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Special acknowledgement is due Mr. David F. Schulz, Chief Special Projects Planner; Mr. James A. Marsho, P.E., Senior Engineer; Mr. John L. Zastrow, Senior Planner; and Mrs. Jean M. Lusk, Planner, all of the Commission staff for their special efforts in the conduct of this study and preparation of this report.

SOUTHEASTERN

WISCONSIN

REGIONAL PLANNING

916 NO EAST AVENUE

P.O: BOX 769

WAUKESHA, WISCONSIN 53187

Serving the Counties of



TO:

The Legislative Bodies of All of the Local Units of Government within the Southeastern Wisconsin Region, Comprising the Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha

This is to certify that at a meeting of the Southeastern Wisconsin Regional Planning Commission held at the Commission offices in Waukesha, Wisconsin on the 13th day of April 1978, the Commission did by unanimous vote of all Commissioners present, being 17 ayes and 0 nayes, and by appropriate resolution, a copy of which is made a part hereof and incorporated by reference to the same force and effect as if it had been specifically set forth herein in detail, adopt a transportation plan for the transportation handicapped residing in the Southeastern Wisconsin Region, said Region being comprised of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties. The said regional transportation plan for the transportation handicapped being a short-range element of the master plan for the physical development of the Region and constituting an amendment to the regional transportation plan adopted by the Commission on December 1, 1966, is comprised of inventory findings, latent travel demand estimates, alternative plans, the recommended plan, and descriptive and explanatory matter thereto contained in SEWRPC Planning Report No. 31, A Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin: 1978-1982, published in April 1978 and attached hereto and made a part hereof. Such action taken by the Commission is hereby recorded on, and is a part of said plan; and the plan is hereby transmitted to the constituent local units of government for consideration, adoption, and implementation.

In Testimony Whereof, I have hereunto set my hand and seal and cause the Seal of the Southeastern Wisconsin Regional Planning Commission to be hereto affixed. Dated at the City of Waukesha, Wisconsin, this 14th day of April 1978.

George C. Berteau, Chairman Southeastern Wisconsin Regional Planning Commission

ATTEST:



Kurt W. Bauer Deputy Secretary (This page intentionally left blank)

RESOLUTION NO. 78-4

RESOLUTION OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION ADOPTING A TRANSPORTATION PLAN FOR THE TRANSPORTATION HANDICAPPED IN THE SOUTHEASTERN WISCONSIN REGION THE PLAN BEING A PART OF THE MASTER PLAN FOR THE PHYSICAL DEVELOPMENT OF THE REGION COMPRISED OF THE COUNTIES OF KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH, WASHINGTON, AND WAUKESHA IN THE STATE OF WISCONSIN

WHEREAS, petitions, in the form of resolutions, were duly adopted by the governing bodies of the governmental units located within the Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha in the State of Wisconsin, petitioning the Honorable Gaylord A. Nelson, as the Governor of the State of Wisconsin, to create a regional planning commission, embracing the said counties, pursuant to the provisions of Section 66.945(2) of the Wisconsin Statutes; and

WHEREAS, pursuant to the said petitions, the Southeastern Wisconsin Regional Planning Commission was duly created by the written Executive Order of the Honorable Gaylord A. Nelson, in his official capacity as the Governor of the State of Wisconsin, attested to by the Secretary of State of the State of Wisconsin, which said Executive Order was duly signed and issued on the 8th day of August 1960, pursuant to the provisions of Section 66.945(2) of the Wisconsin Statutes; and

WHEREAS, the said Executive Order specifically extended to the Southeastern Wisconsin Regional Planning Commission, so created, jurisdiction in the area and boundaries embraced by, included in, and limited to the said Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha in the State of Wisconsin; and

WHEREAS, a copy of the said Executive Order was forwarded by the office of the said Governor to each of the local governmental units included within the area and boundaries defined in the said Executive Order; and

WHEREAS, following the creation of the said Commission, public hearings were held in said local governmental units, following which the membership composition of the said Regional Planning Commission was duly appointed under, and pursuant to, the provisions of Section 66.945(3) and (4) of the Wisconsin Statutes; and

WHEREAS, following the appointment of said membership, the said Regional Planning Commission met and organized and elected a Chairman and Executive Committee and appointed an Executive Director and appointed advisory committees and adopted by-laws and established its own rules of procedure and scheduled quarterly meetings of the Commission to be held each year and hired such experts and consultants as it deemed necessary for the prosecution of its responsibilities and engaged a general counsel; and it thereafter kept a record of its resolutions, transactions, findings, and determinations, which have been and are a public record under, and pursuant to, the provisions of Section 66.945(5), (6), and (7) of the Wisconsin Statutes; and

WHEREAS, following the organization of the said Regional Planning Commission and under, and pursuant to, the provisions of Section 66.945(8) of the Wisconsin Statutes, it proceeded to conduct all types of research studies, collect and analyze data, prepare maps, charts, and tables, and conduct all necessary studies for the accomplishment of its other duties and has prepared numerous reports presenting the findings and recommendations of its research and studies concerning the physical, social, and economic development of the Region and has distributed these reports and provided advisory serivces on planning problems to the local governmental units within the Region and to other public and private agencies in matters relative to its functions and objectives and made annual reports of its activities to the State Legislature of Wisconsin and the legislative bodies of the local governmental units within the Region, all leading to the ultimate adoption of a master plan for the Region when all studies, data, maps, charts, and tables have been completed; and WHEREAS, it entered into contracts with local units of government within the Region under, and pursuant to, the provisions of Sections 66.30 and 66.945(12) of the Wisconsin Statutes, offering advice on land use, thoroughfares, community facilities, and public improvements; and

WHEREAS, for the purpose of accomplishing the objectives of the Regional Planning Commission, it accepted from local, state, and federal government agencies aids and grants, which items have been furnished on a basis not incompatible with the provisions of Section 66.945 of the Wisconsin Statutes under conditions that are in accordance with the accomplishment of its objectives; and

WHEREAS, 24 important elements of the master plan have been duly adopted by the Southeastern Wisconsin Regional Planning Commission; namely,

- 1. The comprehensive plan for the Root River watershed at a meeting held on the 22nd day of September 1966; and
- 2. The regional land use plan (1990) at a meeting held on the 1st day of December 1966 and the regional land use plan (2000) at a meeting held on the 19th day of December 1977, the latter constituting an amendment and extension of the former; and
- 3. The regional transportation plan (highway and transit components) at a meeting held on the 1st day of December 1966; and
- 4. The comprehensive plan for the Fox River watershed at a meeting held on the 4th day of June 1970, amended at meetings held on the 13th day of September 1973 and the 5th day of June 1975; and
- 5. The Milwaukee County jurisdictional highway system plan at a meeting held on the 4th day of June 1970; and
- 6. The comprehensive plan for the Milwaukee River watershed at a meeting held on the 2nd day of March 1972; and
- 7. The Milwaukee area transit plan at a meeting held on the 2nd day of March 1972; and
- 8. The comprehensive plan for the Kenosha Planning District at a meeting held on the 1st day of June 1972; and
- 9. The Walworth County jurisdictional highway system plan at a meeting held on the 1st day of March 1973; and
- 10. The Ozaukee County jurisdictional highway system plan at a meeting held on the 7th day of March 1974; and
- 11. The regional sanitary sewerage system plan at a meeting held on the 13th day of May 1974; and
- 12. The regional library facilities and services plan at a meeting held on the 12th day of September 1974; and
- 13. The Racine area transit development program at a meeting held on the 12th day of September 1974; and
- 14. The Waukesha County jurisdictional highway system plan at a meeting held on the 5th day of June 1975; and
- 15. The regional housing plan at a meeting held on the 5th day of June 1975; and

- 16. The comprehensive plan for the Racine Urban Planning District at a meeting held on the 5th day of June 1975; and
- 17. The Kenosha County jurisdictional highway system plan at a meeting held on the 11th day of September 1975; and
- 18. The Washington County jurisdictional highway system plan at a meeting held on the 11th day of September 1975; and
- 19. The Racine County jurisdictional highway system plan at a meeting held on the 4th day of December 1975; and
- 20. The regional airport system plan at a meeting held on the 4th day of March 1976; and
- 21. The Kenosha area transit development program at a meeting held on the 3rd day of June 1976; and
- 22. The comprehensive plan for the Menomonee River watershed at a meeting held on the 20th day of January 1977; and
- 23. The regional park and open space plan at a meeting held on the 1st day of December 1977; and
- 24. The transportation systems management plan for the Kenosha, Milwaukee, and Racine urbanized areas at a meeting held on the 19th day of December 1977; and

WHEREAS, all planning studies for the preparation of one additional important segment of the master plan for the physical development of the Region have been concluded; namely, a transportation plan for the transportation handicapped in southeastern Wisconsin, including the preparation of SEWRPC Planning Report No. 31, <u>A Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin</u>, bearing the date of February 1978, which report contains proposals for transportation of the transportation handicapped and related descriptive and explanatory matter and, being a transportation plan for the transportation handicapped in southeastern Wisconsin, is intended by the Regional Planning Commission to constitute an integral part of the master plan for the physical development of the Region; and

WHEREAS, the transportation plan for the transportation handicapped was recommended for approval by the Technical Coordinating and Advisory Committee on Transportation Planning for the Transportation Handicapped in Kenosha and Walworth Counties at a meeting held on December 19, 1977; by the Technical Coordinating and Advisory Committee on Transportation Planning for the Transportation Handicapped in Racine County at a meeting held on December 19, 1977; and by the Technical Coordinating and Advisory Committee on Transportation Planning for the Transportation Handicapped in Milwaukee, Ozaukee, Washington, and Waukesha Counties at a meeting held on December 20, 1977; and

WHEREAS, the Commission held two public hearings in the Region on the recommended transportation plan for the transportation handicapped, one on January 24, 1978, and one on February 6, 1978; and

WHEREAS, under the provisions of Sections 66.945(8) and (10) of the Wisconsin Statutes, the Regional Planning Commission is authorized and empowered as the work of making the whole master plan progresses, to adopt a resolution approving the transportation plan for the transportation handicapped in southeastern Wisconsin as part of the master plan.

NOW, THEREFORE, BE IT RESOLVED:

FIRST: That the document entitled SEWRPC Planning Report No. 31, A Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin, together with all descriptive and explanatory matter, which planning document was prepared and financed in part through a joint planning grant from the Wisconsin Department of Transportation; the U. S. Department of Transportation, Urban Mass Transportation Administration; and Milwaukee County, be and the same hereby is in all respects ratified, approved, and officially adopted.

SECOND: That the said transportation plan for the transportation handicapped in southeastern Wisconsin contained in SEWRPC Planning Report No. 31; the said descriptive and explanatory matter contained in SEWRPC Planning Report No. 31; together with all maps, plats, charts, programs, and descriptive and explanatory matter therein contained are hereby made a matter of public record; and the originals and true copies thereof shall be kept, at all times, at the offices of the Southeastern Wisconsin Regional Planning Commission presently located in the Old Courthouse Building in the City of Waukesha, County of Waukesha, State of Wisconsin, or at any subsequent office that the said Commission may occupy, for examination and study by whomsoever may desire to examine the same.

THIRD: That a true, correct, and exact copy of this resolution, together with a complete and exact copy of SEWRPC Planning Report No. 31, <u>A Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin</u>, containing the said descriptive and explanatory matter shall be forthwith distributed to each of the local legislative bodies of the governmental units within the Region entitled thereto and to such other bodies, agencies, or individuals as the law may require or as the Commission or its Executive Committee or its Executive Director, at their discretion, shall determine and direct.

FOURTH: That the Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin, shall following the adoption of this resolution, become an element of the master plan for the entire Region, which master plan shall be made for the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the entire Region and which will, in accordance with existing and future needs, best promote public health, safety, morals, order, convenience, prosperity, or the general welfare, as well as efficiency and economy in the process of development, and the purpose and effect of the adoption of the master plan shall be solely to aid the Regional Planning Commission, the local governments and the local governmental officials comprising the Region, the state government and state governmental officials, and the federal government and federal governmental officials in the performance of their functions and duties.

The foregoing Resolution, upon motion duly made and seconded, was regularly adopted at the meeting of the Southeastern Wisconsin Regional Planning Commission held on the 13th day of April 1978, the vote being: Ayes 17; Nayes 0.

George C. Berteau, Chairman

ATTEST:

Kurt W. Bauer, Deputy Secretary

Applied Resource Integration, Ltd.

September 9, 1977

Mr. Kurt W. Bauer, Executive Director Southeastern Wisconsin Regional Planning Commission 916 N. East Avenue Old Courthouse Waukesha, WI 53186

Dear Mr. Bauer:

In accordance with the contract between Applied Resource Integration, Ltd. and the Southeastern Wisconsin Regional Planning Commission dated July 28, 1976, we are pleased to submit a draft of the concluding chapter for use by your staff in preparing SEWRPC Planning Report No. 31, <u>A Transportation Plan for the Transportation Handi-</u> capped in Southeastern Wisconsin: <u>1978 - 1982</u>.

This and other draft chapters which have been submitted during the course of the project effort reflect the inputs received from the Technical Coordinating and Advisory Committee meetings and comments received from your staff.

It has been a pleasure to work with you and your staff and we trust that our assistance will result in meaningful mobility for the transportation handicapped in your region.

Very truly yours,

PCBowlin

R.C. Bowlin Principal

RCB;j Encl.

> 137 Newbury Street, Boston, Massachusetts 02116 617-266-8320

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Planning Report Number 31

A REGIONAL TRANSPORTATION PLAN FOR THE TRANSPORTATION HANDICAPPED IN SOUTHEASTERN WISCONSIN: 1978-1982

Prepared by the Southeastern Wisconsin Regional Planning Commission

> P. O. Box 769 Old Courthouse 916 N. East Avenue Waukesha, Wisconsin 53187

The preparation of this report was financed in part through a joint planning grant from Milwaukee County, the Wisconsin Department of Transportation, and the U.S. Department of Transportation, Urban Mass Transportation Administration.

April 1978

Inside Region \$10.00 Outside Region \$20.00 (This page intentionally left blank)



STATEMENT OF THE CHAIRMAN

The Milwaukee County Transit Board on August 28, 1975, requested that the Regional Planning Commission undertake a study of the transportation needs of handicapped persons, particularly of the wheelchair bound and those who can walk only with the aid of special devices, such as canes and crutches. The primary objective of the study was to prepare a plan for such special transportation facilities and services as might be required to integrate handicapped people more fully as functioning, participating, and contributing members of society. The preparation of such a plan is in conformance with national policy as enunciated in the Federal Urban Mass Transportation Act and with similar state policies which also require that handicapped people be afforded the same right as other people to utilize public transportation facilities and services in the pursuit of their daily lives. Implementation of the plan presented in this report would not only fully meet this compassionate and humane objective and the dictates of national and state policy but would do so in an efficient, cost-effective manner.

In accordance with Commission practice, this report not only presents a recommended plan for providing needed special transportation services to the transportation handicapped but presents and evaluates alternatives thereto. This report also presents a great deal of previously unavailable information essential to the making of sound decisions concerning the best means for meeting the transportation needs of the handicapped. In this respect, the report presents information on the number and residential location of the transportation handicapped and on their need for transportation services; on the principal barriers to the use of public transit services and facilities presented to handicapped residents of the Region; and on the current levels of the transportation services presently provided to the transportation handicapped by a large number of public and private transportation and social service agencies operating within the Region and the use made of such services by the handicapped.

The plan presented in this report differs from other regional plan elements prepared and adopted to date in that it is a shortrange—five-year—plan element containing recommendations that can be relatively quickly implemented at relatively low cost. The plan basically recommends, with variations by county, a four-fold approach to meeting the transportation needs of the handicapped. First, the plan recommends that the existing public transit systems in the Kenosha, Milwaukee, and Racine urbanized areas be made accessible to the handicapped. Second, the plan recommends a user-side subsidy program in the urbanized areas to complement the services provided by the accessible bus systems. Third, in the more rural portions of the Region lying outside the three urbanized areas, the plan recommends the provision of special demand responsive transportation services to the handicapped. Fourth, the plan recommends the coordination of social service agency transportation services on a county-by-county basis. It should be noted that the plan proposes to meet the needs of all of the transportation handicapped residents of the Region—whether young or old, chronically or acutely affected, or whether residing in private homes or in institutions.

In accordance with the statutory role assigned to the Commission, the regional transportation plan for the transportation handicapped is completely advisory to the local, state, and federal units and agencies of government concerned. It is hoped that the plan will serve as a guide to decisionmaking by these units and agencies of government as they seek a rational basis for the use of the limited public funds available to meet a pressing need. Careful attention to the recommendations of the plan will be essential if the special transportation efforts required not only by the dictates of national and state policy but by humane considerations are to be met and if federal and state funding of not only special transportation efforts for the handicapped but of public transit improvements and operations are not to be jeopardized. In its continuing role as a center for the coordination of plan implementation activities, the Commission stands ready to assist all involved in implementation of the recommended transportation plan for the handicapped.

Respectfully submitted,

George Ć. Berteau Chairman

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### INTRODUCTION

As a part of the overall transportation planning responsibility of the Southeastern Wisconsin Regional Planning Commission (SEWRPC), a study was undertaken of the transportation needs of the elderly and the handicapped persons residing in the Region. This regional elderly and handicapped transportation study provides for: (1) identification of the number and the characteristics of the elderly and the handicapped persons within the Region and their special transportation needs; (2) assessment of the overall effectiveness of the existing public and private transportation systems in accommodating these needs; and (3) development of a workable and cost-effective plan for facilities and services which will satisfy the current and future transportation needs of these elderly and handicapped persons. The conduct of this study provides an additional element of the overall regional transportation plan that is consistent with the goals for orderly social, economic, environmental, and physical development of the Region. Since this study represents an integral part of the regional planning effort, an understanding of the need for, and objectives of, regional planning and the manner in which these needs and objectives are being met in southeastern Wisconsin is necessary for a full appreciation of the findings and recommendations of the regional elderly and handicapped transportation study.

### THE REGIONAL PLANNING COMMISSION

The work of the Southeastern Wisconsin Regional Planning Commission is directed toward provision of the necessary areawide planning services for the rapidly urbanizing, seven-county Southeastern Wisconsin Region. The Commission was created in August 1960 under the provisions of Section 66.945 of the Wisconsin Statutes to serve and assist the local, state, and federal levels, units, and agencies of government in planning for the orderly and economical development of the Region. The Commission's role is entirely advisory, and participation by local units of government in its work is on a voluntary, cooperative basis. The Commission is composed of 21 citizen members, three from each county in the Region, who serve without pay. One Commissioner from each county is appointed to the Commission by the county board, one by the Governor from a list certified to him by the county board, and one by the Governor on his own motion.

The powers, duties, and functions of the Commission and the qualifications of the Commissioners are carefully set forth in the state enabling legislation. The Commission is authorized to employ a staff and to appoint advisory committees to assist it in the execution of its responsibilities. Basic funds necessary to support Commission operations are provided by the member counties, with the budget apportioned among the seven counties on the basis of relative equalized property valuation. The Commission is authorized to request and accept aid in any form from all levels and agencies of government to accomplish its objectives and is authorized to deal directly with the state and federal governments for this purpose. The Commission, its committee structure, and its staff organization, together with its relationship to the constituent counties, are shown in Figure 1.

## THE REGIONAL PLANNING CONCEPT IN SOUTHEASTERN WISCONSIN

Regional planning, as conceived by the Commission, is not a substitute for, but a supplement to, local, state, and federal planning efforts. Its objective is to assist the various levels, units, and agencies of government in finding solutions to areawide development and environmental problems which cannot be properly resolved within the framework of a single municipality or county. As such, regional planning has three principal functions:

- 1. Inventory—the collection, analysis, and dissemination of basic planning and engineering data on a uniform areawide basis so that, in light of such data, the various levels and agencies of government and private investors operating within the Region can better make decisions concerning community development.
- 2. Plan Design—the preparation of a framework of plans for the physical development of the Region, these plans being limited to

#### Figure 1

#### SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION ORGANIZATIONAL STRUCTURE



⁰THE COMMISSION IS COMPOSED OF 21 CITIZEN MEMBERS, THREE FROM EACH COUNTY, WHO SERVE WITHOUT PAY.

#### Source: SEWRPC.

those functional elements having areawide significance. To this end, the Commission is charged by law with the function and duty of "making and adopting a master plan for the physical development of the Region." The permissible scope and content of this plan, as outlined in the enabling legislation, extend to all phases of regional development, implicitly emphasizing preparation of alternative spatial designs for land use and for supporting transportation and utility facilities.

3. Plan Implementation—promotion of regional plan implementation through the provision of a center for the coordination of the day-to-day planning and plan implementation activities of the various levels and agencies of government operating in the Region.

The work of the Commission, therefore, is visualized as a continuing planning process providing outputs of value to the making of development decisions by public and private agencies and to the preparation of plans and plan implementation programs at the local, state, and federal levels. It emphasizes close cooperation between the governmental agencies and private enterprise responsible for the development and maintenance of land uses in the Region and for the design, construction, operation, and maintenance of the supporting public works facilities. All Commission work programs are intended to be carried out within the context of a continuing planning program which provides for periodic reevaluation of the plans produced and for the extension of planning information and advice necessary to convert the plans into action programs at the local, regional, state, and federal levels.

### THE REGION

The Southeastern Wisconsin Planning Region, as shown on Map 1, is composed of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties. Exclusive of Lake Michigan, these seven counties have a total area of 2,689 square miles, or about 5 percent of the total area of the State of Wisconsin. About 40 percent of the state population (1970) lives in these seven counties, which contain three of the eight and one-half Standard Metropolitan Statistical Areas (SMSA's) in Wisconsin. The Region contains about half of the tangible wealth in Wisconsin as measured by equalized property valuation, and represents the greatest wealth-producing area of the State. About 38 percent of the state's labor force is employed within the Region. The Region contains 154 local units of government exclusive of school and other special purpose districts and encompasses all or part of 11 major watersheds. It has been subject to rapid population growth and urbanization and from 1960 to 1970 accounted for approximately 40 percent of the population increase in the State.

Geographically, the Region is located in a relatively good position for continued growth and development. It is bounded on the east by Lake Michigan, which provides an ample supply of fresh water for both domestic and industrial use, as well as being an integral part of a major international transportation network. It is bounded on the south by the rapidly expanding northeastern Illinois metropolitan region and on the west and north by the fertile agricultural lands and desirable recreational areas of the rest of Wisconsin. Many of the most important industrial areas and heaviest population concentrations in the Midwest lie within a 250 mile radius of the Region, and over 33 million people reside within this radius.

# THE REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION STUDY

In August 1975 the Regional Planning Commission was requested by the Milwaukee County Transit Board to undertake an elderly and handicapped transportation needs study as part of its overall transportation planning program. The Commission, in its deliberations following receipt of this request, determined that a specialized study of the transportation needs of the elderly and the handicapped within southeastern Wisconsin would constitute a major contribution to the Commission function of areawide research by facilitating the collection and analysis of basic planning data not then available for the Region as a whole; would produce transportation service and facility plans that can be implemented quickly, thereby effectively enhancing the mobility of elderly and handicapped persons, particularly the semiambulatory and those confined to wheelchairs; would provide output of value to assist development decisionmaking within local, state, and federal governmental agencies, public and private agencies and interested citizen groups responsible for administering programs and funds related to the needs of the elderly and handicapped; would contribute to the proper coordination of transportation programs, services, and facilities with other aspects of the comprehensive regional transportation system;



The seven-county Southeastern Wisconsin Region encompasses an area of about 2,689 square miles, or about 5 percent of the total area of the State of Wisconsin. About 40 percent of the State's population, however, resides in these seven southeastern counties. The Region employs about 38 percent of the state's labor force and contains about 42 percent of all the tangible wealth in the State as measured by equalized assessed property valuation. The Region has been subject to rapid population growth and urbanization, and from 1960 to 1975 accounted for about 40 percent of the total population increase of the State.

Source: SEWRPC.

and would contribute a new element to the Commission's adopted regional transportation plan. The Commission also determined that this study would provide a necessary element of the urban transportation planning process, as set forth in federal rules and regulations promulgated by the U.S. Department of Transportation and issued jointly by the Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA), and that implementation of facility and service recommendations based on this study are to be included in the annual transportation improvement program for the urbanized areas of the Region.

Accordingly, the Commission directed its staff to prepare a study design for a study of the transportation needs of the elderly and handicapped within the Region and the preparation of a plan to meet those needs. The study design outlined the major work tasks to be completed, the basic consultant, Commission staff, and advisory committee organizational structure by which the study would be conducted, and a time schedule for its completion.¹

# Need for the Study

As stated in the study design, the need for an areawide elderly and handicapped transportation study within the Southeastern Wisconsin Region was established upon review of three major considerations:

1. A lack of timely, uniform, areawide information about the number and location of the elderly and handicapped and their demand and need for transportation services. This lack of information also includes a lack of information on the barriers experienced by the elderly and the handicapped that make it difficult or impossible for these persons to use existing transportation services. These barriers fall into four basic categories: 1) the cost of obtaining transportation services; 2) availability of, and access to, transportation services; 3) physical constraints to passenger use in the design of transportation facilities and equipment; and 4) social and psychological barriers to the use of transportation services.

- 2. The need, among the many public and private transportation agencies serving the elderly and the handicapped, for: 1) a clear definition of the current levels of service provided and a comprehensive inventory of the availability and use of their transportation equipment; 2) coordination of their service efforts; and 3) elimination of needless duplication of these service efforts.
- 3. The need to utilize the limited public funds reserved for improvement of the mobility of the elderly and the handicapped in the most prudent and cost-effective manner in order to attain the maximum benefit.

Reflected in the foregoing considerations are the extremely complex interrelationships between supply and demand factors in planning specialized transportation systems for widely dispersed groups of people, many of whom have unique needs, and the pressing need to provide the elderly and handicapped persons in the Region with geographic mobility. Review of these considerations established the need for a regional elderly and handicapped transportation study that was both timely and consistent with the most recent federal regulations to assure that the Southeastern Wisconsin Regional Planning Commission and the local units of government providing public transportation services in the Region remained eligible for future federal planning, capital, and operating assistance for mass transportation improvements.

### **Study Objectives**

The end product of this regional elderly and handicapped transportation study will be a transportation plan for the Region that seeks to improve the mobility of elderly and handicapped persons in an effective and efficient manner. These study and plan activities are in accord with the final regulations jointly promulgated on April 30, 1976, by the Federal Highway Administration and the Urban Mass Transportation Administration on the planning of transportation services for the elderly and the handicapped.² To accomplish this, the specific study objectives included: 1) identification of the Region's elderly and handicapped persons and their special transportation needs; 2) the evalu-

¹See "Regional Elderly and Handicapped Transportation Needs Study and Plan Design," revised, September 1976, on file in the Commission offices.

²Department of Transportation, Urban Mass Transportation Administration and Federal Highway Administration, "Transportation for Elderly and Handicapped Persons," <u>Federal Register</u>, Vol. 41, No. 85, April 30, 1976, pp. 18234-18241.

ation of practical alternatives to achieving improved mobility for the elderly and handicapped; and 3) the design of the most practicable, feasible, and cost-effective transportation plan, utilizing a variety of transportation modes to best accommodate those with special transportation needs.

The current federal regulations as set forth in Appendix B apply to all planning, capital, and operating assistance projects receiving federal financial assistance under Sections 3, 5, or 9 of the Urban Mass Transportation Act of 1964, as amended, and nonhighway mass transportation projects receiving federal financial assistance under Federal Highway Administration legislation. These regulations in summary require: 1) that the urban transportation planning process include special efforts to plan and design public mass transportation facilities and services so as to accommodate the special needs of elderly and handicapped persons; 2) that all applications for capital and operating assistance include assurances and descriptive material on transportation for elderly and handicapped persons; 3) that regular transit service be made more accessible to the large number of ambulatory elderly and handicapped persons by incorporating the transportation needs of such persons into the design standards for fixed facilities and vehicles; and 4) that the annual element of the transportation improvement program contain projects or project elements designed to benefit elderly and handicapped persons and that by September 30, 1977, reasonable progress be demonstrated in implementing previously programmed projects.

More specifically, this regional elderly and handicapped transportation study provides a framework of agreed-upon regional objectives for specialized transportation service and an accompanying set of standards relevant to the mobility needs and values of the elderly and the handicapped citizens of the Region. Further, the study promotes the most effective coordination possible between existing specialized transportation programs and services, both public and private, and profit and nonprofit, and between such existing specialized transportation services and existing regular transit service in the Region, and it encourages good transportation design and development for the elderly and the handicapped within the framework of the overall regional transportation plan and within the broader context of a sound, comprehensive plan for the overall social, economic, environmental, and physical development of the Region.

## Staff, Consultant, and Committee Structure

The basic organizational structure for the study is outlined in Figure 2 and consisted of a consultant and the Commission staff who report to the Executive Director of the Commission. The Executive Director, in turn, served as the project sponsor and reported to the Southeastern Wisconsin Regional Planning Commission, which had the ultimate legal authority and responsibility for the study. The responsibilities of the consultant and Commission staff for the various work elements of the study are also briefly identified in Figure 2.

For the regional elderly and handicapped transportation study, just as for all major planning efforts, the basic Commission organization provides for attainment of the necessary interagency coordination and lay citizen advisory function through the establishment of advisory committees, as well as through interagency staff assignments. Three technical and advisory committees were established in each of three study subareas: one for the Milwaukee Standard Metropolitan Statistical Area which includes Milwaukee, Ozaukee, Washington, and Waukesha Counties; one for Racine County; and one for Kenosha and Walworth Counties combined. These committees were composed of technical representatives of health and social service, comprehensive planning, and transportation agencies, and a cross section of community interests, including the elderly. the handicapped, and the general community at large.

The three committees performed both technical and lay citizen advisory functions. The technical advisory function provided technical policy direction to the study and placed at the disposal of the study the experience, knowledge, and resources of those represented federal, state, and local agencies which initiate and administer programs serving the elderly and the handicapped. In addition, the technical advisory function ensured that the planning efforts of the operational agencies were incorporated into the study where possible. The lay citizen advisory function assured that the transportation study and recommendations growing out of that study were responsive to the needs and values of the citizens affected. This responsiveness was achieved in the study through nontechnical policy direction provided by the active involvement of concerned citizen groups in the planning program. The full membership of the Advisory Committees is set forth in Appendix A. The Technical Coordinating and Advisory Committees were

#### Figure 2

#### ORGANIZATIONAL STRUCTURE FOR THE REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION STUDY



Source: Applied Resource Integration, Ltd.

furnished with staff assistance as necessary in order to make their work as convenient and effective as possible.

To assist the Commission and its staff with the technical work required throughout the planning process, a consultant, Applied Resource Integration (ARI), Ltd., of Boston, Massachusetts, was retained. ARI was selected from among a number of highly qualifed firms that responded to the Commission's request for proposals to assist in undertaking this study. The consultant was responsible for the following six major work tasks: 1) the basic social research required to fully identify the handicapped and elderly persons in the Region: 2) the inventory of existing public and private services; 3) the determination of travel characteristics of the Region's handicapped and elderly; 4) the development of objectives and standards; 5) alternative plan design; 6) and the preparation of a set of fully coordinated elderly and handicapped transportation plans for subareas of the Region.

Commission staff responsibilities included the following: overall management of the study; providing liaison between the consultant and the Technical Coordinating and Advisory Committees created to guide and direct the study and between the various affected agencies and interested parties having data important to the planning process; review and direction of consultant work efforts in completing and documenting each work task; the conduct of a small sample telephone survey of the Region's elderly and handicapped population; and the conduct of a personal interview survey with residents of nursing homes and residential treatment centers in the Region. In addition, Milwaukee County assigned staff as needed to assist the consultant and the Commission staff in conducting the study, particularly for those elements of the study pertaining to the Milwaukee urbanized area.

#### Format of Presentation

The major findings and recommendations of the regional elderly and handicapped transportation study are documented in this report. The report sets forth the basic principles and concepts underlying the study, documents the salient findings of program inventories and cites the results of analyses based on the inventories, explores alternative transportation plans and strategies, and sets forth a recommended plan based upon objectives and standards adopted by the Technical Coordinating and Advisory Committees, including levels of service, limits on service use and service area, user costs, and the identification of travel barriers to be removed or reduced in existing transit service. In addition, the report contains specific recommendations for plan implementation.

This report is organized so as to present separate but fully coordinated subregional elderlyhandicapped transportation plans for the Milwaukee, Racine, and Kenosha urbanized areas and for the rural portions of the Region. Each chapter has been so divided as to summarize in brief fashion the pertinent findings for each of the regional subareas. This report, therefore, contains data valuable in assisting federal, state, and local units of government and private investors to make decisions about present and future transportation requirements for the elderly and the handicapped residents in the Region and its major subareas.

#### THE ELDERLY AND HANDICAPPED TRANSPORTATION PLANNING PROCESS

#### INTRODUCTION

Because of its important impact on the daily existence and quality of life of the elderly and handicapped, the transportation of such individuals is and may be increasingly expected to become one of the important areas of public policy determination facing public officials, citizen leaders, and transportation and social agency planners within the Region. Although greater amounts of public funding are currently becoming available for improving transportation facilities and services for the elderly and handicapped, there will never be enough funds for all of the projects and services proposed and needed. Precisely how the available public funds should be allocated involves many important public policy determinations. These determinations must be made in view of an urbanizing Region and a target population which is constantly changing. Therefore, such determinations should be based upon a comprehensive transportation and social service delivery planning process able to objectively scale the changing elderly-handicapped travel demand against existing and proposed transportation system capacities. Only within such a planning process can the effect of different elderly-handicapped transportation development proposals be properly evaluated, the best course of action intelligently selected, and the available funds most effectively invested.

Transportation facilities and services, however, are a part of, and have a major effect upon, the social, economic, and land use development of an area. There can be no effective guidance toward desirable regional development patterns without full coordination of transportation system plans and programs. Elderly and handicapped transportation planning must be carried out, therefore, as an integral part of a comprehensive regional planning effort.

In southeastern Wisconsin, the existence of a comprehensive regional planning agency charged by state statute with the duty and function of making and adopting an "advisory master plan for the physical development of the Region" provides a good institutional structure for the conduct of the needed areawide elderly and handicapped transportation planning process. Because of its comprehensive physical planning responsibilities and its formal working relationships with other areawide functional planning agencies dealing with health planning and planning for the aged, the Commission can relate other factors, such as public transportation system development, land use development, and demographic characteristics, to the elderly and handicapped transportation planning process, thus producing an objectively cooperative determined system capable of adoption and joint implementation by the units of government concerned. Accordingly, the elderly and handicapped transportation planning process can be more purposely directed and better plans prepared.

#### DEFINITION OF TERMS

In order to avoid confusion and misunderstanding, certain terms which have different meanings in different contexts must be defined for the purposes of this study. The term "elderly" will be used herein to designate all those persons who are 65 years of age or older. The term "handicapped" will be used herein to designate all persons who as a result of a chronic or acute disability suffer an activity limitation¹ which results in: 1) the inability to carry on the major activity for one's age-sex group, such as working, keeping house, or going to school; or 2) restriction in the amount or kind of such major activity; or 3) restriction in relation to other activities such as recreational, church, or civic interests. The term "transportation handicapped" will be used herein to designate all persons of any age who have a physical, mental, or emotional disability that they perceive prevents them from using public mass transit because it makes access to, and riding on, conventional

¹The definition of activity limitation was obtained from Vital Health Statistics, Series 10-96, Limitation of Activity and Mobility Due to Chronic Conditions, USA, 1972, Public Health Service of the Department of Health, Education and Welfare, November 1974.

public mass transit vehicles difficult if not impossible. The transportation handicapped are thus defined here as a special subgroup of the elderly and the handicapped (see Figure 3).

The term "locationally disadvantaged" will be used to designate those elderly and transportation handicapped individuals who do not reside within the service areas of the existing public mass transit systems within the Region. The term "economically disadvantaged" will be used to designate those elderly and transportation handicapped individuals who are restricted in their mobility. by lack of financial resources. The term "transportation" will be used to designate the movement of the transportation handicapped by all forms of transit and paratransit facilities within the Region. The terms "transit" and "paratransit" designate any nonemergency publicly or privately operated service available to the transportation handicapped including service provided by public mass transit agencies utilizing conventional motor buses; taxi service provided by private agencies utilizing taxicabs; and services provided by volunteer, social service, and private agencies utilizing automobiles, vans, or other special vehicles. The term "fixed route" refers to a transportation system which provides service only to and from specified points along a prescribed route according to a specific time schedule. In contrast, "demand responsive" system provides door-to-door or door-through-door transportation service to any point within the service area on an on-call basis.

# BASIC PRINCIPLES

The specific process applied in the Commission's regional elderly and handicapped transportation planning process is based on the following five basic principles:

1. Transportation planning must be regional in scope. Travel patterns develop over an entire urban region without regard to corporate limits, and, thus, transportation planning cannot be accomplished successfully within the confines of a single municipality or even a single county if that municipality or county is part of a larger urban complex. The entire elderly and handicapped transportation system, composed of accessible public transportation, special public systems, taxicabs, chair car services, and agency services, must form a fully coordinated but nonduplicating system over the entire Region, a system which can adequately serve existing and growing elderly and handicapped needs.

- 2. Elderly and handicapped transportation planning must consider the existing and future social needs of the target populations. The number and needs of the elderly and the handicapped and the capabilities of the current transportation system to serve those needs combine to determine the purpose of any recommendations for future services. In turn, future services will determine how the elderly and the handicapped will continue to gain in independence and to improve their quality of life.
- 3. Fixed route and demand responsive mass transit systems must be planned together in an integrated and unified fashion. Each mode must be assigned that part of the total elderly and handicapped travel which it is best suited to carry. To be most effective, demand responsive service areas, transfer/terminal points, and operating procedures should complement fixed route transit services accessible to the transportation handicapped and should function in a coordinated rather than competitive manner.
- 4. Elderly and handicapped transportation systems must meet certain legal and regulatory standards arising from current federal and state legislation. Elderly and handicapped transportation plans must be capable, in particular, of meeting the Urban Mass Transportation Administration's new "special efforts" requirement for the elderly and handicapped. Furthermore, these plans should recognize a social and moral responsibility to free the handicapped from the mobility barriers which have restrained them in the past.
- 5. Elderly and handicapped transportation planning must recognize the existence of a limited financial resource base within which all existing and future services must operate and within which optimization of the various competing modes, ideas, and projects must be carried out. Ineffective coordination or fiscal irresponsibility can lead to serious funding, operational, or legal problems which may take years to correct.

#### DISTRIBUTION WITHIN THE REGIONAL POPULATION OF THE ELDERLY, HANDICAPPED, TRANSPORTATION HANDICAPPED, AND LOCATIONALLY AND ECONOMICALLY DISADVANTAGED TRANSPORTATION HANDICAPPED POPULATIONS



Source: U. S. Department of Health, Education and Welfare, and SEWRPC.

# THE ELDERLY AND HANDICAPPED TRANSPORTATION PLANNING PROCESS

Based upon the foregoing principles, a seven-step planning process was developed by which the elderly and transportation handicapped could be identified, the complex movement of the elderly and handicapped accurately described, and the effect of different courses of action with respect to elderly and handicapped transportation system development evaluated. The seven specific steps involved in this planning process were: 1) study design, 2) formulation of objectives and standards, 3) inventory, 4) analysis and demand estimation, 5) plan design, 6) plan test and evaluation, and 7) plan selection and adoption. Plan implementation, although necessarily a step beyond the foregoing planning process, was considered throughout the process so that realization of the plans could be fostered.

An understanding of the seven-step planning process is essential to any appreciation and understanding of the findings and recommendations of the evaluation process as set forth herein. Each step in the process, together with its major component operations, is briefly described below for the elderly and handicapped transportation planning process. The overall process applied is diagrammed in Figure 4.

#### Study Design

Every planning program must embrace a formal structure or study design so that the program can be carried out in a logical and consistent manner. This study design must specify the content of the fact-gathering operations, define the geographic area for which data will be gathered and plans prepared, outline the manner in which the data collected are to be processed and analyzed, specify requirements for demand estimates and for their accuracy, and define the nature of the plans to be prepared and the criteria for their evaluation and adoption. The study design may be based upon a highly structured series of mathematical models or upon a more traditional framework of analysis, forecast, and plan preparation, but it must be formally established if the planning program is to avoid uncoordinated and wasteful data collection, processing, and analysis activities.



For the elderly and handicapped transportation planning effort, the study design was set forth in the Commission's <u>Regional Elderly and Handicapped Transportation Needs Study and Plan</u> <u>Design</u>, revised, September 1976. Delineated in the study design were those work tasks which were deemed necessary to expeditiously reach an overall regional understanding of the existing situation for elderly and handicapped transportation needs and the optimal plan for future implementation. The study design was based upon an analysis of those factors deemed most necessary for the Region and also upon standard transit planning practices applied elsewhere, especially those relating to the needs of the elderly and handicapped.

# Formulation of Objectives and Standards

The formulation of objectives is an essential element of the planning process. It is much more important to choose the "right" objectives than the "right" plan. To choose the wrong objectives is to solve the wrong problem; to choose the wrong plan is merely to choose a less efficient physical system. It is important to recognize that the formulation of sound objectives involves the formal definition of the desirable system by listing, in effect, the broad needs which the system aims to satisfy. This suggests that the formulation of objectives requires prior knowledge of the social and economic characteristics of the area for which the plan will be devised, an understanding of the population's typical behavioral patterns which are relevant to the subject of the study, a practical knowledge of the technical means of achieving the objectives, and an understanding of the underlying value systems which the objectives implicitly reflect. Therefore, the regional development objectives formulated under this elderly and handicapped transportation planning effort were influenced by an understanding of these conditions as they exist within the Region. In addition, the objectives were shaped by the current federal regulatory requirements for elderly and handicapped transportation planning.

### Inventory

Basic demographic, transportation service, and travel demand data are essential to the formulation of workable transportation system development plans. Consequently, inventory becomes the first operational step in any planning process. The crucial nature of factual information in the planning process should be evident, since no intelligent decisions can be made or alternative courses of action selected without knowledge of the current state of the system being planned. The sound formulation of a regional elderly and handicapped transportation plan requires that factual data be developed on the existing elderly and handicapped populations and appropriate subgroups of those populations, the existing transportation services available to these populations, and the existing travel of these populations. Data should also be developed on the existing and latent demand for transportation within 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 necessary inventories required to develop a sufficient data base for analyses and need assessment included the determination of: a) the elderly and transportation handicapped population, b) their travel habits, and c) the transportation services available to satisfy travel desires. In addition, information on the legal and financial framework within which transportation services to the transportation handicapped may be or are required to be provided was compiled as a part of the planning program.

Identified in the inventory of the elderly and transportation handicapped population were the number and location of those persons who are transportation handicapped, that is, those who experience serious difficulties using transit or who cannot use transit because of mental or physical disabilities. Also identified through this inventory were those persons, either elderly or transportation handicapped, who are locationally disadvantaged or economically disadvantaged.

Identified in the second inventory phase were the travel habits of the elderly and transportation handicapped population within the Southeastern Wisconsin Region through sample surveys of the transportation handicapped and the elderly residing in private households and selected nursing homes and residential treatment centers in the Region. The data obtained in these surveys were used to refine and check data from other sources. In addition to further identifying travel characteristics, this inventory phase included an on-board survey of clients utilizing the transportation services of social service agencies and chair car operators. The third inventory phase was directed at identification of existing transportation services utilized by the elderly and transportation handicapped population. During this inventory phase data were collected on the types of equipment and extent of services provided by the public transit operations within the Region and the taxicab service provided by private operations. And, importantly, this inventory phase provided pertinent data on those social and human service agencies and private transportation operations specifically oriented to serve the elderly and handicapped population.

In addition, significant effort was focused on identification of the applicable federal, state, and local legislation which sets forth and governs the provision of transportation services for the elderly and handicapped.

# Data Analyses and Latent

### Travel Demand Estimates

Inventories of travel habits and characteristics provide factual information about the present. Analyses of these inventory data, as well as estimates of latent travel demand, are necessary to determine potential levels of utilization for alternative new or modified existing transportation services and facilities, as well as attendant funding requirements. Analyses are required to provide an understanding of the status of the existing transportation system, identify changing trends which could alter the use of the present system, and determine the factors influencing these trends. Particularly important to this study are the analytical relationships which link specific population subgroups with system capacity and accessibility, and the ability of proposed new or modified existing services and facilities to satisfy both existing and latent travel demand.

Drawing on specially prepared SEWRPC transportation handicapped and elderly surveys and on other elderly and handicapped transportation survey data from the existing literature, it is possible to described and assess existing travel habits and latent demand for additional travel among the target design populations and to state how these travel habits and latent travel demands differ from those of the general population. Since the state of the art concepts and procedures available for estimating latent travel demand have not been rigorously tested or proved, it is only possible to estimate a range within which latent travel demand by persons utilizing new or modified existing transportation services and facilities is likely to be encompassed.

It is important to note that this elderly and handicapped transportation planning program is intended to identify only the existing elderly and transportation handicapped populations and to set forth alternative plans to satisfy existing travel demand and latent travel desires. As such, no forecasts of any future year elderly and handicapped population will be made nor will future year forecasts of travel desires be prepared.

#### Plan Design

Plan syntheses or design forms the heart of the planning process. The most well conceived objectives, the most sophisticated data collection, processing, and analysis operations, and the most accurate estimates are of little value if they do not ultimately result in sound plans to meet the objectives in light of estimated needs. The outputs of each of the three planning operations—formulation of objectives and standards, inventory, and analyses and demand estimation—become inputs to the design problem of plan synthesis.

The elderly and handicapped plan design problem consists essentially of determining the best way to meet existing and latent travel desires through expansion and/or modification of existing transportation services or the provision of new services. As such, the alternative elderly and handicapped transportation plans for each of the subareas of the Region are essentially short-range transportation plans covering the next five-year period. This planning period is consistent with the intent of this study to address the present travel demand and latent travel desires of the existing population of elderly and handicapped. Further, this time period is compatible with and will facilitate the incorporation of the recommended plan into the adopted transit development programs within the Region and will set forth data relevant to the elderly and handicapped funding element of the transportation improvement programs.

Because the emergence of both the handicapped as independent-living persons and the relative increase in numbers of elderly are such recent phenomena, the types of alternatives which must be selected are not so well known or so standardized as for other types of transportation problems. The whole concept of demand-responsive public transportation, whether for the public at large or for special groups, has only gained widespread knowledge and serious efforts at implementation in the past decade. Consequently, there is no large body of knowledge or data available for this planning program compared to other elements of the transportation system, like public highways, which have been in existence for generations.

Nevertheless, there is enough known about transportation related problems of the elderly and handicapped to indicate that at least two alternatives should be considered. These two basic alternatives are: the modification of existing public transportation facilities so that the transportation handicapped have full access to such facilities, and the institution of demand responsive services which supplement the existing public transportation system. Although the two alternative approaches to meeting the needs of the transportation handicapped are often viewed by the public as competing, they are not necessarily mutually exclusive. A truly balanced plan should attempt to find the appropriate mix of services which will utilize both alternatives. An additional consideration in the preparation of alternative plans is the future use of all existing transport services, including taxicabs, chair car carriers, and social service agency services to meet the needs of the transportation handicapped. Each of these various modes of transportation service has a role to play in meeting these needs.

### Plan Test and Evaluation

If the alternative plans developed in the design stage of the planning process are to be practical and workable, and thereby viable in terms of implementation and system development, some quantitative tests must be applied in advance of their adoption. These measures include the demand forecasts for each alternative plan and the requisite legal and regulatory constraints which the Region now faces. In addition, each plan must be evaluated by established regional objectives to determine the extent to which each plan is acceptable to the federal, state, and local units and agencies of government concerned.

Calculation of costs is necessary to assess the potential for funding and thus implementing a given plan. The financial resources of the Region are not without limit and, therefore, the cost of implementing the various alternative plans must lie within the fiscal capabilities of the implementing agencies. In addition, with numerous programs competing for the public dollar, it is essential that the evaluation stage include a quantitative analysis of the cost-effectiveness of each alternative plan, employing such techniques as the optimization of benefit-cost ratios. While it is understood that quantitative techniques, such as benefit-cost ratio analyses, cannot treat all of the relevant human factors which are involved with special groups and therefore cannot provide all of the answers, nevertheless they can serve to aid in the evaluation of alternative plans.

# Plan Selection and Adoption

In the plan evaluation process, several alternative regional elderly and handicapped transportation plans were developed. The approach to selecting a plan from among those alternatives was to proceed through the use of the advisory committee structure and public informational meetings and hearings to a final decision and plan adoption by the Commission. Plan selection and adoption necessarily involve both technical and nontechnical policy determinations and must, therefore, be founded in the active involvement of the various governmental bodies, technical agencies, and private interest groups concerned with regional development in the planning process. Such involvement is particularly important in view of the advisory role of the Commission in shaping regional development. The use of advisory committees and both formal and informal hearings appears to be the most practical and effective procedure for involving public officials, technicians, and citizens in the planning process and of openly arriving at agreement among the affected governmental bodies and agencies on objectives and on plans which can be jointly implemented.

# SUMMARY

This chapter has set forth the basic principles underlying the regional elderly and handicapped transportation planning process in southeastern Wisconsin. The relevant terms "elderly and handicapped," "transportation handicapped," "locationally disadvantaged," and "economically disadvantaged" were defined, as was the use of the word "transportation" as applied to the elderly and handicapped. Finally, the seven-step planning process was described as applied by the Commission in this study. This process consisted of the preparation of a study design, the formulation of objectives and standards, the conduct of inventories, the preparation of analyses and demand estimation, the formulation of alternative plans, the test and evaluation of alternatives, and the selection and adoption of a recommended plan.

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#### Chapter III

#### THE TRANSPORTATION HANDICAPPED AND ELDERLY POPULATION

### INTRODUCTION

The purpose of the elderly and handicapped transportation study is to devise an effective plan for improving transportation facilities and services to increase the mobility of the transportation handicapped persons in the Region. Since the primary purpose for designing these facilities and services is to meet the travel needs and demands of the resident transportation handicapped population, an understanding of the size, composition, and spatial distribution of this population is essential to the study effort.

Prior to this study there have been no comprehensive enumerations of the transportation handicapped residents of the Region. Impediments to enumeration of this population have included: 1) the difficulty generally inherent in accurately identifying and quantifying any relatively small subgroups of the general population and 2) the lack of precise definition of those significant attributes which would identify a person as being a member of the transportation handicapped group. In the process of this study the latter impediment has been removed by defining the primary target group of the study as well as by defining other groups within the general population who might otherwise be confused with the transportation handicapped, specifically the ablebodied elderly. These definitions, as previously presented in Chapter II of this text, are used to obtain estimates of the transportation handicapped and able-bodied elderly in this Region.

The first impediment to identifying the target group, the difficulty generally inherent in accurately identifying and quantifying any relatively small subgroup of the general population, has been dealt with in this study by obtaining two distinct, independent estimates of both the transportation handicapped and the able-bodied elderly by using two different methodologies, namely: 1) estimation of these populations through application to the total population of incidence rates obtained from secondary source data and 2) estimation of these populations through expansion of primary source data obtained in a random sample survey of households and institutions in the Region. By obtaining and analyzing these two estimates, an understanding of the ranges within which these estimates may fall is enhanced and the possibility of greatly overstating or understating the number of persons in these population groups is diminished. This Chapter presents the estimates of the transportation handicapped and able-bodied elderly as obtained through the application to the general population of incidence rates obtained from secondary source data and those estimates as obtained in the small sample survey.

In this chapter transportation handicapped and able-bodied elderly are quantified by type, by mobility limitation, by age, by degree of difficulty encountered in transit use, by the number who are locationally disadvantaged, and by the number who are economically disadvantaged. This data is presented for the Milwaukee Standard Metropolitan Statistical Area (SMSA) and subareas thereof, for Racine County and subareas thereof, and for Kenosha and Walworth Counties and subareas thereof. The methodologies for obtaining the estimates for these subareas are described below.

METHODOLOGY FOR ESTIMATING TRANSPORTATION HANDICAPPED POPULATION THROUGH USE OF SECONDARY SOURCE DATA

Utilized in generating the estimates of transportation handicapped and able-bodied elderly in the Region were mobility limitation data gathered in the National Health Survey¹ as well as other estimates from the National Center for Health Statistics², findings of a survey conducted in

¹Vital Health Statistics, Series 10-96, <u>Limitation</u> of Activity and Mobility, due to Chronic Conditions, USA., 1972, Public Health Service of the Department of Health, Education, and Welfare, November 1974.

²Current Estimates from the Health Interview Survey, 1972, U. S. Department of Health, Education, and Welfare, NCHS. Chicago,³ and data from the 1970 Census of Population.

Although none of these sources completely identifies the transportation handicapped or ablebodied elderly populations, the particular aspects addressed in these various sources were meshed and a comprehensive set of incidence rates was derived by using a method which relates various types of disabilities to a person's ability to use bus transportation. This methodology has been recognized as a consistent and logical approach to the problem of estimating the transportation handicapped.⁴ The transportation handicapped are assumed by this method to consist of persons: 1) afflicted with any type of chronic disability which limits mobility; 2) suffering from certain types of acute disabilities which limit mobility; or 3) confined to certain types of institutions. For the purposes of this study, the able - bodied elderly population group consists of all persons over 65 years of age who are not transportation handicapped.

Chronically Disabled Transportation Handicapped In this study, a chronic condition is defined as a physical or mental disability which has persisted for more than three months or a disability which the U. S. Public Health Service has classified as chronic regardless of the date of onset (see Appendix C). Persons who are limited in their mobility because of the aging process also are defined as chronically disabled. Obtained from the 1972 National Health Survey were national and subnational estimates of the number of such chronically disabled persons by four classifications of mobility limitations:

- 1. No limitation on mobility
- 2. Has trouble getting around alone
- 3. Needs help in getting around (special aid, another person)
- 4. Confined to house (not confined to bed and confined to bed)

⁴<u>Transportation Problems of the Transportation</u> <u>Handicapped</u>, Vol. 1, U. S. Department of Transportation, UMTA, Washington, D. C. August 1976. To collect this information all persons selected in a sample survey of the household population in the United States were requested to describe themselves by selecting the appropriate statement on personal mobility. Use of these classifications which are treated as mutually exclusive—therefore provides a measure of the mobility limitations perceived by the noninstitutionalized population of the United States.

Within the framework of this study, those persons who perceive no limitation on mobility are not considered to be transportation handicapped; whereas those persons in the three categories-"has trouble getting around," "needs help in getting around," and "confined to house"-are considered to be transportation handicapped. This allocation assumes that such mobility limitations would make bus use more difficult for members of these groups than for the nonlimited portions of the population. Based on the National Health Survey estimates of chronically disabled persons with mobility limitations living in the North Central Region of the United States, incidence rates were calculated for each of the three mobility limitation classifications by three age groupsunder 17, 17 through 64, and 65 and over-and then applied to estimates of the total population within each age group within each census tract in the Region.

To provide more detailed information on the transportation handicapped, the third classification, "needs help in getting around," was subdivided into three groups: uses wheelchair; uses other special aids; and needs help from another person. Although information on the size of each of these subgroups is not explicitly provided for the North Central Region of the United States, reasonable estimates can be derived from national statistics. The 1972 National Health Survey divides the classification, "needs help in getting around," into two categories: those who use special aids (including wheelchair) and those who need help from another person. The number of persons who use wheelchairs due to a chronic disability was determined by applying ratios obtained from a 1969 National Survey, entitled Use of Special Aids.⁵ Thus, through data from these two National Health Surveys, incidence rates were calculated for persons with chronic disabilities in each of the following detailed categories of mobility limitation:

- 1. Has trouble getting around alone
- 2. Uses special aids other than wheelchair

³<u>Transportation Needs of the Mobility Limited</u>, Richard M. Michaels, Sue N. Weiler, Transportation Center, Northwestern University, 1974.

- 3. Uses wheelchair
- 4. Needs help in getting around from another person
- 5. Confined to house (confined to bed and not confined to bed)

This expanded grouping represents all persons with chronic disabilities who have some limitations of mobility and who, therefore, are considered to be transportation handicapped.

Estimates of the number of chronically disabled persons who use transit with difficulty or cannot use transit at all, based on the degree of perceived mobility limitation and the use of special aids, were derived from data obtained in the study conducted at the Transportation Center of Northwestern University which related functional disabilities resulting in the mobility limitations listed above to the ability to use different modes of transportation. In this study through the use of mail and personal interview surveys in the Chicago area, Michaels and Weiler compared the perception that disabled persons have of their mobility limitations to functional performance in using different modes of transportation. In the allocations by difficulty of transit use, persons in the confined to house and wheelchair category were grouped into the category of "can't use transit." This category also included persons needing help from another person since inability to use transit independently was considered to constitute a severe transportation handicap. Finally, based on the Chicago study, about 53 percent of those using other special aids also were included in the "can't use transit" category. The remainder of those using special aids, as well as those who have trouble getting around alone, were included in the category "use transit with difficulty." The resultant classifications for mobility limitations by difficulty of transit use are as follows:

- 1. Use transit with difficulty
  - a. Has trouble getting around alone
  - b. Uses special aid other than wheelchair

- a. Uses special aid other than wheelchair
- b. Uses wheelchair
- c. Needs help in getting around from another person
- d. Confined to house

### Acutely Disabled Transportation Handicapped

An acute physical or mental disability is defined as a condition that can be expected to last less than three months yet requires medical attention or restricted activity. Of all the many types of acute disabilities, fractures, dislocations, sprains, and strains are likely to be the most mobility limiting. In the estimating technique, all persons with these types of disabilities were considered to be transportation handicapped. The overall incidence rate for such acute conditions is 2.77 per thousand, as derived from the data published by the National Center for Health Statistics. Therefore, at any given point in time, approximately 11 persons of every 4,000 persons will be transportation handicapped due to an acute disability. This rate takes into account the durations of the acute disability.

In obtaining an estimate of the acutely disabled transportation handicapped in the Region, age group specific rates based on the above source were found by distributing the days of restricted activity due to fractures, dislocations, sprains, and strains to each age group in the same proportion as the days of restricted activity due to all injuries. The number of person years of restricted activity was then calculated and divided by the total number of person years of the entire population.⁶ In this way incidence rates were derived for three age groups for which data were available: those persons under 17; those persons between age 17 and 44; and those persons 45 and older. Because there was no differentiation between a 45 to 64 age group and the 65 and older age group, it was assumed that the incidence rate is identical for each age group.

Institutionalized Transportation Handicapped The 1970 census of population enumerated the institutional segment of the group quartered popu-

^{2.} Cannot use transit

⁵ The total number of people who use special aids may appear underestimated in these calculations if checked against the numbers in the report, <u>Use</u> of <u>Special Aids</u> since a) not all persons who use a special aid are mobility limited and b) some persons who use more than one aid may be double counted.

⁶For more detailed review of this technique, see Memo Report No. 11, "Methodology for determining incidence rates for the transportation handicapped," Applied Resource Integration, May 9, 1977, on file at the SEWRPC.

lation in three categories: "mental hospitals," "home for the aged and dependent," and "other institutions." Residents of homes for the aged and mental hospitals are likely to be transportation handicapped; however, not all members of the institutionalized population in "other institutions" should be viewed as transportation handicapped. From a definitional viewpoint, a transportation handicapped person in an institution should have a physical or a mental disability which may cause difficulty in using public transit service. Although those in tuberculosis hospitals, chronic disease hospitals, homes and schools for the physically handicapped, and homes and schools for the mentally handicapped meet these requirements. those residing in penal institutions, detoxification centers, and other institutions such as homes for unwed mothers do not. According to the 1970 census, residents of facilities which would house persons who are transportation handicapped comprise approximately 40 percent of those persons in the category "other institutions." Therefore, all those in homes for the aged and mental hospitals and about 40 percent of those persons in "other institutions," as recorded by the 1970 census by county, were counted as transportation handicapped.

Tabulations of the institutionalized population 55 years of age and older and 17 years of age and younger are provided in the 1970 census. The percentage distributions of total institutionalized populations represented by these two groups by county were applied to the estimates of total institutionalized transportation handicapped persons to obtain estimates of the number of such persons by age group. Further adjustment was made to the estimate in those instances where a large segment of the nontransportation handicapped population is known to be encompassed within a specific age group. For example, in 1970 approximately 320 persons 17 years of age or under were confined in a juvenile correction center located in Waukesha County. Since such persons were not included in the estimated number of institutionalized transportation handicapped, it was necessary to adjust the corresponding age group tabulation to obtain the most accurate estimate possible.

# The Locationally Disadvantaged

The locationally disadvantaged are defined as those transportation handicapped and - able bodied elderly persons who, due to their residential location, are not served by existing transit service. In estimating the locationally disadvantaged, a crite-

rion of distance to the nearest transit route was utilized to calculate a locational factor for every census tract within each of the three urbanized areas of the Region. For the nonurbanized areas of the Region, where local transit service does not currently provide broad coverage, all able-bodied elderly and transportation handicapped persons were considered locationally disadvantaged. When applying the locational factors, a uniform density of transportation handicapped and able-bodied elderly was assumed within each census tract. The residential area of the census tract, which is not within a specified maximum distance of a transit route, was estimated and then divided by the total residential area within the census tract. The resultant ratio was applied to the number of transportation handicapped or able-bodied elderly living in that tract to arrive at an estimate of the locationally disadvantaged.

The most critical element in the process was the determination of a maximum distance which a transportation handicapped or elderly person could walk. Three sets of estimates were derived through the use of three distinct distance factors. The medium estimate was made under the assumption of a two-block maximum walking distance or about one-eighth of a mile. The low estimate used a larger maximum distance of four blocks or about one-quarter of a mile; the high estimate used a smaller maximum distance of one block or about 300 feet. It was assumed that all transportation handicapped or able-bodied elderly persons who lived farther than the maximum of onequarter of a mile from a bus route were effectively prohibited from using transit service and would be insensitive to service improvements made to the existing local transit system exclusive of route relocations.

# The Economically Disadvantaged

For the purposes of this study the economically disadvantaged were defined as those transportation handicapped and able-bodied elderly persons who are members of households which receive an annual household income of under \$8,000 a year. The secondary source data available on the economic status of the transportation handicapped and ablebodied elderly consisted of estimates derived for the entire United States from the 1972 National Health Survey. Direct application of ratios derived from this data to obtain local estimates presented certain problems. First, since the data reflected 1972 findings, the rapid economic changes and inflationary pressures observed between 1972 and 1976 were not reflected in the estimates. Second, subnational differences in the cost-ofliving index were not reflected in the estimates and third, subregional differences, such as those between urban and nonurban areas, were not reflected in the estimates. In addition, the three aspects above almost certainly would tend to generate an understatement of the numbers of economically disadvantaged transportation handicapped and able-bodied elderly in the Region. Therefore, upon review of available data it was determined to utilize ratios obtained in the transportation handicapped and elderly survey conducted in 1976 by the SEWRPC. To obtain the estimates, the percentage distributions of transportation handicapped and able-bodied elderly persons reporting household annual income on the survey were calculated for each of the geographic subareas of the study and then applied to the estimated populations within each of these subareas. The estimates derived from 1972 National Health Survey data through use of a base 1972 household income of under \$5,000 a year indicated that 57 percent of the transportation handicapped and 57 percent of the able-bodied elderly populations were economically disadvantaged. The estimates derived from application of data obtained in the 1976 transportation handicapped and elderly survey, through use of a base 1976 household income of under \$8,000 a year, indicated that 62 percent of the transportation handicapped and 66 percent of the able-bodied elderly in southeastern Wisconsin were economically disadvantaged.

# METHODOLOGY FOR ESTIMATING THE TRANSPORTATION HANDICAPPED POPULATION THROUGH LOCAL SMALL SAMPLE SURVEYS

In order to identify and quantify the number and location of the transportation handicapped and able-bodied elderly in the Region and to provide, thereby, relevant data to verify the estimates of this population subgroup as derived from secondary source data, a special transportation handicapped and elderly survey was conducted. This survey consisted of two subsurveys: namely, a random sample household survey conducted by telephone and a random sample institutional survey conducted through personal interview. During the household segment of the survey, a total of 6,482 occupied housing units containing a population of about 20,400 persons were sampled, resulting in a total of 503 completed interviews of transportation handicapped persons and 1,370 completed interviews of able-bodied elderly persons. During the institutional segment of the survey, 526 completed interviews were obtained from transportation handicapped institutionalized individuals for an overall 3.2 percent sample in the Region of residents of nursing homes and certain residential treatment facilities. The data collected on the transportation handicapped and elderly survey were then edited, coded, converted to machine readable tape, subjected to extensive legitimate code and logic checks, and the samples were expanded to the universe from which they were drawn; whereupon, accuracy checks to determine the reliability of the survey data were conducted. These checks indicated that the transportation handicapped and elderly survey had obtained a high degree of accuracy and completeness through these sampling and expansion procedures. For further and more detailed discussion of the survey conduct, survey expansion, and accuracy checks, see Chapter IV which presents the complete inventory findings.

## DIFFERENCES BETWEEN THE TWO ESTIMATING METHODOLOGIES

Two definitional differences between the transportation handicapped and elderly survey conducted in southeastern Wisconsin in 1976 and the estimating procedures which are based on secondary source data have resulted in somewhat different estimates of the number of transportation handicapped by degree of mobility limitation and of the total number of transportation handicapped persons in the Region.

# Severity of Mobility Limitation

In the first case, the differences between the two estimates in terms of the distribution of the transportation handicapped population by mobility limitation occur in the mobility limitation classifications of "confined to house" and "needs help from another person." These differences arise from differences in the phrasing of the questions concerning mobility limitations on the transportation handicapped and elderly survey and on the 1972 National Health Survey. The National Health Survey questionnaire asked two questions to obtain the data relevant to the "confined to house" category: 1) "must (the respondents) stay in bed all or most of the time?" and, 2) "must (the respondents) stay in the house all or most of the time?" The transportation handicapped and elderly survey questionnaire classified the "confined to house" category with a descriptive statement: "You are home-bound or bedridden and cannot get out at all." The latter method of classification represents a considerably more stringent or restrictive description of limited activity with the phrase "cannot get out at all" than the limitation indicated by the National Health Survey in the phrase "all or most of the time." As a result, it appears that a significant number of transportation handicapped individuals who would have described themselves by the second classification found on the 1972 National Health Survey, may have described themselves as needing "the personal assistance of someone to help you whenever you go out" on the transportation handicapped and elderly survey. Table 1 presents the numbers of persons in the Region reported by the survey to have responded to these two mobility limitations by age group, the estimated number of persons in these two mobility limitation classifications as derived by secondary source data, and the total of the two mobility limitation classifications for both estimates. The total of the two classifications is markedly similar between the secondary source data estimate and the survey estimate with a difference of less than 100 persons, or only 0.4 percent in the two estimates of the combined total.

### Definition of "Difficulty of Bus Use"

Both estimating techniques defined transportation handicapped individuals as those persons who, due to a physical or mental problem or disability, experience difficulty using public bus service. The estimates based on secondary source data equate mobility limitation with such difficulty; whereas the estimates obtained through the survey demand that the respondent actually perceive that he or she experiences difficulty using the bus. The assumption that all mobility limited persons identified by the National Health Survey would experience difficulty using the bus generated differences between the number of transportation handicapped persons estimated to be present in the Southeastern Wisconsin Region by the two differing methodologies. While the estimates based on secondary source data indicate that there are 73,290 transportation handicapped persons in the Region, the survey data indicates that there are 62,394 such persons in the Region, a 15 percent difference between the two estimates.

The basis of this difference is disclosed by analyzing the data included on Table 2 which shows the distribution of the household segment of the transportation handicapped population by age group and by four mobility limitations: 1) "has trouble

#### Table 1

## COMPARISON OF THE CLASSIFICATIONS OF THE "NEEDS HELP FROM ANOTHER PERSON" AND "CONFINED TO HOUSE" MOBILITY LIMITED TRANSPORTATION HANDICAPPED POPULATIONS AS DERIVED FROM SECONDARY SOURCE DATA AND AS REPORTED BY THE TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY

		Chronically Disabled ^a Transportation Handicapped Living in Private Households			
Mobility Limitation	Source	Under 17 Years	17 Through 64	65 Years and Over	Total
Needs Help From Another	Survey Estimate	1,060	3,249	8,332	12,641
Person	Secondary Source Data Estimate	323	1,416	3,201	4,940
	Difference	737	1,833	5,131	7,701
Confined to House	Survey Estimate	34	519	3,173	3,726
	Secondary Source Data Estimate	232	4,501	6,617	11,350
	Difference	- 198	- 3,982	- 3,444	- 7,624
Subtotal: Needs Help from	Survey Estimate	1,094	3,768	11,505	16,367
Another Person and Confined	Secondary Source Data Estimate	555	5,917	9,818	16,290
to House	Difference	539	- 2,149	1,687	77

^a On the transportation handicapped and elderly survey, mobility limitation data was collected for both acutely and chronically disabled transportation handicapped persons. "No" responses to the survey question, "Have you had this difficulty for longer than three months?" were obtained from only 1,786 persons in the Region.

Source: Applied Resource Integration and SEWRPC.

getting around;" 2) "uses aid other than wheelchair;" 3) "uses wheelchair;" and 4) "needs help from another person to go out" combined with "confined to the house." Within each mobility limitation classification, the survey estimate and the secondary source data estimate are reasonably similar, except within the mobility classification: "has trouble getting around." By age group, the two estimates within the under 17 age bracket and the over 65 age bracket are very similar with a substantial difference of approximately 7,700 persons occurring between the estimates in the 17 through 64 age group. In addition, within the body of the matrix of age group by mobility limitation, the two estimates are very similar within all cells except for the estimates of transportation handicapped persons who are 17 through 64 years of age who "have trouble getting around" which vary by about 6,100 persons.

The strict adherence to the definition of transportation handicapped appears to have also affected the study's reporting of the number of acutely disabled persons. The estimating procedure identifies everyone who suffers fractures, dislocations, sprains, and strains as transportation handicapped. However, it is recognized that not all such injuries actually create difficulty with bus usage. Consequently, the estimate based on secondary source data would tend to produce a higher estimate of the acutely disabled transportation handicapped than the estimate derived from the survey. The consequent influence on the estimates of acutely disabled populations is not as easily established as in the categories of chronically disabled persons due to the tendency in responding to the survey of acutely disabled persons to not regard themselves as transportation handicapped when in actuality they may have some temporary difficulty using the bus.

For a complete understanding of the aspects which generated the difference between the two estimates and of the significance of this difference, it is important to understand the interview procedure,

#### Table 2

#### DISTRIBUTION OF THE CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED LIVING IN PRIVATE HOUSEHOLDS IN THE REGION BY AGE GROUP AND MOBILITY LIMITATION AS ESTIMATED FROM SECONDARY SOURCE DATA AND AS REPORTED BY THE TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY

		Chronically Disabled ^a Transportation Handicapped Living in Private Households			
Mobility Limitation	Source	Under 17 Years	17 Through 64	65 Years and Over	Total
Has Trouble Getting Around	Survey Estimate	759	5,472	10,833	17,064
	Secondary Source Data Estimate	494	11,581	9,355	21,430
	Difference	265	- 6,109	1,478	- 4,366
Uses Aid Other Than Wheelchair	Survey Estimate Secondary Source Data Estimate Difference	77 99 - 22	2,259 2,384 - 125	6,358 7,278 - 920	8,694 9,761 - 1,067
Uses Wheelchair	Survey Estimate	61	2,060	1,756	3,877
	Secondary Source Data Estimate	192	1,393	1,841	3,426
	Difference	- 131	667	- 85	451
Subtotal: Needs Help from	Survey Estimate	1,094	3,768	11,505	16,367
Another Person Confined	Secondary Source Data Estimate	555	5,917	9,818	16,290
to House	Difference	539	- 2,149	1,687	77
Total	Survey Estimate	1,991	13,559	30,452	46,002
	Secondary Source Data Estimate	1,340	21,275	28,292	50,907
	Difference	651	- 7,716	2,160	- 4,905

^a On the transportation handicapped and elderly survey, mobility limitation data was collected for both acutely and chronically disabled transportation handicapped persons. "No" responses to the survey question, "Have you had this difficulty for longer than three months?" were obtained from only 1,786 persons in the Region.

Source: Applied Resource Integration and SEWRPC.

through which these data were obtained (see copy of survey instrument in Appendix D). On the Form I section of the questionnaire—which was collected for all interviewed households-the numbers of persons living in the households who were handicapped or disabled were identified. Following response to this item, the numbers of such persons who would encounter difficulty using a public bus were identified. Only after the factor of difficulty using the bus was established was the Form II section of the questionnaire completed for all those persons under the age of 65. In contrast, the Form II section of the interview was collected for all persons over 65 years of age. Therefore, as a mechanism in the survey procedure, a prerequisite for collection of the mobility limitation data was the establishment of either the transportation handicapped or elderly status of the members of the responding household. This is the converse of the procedure utilized in the estimates derived from secondary source data, because mobility limitations were the prerequisite to a determination that a population group would find bus use to be difficult. Since the Form II section of the questionnaire was collected for all elderly persons, those elderly who did not initially perceive that they had difficulty using the bus but indicated that they had trouble getting around (for example, to and from the bus stop) were identified and classified in the survey as transportation handicapped due to age. As a result, the two estimates of persons 65 years of age and older that "had trouble getting around" are very similar.

It is recognized that, in fact, not all persons suffering from the least restrictive mobility limitation of "have trouble getting around" are transportation handicapped. Although their mobility may be limited in some fashion-for example, inability to drive an auto due to a physical condition-they do not perceive that this mobility limitation in any way affects their ability to use a public bus: and, indeed, it may not. Nevertheless the estimate obtained through application to the total population of incidence rates derived from secondary sources is believed to provide a functional and realistic estimate of the total population which would probably be eligible for any special program or funding effort. Therefore, although the survey estimate of transportation handicapped population is accurate within the strict confines of the definition and, thereby, provides a reasonable lower limit for the estimates of the transportation handicapped population group, the less restrictive estimates derived from the use of secondary

a reasonable range for such estimates, the transportation handicapped and elderly survey was conducted in order to provide an instrument for establishing the degree of reliability of the secondary source data estimates. Since the two estimates are not entirely comparable, due to the definitional differences explained above, certain adjustments to the reported totals are necessary to allow for direct comparison. As shown in Table 3, the unadjusted estimates indicate that between 73,290 and 62,394 transportation handicapped persons live in the Southeastern Wisconsin Region. The difference between these estimates is about 15 percent. Following adjustment for the strict definition of the transportation handicapped, the true difference between the two estimates is found to be only lowing adjustment for the strict interpretation of the definition of the transportation handicapped on the survey, the true difference between the two estimates is found to be only 2 percent. These observations, complemented by an understanding of the estimating methodologies and procedures utilized in this study, indicate that the estimates derived from secondary source data are within acceptable limits of reliability and may be utilized in the planning process with confidence not only that the estimates are accurate but also that they are sufficiently broad so as to avoid excluding any eligible handicapped or elderly population segment from the plan design.

source data are considered to be more functional

in terms of plan development and implementation.

In addition to quantifying the transportation

handicapped persons in the Region and providing

VERIFICATION OF SECONDARY

SOURCE DATA ESTIMATES

### FORMAT OF PRESENTATION

The data in this chapter is presented by three major geographic areas: 1) the Milwaukee SMSA and its subareas; 2) Racine County and its subareas: and 3) Kenosha and Walworth Counties and its subareas. Within each of these geographic areas, estimates are presented of the numbers of transportation handicapped and able-bodied elderly by type, mobility limitation, age, degree of difficulty encountered in transit use, locational disadvantage, and economic disadvantage, as obtained through the two differing methodologies: 1) the application of incidence rates obtained from secondary source data to estimates of the total population and 2) the conduct, expansion, and analysis of a local, small

#### Table 3

# COMPARISON OF TRANSPORTATION HANDICAPPED POPULATION ESTIMATES BASED ON SECONDARY SOURCE DATA TO ESTIMATES DERIVED FROM SURVEY DATA PRIOR TO AND FOLLOWING ADJUSTMENT FOR DIFFERENCES IN DEFINITION INTERPRETATION

	Relationship of if Adjustment A Secondary Source	Estimates Applied to Data Estimate	Relationship of Estimates if Adjustment Applied to Survey Data Estimate		
Population Esti and Adjustme	Secondary Source Data Estimate	Survey Estimate	Secondary Source Data Estimate	Survey Estimate	
Total Transportation Handicapped	Number Percent Difference	73,290	62,394 -14.9	73,290	62,394 -14.9
Adjustment for Restriction of Transportation Handicapped Definition by Perceived Difficulty with Bus Usage – Chronically Disabled		-6,109			6,109
Subtotal	Number Percent Difference	67,181	62,394 -7.1	73,290 	68,503 -6.5
Adjustment for Restriction of Transportation Handicapped Definition by Perceived Difficulty with Bus Usage – Acutely Disabled		-3,262			3,262
Total	Number Percent Difference	63,919	62,394 -2.4	73,290	71,765 -2.1

Source: SEWRPC.

sample survey. Data pertaining to the entire Southeastern Wisconsin Region are provided in tabular presentations and in the summary of this chapter as a point of reference.

## ESTIMATES OF THE TRANSPORTATION HANDICAPPED AND ABLE BODIED ELDERLY RESIDING IN THE MILWAUKEE SMSA

The Milwaukee Standard Metropolitan Statistical Area (SMSA) which contains a total resident population of about 1,400,000 persons, or about 79 percent of the resident population of the Southeastern Wisconsin Region, is composed of Milwaukee, Ozaukee, Washington, and Waukesha Counties. Within this SMSA is the largest urbanized area in the Region, which has a resident population in excess of 1,200,000 persons and geographically extends through all of Milwaukee County and into significant portions of Ozaukee, Washington, and Waukesha Counties⁷ (see Map 2). This urbanized area is served by the largest public transit system in the Region, a system operated by Milwaukee County, which provides service to a major portion of the County. In the following discussion, the estimates of the transportation handicapped and able - bodied elderly as derived from secondary source data and the estimates as obtained from the

 $^{^{7}}A$  very small portion of the Milwaukee urbanized area extends into Racine County, but this extension was disregarded in the study as not being significant.

Map 2

#### GEOGRAPHIC AREAS USED FOR DATA ANALYSIS IN THE ELDERLY-HANDICAPPED TRANSPORTATION STUDY



Several geographic areas were used for data analysis and plan preparation purposes in the regional elderly and handicapped transportation study. This map identifies the boundaries of the seven counties, three standard metropolitan statistical areas, three nonurbanized areas, three transit service areas, and the Milwaukee County area not served by transit. Standard SEWRPC planning analysis areas were used to approximate the boundaries of the U.S. Bureau of the Census urbanized areas and the actual transit service areas.

Source: SEWRPC.

Transit Service Areas

2

27

45

46

52 50

51

43

44

transportation handicapped and elderly survey are presented for the total Milwaukee SMSA, the urbanized and nonurbanized areas of the SMSA, and for each of the four counties in the SMSA.

#### The Transportation Handicapped, Able -Bodied Elderly, and Total Populations

Essential to an understanding of a population subgroup is the relation of such subgroups to the overall population. This relationship is presented in the estimates of the transportation handicapped, able-bodied elderly, and total population as shown in Table 4 and Table 5. The estimates presented in Table 4 were derived from secondary source data; the estimates shown in Table 5 were obtained from the transportation handicapped and elderly survey. It is important to note that different total population bases are represented by these two data sources. In the estimating procedure which utilizes secondary source data, the ratios derived from that data were applied to estimates of 1975 total population obtained from the Wisconsin Department of Administration. These estimates were the most current figures available at the time. In the expansion of the household survey data, Wisconsin Department of Administration estimates of 1976 total population were utilized for all areas except for the City of Milwaukee where data from the 1975 Special Census on Population and Housing Units were applied. As a result of the differing time periods and data sources used in the two estimating techniques, the total populations shown in Table 4 and Table 5 are not the same, the most notable difference occurring in Milwaukee County.

Milwaukee SMSA: Both the estimates based on the secondary source data and on the survey data indicate that within the Milwaukee SMSA live about 80 percent of the transportation handicapped persons and about 81 percent of the able-bodied elderly persons found in the entire Southeastern Wisconsin Region. The estimates derived from incidence rates indicate that the SMSA contains about 58,900 transportation handicapped persons, or slightly more than 4 percent of the total resident population; about 113,000 able bodied elderly persons, or 8 percent of the resident population; and a remaining 1,246,500 persons, or 88 percent, who are neither transportation handicapped or elderly. The survey estimates indicate that within the Milwaukee SMSA are about 50,200 transportation handicapped persons, slightly less than 4 percent of the resident population; about 100,400 able - bodied elderly persons, about 7 percent of the population; and another 1,259,700 persons who are neither transportation handicapped or elderly, about 89 percent of the total resident population. Therefore, both estimating methodologies indicate very similar distributions of the transportation handicapped and able-bodied elderly populations as portions of the total SMSA population. In terms of actual

#### Table 4

ESTIMATES OF THE TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY, AND TOTAL POPULATION IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

		Counties Within Milwaukee SMSA				Milwaukee SMSA			Southeastern
Population Group		Mitwaukee	Ozaukee	Washington	Waukesha	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Transportation	Number	46,147	1,875	2,655	8,237	52,791	6,123	58,914	73,290
Handicapped	Percent	4.6	2.9	3.4	3.1	4.2	3.7	4.2	4.1
Able-Bodied	Number	92,613	3,642	4,447	12,326	102,500	10,528	113,028	138,881
Elderly	Percent	9.2	5.5	5.8	4.6	8.2	6.3	8.0	7.7
Nontransportation Handicapped Under 65 Years of Age	Number Percent	870,475 86.2	60,356 91.6	70,055 90.8	245,659 92.3	1,095,663 87.6	150,882 90.0	1,246,545 87.8	1,582,369 88.2
Total	Number	1,009,235	65,873	77,157	266,222	1,250,954	167,533	1, <b>418,487</b>	1,794,540
Population ^a	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aBased on April, 1975, Wisconsin Department of Administration estimates of total population by county (as estimated in 1976). Source: Wisconsin Department of Administration; Applied Resource Integration, Ltd.; and SEWRPC. numbers, the survey estimate indicates approximately 8,700 fewer transportation handicapped persons and about 12,600 fewer able-bodied elderly persons than found by the secondary source data estimate to be residing within this SMSA. The lower estimates obtained by the transportation handicapped and elderly survey for the total Milwaukee SMSA reflect a pattern which is easily observable within all of the subareas of the SMSA. In each county and each area of the SMSA, the more stringent estimate of transportation handicapped and able-bodied elderly persons as obtained by the survey is lower than the equivalent, but less restrictive, estimates obtained through application of mobility limitation incidence rates derived from secondary source data.

<u>Urbanized Area</u>: Both sets of estimates indicate that approximately 90 percent of the transportation handicapped and of the able-bodied elderly persons in the Milwaukee SMSA reside within the urbanized area of that SMSA. The urbanized area is estimated through the use of secondary source data to contain about 102,500 able-bodied elderly, or about 8 percent of the total resident population, and about 52,800 transportation handicapped residents, or slightly more than 4 percent of the total resident population, with the remaining 1,095,700 residents being neither transportation handicapped or elderly. The survey results indicate that about 45,000 persons, or 4 percent of the resident population, are transportation handicapped; about 90.600 persons, or 7 percent of the population, are able-bodied elderly; and about 1.082,700 persons, or 89 percent, are neither transportation handicapped or elderly. Although the percentage distribution of the population groups as proportions of the total population in the urbanized area are very similar between the two estimating methodologies, the less restrictive technique indicates the presence of 7,800 more transportation handicapped persons and about 11,900 more able-bodied elderly persons than reported by the transportation handicapped and elderly survey.

Nonurbanized Area: The nonurbanized area of the Milwaukee SMSA is estimated by both techniques to contain approximately 10 percent of the ablebodied elderly and transportation handicapped persons residing in the Milwaukee SMSA. It is estimated through the use of secondary source data that around 10,500 able-bodied elderly, or about 6 percent of the nonurbanized area resident population, and about 6,100 transportation handicapped, or slightly less than 4 percent of the resident population, reside in this nonurbanized, or rural, area with the remaining 150,900 resi-

#### Table 5

#### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF THE TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY, AND TOTAL POPULATION IN THE MILWAUKEE SMSA

		Counties Within Milwaukee SMSA			Milwaukee SMSA			Southeastern	
Population Group		Milwaukee	Ozaukee	Washington	Waukesha	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Transportation	Number	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
Handicapped	Percent	4.0	2.1	3.3	2.4	3.7	2.7	3.6	3.5
Able-Bodied	Number	83,195	2,403	3,298	11,548	90,624	9,820	100,444	125,162
Elderly	Percent	8.3	3.6	4.2	4.3	7.4	5.1	7.1	7.1
Nontransportation Handicapped Under 65 Years of Age	Number Percent	873,158 87.7	62,632 94.3	72,585 92.5	251,284 93.3	1,082,652 88.9	177,007 92.2	1,259,659 89.3	1,588,940 89.4
Total	Number	996,099	66,394	78,489	269,312	1,218,301	191,993	1,410,294	1,776,496
Population ^a	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aApproximately 20,000 persons in the Region live in certain mental institutions, college dormitories, penal institutions, detoxification centers, monasteries, convents, and other such group quarters. Since the transportation handicapped and elderly survey was designed to represent solely persons residing in private households, nursing homes, and certain residential treatment centers, these 20,000 persons living in other group quarters are not included in the survey estimate of total population.

Source: SEWRPC.

dents being neither transportation handicapped or elderly individuals. The transportation handicapped and elderly survey estimates of the nonurbanized area population indicate: about 9,800 persons, or about 5 percent, are able-bodied elderly; about 5,200 persons, or about 3 percent, transportation handicapped; and about are 177,000 persons, or about 92 percent, are neither transportation handicapped or elderly. Within the nonurbanized area of the Milwaukee SMSA, the more restrictive survey estimates indicate lower numbers of persons who are transportation handicapped and elderly than those estimated through the secondary source data, as well as indicating that the transportation handicapped and ablebodied elderly populations represent smaller percentages of the total nonurbanized area population than the proportions assigned such subgroups by the estimates based on secondary source data.

Milwaukee County: By far the most populous county in the Southeastern Wisconsin Region, Milwaukee County is the home of the majority of both the able bodied-elderly and transportation handicapped persons in the Region, as well as in the SMSA. Based on secondary source data, there are estimated to be living in Milwaukee County about 63 percent of the transportation handicapped and about 67 percent of the able-bodied elderly persons residing in the Region, and about 78 percent and 82 percent, respectively, of such persons residing in the Milwaukee SMSA. Of the total of 1,009,200 persons estimated by this method to be living in Milwaukee County, approximately 92,600, or about 9 percent, are able-bodied elderly residents; about 46,100, or almost 5 percent are transportation handicapped; and the remaining 870,500 persons, or 86 percent, are neither transportation handicapped or elderly. In contrast, of the total of 996,100 persons recorded by the survey to be living in Milwaukee County, approximately 83,200, or about 8 percent, are able-bodied elderly residents; about 39,700, or 4 percent, are transportation handicapped; and the remaining 873,200 persons, or 88 percent, are neither transportation handicapped or elderly. In this County, the less restrictive technique based on incidence rates indicates substantially higher numbers and proportions of transportation handicapped and elderly persons than reported in the more stringent survey estimate.

Ozaukee County: Ozaukee County, which has the smallest county population in the Milwaukee SMSA, accounts for approximately 3 percent of the transportation handicapped and able-bodied elderly populations in the SMSA. Estimates based on secondary source data indicate that approximately 3,600 able-bodied elderly persons, almost 6 percent of the County population, and about 1,900 transportation handicapped persons, almost 3 percent of the County population, reside in Ozaukee County. This methodology indicates that the remaining 60,400 persons, or 92 percent of the Ozaukee County population, are neither transportation handicapped or elderly individuals. Transportation handicapped and elderly survey data indicates: about 1,400 persons, or only 2 percent of the Ozaukee County population, are transportation handicapped; about 2,400 persons, or about 4 percent of the County population, are able bodied elderly; and about 62,600 persons, or 94 percent of the population, are neither transportation handicapped or elderly. In total, the differences in Ozaukee County between the two sets of estimates indicate a range of about 500 transportation handicapped persons and about 1,200 ablebodied elderly persons.

Washington County: Approximately 4 percent of the transportation handicapped and able-bodied elderly population in the Milwaukee SMSA reside in Washington County. Estimates based on secondary source data indicate that of the 77,200 persons living in Washington County, about 4,400, or about 6 percent, are able-bodied elderly and slightly more than 2,600, somewhat more than 3 percent, are transportation handicapped, with the remaining 70,100, or 91 percent, being neither transportation handicapped or elderly. Survey data indicates that about 4 percent of the population, or about 3,300 persons, are able-bodied elderly; about 3 percent, or about 2,600 persons, are transportation handicapped; and about 93 percent, or around 72,600 persons, are neither transportation handicapped or elderly. Although there is very little difference between these two sets of estimates in the number of transportation handicapped persons, there is a range between the survey estimate and the secondary source data estimate of approximately 1,100 persons in the able-bodied elderly category.

Waukesha County: The second most populous county in the Milwaukee SMSA, Waukesha County, is estimated to contain about 14 percent of the transportation handicapped persons and almost 11 percent of the able-bodied elderly persons residing in the Milwaukee SMSA. Based on secondary source data, the estimated 12,300 able-bodied elderly and 8,200 transportation handicapped persons living in Waukesha County constitute about 5 percent and 3 percent of the total population. respectively, with the remaining 245,700 persons, or 92 percent of the population, being neither transportation handicapped or elderly. Transportation handicapped and elderly survey data indicates that about 6,500 persons in Waukesha County, or slightly more than 2 percent of the population, are transportation handicapped; about 11,500 persons, or 4 percent of the population, are able-bodied elderly; and about 251,300 persons, or 93 percent, are nontransportation handicapped persons under 65 years of age. In total, the more restrictive survey estimate indicates approximately 1,800 fewer transportation handicapped persons and approximately 800 fewer ablebodied elderly persons than indicated by the secondary source data estimate to be residing in Waukesha County.

# The Transportation Handicapped

# by Type of Limitation

For the purposes of this study, the transportation handicapped are divided into three primary categories: the institutionalized; the acutely disabled; and the chronically disabled living in private households. The chronically disabled living in private households are further subdivided by each of the five mobility limitations: has trouble getting around; uses aid other than wheelchair; needs help from another person; uses wheelchair; and, confined to house. Table 6 presents the estimates of transportation handicapped persons in the Milwaukee SMSA by type of limitation as obtained through the application of incidence rates derived from secondary source data. Table 7 represents the equivalent estimates as reported by the transportation handicapped and elderly survey. The data presented in these two tables does not provide for direct comparison in two major categories: namely in the acutely disabled and the "confined to house" classifications.

Although in the estimating procedure which used incidence rates, the acutely disabled population is separated from the chronically disabled population, in the presentation of the survey data, the chronically and acutely disabled are combined. In the survey, respondents were requested to indicate if their limitation or disability had persisted for longer than three months. Responses to this item indicated that about 1,600 persons in the Milwaukee SMSA and about 1,800 persons in the Region had been disabled for less than three

months. This response, however, does not necessarily provide that the condition is an acute rather than chronic condition, since a chronic condition could have been contracted within the three months prior to the survey. Further compounding the difficulty of adequately identifying the acutely disabled through the survey instrument were two factors: the tendency of the acutely disabled respondents not to regard themselves as transportation handicapped and the possibility that, due to seasonal variations, the survey, which was conducted in November, may have covered a time period during which the incidence of acute disability such as sprains, strains, and dislocations was lower than that incidence which would be observed in midsummer, midwinter, or in an annual average.

The second major difference between the data obtained in the survey and the estimates derived from application of incidence rates to the total population occurs in the mobility limitation classifications of "confined to house" and "needs help from another person." These differences, as discussed previously, arise from differences in the phrasing of the questionnaires concerning mobility limitations on the transportation handicapped and elderly survey and on the 1972 National Health Survey. As a result of these differences, it appears that a significant number of transportation handicapped individuals who would have described themselves as "confined to the house" on the 1972 National Health Survey describe themselves as needing "the personal assistance of someone to help you whenever you go out" on the transportation handicapped and elderly survey. In addition, due to the less restrictive interpretation of the definition of transportation handicap in deriving the estimates based on secondary source data, the estimates of the number of persons who have trouble getting around are substantially different for the two methodologies.

<u>Milwaukee SMSA</u>: As shown in Table 6, the distribution of the transportation handicapped population by type of disability within the Milwaukee SMSA as derived through the use of secondary source data is identical to that distribution within the Southeastern Wisconsin Region: the acutely disabled represent about 7 percent of the total transportation handicapped; institutionalized persons represent about 24 percent; and chronically disabled persons living in private households, about 70 percent. Of the transportation handicapped in the Milwaukee SMSA, about 4,000 are acutely disabled; almost 13,900 are institutional-
# ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE SMSA BY TYPE OF LIMITATION AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

				Transporta	tion Handicap	ped Persons			
		Cou	unties Within	Milwaukee SM	SA	N	Ailwaukee SMSA		Southeastern
Limitati	on	Milwaukee	Ozaukee	Washington	Waukesha	Urbanized Area '	Nonurbanized Area	Total	Wisconsin Region
Chronically Disabled L Private Households: Me Limitation	iving in obility								
Has Trouble Getting	Around	13,242	666	778	2,543	15,451	1,778	17,229	21,430
Uses Aid Other Than	Wheelchair	6,285	271	335	1,003	7,116	778	7,894	9,761
Needs Help from Another Person		3,116	145	178	545	3,577	407	3,984	4,940
Uses Wheelchair		2,128	104	126	397	2,470	285	2,755	3,426
Confined to House	• • • • • • • • • •	7,163	333	402	1,257	8,232	923	9,155	11,350
	Total Percent	31,934 69.2	1,519 81.0	1,819 68.5	5,745 69.7	36,846 69.8	4,171 68.1	41,017 69.6	50,907 69.5
Acutely Disabled	Number Percent	2,897 6.3	180 9.6	209 7.9	722 8.8	3,552 6.7	456 7.5	4,008 6.8	5,048 6.9
Institutionalized	Number Percent	11,316 24.5	176 9.4	627 23.6	1,770 21.5	12,393 23.5	1,496 24.4	13,889 23.6	17,335 23.6
Total Transportation Handicapped Persons	Number Percent	46,147 100.0	1,875 100.0	2,655 100.0	8,237 100.0	52,791 100.0	6,123 100.0	58,91 <b>4</b> 100.0	73,290 100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

### Table 7

## TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE SMSA BY TYPE OF LIMITATION

			Transportation Handicapped Persons										
		Cou	unties Within	Milwaukee SM	SA	N	Southeastern						
Limitat	ion	Milwaukee	Ozaukee	Washington	Waukesha	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region				
Chronically and Acute Living in Private House Mobility Limitation Has Trouble Getting Uses Aid Other Thar Needs Help from An Uses Wheelchair	ly Disabled ^a eholds: Around Wheelchair other Person	10,667 6,122 8,104 2,316 2,235	397 104 29 129 300	1,148 128 436 60 99	1,849 657 1,212 425 522	11,853 6,661 8,997 2,657 2,831	2,208 350 784 273 325	14,061 7,011 9,781 2,930 3,156	17,064 8,694 12,641 3,877 3,726				
	Total Percent	29,444 74.1	959 70.6	1,871 71.8	4,665 72.0	32,999 73.3	3,940 76.3	36,939 73.6	46,002 73.7				
Institutionalized	Number Percent	10,302 25.9	400 29.4	735 28.2	1,815 28.0	12,026 26.7	1,226 23.7	13,252 26.4	16,392 26.3				
Total Transportation Handicapped Persons	Number Percent	39,746 100.0	1,359 100.0	2,606 100.0	6,480 100.0	45,025 100.0	5,166 100.0	50,191 100.0	62,394 100.0				

^aOn the transportation handicapped and elderly survey, mobility limitation data was collected for both acutely and chronically disabled transportation handicapped persons. "No" responses to the survey question, "Have you had this difficulty for longer than three months?" were obtained from only 1,558 persons in the Milwaukee SMSA and 1,786 persons in the Region.

Source: SEWRPC.

ized; and about 41,000 are chronically disabled living in private households. Of these chronically disabled persons 17,200, or about 40 percent, suffer from the least severe mobility limitation of having "trouble getting around." Of the remaining chronically disabled transportation handicapped persons, about 7,900 use aids other than wheelchairs; about 4,000 need help from another person; about 2,800 use wheelchairs; and about 9,200 are confined to the house.

The distribution of the transportation handicapped population by type of disability within the Milwaukee SMSA, as reported in the transportation handicapped and elderly survey, also is identical to that distribution found within the Southeastern Wisconsin Region in that survey. In both instances, the chronically and acutely disabled living in private households represent about 74 percent of the total transportation handicapped population, and the institutionalized persons represent about 26 percent of the transportation handicapped population. Survey data indicates that in this SMSA about 36,900 chronically or acutely disabled transportation handicapped persons live in private households, and about 13,300 persons are institutionalized transportation handicapped. Of the chronically and acutely disabled living in private households, about 14,100 are reported to have trouble getting around; about 7,000 persons use aids other than wheelchairs; about 9,800 persons need help from another person; about 2.900 persons use wheelchairs; and about 3,200 persons are confined to the house and cannot get out at all.

Urbanized Area: In the estimates based on secondary source data, the distribution of the transportation handicapped in the urbanized area is very similar to that found within the Milwaukee SMSA. About 36,800, or 70 percent of the transportation handicapped population, are chronically disabled persons living in private households; about 12,400, or 23 percent, persons are institutionalized; and another 3,600, or 7 percent, are acutely disabled individuals. Of the 36,800 chronically disabled transportation handicapped persons living in private households about 15,500, or 42 percent, suffer from the least restrictive mobility limitation in that they "have trouble getting around." Of the remaining chronically disabled transportation handicapped living in private households in the urbanized area, about 7,100 use aids other than wheelchairs: about 3,600 need help from another person; about 2,500 use wheelchairs; and about 8,200 are confined to the house.

The survey estimates of the urbanized area transportation handicapped population also indicate a marked similarity between the urbanized area and the Southeastern Wisconsin Region with about 33,000 persons, or 73 percent of the transportation handicapped, being chronically or acutely disabled persons living in private households and about 12,000 persons, or 27 percent of the transportation handicapped, being institutionalized individuals. Of the chronically and acutely disabled transportation handicapped living in private households as reported by the survey, about 11,900 persons in the urbanized area have trouble getting around: about 6,700 persons use aids other than wheelchairs; about 9,000 need help from another person when they go out; about 2,700 use wheelchairs; and about 2,800 persons are confined to the house.

Nonurbanized Area: The distribution of transportation handicapped within the nonurbanized area of the Milwaukee SMSA, as derived through the application of incidence rates to secondary source data, shows very little difference from that distribution observed for the Milwaukee SMSA in total, for the urbanized area, and for the Region as a whole. Of the 6,100 transportation handicapped persons in the nonurbanized area, about 4,200, or 68 percent are chronically disabled persons living in private households; another 1,500, or 24 percent, are institutionalized individuals: and almost 500, or 8 percent, are acutely disabled. The distribution by mobility limitation of the chronically disabled persons living in private households in the nonurbanized area of the Milwaukee SMSA indicates that about 1,800 persons have trouble getting around; about 800 persons use aids other than wheelchairs; about 400 persons need help from another person to get around; about 300 persons use wheelchairs; and about 900 persons are confined to the house.

Survey data indicate a slight amount of difference in the distribution of the transportation handicapped in the nonurbanized area of the Milwaukee SMSA from those distributions observed in the urbanized area, the total Milwaukee SMSA, and the Region as a whole. The survey data report that in the nonurbanized area slightly more than 3,900 persons, or 76 percent of the transportation handicapped, are chronically and acutely disabled persons living in private households, and slightly more than 1,200 persons, or 24 percent of the transportation handicapped, are institutionalized individuals. The distribution by mobility limitation of the chronically and acutely disabled persons living in private households in the nonurbanized area of the Milwaukee SMSA as reported by the survey indicates that about 2,200 persons have trouble getting around; almost 400 persons use aids other than wheelchairs; almost 800 persons need help from another person to get around; almost 300 persons use wheelchairs; and about 300 persons are confined to the house.

Milwaukee County: The estimates based on the secondary source data indicate that 69 percent, or 31,900 of the 46,100 transportation handicapped individuals in Milwaukee County, are chronically disabled persons who live in private households; about 11,300, or 25 percent, are institutionalized; and another 2,900, or 6 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped living in private households in Milwaukee County, about 13,200, over 40 percent, suffer from the least restrictive mobility limitation, "has trouble getting around." Of the remaining chronically disabled transportation handicapped living in private households, about 6,300 use aids other than wheelchairs; about 3,100 need help from another person; about 2,100 use wheelchairs; and about 7,200 are confined to the house.

Survey data indicate that approximately 29,400 persons, or 74 percent of the transportation handicapped population in Milwaukee County, are chronically or acutely disabled persons living in private households and another 10,300 persons, or about 26 percent of the transportation handicapped population in Milwaukee County, are institutionalized individuals. The distribution reported by the survey data of the chronically and acutely disabled persons living in private households by mobility limitation indicates that about 10,700 persons have trouble getting around; about 6,100 persons use aids other than wheelchairs; about 8,100 persons need help from another person to get around; about 2,300 persons use wheelchairs; and about 2,200 persons are confined to the house.

Ozaukee County: As a result of using 1970 census data as the base for estimating the institutionalized population through application of incidence rates obtained from secondary source data, the growth observed in the resident institutionalized population in Ozaukee County between 1970 and 1976 is not reflected in these estimates. Therefore, due to this understating of the institutionalized population in Ozaukee County, the distribution of transportation handicapped by primary grouping as reported in the estimates derived from secondary source data is significantly different from that distribution found in the remainder of the SMSA or within the Southeastern Wisconsin Region. Of transportation handicapped in Ozaukee the County, somewhat less than 200, or 9 percent, are estimated to be institutionalized individuals; about 200, almost 10 percent, are acutely disabled individuals; and 1,500, or 81 percent, are chronically disabled transportation handicapped who are living in private households. Of such chronically disabled persons living in Ozaukee County, about 700 have trouble getting around; almost 300 use aids other than wheelchairs; slightly more than 100 need help from another person; about 100 use wheelchairs; and approximately 300 are confined to the house.

The data obtained in the transportation handicapped and elderly survey reflect the growth of the institutionalized population in Ozaukee County. As a result, approximately 400 persons. or 29 percent of the transportation handicapped population in Ozaukee County, are shown to be institutionalized and about 1,000 persons, or 71 percent of the transportation handicapped population in this County, are chronically or acutely disabled persons living in private households. Of such chronically and acutely disabled persons reported by the survey to be residing in Ozaukee County, about 400 have trouble getting around; about 100 use aids other than wheelchairs; less than 50 need help from another person to get around; slightly more than 100 use wheelchairs; and about 300 are confined to the house. This distribution of the chronically and acutely disabled living in private households by mobility limitation reflects some rather substantial variations from the types of distributions obtained for the other counties and subareas of the Region. Not only is the total number of chronically and acutely disabled apparently understated when compared to the estimate derived from secondary source data, but also the categories "confined to house" and "needs help from another person" appear to be following a very different pattern than that established for the rest of the Region. Although the sample rate applied in the survey to Ozaukee County ranged between about 1 percent and approximately 3 percent, similar to the other "rural" areas of the Region, only 20 samples were obtained from transportation handicapped persons living in private households in Ozaukee County.

As a result of this very small number of samples, rather substantial variation in the data may be observed when such data is presented by subgroupings or specific characteristics.

Washington County: Based on the secondary source data, of the 2,600 transportation handicapped individuals residing in Washington County, about 1,800, or 69 percent, are chronically disabled persons living in private households; about 600, or 24 percent, are institutionalized; and about 200, or 8 percent, are acutely disabled. Of the 1,800 chronically disabled transportation handicapped persons living in private households in Washington County, about 800 have trouble getting around; about 300 persons use aids other than wheelchairs; about 200 persons need help from another person; about 100 persons use wheelchairs; and about 400 persons are confined to the house.

The survey data report that, of the 2,600 transportation handicapped individuals residing in Washington County, about 1,900, or 72 percent, are chronically or acutely disabled persons living in private households and about 700, or 28 percent, are institutionalized individuals. Of the 1,900 chronically and acutely disabled transportation handicapped persons reported by the survey to be living in private households in Washington County, slightly more than 1,100 have trouble getting around; slightly more than 100 use aids other than wheelchairs; slightly more than 400 need help from another person to get around, almost 100 use wheelchairs; and another 100 are confined to the house.

<u>Waukesha County</u>: As indicated by the estimate derived from the application of ratios obtained from secondary source data, of the 8,200 transportation handicapped persons residing in Waukesha County, about 5,700, or 70 percent, are chronically disabled individuals living in private households; about 1,800, or 21 percent, are persons in institutions; and approximately 700, or 9 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped living in private households in Waukesha County, about 2,500 have trouble getting around; about 1,000 use aids other than wheelchairs; about 500 need help from another person; about 400 use wheelchairs; and about 1,300 are confined to the house.

Of the 6,500 transportation handicapped persons recorded by the survey to be residing in Waukesha County, about 4,700, or 72 percent, are chronically or acutely disabled individuals living in private households and about 1,800, or 28 percent, are persons living in institutions. Of the chronically and acutely disabled transportation handicapped living in private households in Waukesha County, almost 1,900 have trouble getting around; about 700 use aids other than wheelchairs; about 1,200 need help from another person; about 400 use wheelchairs; and about 500 are confined to the house.

# Transportation Handicapped

# Persons by Age Group

The following discussion summarizes the classifications of transportation handicapped residents of the Milwaukee SMSA and subareas thereof by three age groups: under 17 years of age; 17 through 64 years of age; and 65 years of age and older. As shown in Table 8 and Table 9, the distributions of the transportation handicapped populations by age groups show significant differences between the two estimating methodologies. These differences reflect the impact of the differing interpretations of the definition of transportation handicap which, as noted previously, produced the greatest disparity between the two estimates in the 17 through 64 year age group.

<u>Milwaukee SMSA</u>: The distribution of the transportation handicapped population in the Milwaukee SMSA, as developed through the use of secondary source data, is very similar to the distribution found by this estimate for the entire Southeastern Wisconsin Region, with about 4 percent of the transportation handicapped population under 17 years of age, about 40 percent between the ages of 17 through 64, and about 56 percent 65 years of age or older. Within the Milwaukee SMSA approximately 2,000 transportation handicapped individuals are under the age of 17; about 23,600 are 17 through 64 years of age; and about 33,300 are 65 years of age or older.

In contrast, the distribution of the transportation handicapped population in the Milwaukee SMSA, as reported on the transportation handicapped and elderly survey, although very similar to the distribution found by that survey for the entire Southeastern Wisconsin Region, is significantly different from the distribution obtained from the estimate derived from secondary source data. The survey data indicate that about 3 percent of the transportation handicapped population is under 17 years of age; about 28 percent between the ages of 17 through 64; and about 69 percent

# ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE SMSA BY AGE GROUP AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

		<u> </u>								
				Tra	ansportation H	landicapped Pe	ersons			
		Co	unties Within	Milwaukee SM	SA	Ν	/ilwaukee SMSA		Southeastern	
Age Group	_	Milwaukee	Ozaukee	Washington	Waukesha	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region	
Under 17										
	Number	1,287	91	120	545	1,667	376	2,043	3,084	
	Percent	2.8	4.9	4.5	6.6	3.2	6.2	3.5	4.2	
17 through 6	64									
	Number	17,966	917	1,062	3,639	21,249	2,335	23,584	29,291	
	Percent	38.9	48.9	40.0	44.2	40.2	38.1	40.0	40.0	
65 and Over										
	Number	26,894	867	1,473	4,053	29,875	3,412	33,287	40,915	
	Percent	58.3	46.2	55.5	49.2	56.6	55.7	56.5	55.8	
All Ages					-					
	Number	46,147	1,875	2,655	8,237	52,791	6,123	58,914	73,290	
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Source: Applied Resource Integration, Ltd., and SEWRPC.

### Table 9

# TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE SMSA BY AGE GROUP

		Transportation Handicapped Persons											
		Co	unties Within	Milwaukee SM	SA –	N	iilwaukee SMSA		Southeastern				
Age Group		Milwaukee	Ozaukee	Washington	Waukesha	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region				
Under 17													
	Number	1,033		112	435	1,495	85	1,580	1,993				
	Percent	2.6		4.3	6.7	3.3	1.6	3.2	3.2				
17 through 6	64												
	Number	11,808	319	642	1,042	12,582	1,229	13,811	16,688				
	Percent	29.7	23.5	24.6	16.1	28.0	23.8	27.5	26.7				
65 and Over													
	Number	26,905	1,040	1,852	5,003	30,948	3,852	34,800	43,713				
	Percent	67.7	76.5	71.1	77.2	68.7	74.6	69.3	70.1				
All Ages													
	Number	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394				
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0				

Source: SEWRPC.

65 years of age or older. Survey data indicate that within the Milwaukee SMSA approximately 1,600 transportation handicapped individuals are under the age of 17; about 13,800 are 17 through 64 years of age; and about 34,800 are 65 years of age or older.

<u>Urbanized Area</u>: Estimates derived from secondary source data indicate that, of the transportation handicapped population in the urbanized area, approximately 1,700 persons, or 3 percent, are under the age of 17; about 21,200, or 40 percent, are 17 through 64 years of age; and about 29,900, or 57 percent, are 65 years of age or older. Survey data indicate that, of the transportation handicapped population in the urbanized area, approximately 1,500 persons, or 3 percent, are under the age of 17; about 12,600, or 28 percent, are 17 through 64 years of age; and about 30,900, or 69 percent, are 65 years of age or older.

Nonurbanized Area: Within the nonurbanized area of the Milwaukee SMSA the estimates based on secondary source data indicate more younger transportation handicapped individuals than reported by the survey. It appears that the difference in this nonurbanized area, for estimates of the transportation handicapped population in the under 17 age category, reflects significantly different allocations in the two methodologies of the under 17 age group found in Waukesha County by urbanized and nonurbanized area. The estimates based on secondary source data indicate that about 6 percent of the transportation handicapped, or about 400 persons, are under the age of 17; about 38 percent, or about 2,300 persons, are between the ages of 17 through 64; and about 56 percent, or about 3,400 persons, are 65 years of age and older. In contrast, the data collected by the transportation handicapped and elderly survey indicate that about 2 percent of the transportation handicapped, or about 100 persons, are under the age of 17; about 24 percent, or about 1,200 persons, are between the ages of 17 through 64; and about 75 percent, or about 3,900 persons, are 65 years of age or older.

Milwaukee County: Estimates based on secondary source data indicate that within Milwaukee County only about 3 percent of the transportation handicapped, or about 1,300 persons, are under the age of 17; about 39 percent, or about 18,000 persons, are between the ages of 17 through 64; and about 58 percent, or about 26,900 persons, are 65 years of age or older. Survey data indicate that within Milwaukee County almost 3 percent of the transportation handicapped, or about 1,000 persons, are under the age of 17; almost 30 percent, or about 11,800 persons, are between the ages of 17 through 64; and almost 68 percent, or about 26,900 persons, are 65 years of age or older.

<u>Ozaukee County:</u> In contrast to the other counties in the Milwaukee SMSA, in Ozaukee County the data obtained through the estimates based on secondary source data indicate that those persons in the age group of 17 through 64 years constitute the largest percentage of the transportation handicapped. It is estimated that, of the transportation handicapped in this County, approximately 100, or 5 percent, are under the age of 17; approximately 900, or 49 percent, are between the ages of 17 through 64; and somewhat less than 900, or 46 percent, are 65 years of age or older.

The estimates of the transportation handicapped by age group for Ozaukee County, as obtained from the transportation handicapped and elderly survey, are believed to reflect the very small sample size obtained in that county; i.e., the age group "under 17" is reported in the survey data as being without individuals. Of the transportation handicapped in this County, the survey data report that approximately 300, or 23 percent, are between the ages of 17 through 64; and about 1,000, or 77 percent, are 65 years of age and older.

Washington County: The estimates developed through the use of secondary source data indicate that, of the total transportation handicapped in Washington County, about 100, or 5 percent, are under the age of 17; about 1,100, or 40 percent, are between the ages of 17 and 64; and about 1,500, or 56 percent, are 65 years of age and older. In contrast, survey data indicates that of the total are between the ages of 17 through 64; and about 1,500, or 56 percent, are 65 years of age and older. In contrast, survey data indicate that of the total transportation handicapped in this County about 100, or 4 percent, are under the age of 17; about 600, or 25 percent, are between the ages of 17 through 64; and about 1,900, or 71 percent, are 65 years of age and older.

Waukesha County: In both sets of estimates Waukesha County contains the largest relative proportion of transportation handicapped individuals under 17 years of age found within the Milwaukee SMSA. The estimates derived from the secondary source data indicate that, of the transportation handicapped population in Waukesha County, somewhat more than 500, or 7 percent, are under 17 years of age; about 3,600, or 44 percent, are 17 through 64 years of age; and, about 4,100, or 49 percent, are 65 years of age or older. The survey estimates indicate that, of the transportation handicapped population in this County, about 400, or 7 percent, are under 17 years of age; about 1,000, or 16 percent, are 17 through 64 years of age; and about 5,000, or 77 percent, are 65 years of age or older. It appears that the allocation of the under 17 age group found in Waukesha County by urbanized and nonurbanized area was different within the two estimating methodologies and, as a result, the age group distribution found in the nonurbanized area of the Milwaukee SMSA for the under 17 age group category reflects significant differences between the two estimating methodologies.

# Difficulty of Transit Use

The estimates of the chronically disabled transportation handicapped living in private households classified by mobility limitation were subdivided to obtain estimates of the number of transportation handicapped who can use transit although such use is difficult and the number who, due to their disability, are entirely prevented from using the existing transit service. The technique utilized in deriving the estimates from secondary source data correlated mobility limitation with ability to use the bus. Due to this estimating procedure, the percentage distributions of transportation handicapped who fall into the category of "difficulty using transit," as obtained from the secondary source data estimates, are very similar within each of the subareas. In contrast, the survey required that the sampled individuals state their perceptions of their ability to use a bus. As a result, the survey data reflects a greater variety of mobility limitation classifications within the "difficult" and "impossible" categories than found in the estimates based on secondary source data. Nevertheless, in total, the resultant percentage distributions of the transportation handicapped populations by ability to use a bus are very similar for the two estimating techniques. As seen in Tables 10 and 11, the survey indicates that in the Region about 59 percent of the transportation handicapped population believe that they can use transit, albeit with difficulty; for the secondary source data, the comparable figure is 51 percent. The following discussion presents the estimates of the transportation handicapped by difficulty of bus use as shown in Table 10 and Table 11 for the Milwaukee SMSA and its subareas.

Milwaukee SMSA: As indicated in the estimates derived from secondary source data, approximately 20,900 persons, or 51 percent of the chronically disabled transportation handicapped living in private households in the Milwaukee SMSA, can use the public bus system, although with difficulty. Another 20,100, or 49 percent of such transportation handicapped persons in the Milwaukee SMSA, cannot use the existing transit service at all. Among those persons in the Milwaukee SMSA. who have difficulty using transit, approximately 17.200 have trouble getting around and 3,700 use an aid other than a wheelchair. Among those transportation handicapped persons in the Milwaukee SMSA who cannot use transit as a result of their disability, approximately 4,200 use an aid other than a wheelchair; about 4,000 need help from another person; about 2,800 use a wheelchair; and another 9,200 are confined to the house.

The transportation handicapped and elderly survey data indicates that approximately 22,000 persons. or almost 60 percent of the chronically and acutely disabled transportation handicapped living in private households in the Milwaukee SMSA, have difficulty using transit but can use the public bus system while another 14,900, or 40 percent of such transportation handicapped persons, cannot use the existing transit service at all. Among those persons who have difficulty using transit in the Milwaukee SMSA, approximately 11,400 have trouble getting around; about 4,600 use aids other than wheelchairs; approximately 5,400 need help from another person; and about 700 use wheelchairs. Among those transportation handicapped persons in the Milwaukee SMSA that cannot use transit, about 2,700 have trouble getting around; about 2,400 use an aid other than a wheelchair; about 4,400 need help from another person; about 2,300 use a wheelchair; and another 3,200 are confined to the house.

# ESTIMATES OF CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED PERSONS LIVING IN PRIVATE HOUSEHOLDS IN THE MILWAUKEE SMSA BY DEGREE OF DIFFICULTY USING TRANSIT AND MOBILITY LIMITATION AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

			Chronically	Disabled Transp	ortation Han	dicapped Perso	ons Living in Priva	te Househo	lds
		Cou	unties Withir	Milwaukee SM	SA	N	lilwaukee SMSA		Southeastern
Degree Of Difficulty	Mobility Limitation	Milwaukee	Ozau kee	Washington	Waukesha	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Has Difficulty Using Transit						ſ			
	Has Trouble Getting Around Uses Aid Other Than Wheelchair	13,242 2,954	666 128	778 157	2,543 470	15,451 3,344	1,778 365	17,229 3,709	21,430 4,587
	Subtotal Number Percent	16,196 50.7	794 52.3	935 51.4	3,013 52.4	18,795 51.0	2,143 51.4	20,938 51.0	26,017 51.1
Cannot Use Transit									
	Uses Aid Other Than Wheelchair Needs Help From Another Person Uses Wheelchair	3,331 3,116 2,128 7,163	143 145 104 333	178 178 126 402	533 545 397 1,257	3,772 3,577 2,470 8,232	413 407 285 923	4,185 3,984 2,755 9,155	5,174 4,940 3,426 11,350
	Subtotal Number Percent	15,738 49.3	725 47.7	884 48.6	2,732 47.6	18,051 49.0	2,028 48.6	20,079 49.0	24,890 48.9
Total Chronical Living in Private	y Disabled Number Households Percent	31,934 100.0	1,519 100.0	1,819 100.0	5,745 100.0	36,846 100.0	4,171 100.0	41,017 100.0	50,907 100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

### Table 11

### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF CHRONICALLY AND ACUTELY DISABLED TRANSPORTATION HANDICAPPED PERSONS LIVING IN PRIVATE HOUSEHOLDS IN THE MILWAUKEE SMSA BY DEGREE OF DIFFICULTY USING TRANSIT AND MOBILITY LIMITATION

		Chron	ically and Ad	utely Disabled	Transportatio	n Handicappe	d Persons Living in	n Private Ho	ouseholds
		Co	unties Withir	Milwaukee SM	SA	N	lilwaukee SMSA		Southeastern
Degree Of	Mobility					Urbanized	Nonurbanized		Wisconsin
Difficulty	Limitation	Milwaukee	Ozaukee	Washington	Waukesha	Area	Area	Total	Region
Has Difficulty Using Transit									
	Has Trouble Getting Around	8,356	397	1,033	1,603	9,332	2,057	11,389	13,957
)	Uses Aid Other Than Wheelchair	4,011	66	128	415	4,456	164	4,620	5,547
	Needs Help From Another Person	4,356	-0-	316	697	5,003	366	5,369	6,706
	Uses Wheelchair	609	-0-	-0-	55	630	34	664	835
	Subtotal Number	17,332	463	1,477	2,768	19,421	2,621	22,042	27,045
	Percent	58.9	48.3	78.9	59.3	58.9	66.5	59.7	58.8
Cannot Use									
Transit									
	Has Trouble Getting Around	2,311	-0-	115	246	2,521	151	2,672	3,107
	Uses Aid Other Than Wheelchair	2,111	38	-0-	242	2,205	186	2,391	3,147
	Needs Help From Another Person	3,748	29	120	515	3,994	418	4,412	5,935
	Uses Wheelchair	1,707	129	60	370	2,027	239	2,266	3,042
		2,235	300	99	522	2,831	325	3,156	3,726
	Subtotal Number	12,112	496	394	1,897	13,578	1,319	14,897	18,957
	Percent	41.1	51.7	21.1	40.7	41.1	33.5	40.3	41.2
Total Chronical Living in Private	ly and Acutely Disabled Number Households Percent	29,444 100.0	959 100.0	1,871 100.0	4,665 100.0	32,999 100.0	3,940 100.0	36,939 100.0	46,002 100.0

Source: SEWRPC.

Urbanized Area: Estimates based on secondary source data indicate that within the urbanized area approximately 18,800 persons, or 51 percent of the chronically and acutely disabled transportation handicapped persons living in private households. have difficulty using public transit; another 18,100 individuals, or 49 percent of such persons, are prohibited from using the existing transit service as a result of their disabilities. Among those who have difficulty using transit are 15,500 individuals who have trouble getting around and another 3,300 individuals who use aids other than wheelchairs. Among those transportation handicapped persons who cannot use transit, approximately 3,800 use an aid other than a wheelchair; about 3,600 need help from another person; about 2,500 use wheelchairs; and about 8,200 are confined to the house.

Survey data indicate that within this urbanized area approximately 19,400 persons, or 59 percent of the chronically and acutely disabled transportation handicapped living in private households, have difficulty using public transit and another 13,600 persons, or 41 percent, are prevented from using the existing transit service due to their disabilities. Among those who have difficulty using transit are about 9,300 persons who have trouble getting around; about 4,500 persons who use aids other than wheelchairs, about 5,000 persons who need help from another person to get around; and about 600 persons who use wheelchairs. Among those transportation handicapped who cannot use transit, about 2,500 have trouble getting around; about 2,200 use aids other than wheelchairs; about 4,000 need help from another person; about 2,000 use wheelchairs; and about 2,800 are confined to the house.

Nonurbanized Area: Based on estimates derived from secondary source data, within the nonurbanized area of the Milwaukee SMSA approximately 2,100 persons, or 51 percent of the chronically disabled transportation handicapped persons living in private households in this area, have difficulty using transit and about 2,000 persons, or 49 percent of such transportation handicapped, cannot use transit at all. Among those estimated to have difficulty using transit, about 1,800 persons have trouble getting around and approximately 400 persons use aids other than wheelchairs. Among those persons who cannot use transit as a result of their disabilities, about 400 use aids other than wheelchairs; about 400 need the help of another person; about 300 use wheelchairs; and about 900 are confined to the house.

The survey data indicate that within the nonurbanized area approximately 2,600 persons, or 67 percent of the chronically and acutely disabled transportation handicapped persons living in private households, have difficulty using transit and about 1,300 persons, or 33 percent, cannot use transit at all. In this nonurbanized area the relatively high percentage of transportation handicapped persons indicating that transit use is possible reflects the impact of the response pattern obtained by the survey in Washington County and may reflect some degree of sampling variability. Among those persons who are reported by the survey in this nonurbanized area as having difficulty using transit, about 2,100 persons have trouble getting around; about 200 persons use aids other than wheelchairs; about 400 persons need help from another person; and less than 50 persons use wheelchairs. Among those persons who cannot use transit at all as a result of their disabilities, about 200 have trouble getting around; about another 200 use aids other than wheelchairs; about 400 need help from another person; about 200 use wheelchairs; and about 300 are confined to the house.

Milwaukee County: The estimates derived from secondary source data indicate that about 16,200 persons, or 51 percent of the chronically disabled transportation handicapped residing in private households in Milwaukee County, have difficulty using transit and another 15,700 persons, or 49 percent, are prevented entirely from using transit as a result of their disabilities. Among those estimated to have difficulty using transit, approximately 13,200 have trouble getting around and another 3,000 use aids other than wheelchairs. Among those persons who are prevented from using transit, about 3,300 use aids other than wheelchairs; about 3,100 need the help of another person; another 2,100 use wheelchairs; and about 7.200 are confined to the house.

As reported by the survey data, about 17,300 persons, or 59 percent of the chronically and acutely disabled transportation handicapped residing in private households in this County, have difficulty using transit and another 12,100 persons, or 41 percent, are prevented entirely from using transit as a result of their disabilities. Among those who have difficulty using transit, approximately 8,400 have trouble getting around; approximately 4,000 use aids other than wheelchairs; about 4,400 need help from another person; and about 600 use wheelchairs. Among those persons reported by the survey to be unable to use transit, about 2,300

have trouble getting around; about 2,100 use aids other than wheelchairs; about 3,700 need help from another person; about 1,700 use wheelchairs; and about 2,200 are confined to the house.

Ozaukee County: Estimates derived from secondary source data indicate that about 800 persons, or 52 percent of the chronically disabled transportation handicapped living in private households in Ozaukee County, have difficulty using transit and another 700 persons, or 48 percent, are prevented entirely from using transit as a result of their disabilities. Among those who have difficulty using transit, about 700 have trouble getting around and about 100 use an aid other than a wheelchair. Among those persons who are prevented from using transit as a result of their disabilities, about 150 use an aid other than wheelchair; another 150 need help from another person; about 100 use wheelchairs; and about 300 are confined to the house.

Survey data indicate that within Ozaukee County slightly less than 500 persons, or 48 percent of the chronically and acutely disabled transportation handicapped living in private households in this County, have difficulty using transit and another 500 persons, or 52 percent, are prevented entirely from using transit as a result of their disabilities. Among those who have difficulty using transit, about 400 have trouble getting around and slightly more than 50 use aids other than wheelchairs. Among those persons who are prevented from using transit as a result of their disabilities, less than 50 use aids other than wheelchairs; less than 50 need help from another person; about 100 use wheelchairs; and, about 300 are confined to the house. It is interesting to note that within this County the distribution of mobility limitation type by difficulty using transit is the same general distribution utilized in the secondary source data estimating methodology.

Washington County: Based on estimates derived from secondary source data, slightly more than 900 persons, or 51 percent of the chronically disabled transportation handicapped persons living in private households in Washington County, can use transit, although such use is difficult, and slightly less than 900 persons, or 49 percent, are prevented entirely from using transit as a result of their disabilities. Among those persons who have difficulty using transit, about 800 have trouble getting around, and somewhat more than 100 use aids other than wheelchairs. Among those transportation handicapped who cannot use transit as a result of their disabilities, approximately 200 use aids other than wheelchairs; another 200 need help from another person; about 100 use wheelchairs; and about 400 are confined to the house.

Survey data indicate that in Washington County about 1,500 persons, or 79 percent of the chronically and acutely disabled transportation handicapped persons living in private households, can use transit, albeit with difficulty, and another 400, or 21 percent, are prevented entirely from using transit as a result of their disabilities. This percentage distribution, which may be the result of sampling variability, is markedly different from the percentage distribution found in the other subareas of the SMSA and in the Region. Among those persons who have difficulty using transit, about 1,000 have trouble getting around; about 100 use aids other than wheelchairs; and about 300 need help from another person. Among those persons who are prevented from using transit, about 100 have trouble getting around; another 100 need help from another person; almost 100 use wheelchairs; and about 100 are confined to the house.

Waukesha County: As indicated by the estimates derived from secondary source data, approximately 3,000 persons, or 52 percent of the chronically disabled transportation handicapped persons living in private households in Waukesha County, have difficulty using transit and another 2,700 persons, or 48 percent, cannot use the existing transit service due to their disabilities. Among those persons who have difficulty using transit, about 2,500 have trouble getting around, and about 500 use an aid other than a wheelchair. Among those persons who are prevented from using transit, about 500 use aids other than wheelchairs; another 500 need help from another person; about 400 use wheelchairs; and about 1,300 are confined to the house.

Estimates derived from the survey data indicate that within Waukesha County approximately 2,800 persons, or 59 percent of the chronically and acutely disabled transportation handicapped persons living in private households, have difficulty using public transit, and about 1,900 persons, or 41 percent, are prevented entirely from using transit as a result of their disabilities. Among those persons who have difficulty using transit, about 1,600 have trouble getting around; about 400 use aids other than wheelchairs; about 700 need help from another person; and about 50 use wheelchairs. Among those persons who are prevented from using transit, slightly more than 200 have trouble getting around; another 200 use aids other than wheelchairs; about 500 need help from another person; about 400 use wheelchairs; and about 500 are confined to the house.

### The Locationally Disadvantaged

An important element in preparation of an effective plan for improving the mobility of the transportation handicapped is the determination of how many persons would benefit from alterations to the existing fixed route transit system, aside from route relocation. Those persons who live beyond a reasonable walking distance from a bus stop clearly would derive minimal, or only occasional, benefit from such alterations to passenger bus design as wheelchair lifts or kneeling features, and might be better served by development of an effective, publicly sponsored, demand responsive system. Data collected in the survey indicate that a few persons living in Ozaukee County, Washington County, and Waukesha County have bus service within four blocks of their homes. In some cases this service consists of a local service; in other

cases, a form of local service is provided by intercity bus lines on routes which allow boarding and deboarding at any point on the route. Survey data pertaining to persons in these counties who live within four blocks of such service are shown in the following tabular presentations solely as a point of interest. All transportation handicapped persons and all able-bodied elderly persons residing in Ozaukee County, Washington County, Waukesha County, and in the nonurbanized area of the Milwaukee SMSA are considered in this study to be locationally disadvantaged (see Table 12 and Table 13).

Three estimates of the numbers of the locationally disadvantaged transportation handicapped and able bodied elderly persons were prepared. The most stringent estimate requires that the person's residence be within one block of a bus route; the medium estimate requires a distance of two blocks; and the least restrictive estimate requires a distance of four blocks. By using these three criteria, a range of probable numbers of locationally disadvantaged was developed. The survey data indicate a much wider range than that found by the

#### Table 12

ESTIMATES OF THE LOCATIONALLY DISADVANTAGED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF THE MILWAUKEE SMSA AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

	<u> </u>		Tr	ansportation	n Handicapi	oed				Able-Bodi	ed Elderly		
	Maximum Allowed Distance of Residence	Locati Disadva (Ou Distar Bus R	onally entaged tside nce To coute)	N Disadva (Inside I To Bus	ot antaged Distance Route)	Ta Popu (Insia Outside To Bus	ital lation de and Distance Route)	Locati Disadva (Ou Distar Bus F	ionally an taged tside nce To Route)	N Disadv (Inside To Bus	ot antaged Distance Route)	To Popul (Insid Outside To Bus	tal ation e and Distance Route)
Area	From Bus Route	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Milwaukee County	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	9,327 11,305 13,511	20.2 24.5 29.3	36,820 34,842 32,636	79.8 75.5 70.7	46,147 46,147 46,147	100.0 100.0 100.0	13,094 16,668 20,554	14.1 18.0 22.2	79,519 75,945 72,059	85.9 82.0 77.8	92,613 92,613 92,613	100.0 100.0 100.0
Ozaukee County	N/A	1,875	100,0			1,875	100.0	3,642	100.0			3,642	100.0
Washington County	N/A	2,655	100.0			2,655	100.0	4,447	100.0			4,447	100.0
Waukesha County	N/A	8,237	100.0			8,237	100.0	12,326	100.0			12,326	100.0
Milwaukee SMSA Urbanized Area	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	15,971 17,949 20,155	30,3 34,0 38,2	36,820 34,842 32,636	69.7 66.0 61.8	52,791 52,791 52,791	100.0 100.0 100.0	22,981 26,555 30,441	22.4 25.9 29.7	79,519 75,945 72,059	77.6 74.1 70.3	102,500 102,500 102,500	100.0 100.0 100.0
Nonurbanized Area		6,123	100.0			6,123	100.0	10,528	100.0			10,528	100.0
Total Milwaukee SMSA	Four Blocks to Bus Route Two-Blocks to Bus Route One Block to Bus Route	22,094 24,072 26,278	37.5 40.9 44.6	36,820 34,842 32,636	62.5 59.1 55.4	58,914 58,914 58,914	100.0 100.0 100.0	33,509 37,083 40,969	29.6 32.8 36.2	79,519 75,945 72,059	70.4 67.2 63.8	113,028 113,028 113,028 113,028	100.0 100.0 100.0
Southeastern Wisconsin Region	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	29,677 32,138 35,065	40.5 43.9 47.8	43,613 41,152 38,225	59.5 56.1 52.2	73,290 73,290 73,290	100.0 100.0 100.0	45,988 50,327 55,541	33.1 36.2 40.0	92,893 88,554 83,340	66.9 63.8 60.0	138,881 138,881 138,881	100.0 100.0 100.0

N/A - Not applicable.

Source: Applied Resource Integration, Ltd., and SEWRPC.

	· · · · · · · · · · · · · · · · · · ·		т	ransportation	h Handicap	ped				Able-Bodi	ed Elderly		
	Maximum Allowed	Locationally Disadvantaged (Outside Distance To Bus Stop)		Not Disadvantaged (Inside Distance To Bus Stop)		To Popul (Insic Outside To Bu	tal lation le and Distance s Stop)	Locati Disadva (Ou Distar Bus S	onally antaged tside ace To Stop)	Not Disadvantaged (Inside Distance To Bus Stop)		To Popul (Inside Outside To Bus	tał ation ∋ and Distance Stop)
Area	From Bus Stop	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Milwaukee County	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	3,057 10,683 18,325	7.7 26.9 46.1	36,689 29,063 21,421	92.3 73.1 53.9	39,746 39,746 39,746	100.0 100.0 100.0	6,785 18,534 37,361	8.2 22.3 44.9	76,410 64,661 45,834	91.8 77.7 55.1	83,195 83,195 83,195 83,195	100.0 100.0 100.0
Ozaukee County	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	1,294 1,294 1,359	95.2 95.2 100.0	65 65 	4.8 4.8 	1,359 1,359 1,359	100.0 100.0 100.0	2,334 2,403 2,403	97.1 100.0 100.0	69  	2.9  	2,403 2,403 2,403	100.0 100.0 100.0
Washington County	(No Service Reported)	2,606	100.0			2,606	100.0	3,298	100.0			3,298	100.0
Waukesha County	Four Blocks To Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	5,448 5,645 5,880	84.1 87.1 90.7	1,032 835 600	15.9 12.9 9.3	6,480 6,480 6,480	100.0 100.0 100.0	10,778 10,825 11,223	93.3 93.7 97.2	770 723 325	6.7 6.3 2.8	11,548 11,548 11,548	100.0 100.0 100.0
Milwaukee SMSA Urbanized Area	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	7,267 15,093 23,004	16.1 33.5 51.1	37,758 29,932 22,021	83.9 66.5 48.9	45,025 45,025 45,025	100.0 100.0 100.0	13,657 25,477 44,671	15.1 28.1 49.3	76,967 65,147 45,953	84.9 71.9 50.7	90,624 90,624 90,624 90,624	100.0 100.0 100.0
Nonurbanized Area	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	5,135 5,135 5,166	99.4 99.4 100.0	31 31	0.6 0.6 	5,166 5,166 5,166	100.0 100.0 100.0	9,538 9,583 9,614	97.1 97.6 97.9	282 237 206	2.9 2.4 2.1	9,820 9,820 9,820	100.0 100.0 100.0
Total Milwaukee SMSA	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	12,402 20,228 28,170	24.7 40.3 56.1	37,789 29,963 22,021	75.3 59.7 43.9	50,191 50,191 50,191	100.0 100.0 100.0	23,195 35,060 54,285	23.1 34.9 54.0	77,249 65,384 46,159	76.9 65.1 46.0	100,444 100,444 100,444	100.0 100.0 100.0
Southeastern Wisconsin Region	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	17,761 26,398 35,805	28.5 42.3 57.4	44,633 35,996 26,589	71.5 57.7 42.6	62,394 62,394 62,394	100.0 100.0 100.0	35,353 48,838 71,558	28.2 39.0 57.2	89,809 76,324 53,604	71.8 61.0 42.8	125,162 125,162 125,162	100.0 100.0 100.0

### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF THE LOCATIONALLY DISADVANTAGED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF THE MILWAUKEE SMSA

Source: SEWRPC.

secondary source data estimate. However, both methodologies produce almost identical percentage distributions of the transportation handicapped and able-bodied elderly populations that reside two blocks from a bus stop—this quantity being the medium estimate and the criterion used in the plan design. It is important to realize that the methodology utilized to obtain estimates of the locationally disadvantaged from secondary source data employed distance from the bus route as a criterion whereas the survey collected information concerning the distance between the respondent's residence and the nearest bus stop.

<u>Milwaukee SMSA:</u> The estimate derived from secondary source data indicates that about 22,100 transportation handicapped persons, or 38 percent, are estimated to be more than four blocks from a bus route; about 24,100, or 41 percent, more than two blocks; and about 26,300, or 45 percent, more than one block. In comparison, the estimates derived from the transportation handicapped and elderly survey indicate that within this SMSA about 12,400 transportation handicapped persons, or 25 percent, live more than four blocks from a bus stop; about 20,200, or 40 percent, more than two blocks, and about 28,200, or 56 percent, more than one block.

It is noteworthy that both estimating methodologies indicate that proportionately more able-bodied elderly persons live within a reasonable walking distance of bus service than do transportation handicapped persons. Estimates based upon secondary source data indicate that about 33,500 ablebodied elderly, or 30 percent, live more than four blocks from a bus route; about 37,100, or 33 percent, more than two blocks; and about 41,000. or 36 percent, more than one block. In comparison, the estimates derived from the survey indicate that about 23,200 able-bodied elderly, or 23 percent, live more than four blocks from a bus stop; about 35,100, or 35 percent, more than two blocks; and about 54,300, or 54 percent, more than one block.

<u>Milwaukee</u> Urbanized Area: Estimates based on secondary source data indicate that living within the Milwaukee urbanized area are about 16,000 transportation handicapped persons, or 30 percent, who reside more than four blocks from the bus route; about 17,900, or 34 percent, who reside more than two blocks from the bus route; and about 20,200, or 38 percent, who reside more than one block from the bus route. Survey data indicates that within this urbanized area about 7,300 transportation handicapped persons, or 16 percent, are estimated to live more than four blocks from the bus stop; about 15,100, or 34 percent, more than two blocks; and about 23,000, or 51 percent, more than one block.

Based on secondary source data, it is estimated that within this urbanized area about 23,000 ablebodied elderly, or 22 percent, live more than four blocks from a bus route; about 26,600, or 26 percent, more than two blocks; and about 30,400, or 30 percent, more than one block. The survey data indicates that in this urbanized area about 13,700 able-bodied elderly, or 15 percent, live more than four blocks from a bus stop; about 25,500, or 28 percent, more than two blocks; and about 44,700, or 49 percent, more than one block.

Milwaukee County: Secondary source data estimates indicate that, of the 46,100 transportation handicapped persons residing in Milwaukee County, about 9,300 persons, or 20 percent, live more than four blocks from a bus route; about 11,300 persons, or 25 percent, more than two blocks; and about 13,500 persons, or 29 percent, more than one block. Estimates derived from the transportation handicapped and elderly survey for this area indicate that about 3,100 transportation handicapped persons, or 8 percent, live more than four blocks from a bus stop; about 10,700, or 27 percent, more than two blocks; and about 18,300 persons, or 46 percent, more than one block.

Estimates based on secondary source data indicate that, of the 92,600 able-bodied elderly persons residing in Milwaukee County, about 13,100 ablebodied elderly, or 14 percent, live more than four blocks from a bus route; about 16,700, or 18 percent, more than two blocks; and about 20,600, or 22 percent, more than one block. Estimates based on the transportation handicapped and elderly survey data indicate that about 6,800 ablebodied elderly, or 8 percent, live more than four blocks from a bus stop; about 18,500, or 22 percent, more than two blocks; and about 37,400, or 45 percent, more than one block.

## Economically Disadvantaged

An important factor in any consideration of the development or alteration of a mass transit system is the establishment of an equitable and feasible fare structure. Regardless of how effectively designed a system is, if the users cannot afford the fare, the ridership will be extremely low and the system will not, therefore, perform the primary function of providing increased mobility among persons in the target group. In order to provide information useful in the consideration of a fare structure, the following discussion examines the annual household income of the transportation handicapped and able-bodied elderly. It should be noted that, as previously discussed, such data are difficult to obtain and may in some cases exhibit some degree of sampling variability. Estimates based on 1972 National Health Survey data indicate that in the United States an average of 57 percent of the transportation handicapped and 57 percent of the able-bodied elderly are economically disadvantaged. The estimates below, which were derived by applying ratios obtained from the SEWRPC 1976 survey data to the estimated population derived from secondary source data, indicate that approximately 62 percent of the transportation handicapped and 66 percent of the able-bodied elderly in Southeastern Wisconsin live in households making under \$8,000 a year and consequently are considered to be economically disadvantaged (see Table 14).

Milwaukee SMSA: Within the Milwaukee SMSA approximately 63 percent of the transportation handicapped and 65 percent of the able-bodied elderly live in households making less than \$8,000 a year-that is, are economically disadvantaged. Of the chronically disabled living in private households in the Milwaukee SMSA, about 11,500 persons, or 28 percent, have a household annual income of less than \$4,000; about 14,200 persons, or 35 percent, between \$4,000 and \$7,999; about 5,500 persons, or 13 percent, between \$8,000 and \$11,999; and about 9,900 persons, or 24 percent, \$12,000 or more. Of the able-bodied elderly residing in the Milwaukee SMSA, about 28,100 persons, or 25 percent, have a household annual income of less than \$4,000; about 46,200 persons, or 41 percent, between \$4,000 and \$7,999; about 21,400 persons, or 19 percent, between \$8,000 and \$11,999; and about 17,400 persons, or 15 percent, \$12,000 or more.

# ESTIMATES OF THE CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF THE MILWAUKEE SMSA BY HOUSEHOLD ANNUAL INCOME

	Household			_			Milwaukee SMSA		Southeastern
Population	Annual	Cou	unties Withir	n Milwaukee SM	SA	Urbanized	Nonurbanized		Wisconsin
Group	Income	Milwaukee	Ozaukee	Washington	Waukesha	Area	Area	Total	Region
Chronically Disabled	Under \$4,000								
Transportation	Number	9,133	340	937	1,080	10,147	1,343	11,490	14,817
Handicapped	Percent	28.6	22.4	51.5	18.8	27.5	32.3	28.0	29.1
	\$4,000-7,999								
	Number	11,560	714	580	1,327	12,351	1,830	14,181	16,968
	Percent	36.2	47.0	31.9	23.1	33.5	44.1	34.6	33.3
	\$8,000-11,999								,
	Number	4,183		167	1,143	4,883	610	5,493	7,189
	Percent	13.1		9.2	19.9	13.3	14.7	13.4	14.1
	Over \$12,000								
	Number	7,058	465	135	2,195	9,482	371	9,853	11,933
	Percent	22.1	30.6	7.4	38.2	25.7	8.9	24.0	23.5
	Total								
	Number	31,934	1,519	1,819	5,745	36,863	4,154	41,017	50,907
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Able-Bodied Elderly	Under \$4,000								
-	Number	23,061	1,082	1,543	2,379	25,644	2,421	28,065	36,153
	Percent	24.9	29.7	34.7	19.3	25.0	23.0	24.8	26.0
	\$4,000-7,999								
	Number	38,434	1,242	1,570	4,955	41,973	4,228	46,201	55,306
	Percent	41.5	34.1	35.3	40.2	41.0	40.2	40.9	39.8
	\$8,000-11,999								
	Number	17.874	302	756	2.441	19 487	1 886	21 373	26 161
	Percent	19.3	8.3	17.0	19.8	19.0	17.9	18.9	18.9
	Over \$12,000								
	Number	13,244	1,016	578	2,551	15,396	1,993	17,389	21.261
	Percent	14.3	27. <del>9</del>	13.0	20.7	15.0	18.9	15.4	15.3
	Total								
	Number Percent	92,613 100.0	3,642 100.0	4,447 100.0	12,326 100.0	102,500 100.0	10,528 100.0	113,028 100.0	138,881 100.0

Source: SEWRPC.

<u>Milwaukee Urbanized Area</u>: Within the Milwaukee urbanized area, approximately 61 percent of the transportation handicapped persons and about 66 percent of the able-bodied elderly persons are considered to be economically disadvantaged. Of the chronically disabled transportation handi-

capped persons living in private households in the Milwaukee urbanized area, about 10,100 persons, or 28 percent, have a household annual income of less than \$4,000; about 12,400 persons, or 34 percent, between \$4,000 and \$7,999; about 4,900 persons, or 13 percent, between \$8,000 and \$11,999; and about 9,500 persons, or 25 percent, \$12,000 or more. Of the able bodied elderly residing in the Milwaukee urbanized area, about 25,600 persons, or 25 percent, have a household annual income of less than \$4,000; about 42,000 persons, or 41 percent, between \$4,000 and \$7,999; about 19,500 persons, or 19 percent, between \$8,000 and \$11,999; and about 15,400 persons, or 15 percent, \$12,000 or more.

The Nonurbanized Area: As a result of a very small population base in the nonurbanized area, the income estimates presented below are subject to a possibly wide range of sampling variability. The estimates indicate that within the nonurbanized area approximately 76 percent of the transportation handicapped and 63 percent of the ablebodied elderly are economically disadvantaged. Of the chronically disabled living in private households in the nonurbanized area, about 1,300 persons, or 32 percent, have a household annual income of less than \$4,000; about 1,800 persons. or 44 percent, between \$4,000 and \$7,999; about 600 persons, or 15 percent, between \$8,000 and \$11,999; and about 400 persons, or 9 percent, \$12,000 or more. Among the able-bodied elderly living in the nonurbanized area, about 2,400 persons, or 23 percent, have a household annual income of less than \$4,000; about 4,200 persons, or 40 percent, between \$4,000 and \$7,999; about 1,900 persons, or 18 percent, between \$8,000 and \$11,999; and about 2,000 persons, or 19 percent, \$12,000 or more.

Milwaukee County: Within Milwaukee County approximately 65 percent of the transportation handicapped and about 66 percent of the ablebodied elderly live in households making less than \$8,000 a year, and therefore, are considered to be economically disadvantaged. Of the chronically disabled living in private households in Milwaukee County, about 9,100, or 29 percent, have a household annual income of less than \$4,000; about 11,600, or 36 percent, between \$4,000 and \$7,999; about 4,200 persons, or 13 percent, between \$8,000 and \$11,999; and about 7,100 persons or 22 percent, \$12,000 or more. Of the able-bodied elderly residing in Milwaukee County, about 23,100, or 25 percent, have a household annual income of less than \$4,000; about 38,400, or 42 percent, between \$4,000 and \$7,999; about 17,900 persons, or 19 percent, between \$8,000 and \$11,900; and about 13,200, or 14 percent, \$12,000 or more.

Ozaukee County: The estimates by income group derived for Ozaukee County may be subject to a wide range of sampling variability due to a very small population base. It is estimated that within Ozaukee County, approximately 69 percent of the transportation handicapped and about 64 percent of the able-bodied elderly are economically disadvantaged. Of the chronically disabled living in private households in Ozaukee County, approximately 300 persons, or 22 percent, have a household annual income of less than \$4,000; about 700 persons, or 47 percent, between \$4,000 and \$7,999; and about 500 persons, or 31 percent, \$12,000 or more. The absence of any persons recorded in the \$8,000 to \$11,999 category is probably the result of sampling variability. Of the able-bodied elderly living in Ozaukee County. it is estimated that about 1,100 persons, or 30 percent, have a household annual income of less than \$4,000; about 1,200 persons, or 34 percent, between \$4,000 and \$7,999; about 300 persons, or 8 percent, between \$8,000 and \$11,999; and about 1,000 persons, or 28 percent, \$12,000 or more.

Washington County: Washington County also has a very small transportation handicapped population base. Consequently, the estimates by income group for this County may be subject to a wide range of sampling variability. It is estimated that within Washington County approximately 83 percent of the transportation handicapped and about 70 percent of the able-bodied elderly are economically disadvantaged. Of the chronically disabled living in private households in Washington County, about 900 persons, or 52 percent, have a household annual income of less than \$4,000; about 600 persons, or 32 percent, between \$4,000 and \$7,999; about 200 persons, or 9 percent, between \$8,000 and \$11,999; and about 100 persons, or 7 percent, \$12,000 or more. Among the ablebodied elderly living in Washington County, about 1,500 persons, or 35 percent, have a household annual income of less than \$4,000; about 1,600 persons, or 35 percent, between \$4,000 and \$7,999; about 800 persons, or 17 percent, between \$8,000 and \$11,999; about 600 persons, or 13 percent, \$12,000 or more.

Waukesha County: It is estimated that within Waukesha County approximately 42 percent of the transportation handicapped and 60 percent of the able-bodied elderly live in households making less than \$8,000 per year and therefore are economically disadvantaged. Of the chronically disabled living in private households in Waukesha County, approximately 1,100 persons, or 19 percent, have a household annual income of less than \$4,000; about 1,300 persons, or 23 percent, between \$4,000 and \$7,999; about 1,100 persons, or 20 percent, between \$8,000 and \$11,999; and about 2,200 persons, or 38 percent, \$12,000 or more. Among the able-bodied elderly residing in Waukesha County, it is estimated that about 2,400 persons, or 19 percent, have a household annual income of less than \$4,000; about 5,000 persons, or 40 percent, between \$4,000 and \$7,999; about 2,400 persons, or 20 percent, between \$8,000 and \$11,999; and about 2,600 persons, or 21 percent, \$12,000 or more.

# ESTIMATES OF THE TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDING IN RACINE COUNTY

Racine County, which contains approximately 10 percent of the population in the Southeastern Wisconsin Region, is composed of an urbanized and nonurbanized area. The urbanized area of Racine County consists of the City of Racine and its suburbs. Within this urbanized area reside approximately 68 percent of the County population, and 7 percent of the regional population.

The Transportation Handicapped, Able-Bodied Elderly, and Total Population

For a complete understanding of the Racine County population subgroups, such as transportation handicapped and able-bodied elderly, it is important to relate such subgroups to the total population found in the urbanized and nonurbanized areas of this County. The following discussions of the estimates presented in Table 15 and Table 16 provide this reference. The estimates presented in Table 15 were derived from secondary source data; the estimates presented in Table 16 were obtained from the transportation handicapped and elderly survey. It is important to note that different total population bases are represented by these two data sources. In the estimating procedure which utilizes secondary source data, estimates of the 1975 total populations obtained from the Wisconsin Department of Administration served as the base populations. In the expansion of the household survey data, the base population consisted of the Wisconsin Department of Adminis-

### Table 15

### ESTIMATES OF THE TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY, AND TOTAL POPULATION IN RACINE COUNTY AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

				Southeastern	
Population Gr	oup	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Transportation	Number	4,540	1,994	6,534	73,290 4.1
Handicapped	Percent	3.7	3.4	3.6	
Able-Bodied	Number	7,550	2,756	10,306	138,881
Elderly	Percent	6.2	4.7	5.7	7.7
Nontransportation Handicapped Under 65 Years of Age	Number Percent	109,918 90.1	53,594 91.9	163,512 90.7	1,582,369 88.2
Total	Number	122,008	58,344	180,352	1,794,540
Population ^a	Percent	100.0	100.0	100.0	100.0

^aBased on 1975 Wisconsin Department of Administration Estimates.

Source: Wisconsin Department of Administration; Applied Resource Integration, Ltd.; and SEWRPC.

			<b>Racine County</b>		Southeastern	
Population Gr	oup	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region	
Transportation	Number	4,494	1,326	5,820	62,394	
Handicapped	Percent	4.2	1.9	3.3	3.5	
Able-Bodied	Number	8,308	3,553	11,861	125,162	
Elderly	Percent	7.8	5.1	6.7	7.1	
Nontransportation Handicapped Under 65 Years of Age	Number Percent	93,422 88.0	65,169 93.0	158,591 90.0	1,588,940 89.4	
Total	Number	106,224	70,048	176,272	1,776,496	
Population ^a	Percent	100.0	100.0	100.0	100.0	

# TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF THE TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY, AND TOTAL POPULATION IN RACINE COUNTY

^aApproximately 20,000 persons in the Region live in certain mental institutions, college dormitories, penal institutions, detoxification centers, monasteries, convents, and other such group quarters. Since the transportation handicapped and elderly survey was designed solely to represent persons residing in private households, nursing homes, and certain residential treatment centers, these 20,000 persons living in other group quarters are not included in the survey estimate of total population.

Source: SEWRPC.

tration estimates of 1976 total population. Therefore, the total populations shown in Tables 15 and 16 for Racine County are not the same.

In addition, the survey sample did not include the population residing in Southern Colony-bed capacity of 972—in the nonurbanized area of Racine County. However, the resident population of Southern Colony, an institution that effectively provides for the transportation needs of its clients, has been included in the estimates obtained through use of secondary source data.

<u>Racine Urbanized Area</u>: Both sets of estimates indicate that approximately 70 percent or more of the transportation handicapped and able-bodied elderly persons in Racine County live within the urbanized area of that County. Interestingly, within this urbanized area the two estimates are very similar despite the definitional differences arising from the interpretation of the definition of transportation handicapped in terms of either difficulty with bus usage or mobility limitation. Based on secondary source data, the urbanized area of Racine County is estimated to contain approximately 7,600 able-bodied elderly, or about 6 percent of the total population, and about 4,500 transportation handicapped, or about 4 percent of the total population, with the remaining 109,900 persons estimated to be residing in this area neither transportation handicapped or elderly. The survey data indicates that within this urbanized area are about 8,300 able-bodied elderly, or about 8 percent of the total population, and about 4,500 transportation handicapped, or about 4 percent of the total population, with the remaining 93,400 persons neither transportation handicapped or elderly.

<u>Racine Nonurbanized Area</u>: Estimates based on secondary source data indicate that about 2,800 able-bodied elderly, or about 5 percent of the nonurbanized area population, and about 2,000 transportation handicapped, about 3 percent of the population, live in this nonurbanized or rural area along with 53,600 persons who are neither transportation handicapped or elderly. The survey data estimate, which does not include the population residing in Southern Colony, indicates that there are in this nonurbanized area about 3,600 ablebodied elderly, or about 5 percent of the nonurbanized area population, and about 1,300 transportation handicapped persons, or about 2 percent of the nonurbanized area population. The remaining 65,200 persons in this area are neither transportation handicapped or elderly.

Total Racine County: Estimates based on secondary source data indicate that, in total, Racine County contains approximately 6,500 transportation handicapped, or about 9 percent of the transportation handicapped residing in the Region, and approximately 10,300 able - bodied elderly, or about 7 percent of the able-bodied elderly residing in the Region. The secondary source data indicates that in this County the transportation handicapped represent slightly less than 4 percent of the total County population and the able-bodied elderly represent approximately 6 percent of the County population with the remaining 163,500 persons, or 91 percent of the County population, neither transportation handicapped or elderly. The survey data indicates very similar distributions of the population by subgroup. The transportation handicapped and elderly survey indicates that in this County live approximately 5,800 transportation handicapped persons, or about 3 percent of the total County population, and about 11,900 ablebodied elderly persons, or about 7 percent of the County population, with the remaining 158,600 persons, or 90 percent, neither transportation handicapped or elderly.

# The Transportation Handicapped

# By Type of Limitation

As shown in Table 17 and Table 18, the transportation handicapped are divided into three primary

Table 1	17	
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			Transportation Hand	icapped Persor	1\$
			Racine County		Southeastern
Limitati	on	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Chronically Disabled Liv Households: Mobility L	ving in Private imitation				
Has Trouble Getting	Around	1,338	534	1,872	21,430
Uses Aid Other Than	Wheelchair	573	210	783	9,761
Needs Help from And	other Person	297	115	412	4,940
Uses Wheelchair		210	84	294	3,426
Confined to House		689	263	952	11,350
	Total	3,107	1,206	4,313	50,907
	Percent	68.4		66.0	69.5
Acutely Disabled	Number	338	155	493	5,048
	Percent	7.5	7.8	7.6	6.9
Institutionalized	Number	1,095	633	1,728	17,335
	Percent	24.1	31.7	26.4	23.6
Total Transportation	Number	4,540	1,994	6,534	73,290
Handicapped Persons	Percent	100.0	100.0	100.0	100.0

# ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY TYPE OF LIMITATION AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

Source: Applied Resource Integration, Ltd., and SEWRPC.

groups: the institutionalized; the acutely disabled; and the chronically disabled living in private households. The chronically disabled living in private households are further subdivided by each of five mobility limitations: has trouble getting around; uses aid other than a wheelchair; needs help from another person; uses wheelchair; and confined to house. Table 17 presents the estimates of transportation handicapped persons in Racine County by type of limitation as obtained through the application of incidence rates derived from secondary source data. Table 18 presents the equivalent estimates as reported by the transportation handicapped and elderly survey. As previously discussed, the data presented in these two tables does not provide for direct comparison in two major areas: namely, in the acutely disabled and the confined to household classifications. In the first of these areas, the acutely disabled, the estimating procedure using incidence rates separated acutely disabled from chronically disabled while the survey data combined chronically and acutely disabled. In the second area, mobility limitation classifications of "confined to house" and "needs help from another person," there were differences in the phrasing of the questionnaires concerning mobility limitations on the transportation handicapped and elderly survey and on the 1972 National Health Survey. In addition, due to the less restrictive interpretation of the definition of

### Table 18

### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY TYPE OF LIMITATION

			Transportation Handi	capped Person	s
			Racine County		Southeastern
Limitati	on	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Chronically and Acutely Living in Private Househ Mobility Limitation Has Trouble Getting Uses Aid Other Than Needs Help from And Uses Wheelchair Confined to House	Chronically and Acutely ^a Disabled Living in Private Households: Mobility Limitation Has Trouble Getting Around Uses Aid Other Than Wheelchair Needs Help from Another Person Uses Wheelchair Confined to House		340 194 357 135 124	1,156 857 1,882 397 218	17,064 8,694 12,641 3,877 3,726
	Total Percent	3,460 77.0	1,150 86.7	4,610 79.2	46,002 73.7
Institutionalized	Number Percent	1,034 23.0	176 ^b 13.3	1,210 20.8	16,392 26.3
Total Transportation Handicapped Persons	Number Percent	4,494 100.0	1,326 100.0	5,820 100.0	62,394 100.0

^aOn the transportation handicapped and elderly survey, mobility limitation data was collected for both acutely and chronically disabled transportation handicapped persons. "No" responses to the survey question "Have you had this difficulty for longer than three months?" were obtained from only 125 persons in Racine County and 1,786 persons in the Region.

^bThe survey sample did not include the population residing in Southern Colony (bed capacity of 972) in the nonurbanized area of Racine County. Southern Colony effectively provides for the transportation needs of its clients.

Source: SEWRPC.

transportation handicapped in deriving estimates based on secondary source data, the estimates of the number of persons who have trouble getting around are substantially different for the two methodologies.

Racine Urbanized Area: Based on the estimates derived from secondary source data, of the transportation handicapped population in the Racine urbanized area, about 3,100, or 68 percent, are chronically disabled persons living in private households; another 300, or 8 percent, are acutely disabled individuals; and about 1,100, or 24 percent, are institutionalized. Of the 3,100 chronically disabled transportation handicapped persons living in private households, approximately 1,300 suffer from the least restrictive mobility limitation in that they "have trouble getting around." Of the remaining chronically disabled transportation handicapped living in private households, about 600 use aids other than wheelchairs; about 300 need help from another person; about 200 use wheelchairs; and about 700 are confined to the house.

Survey data indicate that, of the transportation handicapped population in this urbanized area, about 3,500, or 77 percent, are chronically or acutely disabled persons living in private households and about 1,000, or 23 percent, are institutionalized. Of the 3,500 chronically and acutely disabled transportation handicapped persons living in private households, approximately 800 suffer from the least restrictive mobility limitation in that they "have trouble getting around." Of the remaining such handicapped persons, about 700 use aids other than wheelchairs; about 1,500 need help from another person; about 300 use wheelchairs; and about 200 are confined to the house.

<u>Racine Nonurbanized Area</u>: The percentage distribution of transportation handicapped persons in the Racine nonurbanized area, as estimated on the basis of secondary source data, reflects the relatively large portion of the institutionalized transportation handicapped in this subarea who live in a single institution, Southern Colony. Based on secondary source data, of the 2,000 transportation handicapped persons in the nonurbanized area, about 1,200, or slightly more than 60 percent, are chronically disabled persons living in private households; another 600, or 32 percent, are institutionalized individuals; and about 200, or 8 percent, are acutely disabled. The distribution by mobility limitation of the chronically disabled persons living in private households in the nonurbanized area of Racine County, indicates that about 500 persons have trouble getting around; about 200 persons use aids other than wheelchairs; about 100 persons need help from another person to get around; about 100 persons use wheelchairs; and about 300 persons are confined to the house.

The transportation handicapped and elderly survey indicates that of the 1.300 transportation handicapped persons in the Racine nonurbanized area, about 1,200, or 87 percent, are chronically and acutely disabled persons living in private households. Another 200 persons, or 13 percent of the transportation handicapped population in this nonurbanized area, live in institutions other than Southern Colony. The distribution by mobility limitation of the chronically and acutely disabled persons living in private households in the nonurbanized area of Racine County, as found by the survey indicates that somewhat more than 300 persons have trouble getting around; about 200 persons use aids other than wheelchairs; about 400 persons need help from another person to get around; slightly more than 100 persons use wheelchairs; and about 100 persons are confined to the house.

Total Racine County: As indicated by estimates based on secondary source data, in Racine County about 4,300 persons, or 66 percent of the transportation handicapped, are chronically disabled persons living in private households; about 500 persons, or 8 percent of the transportation handicapped population, are acutely disabled; and about 1,700 persons, or 26 percent of the transportation handicapped, are institutionalized. The distribution by mobility limitation of the chronically disabled persons living in private households in Racine County indicates that about 1,900 persons have trouble getting around; almost 800 persons use aids other than wheelchairs; about 400 persons need help from another person to get around; about 300 persons use wheelchairs; and almost 1,000 persons are confined to the house.

Survey estimates—which exclude the population of Southern Colony—indicate that within the whole of Racine County, there are about 4,600 persons, or 79 percent of the transportation handicapped, who are chronically or acutely disabled individuals living in private households. Another 1,200 persons or 21 percent of the transportation handicapped population, are indicated by the survey data to be residing in institutions other than Southern Colony. Of the 4,600 chronically and acutely disabled persons living in private households in Racine County as indicated by the survey data, almost 1,200 persons have trouble getting around; almost 900 persons use aids other than wheelchairs; almost 1,900 persons need help from another person; almost 400 persons use wheelchairs; and about 300 persons are confined to the house.

# Transportation Handicapped

# Persons by Age Group

The following discussion presents a summary of the classifications shown in Table 19 and Table 20 of the transportation handicapped residents of Racine County and subareas thereof by three age groups: under 17 years of age; 17 through 64 years of age; and 65 years of age and older. As shown in Table 19 and Table 20, the distribution of transportation handicapped population by age group shows significant differences between the two estimating methodologies. In Racine County, these differences arise from two aspects: 1) the differences between the two methodologies, as discussed previously, in the interpretation of the definition of transportation handicapped; and 2) the exclusion of the population in Southern Colony from the universe of the transportation handicapped and elderly survey.

Racine Urbanized Area: As indicated by the less restrictive secondary source data estimate, about 4 percent of the transportation handicapped, or 200 persons, are under the age of 17; about 42percent, or 1.900 persons, are between the ages of 17 through 64; and about 54 percent, or 2,500 persons, are 65 years of age and older. In contrast, the more restrictive interpretation of the definition of transportation handicapped utilized in the survey data resulted in a very different age distribution for this urbanized area. The survey indicates that about 2 percent of the transportation handicapped, or less than 100 persons, are under the age of 17; about 21 percent, or about 1,000 persons, are between the ages of 17 through 64; and about 77 percent, or about 3,500 persons, are 65 years of age and older.

Racine Nonurbanized Area: The impact of the relatively large younger population housed in Southern Colony is demonstrated in comparing the

### Table 19

			Racine County		Southeastern
Age G	roup	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Under 17					
	Number	174	431	605	3,084
	Percent	3.8	21.6	9.3	4.2
17 through 6	4				
	Number	1,915	986	2,901	29,291
	Percent	42.2	49.5	44.4	40.0
65 and Over					
	Number	2,451	577	3,028	40,915
	Percent	54.0	28.9	46.3	55.8
All Ages					
	Number	4,540	1,994	6,534	73,290
	Percent	100.0	100.0	100.0	100.0

ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY AGE GROUP AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

Source: Applied Resource Integration, Ltd., and SEWRPC.

			Racine County		Southeastern Wisconsin Region	
Age G	iroup	Urbanized Area	Nonurbanized Area	Total		
Under 17						
	Number	66	59	125	1,993	
	Percent	1.5	4.5	2.1	3.2	
17 through 6	64					
	Number	958	117	1,075	16,688	
	Percent	21.3	8.8	18.5	26.7	
65 and Over						
	Number	3,470	1,150	4,620	43,713	
	Percent	77.2	86.7	79.4	70.1	
All Ages						
	Number	4,494	1,326	5,820	62,394	
	Percent	100.0	100.0	100.0	100.0	

# TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY AGE GROUP

Source: SEWRPC.

two estimates of the distribution of transportation handicapped persons by age group in the nonurbanized area of Racine County. Estimates based on secondary source data indicate that within this nonurbanized area, about 400 persons, or 22 percent of the transportation handicapped, are under the age of 17; about 1,000 persons, or 50 percent, are between 17 through 64 years of age; and about 600 persons, or 29 percent, are 65 years of age or older. In contrast, the survey data indicates that less than 100 persons, or about 4 percent of the transportation handicapped, are under the age of 17; about 100 persons, or 9 percent of the transportation handicapped, are between 17 through 64 years of age; and about 1,200 persons, or 87 percent of the transportation handicapped, are 65 years of age or older.

Total Racine County: In total, the transportation handicapped population estimated on the basis of secondary source data to be residing in Racine County exhibits the youngest age characteristics of any County or analysis subarea, as well as exhibiting significant differences from the overall age group distributions found for the entire Southeastern Wisconsin Region. Based on secondary source data, of the total transportation handicapped in this County, about 600, or 9 percent, are under the age of 17; about 2,900, or 44 percent, are between the ages of 17 through 64; and about 3,000, or 46 percent, are 65 years of age and older. In contrast, the survey data—which excluded the population of Southern Colony—found that of the total transportation handicapped in this County, about 100, or 2 percent, are under the age of 17; about 1,100, or 19 percent, are between the ages of 17 through 64; and about 4,600, or 79 percent, are 65 years of age and older.

## Difficulty of Transit Uses

As indicated previously, the estimates of the transportation handicapped living in private households and classified by mobility limitation were subdivided to obtain estimates of the number of transportation handicapped who can use transit, although such use is difficult, and the number who are entirely prevented from using the existing

transit service as a result of their disabilities. The following discussion presents those estimates as shown in Table 21 and in Table 22 for the urbanized and nonurbanized areas and total of Racine County. Due to the estimating procedure utilized in deriving the estimates based on secondary source data, the percentage distributions of transportation handicapped by difficulty of transit use, are very similar within each of the subareas, Although widely divergent techniques were utilized by the estimate obtained from the survey and the estimate obtained from the secondary source data, very similar percentage distributions by difficulty of transit use were obtained from the two data sets for the Racine County urbanized area and Racine County total.

<u>Racine Urbanized Area:</u> As indicated by secondary source data estimates, approximately 1,600 persons, or 52 percent of the transportation handicapped in the urbanized area of Racine County, have difficulty using transit, but can use the public bus system. Another 1,500 persons, or 48 percent of the transportation handicapped, cannot use the existing transit service at all. Among those persons who have difficulty in using transit in the Racine urbanized area, approximately 1,300 have trouble getting around and another 300 use an aid other than a wheelchair. Among those transportation handicapped who cannot use transit as a result of their disabilities, approximately 300 use an aid other than a wheelchair; about 300 need help from another person; about 200 use wheelchairs; and about 700 are confined to the house.

Survey data indicate that approximately 1,800 persons, or 51 percent of the transportation handicapped in the urbanized area of Racine County, can use public transit although with difficulty whereas about 1,700 persons, or 49 percent of the transportation handicapped, cannot use the existing transit service at all. Among those persons indicated by the survey to have difficulty using transit in the Racine urbanized area, approximately 700 have trouble getting around; about 400 use aids other than wheelchairs; and about 600 need help from another person. Among those transportation handicapped who cannot use transit as

### Table 21

ESTIMATES OF CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED PERSONS LIVING IN PRIVATE HOUSEHOLDS IN RACINE COUNTY BY DEGREE OF DIFFICULTY USING TRANSIT AND MOBILITY LIMITATION AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

		Chronic P	Chronically Disabled Transportation Handicapped Persons Living in Private Households						
Degree			Racine County		Southeastern				
of		Urbanized	Nonurbanized		Wisconsin				
Difficulty	Mobility Limitation	Area	Area	Total	Region				
Has Difficultv	Has Trouble Getting Around	1.338	534	1.872	21.430				
Using Transit	Uses Aid Other Than Wheelchair .	269	99	368	4,587				
_	Subtotal Numb	er 1,607	633	2,240	26,017				
	Percer	nt 51.7	52.5	51.9	51.1				
Cannot Use	Uses Aid Other Than Wheelchair .	304	111	415	5,174				
Transit	Needs Help from Another Person .	297	115	412	4,940				
	Uses Wheelchair	210	84	294	3,426				
	Confined to House	689	263	952	11,350				
	Subtotal Numl	per 1,500	573	2,073	24,890				
	Perce	nt 48.3	47.5	48.1	48.9				
Total Chronicall	v Disabled Num	ber 3.107	1.206	4.313	50,907				
Living in Private	Households Perce	ent 100.0	100.0	100.0	100.0				

Source: Applied Resource Integration, Ltd., and SEWRPC.

### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF CHRONICALLY AND ACUTELY DISABLED TRANSPORTATION HANDICAPPED PERSONS LIVING IN PRIVATE HOUSEHOLDS IN RACINE COUNTY BY DEGREE OF DIFFICULTY USING TRANSIT AND MOBILITY LIMITATIONS

		Chronic Handica	ally and Acutely Dipped Persons Living	sabled Trar in Private	nsportation Households
Degree			Racine County		Southeastern
of Difficulty	Mobility Limitation	Urbanized Area	Nonurbanized Area	Total	Wisconsin Region
Has Difficulty	Has Trouble Getting Around	723	270	993	13,957
Using Transit	Uses Aid Other Than Wheelchair	387	124	511	5,547
	Needs Help from Another Person	640	292	932	6,706
	Uses Wheelchair	• •	135	135	835
	Subtotal Number	1,750	821	2,571	27,045
	Percent	50.6	71.4	55.8	58.8
Cannot Use	Has Trouble Getting Around	93	70	163	3,107
Transit	Uses Aid Other Than Wheelchair	276	70	346	3,147
	Needs Help from Another Person	885	65	950	5,935
	Uses Wheelchair	262		262	3.042
	Confined to House	194	124	318	3,726
	Subtotal Number	1,710	329	2,039	18,957
	Percent	49.4	28.6	44.2	41.2
Total Chronically and Acutely Disabled Number Living in Private Households Percent		3,460 100.0	1,150 100.0	4,610 100.0	46,002 100.0

Source: SEWRPC.

a result of their disability, about 100 have trouble getting around; about 300 use aids other than wheelchairs; about 900 need help from another person; about 300 use wheelchairs; and about 200 are confined to the house.

Racine Nonurbanized Area: Based on estimates derived from secondary source data, within the nonurbanized area of Racine County slightly more than 600 persons, or 53 percent of transportation handicapped, have difficulty using transit and slightly less than 600 persons, or 48 percent of the transportation handicapped, cannot use transit at all. Among those who have difficulty using transit, about 500 persons are estimated to have trouble getting around, and approximately 100 persons use aids other than wheelchairs. Among those persons who cannot use transit at all, about 100 persons use aids other than wheelchairs; another 100 need the help of another person; slightly less than 100 use wheelchairs; and about 300 are confined to the house.

The survey data obtained for this nonurbanized area indicate a very different distribution of the transportation handicapped population by difficulty of bus use. This difference may, in part, arise from inexperience with local bus service and consequent overappraisal by the respondent of his or her potential ability to utilize such a service. Survey estimates indicate that within this nonurbanized area slightly more than 800 persons, or 71 percent of the transportation handicapped, can use an existing transit service, albeit with difficulty, and about 300 persons, or 29 percent of the transportation handicapped, cannot use transit at all. The survey indicates that among those who have difficulty using transit, about 300 persons have trouble getting around; about 100 persons use aids other than wheelchairs; about 300 persons need help from another person; and about 100 persons use wheelchairs. Among those persons who cannot use transit at all, slightly less than 100 persons have trouble getting around; slightly less than 100 persons use aids other than wheelchairs; slightly more than 50 persons need help from another person; and about 100 persons are confined to the house.

Total Racine County: In total, estimates derived from the use of secondary source data indicate that about 2,200 persons, or 52 percent of the transportation handicapped residing in Racine County, have difficulty using transit and another 2,100 persons, or 48 percent of the transportation handicapped, are prevented entirely from using transit as a result of their disabilities. Among those who are estimated to have difficulty using transit, approximately 1.900 have trouble getting around and another 400 use aids other than wheelchairs. Among those persons who are prevented from using transit, about 400 use aids other than wheelchairs; another 400 need the help of another person; about 300 use wheelchairs; and almost 1.000 are confined to the house.

The transportation handicapped and elderly survey indicates that about 2,600 persons, or 56 percent of the transportation handicapped residing in Racine County, have difficulty using transit, and another 2,000 persons, or 44 percent of the transportation handicapped, are prevented entirely from using transit due to their disabilities. Among those found by the survey to have difficulty using transit, approximately 1,000 have trouble getting around; about 500 use aids other than wheelchairs; about 900 need help from another person to get around; and about 100 persons use wheelchairs. Among those persons found by the survey to be prevented from using transit as a result of their disabilities, about 200 have trouble getting around; about 300 use aids other than wheelchairs; about 1,000 need help from another person; slightly less than 300 use wheelchairs; and about 300 are confined to the house.

# The Locationally Disadvantaged

An important element in the preparation of an effective plan for improving the mobility of the transportation handicapped is the determination of how many persons would benefit from alterations to the existing fixed route transit system, exclusive of route relocations. Those persons who live beyond a reasonable walking distance from a bus stop would clearly derive minimal or only occasional, benefit from such alteration to bus passenger design as wheelchair lifts or kneeling features and might be better served by development of an effective, publicly sponsored, demand responsive system or user side subsidies, subsidies given directly to the rider. Data collected in the survey indicates that a few persons living in the Racine nonurbanized area have bus service within four blocks from their home. Survey results for these persons are shown in the following tables of the survey data solely as a point of interest. All transportation handicapped persons and all able-bodied elderly persons residing in the nonurbanized area of Racine County are considered in this study to be locationally disadvantaged. As shown in Table 23 and Table 24, three estimates of the numbers of locationally disadvantaged transportation handicapped and able-bodied elderly persons were prepared. The most stringent estimate requires that the person's residence be within one block of a bus route or stop; the medium estimate requires the distance of two blocks; and the least restrictive estimate requires a distance of four blocks. By using these three criteria, a range of the probable numbers of locationally disadvantaged was developed. The survey data indicates a much wider range than that found by the secondary source data estimates. It is important to note that the methodology used to obtain estimates of the locationally disadvantaged from secondary source data employed distance from the bus route as a criterion whereas the survey data collected information on the distance of the respondent's residence from the nearest bus stop.

Racine Urbanized Area: The estimates derived from secondary source data indicate that about 900 transportation handicapped persons in the Racine urbanized area, or 19 percent, are estimated to be more than four blocks from a bus stop; about 1,200, or 26 percent, more than two blocks; and about 1,500, or 33 percent, more than one block. In comparison, the estimates derived from the transportation handicapped and elderly survey indicate that within this urbanized area, about 500 transportation handicapped persons, or 12 percent, live more than four blocks from a bus stop; about 1,000, or 21 percent, more than two blocks; and about 1,900, or 41 percent, more than one block.

Secondary source estimates concerning able-bodied elderly persons indicate that about 800 able-bodied elderly, or 11 percent, live more than four blocks

# ESTIMATES OF THE LOCATIONALLY DISADVANTAGED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF RACINE COUNTY AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

			Tr	ansportation	Handicapp	ed				Able-Bodi	ed Elderly		
	Maximum Allowed Distance of Residence		onally entaged tside ace To oute)	No Disadva (Inside I To Bus	ot intaged Distance Route)	To Popul (Insid Outside To Bus	tal ation le and Distance Route)	Locati Disadva (Out Distan Bus R	onally antaged side ce To oute)	N Disadva (Inside I To Bus	ot Intaged Distance Route}	To Popul (Insid Outside To Bus	tal lation e and Distance Route)
Area	From Bus Route	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Racine Urbanized Area	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	882 1,185 1,506	19.4 26.1 33.2	3,658 3,355 3,034	80.6 73.9 66.8	4,540 4,540 4,540	100.0 100.0 100.0	837 1,251 1,718	11.1 16.6 22.8	6,713 6,299 5,832	88.9 83.4 77.2	7,550 7,550 7,550	100.0 100.0 100.0
Racine Nonurbanized Area		1,994	100.0			1,994	100.0	2,756	100.0			2,756	100.0
Total Racine County	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	2,876 3,179 3,500	44.0 48.7 53.6	3,658 3,355 3,034	56.0 51,3 46.4	6,534 6.534 6,534	100.0 100.0 100.0	3,593 4,007 4,474	34.9 38.9 43.4	6,713 6,299 5,832	65.1 61.1 56.6	10,306 10,306 10,306	100.0 100.0 100.0
Southeastern Wisconsin Region	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	29,677 32,138 35,065	40.5 43.9 47.8	43,613 41,152 38,225	59.5 56.1 52.2	73,290 73,290 73,290	100.0 100.0 100.0	45,988 50,327 55,541	33.1 36.2 40.0	92,893 88,554 83,340	66.9 63.8 60.0	138,881 138,881 138,881	100.0 100.0 100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 24

			Tr	ansportation	h Handicapp	bed		Able-Bodied Elderly					
	Maximum Allowed	Locationally Disadvantaged Not (Outside Disadvantaged Distance To (Inside Distance u Bus Stop) To Bus Stop)		Total Population (Inside and Outside Distance To Bus Stop)		Locationally Disadvantaged (Outside Distance To Bus Stop)		Not Disadvantaged (Inside Distance To Bus Stop)		Total Population (Inside and Outside Distance To Bus Stop)			
Area	From Bus Stop	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Racine Urbanized Area	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	535 961 1,862	11.9 21.4 41.4	3,959 3,533 2,632	88.1 78.6 58.6	4,494 4,494 4,494	100.0 100.0 100.0	1,471 2,460 3,982	17.7 29.6 47.9	6,837 5,848 4,326	82.3 70.4 52.1	8,308 8,308 8,308	100.0 100.0 100.0
Racine Nonurbanized Area	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	1,231 1,231 1,231	92.8 92.8 92.8	95 95 95	7.2 7.2 7.2	1,326 1,326 1,326	100.0 100.0 100.0	3,553 3,553 3,553	100.0 100.0 100.0			3,553 3,553 3,553	100.0 100.0 100.0
Total Racine County	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	1,766 2,192 3,093	30.3 37.7 53.1	4,054 3,628 2,727	69.7 62.3 46.9	5,820 5,820 5,820 5,820	100.0 100.0 100.0	5,024 6,013 7,535	42.4 50.7 63.5	6,837 5,848 4,326	57.6 49.3 36.5	11,861 11,861 11,861	100.0 100.0 100.0
Southeastern Wisconsin Region	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	17,761 26,398 35,805	28.5 42.3 57 4	44,633 35,996 26,589	71.5 57.7 42.6	62,394 62,394 62,394	100.0 100.0	35,353 48,838 71 558	28.2 39.0 57.2	89,809 76,324 53 604	71.8 61.0 42.8	125,162 125,162 125,162	100.0 100.0

### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF THE LOCATIONALLY DISADVANTAGED TRANSPORTATION HANDICAPPED AND ABLE-BODIED RESIDENTS OF RACINE COUNTY

Source: SEWRPC.

from a bus stop; about 1,300, or 17 percent, more than two blocks; and about 1,700, or 23 percent, more than one block. On the other hand, the survey data indicate that about 1,500 of the ablebodied elderly, 18 percent, live more than four blocks from a bus stop; about 2,500, or 30 percent, more than two blocks; and about 4,000, or 48 percent, more than one block. Total Racine County: The estimates of the numbers of locationally disadvantaged persons in Racine County as a whole are strongly influenced by the numbers of persons living in the Racine nonurbanized area. As a result, in total, it is estimated through the use of secondary source data that within Racine County about 2,900 transportation handicapped persons, or 44 percent, are estimated to live more than four blocks from a bus stop; about 3,200, or 49 percent, more than two blocks; and about 3,500, or 54 percent, more than one block. Of the total transportation handicapped persons estimated on the basis of secondary source data to be living in Racine County, between 3,000, or 46 percent, and 3,700, or about 56 percent, are not locationally disadvantaged. In comparison, the survey data indicate that within Racine County, about 1,800 persons, or 30 percent, live more than four blocks from a bus stop; about 2,200 persons, or 38 percent, more than two blocks; and about 3,100 persons, or 53 percent, more than one block. Survey data indicate that, of the total transportation handicapped persons in Racine County, between 2,700 persons, or 47 percent, and 4,100 persons, or about 70 percent, are not locationally disadvantaged.

Estimates based on secondary source data indicate that about 3,600 able bodied elderly, or 35 percent, live more than four blocks from a bus stop; about 4,000, or 39 percent, more than two blocks; and about 4,500, or 43 percent, more than one block. It is estimated on the basis of this secondary source data that in Racine County between 5,800 able-bodied elderly, or 57 percent, and 6,700 ablebodied elderly, or 65 percent, are not locationally disadvantaged. In comparison, survey data indicate that about 5,000 able-bodied elderly, or 42 percent, live more than four blocks from a bus stop; about 6,000, or 51 percent, more than two blocks; and about 7,500, or 64 percent, more than one block. Survey data indicate that in Racine County between 4,300 able-bodied elderly, or 37 percent. and 6,800 able-bodied elderly, or 58 percent, are not locationally disadvantaged.

## Economically Disadvantaged

Another important consideration in the development or alteration of a transit system in Racine County is the establishment of an equitable and feasible fare schedule. Regardless of how effectively designed the system is, if the user cannot afford the fare, the ridership will be low and the system therefore will not perform the primary function of providing for increased mobility among persons in the target group. In order to provide information useful to the consideration of a fare structure, the following discussion examines household annual incomes of the transportation handicapped and able-bodied elderly. It should be noted that, as discussed previously, such data are difficult to obtain and may in some cases exhibit some degree of sampling variability. However, estimates based on 1972 National Health Survey data indicate that within the United States an average of 57 percent of the transportation handicapped and 57 percent of the able-bodied elderly are economically disadvantaged. The estimates below which were derived by applying ratios obtained from local 1976 survey data indicate that in the Region approximately 62 percent of the transportation handicapped and 66 percent of the able-bodied elderly live in households making under \$8,000 a year and consequently, are considered to be economically disadvantaged (see Table 25).

Racine Urbanized Area: Within the Racine Urbanized Area, approximately 60 percent of the transportation handicapped and about 69 percent of the able-bodied elderly live in households making less than \$8,000 a year--that is, are economically disadvantaged. Of the chronically disabled transportation handicapped living in private households in the Racine urbanized area, approximately 1,200 persons, or 39 percent, have a household annual income of less than \$4,000; about 600 persons, or 21 percent, between \$4,000 and \$7,999; about 500 persons, or 16 percent, between \$8,000 and \$11,999, and about 800 persons, or 25 percent, \$12,000 or more. Of the able-bodied elderly living in this area, about 2,700 persons, or 35 percent, have a household annual income of less than \$4,000; about 2,500 persons, or 34 percent, between \$4,000 and \$7,999; about 1,300 persons, or 18 percent, between \$8,000 and \$11,999; and about 1,000 persons, or 14 percent, \$12,000 or more.

Racine Nonurbanized Area: Within the nonurbanized area of Racine County, approximately 53 percent of the transportation handicapped and about 70 percent of the able-bodied elderly are estimated to be economically disadvantaged. Of the chronically disabled transportation handicapped living in private households within the nonurbanized area of Racine County, slightly more than 300 persons, or 28 percent, have a household annual income of less than \$4,000; about 300 persons, or 25 percent, between \$4,000 and \$7,999; about 200 persons, or 18 percent, between \$8,000 and \$11,999; and about 350 persons, or 29 percent, \$12,000 or more. Of the able-bodied elderly living in this nonurbanized area, about 1,100 persons, or 39 percent, have a household annual income of less than \$4,000; about 900 persons, or 31 percent, between \$4,000 and \$7,999; about 600 persons, or 23 percent, between \$8,000 and \$11,999; and about 200 persons, or 7 percent, \$12,000 or more.

# ESTIMATES OF THE CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF RACINE COUNTY BY HOUSEHOLD ANNUAL INCOME

Population	Household Annual		Racine County		Southeastern Wisconsin
Group	Income	Urbanized Area	Nonurbanized Area	Total	Region
Chronically Disabled Transportation	Under \$4,000				
Handicapped	Number Percent	1,205 38.8	335 27.8	1,540 35.7	14,817 29.1
	\$4,000-7,999				
	Number Percent	646 20.8	304 25.2	950 22.0	16,968 33.3
	\$8,000-11,999				
	Number Percent	485 15.6	218 18.1	703 16.3	7,189 14.1
	Over \$12,000				
	Number Percent	771 24.8	349 28.9	1,120 26.0	11,933 23.5
	Total				
	Number Percent	3,107 100.0	1,206 100.0	4,313 100.0	50,907 100.0
Able-Bodied	Under \$4,000				
Eldeny	Number Percent	2,658 35.2	1,067 38.7	3,725 36.2	36,153 26.0
	\$4,000-7,999				
	Number Percent	2,537 33.6	854 31.0	3,391 32.9	55,306 39.8
	\$8,000-11,999				
	Number Percent	1,336 17.7	634 23.0	1,970 19.1	26,161 18.9
	Over \$12,000				
	Number Percent	1,019 13.5	201 7.3	1,220 11.8	21,261 15.3
	Total		<u> </u>		
	Number Percent	7,550 100.0	2,756 100.0	10,306 100.0	138,881 100.0

Source: SEWRPC.

Total Racine County: In total, within Racine County, approximately 58 percent of the transportation handicapped and 69 percent of the ablebodied elderly live in households making less than \$8,000 a year and consequently, are considered to be economically disadvantaged. Of the chronically disabled transportation handicapped living in private households in Racine County, approximately 1,500 persons, or 36 percent, have a household annual income of less than \$4,000; about 1,000 persons, or 22 percent, between \$4,000 and \$7,999; about 700 persons, or 16 percent, between \$8,000 and \$11,999; and about 1,100 persons, or 26 percent, \$12,000 or more. Of the able-bodied elderly residing in Racine County, approximately 3,700, or 36 percent, have a household annual income of less than \$4,000; about 3,400, or 33 percent. between \$4,000 and \$7,999; about 2,000 persons, or 19 percent, between \$8,000 and \$11,999; and about 1,200 persons, or 12 percent, \$12,000 or more.

# ESTIMATES OF THE TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY LIVING IN KENOSHA AND WALWORTH COUNTIES

Extending along the southern boundary of the Region are Kenosha and Walworth Counties. Walworth County, which contains approximately 4 percent of the total resident population in the Southeastern Wisconsin Region, is classified entirely as a nonurbanized area whereas Kenosha County, which contains approximately 7 percent of the resident population of the Region, is composed of both an urbanized and a nonurbanized area. For the purposes of this study, the urbanized area of Kenosha County is defined by the boundaries of planning analysis area 50 and 51 and consists of the majority of the area covered by the City of Kenosha and some small portions of the Towns of Pleasant Prairie and Somers.

It is noteworthy that the survey data obtained for Kenosha County were collected on the basis of a county-wide sampling procedure and similarly expanded. Since no attempt was made to spread the samples geographically on the basis of planning analysis areas, the division of the County into urbanized and nonurbanized areas in analysis of data reveals a slightly skewed distribution of the population. Analysis of the original source documents has revealed that a relatively large number of samples was obtained for the City of Kenosha in areas within the City limits but outside of the

boundaries of planning analysis area 50 and. in some instances, 51. Although the sampling procedure utilized in the transportation handicapped and elderly survey made the likelihood of such an uneven distribution of population very remote, it appears that in comparison to other estimates of the size of the Kenosha urbanized area and nonurbanized area the survey tended to understate the central population of the City of Kenosha while overstating the population which is residing in the outer boundaries of that City. In addition, it should be noted that in Kenosha County 46 samples were obtained from transportation handicapped persons: 32 of those samples fell within the Kenosha urbanized area and 14 samples fell in the Kenosha nonurbanized area. In Walworth County 35 samples were obtained from transportation handicapped persons. As a result of the relatively small number of samples obtained in Walworth County and in the urbanized and nonurbanized areas of Kenosha County, the response patterns found in the survey data for various data arrays presented in the following section may display a wide degree of variation from the normal response patterns observed previously in those subareas containing a larger number of samples.

The Transportation Handi-

capped, Able-Bodied Elderly,

## and Total Population

For a complete understanding of the Kenosha and Walworth County transportation handicapped and able bodied elderly population subgroups, it is useful to relate such subgroups to the total population found in these Counties and subareas thereof. The following discussion of the estimates presented in Table 26 and in Table 27 provides this reference. The estimates presented in Table 26 were derived from secondary source data; the estimates shown in Table 27 were obtained from the transportation handicapped and elderly survey. It is important to note that different total population bases are represented by these two data sources. In the estimating procedure which utilizes secondary source data, the ratios derived from that data were applied to estimates of 1975 total population obtained from the Wisconsin Department of Administration, such estimates being the most current figures available at the time. In the expansion of the household survey data, Wisconsin Department of Administration estimates of 1976 total population were utilized. Due to this use of different time frames and data sources in the two estimating techniques, the total populations shown

# ESTIMATES OF THE TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY, AND TOTAL POPULATION IN KENOSHA AND WALWORTH COUNTIES AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

			Kenosha County		Walworth	Southeastern Wisconsin	
Population Gr	oup	Urbanized Area	Nonurbanized Area	Total	County	Region	
Transportation	Number	3,244	1,349	4,593	3,249	73,290	
Handicapped	Percent	3.6	3.6	3.6	4.8	4.1	
Able-Bodied	Number	6,835	2,493	9,328	6,219	138,881	
Elderly	Percent	7.5	6.7	7.3	9.1	7.7	
Nontransportation Handicapped Under 65 Years of Age	Number Percent	80,649 88.9	33,123 89.6	113,772 89.1	58,540 86.1	1,582,369 88.2	
Total	Number	90,728	36,965	127,693	68,008	1,794,540	
Population ^a	Percent	100.0	100.0	100.0	100.0	100.0	

^aBased on 1975 Wisconsin Department of Administration Estimates.

Source: Wisconsin Department of Administration, Applied Resource Integration, Ltd., and SEWRPC.

### Table 27

### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF THE TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY, AND TOTAL POPULATION IN KENOSHA AND WALWORTH COUNTIES

			Kenosha County		Walworth	Southeastern Wisconsin	
Population Gr	oup	Urbanized Area	Nonurbanized Area	Total	County	Region	
Transportation	Number	2,436	1,833	4,269	2,114	62,394	
Handicapped	Percent	3.2	3.6	3.4	3.3	3.5	
Able-Bodied	Number	5,689	1,805	7,494 6.0	5,363	125,162	
Elderly	Percent	7.6	3.6		8.3	7.1	
Nontransportation Handicapped Under 65 Years of Age	Number Percent	66,959 89.2	46,712 92.8	113,671 90.6	57,020 88.4	1,588,940 89.4	
Total	Number	75,084	50,350	125,434	64,497	1,776,496	
Population ^a	Percent	100.0	100.0	100.0	100.0	100.0	

^aApproximately 20,000 persons in the Region live in mental institutions, college dormitories, penal institutions, detoxification centers, monasteries, convents, and other such group quarters. Since the transportation handicapped and elderly survey was designed to represent solely persons residing in private households, nursing homes, and residential treatment centers, these 20,000 persons living in other group quarters are not included in the survey estimate of total population.

Source: SEWRPC.

in Table 26 and Table 27 are not the same. In addition, further affecting the population distribution in Kenosha County by urbanized area and nonurbanized area is the unexpected distribution of the samples collected within the City of Kenosha, as discussed above.

Kenosha Urbanized Area: Based on secondary source data, the estimated 6,800 able-bodied elderly and 3,200 transportation handicapped persons living in the Kenosha urbanized area constitute almost 8 percent and 4 percent of the total population, respectively, with the remaining 80,600 persons, or 89 percent of the population, being neither transportation handicapped or elderly. Transportation handicapped and elderly survey data indicate that about 5,700 persons in the Kenosha urbanized area, or 8 percent of the population, are able-bodied elderly; about 2,400 persons, or 3 percent of the population, are transportation handicapped; and about 67,000 persons, or 89 percent, are nontransportation handicapped persons under 65 years of age.

Kenosha Nonurbanized Area: Estimates based on secondary source data indicate that approximately 2,500 able-bodied elderly persons, almost 7 percent of the area population, and about 1,300 transportation handicapped persons, almost 4 percent of the area population, reside in the Kenosha nonurbanized area with the remaining 33,100 persons, almost 90 percent of the nonurbanized area population, being neither transportation handicapped or elderly individuals. Transportation handicapped and elderly survey estimates indicate that about 1,800 persons, or about 4 percent of the area population, are able-bodied elderly; another 1,800 persons, also 4 percent of the area population, are transportation handicapped; and about 46,700 persons, or 93 percent of the area population, are neither transportation handicapped or elderly.

Total Kenosha County: In total, Kenosha County, the home of approximately 7 percent of the regional population is estimated to contain about 6 percent of the transportation handicapped and able-bodied elderly populations in the Southeastern Wisconsin Region. Estimates based on secondary source data indicate that, of the 127,700 persons living in Kenosha County, about 4,600, or about 4 percent, are transportation handicapped and about 9,300, or 7 percent, are able-bodied elderly, with the remaining 113,800 persons, or 89 percent, being neither transportation handicapped or elderly. Survey data indicates that in this County about 4,300 persons, or slightly more than 3 percent of the population, are transportation handicapped; about 7,500 persons, or 6 percent, are able-bodied elderly; and about 113,700 persons, or 91 percent, are neither transportation handicapped or elderly. Although there is very little difference between these two sets of estimates in the number of transportation handicapped persons in Kenosha County, there is a range between the survey estimates and the secondary source data estimate of approximately 1,800 persons in the able-bodied elderly category.

Walworth County: In total, Walworth County contains almost 4 percent of the regional population, and similar proportions of the regional transportation handicapped and able-bodied elderly populations. As indicated by the secondary source data, the estimated 3,200 transportation handicapped and 6,200 able-bodied elderly persons residing in Walworth County constitute about 5 percent and 9 percent of the total population, respectively, with the remaining 58,500 persons, or 86 percent of the population, being neither transportation handicapped or elderly. Transportation handicapped and elderly survey data indicate that about 2,100 persons in Walworth County. or about 3 percent of the population, are transportation handicapped; about 5,400 persons, or 8 percent of the population, are able-bodied elderly; and about 57,000 persons, or 88 percent, are nontransportation handicapped persons under 65 years of age. In total, the differences in Walworth County between the two sets of estimates indicate a range of about 1,100 transportation handicapped persons and about 900 able-bodied elderly persons.

# The Transportation Handicapped

# By Type of Limitation

As shown in Table 28 and in Table 29, the transportation handicapped are divided into three primary groups: the institutionalized, the acutely disabled; and the chronically disabled living in private households. The chronically disabled living in the private household category were further subdivided by each of the five mobility limitations: has trouble getting around; uses aid other than a wheelchair; needs help from another person; uses wheelchair; and confined to house. Table 28 presents the estimates of transportation handicapped persons in Kenosha and Walworth Counties by type of limitation as obtained through the application of incidence rates derived from secondary source

		Kenosha County			Southeastern	
Limitation	Urbanized Area	Urbanized Nonurbanized Area Area Total		Walworth County	Wisconsin Region	
Chronically Disabled Living in Private Households: Mobility Limitation						
Has Trouble Getting Around Uses Aid Other Than Wheelchair Needs Help from Another Person Uses Wheelchair Confined to House	1,057 475 242 168 557	405 184 93 66 213	1,462 659 335 234 770	867 425 209 143 473	21,430 9,761 4,940 3,426 11,350	
Total Percent	2,499 77.0	961 71.2	3,460 75.3	2,117 65.2	50,907 69.5	
Acutely Disabled Number Percent	253 7.8	101 7.5	354 7.7	193 5.9	5,048 6.9	
Institutionalized Number Percent	492 15.2	287 21.3	779 17.0	939 28.9	17,335 23.6	
Total Transportation Handicapped Persons Number Percent	3,244	1,349	4,593	3,249 100.0	73,290	

# ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY TYPE OF LIMITATION AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

Source: Applied Resource Integration, Ltd., and SEWRPC.

data. Table 29 presents the equivalent estimates as reported by the transportation handicapped and elderly survey. As previously discussed, the data presented in these two tables do not provide for direct comparison in two major areas; namely, in the acutely disabled, and the confined to house classifications. While in the estimating procedure which utilizes incidence rates the acutely disabled population is separated from the chronically disabled population, in the presentation of the survey data, the chronically and acutely disabled are combined. The second major difference which occurs in the mobility limitation classifications of "confined to house" and "needs help from another person" arises from differences in the phrasing of the questionnaires concerning mobility limitations of the transportation handicapped and elderly

survey and on the 1972 National Health Survey. It is interesting to note that, due to the less restrictive interpretation of the definition of transportation handicapped in deriving the estimates based on secondary source data, the estimates of the number of persons who have trouble getting around in Walworth County are substantially different between the two methodologies; however, this pattern—which has been observed in nearly every subarea in the Region—is not apparent in Kenosha County, either in the urbanized or nonurbanized area.

Kenosha Urbanized Area: The distribution of the transportation handicapped population by primary category within the Kenosha urbanized area is indicated by both sets of data as being significantly

		Kenosha County			Southeastern
Limitation	Urbanized Area	Nonurbanized Area	Total	Walworth County	Wisconsin Region
Chronically and Acutely Disabled ^a Living in Private Households: Mobility Limitation					
Has Trouble Getting Around Uses Aid Other Than Wheelchair . Needs Help from Another Person . Uses Wheelchair Confined To House	1,097    456    371    288    70	435 160 149 149 79	1,532 616 520 437 149	315 210 458 113 103	17,064 8,694 12,641 3,877 3,726
Total Percent	2,282 93.7	972 53.0	3,254 76.2	1,199 56.7	46,002 73.7
Institutionalized Number Percent	154 6.3	861 47.0	1,015 23.8	915 43.3	16,392 26.3
Total Transportation Number Handicapped Persons Percent	2,436 100.0	1,833 100.0	4,269 100.0	2,114 100.0	62,394 100.0

# TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY TYPE OF LIMITATION

^aOn the transportation handicapped and elderly survey, mobility limitation data was collected for both acutely and chronically disabled transportation handicapped persons. "No" responses to the survey question "Have you had this difficulty for longer than three months?" were obtained from only 68 persons in Kenosha County, 35 persons in Walworth County, and 1,786 persons in the Region.

Source: SEWRPC.

different than that distribution found within the Southeastern Wisconsin Region. Due to a relatively small proportion of institutionalized transportation handicapped within this urbanized area, the chronically disabled individuals living in private households represent a larger proportion of the total transportation handicapped than in any other subarea of the Region, with the exception of Ozaukee County.

Estimates based on secondary source data indicate that, of the transportation handicapped in the Kenosha urbanized area, about 300, or 8 percent, are acutely disabled; approximately 500, or 15 percent, are institutionalized; and about 2,500, or 77 percent, are chronically disabled persons living in private households. The distribution by mobility limitation of the chronically disabled persons living in private households in the urbanized area of Kenosha County indicates that about 1,100 persons have trouble getting around; approximately 500 persons use aids other than wheelchairs; about 200 persons need help from another person to get around; another 200 persons use wheelchairs; and about 600 persons are confined to the house.

Survey data indicate that, of the transportation handicapped population in this urbanized area, about 2,300, or 94 percent, are chronically or acutely disabled persons living in private households and about 200, or 6 percent, are institutionalized. Of the 2,300 chronically and acutely disabled transportation handicapped persons living in private households, approximately 1,100 persons have trouble getting around; slightly less than 500 use aids other than wheelchairs; almost 400 need help from another person to get around; almost 300 use wheelchairs; and almost 100 are confined to the house.

Kenosha Nonurbanized Area: As indicated by secondary source data, of the somewhat more than 1,300 transportation handicapped persons in the nonurbanized area, almost 1,000, or 71 percent, are chronically disabled persons living in private households; almost 300, or 21 percent, are institutionalized individuals; and approximately 100, or almost 8 percent, are acutely disabled. Of the 1,000 chronically disabled transportation handicapped persons living in private households in the nonurbanized area of Kenosha County, about 400 have trouble getting around; about 200 use aids other than wheelchairs; about 100 need help from another person; less than 100 use wheelchairs; and about 200 are confined to the house.

The distribution of the transportation handicapped by primary category within the nonurbanized area of Kenosha County, as found on the survey, is heavily influenced by the survey population indicated to be residing in institutions in this nonurbanized area. As indicated previously, the survey data for Kenosha County were collected and expanded on a County basis. It is believed that the resulting distribution of the institutionalized transportation handicapped population in Kenosha County between urbanized area and nonurbanized area as reported by the survey is the product of an unequal distribution of samples within the County and might not accurately reflect these population subgroups by County subarea. In this nonurbanized area, the survey data indicate that slightly less than 1,000 persons, or 53 percent of the transportation handicapped, are chronically and acutely disabled persons living in private households; and almost 900 persons, or 47 percent of the transportation handicapped, are institutionalized individuals. The distribution by mobility limitation of the chronically and acutely disabled persons living in private households in the nonurbanized area of Kenosha County as found by the survey indicates that about 400 people have trouble getting around; about 200 people use aids other than wheelchairs; about 150 people need help from another person to get around; about 150 people use wheelchairs; and about 100 people are confined to the house.

<u>Total Kenosha County</u>: In total, the distribution of the transportation handicapped population within Kenosha County as obtained from secondary source data reflects the low incidence of institutionalized transportation handicapped in the urbanized area of this County. Of the 4.600 transportation handicapped individuals residing in this County, about 3,500, or 75 percent, are chronically disabled persons living in private households; almost 800, or 17 percent, are institutionalized; and slightly less than 400, or 8 percent, are acutely disabled. Of the 3,500 chronically disabled transportation handicapped persons living in private households in Kenosha County, about 1,500 persons have trouble getting around; about 700 persons use aids other than wheelchairs; about 300 persons need help from another person; about 200 persons use wheelchairs; and about 800 persons are confined to the house.

The transportation handicapped and elderly survey data for Kenosha County reflect a higher incidence of institutionalized transportation handicapped for the County as a whole than estimated through the use of secondary source data. Of the 4,300 transportation handicapped individuals found by the survey to be residing in Kenosha County, about 3,300, or 76 percent, are chronically and acutely disabled persons living in private households, and about 1,000, or 24 percent, are institutionalized individuals. Of the 3,300 chronically and acutely disabled transportation handicapped persons living in private households in Kenosha County, somewhat more than 1,500 persons have trouble getting around; about 600 persons use aids other than wheelchairs; slightly more than 500 persons need help from another person to get around; slightly more than 400 persons use wheelchairs; and almost 200 persons are confined to the house.

Walworth County: Estimates derived from secondary source data indicate that of the 3,200 transportation handicapped persons residing in Walworth County, about 2,100, or 65 percent, are chronically disabled individuals living in private households; about 900, or 29 percent, are persons in institutions; and approximately 200, or 6 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped living in private households in Walworth County, approximately 900 have trouble getting around: about 400 use aids other than wheelchairs; about 200 need help from another persons; about 100 wheelchairs; and 500 are confined to use the house.

Although both the secondary source data estimates and the survey estimates indicate almost identical numbers of institutionalized transportation handi-

capped persons residing in Walworth County, the survey estimate of the number of chronically and acutely disabled persons living in private households in this County is only equal to about half of the equivalent estimate obtained by the application of incidence rates to the total population. The survey data indicate that of the 2,100 transportation handicapped persons found to be residing in Walworth County, about 1,200, or 57 percent, are chronically or acutely disabled individuals living in private households, and about 900, or 43 percent. are persons living in institutions. Of the chronically and acutely disabled transportation handicapped living in private households in Walworth County, the survey data indicate that about 300 have trouble getting around; about 200 use aids other than wheelchairs; about 500 need help from another person; about 100 use wheelchairs; and another 100 are confined to the house.

## Transportation Handicapped

## Persons By Age Group

The following discussion presents a summary of the classifications of the transportation handicapped residents of Kenosha and Walworth Counties by three age groups: under 17 years of age; 17 through 64 years of age; and 65 years of age and older. As shown in Table 30 and in Table 31, the distributions of the transportation handicapped populations by age groups show significant differences in Walworth County between the two estimating methodologies; however, this patternwhich has been established in all previously discussed areas of the Region-is not found to be present in the Kenosha urbanized area, although it is clearly observed in the Kenosha nonurbanized area. The differences found in Walworth County and in the Kenosha nonurbanized area between the two data sets are known to be the product of the differences between the two methodologies, as discussed previously in the interpretation of the definition of transportation handicapped.

Kenosha Urbanized Area: Estimates derived from secondary source data indicate that of the transportation handicapped population in this urbanized area, approximately 100 persons, or 4 percent, are under the age of 17; about 1,400 persons, or 42 percent, are 17 through 64 years of age; and about 1,800, or 54 percent, are 65 years of age or older. Survey data indicate that of the transportation handicapped population in this urbanized area, approximately 100 persons, or 3 percent, are under the age of 17; about 1,100, or 46 percent, are 17 through 64 years of age; and about 1,200, or 51 percent, are 65 years of age or older. Kenosha Nonurbanized Area: Estimates based on secondary source data indicate that within the Kenosha nonurbanized area about 4 percent of the transportation handicapped, or about 50 persons, are under the age of 17; about 37 percent, or about 500 persons, are between the ages of 17 through 64; and about 59 percent, or about 800 persons, are 65 years of age or older. Survey data indicate that within the Kenosha nonurbanized area about 8 percent of the transportation handicapped, or about 150 persons, are under the age of 17; about 15 percent, or about 300 persons, are between the ages of 17 through 64; and about 77 percent, or about 1,400 persons, are 65 years of age or older.

Total Kenosha County: Estimates derived from secondary source data indicate that, of the transportation handicapped population in Kenosha County, approximately 200 persons, or 4 percent, are under the age of 17; about 1,800 persons, or 40 percent, are 17 through 64 years of age, and about 2,600 persons, or 56 percent, are 65 years of age or older. In contrast, survey data indicate that, of the transportation handicapped population in this County, approximately 200 persons, or 5 percent, are under the age of 17; about 1,400 persons, or 33 percent, are 17 through 64 years of age; and about 2,700 persons or 62 percent, are 65 years of age or older.

Walworth County: The impact of a relatively large elderly population in Walworth County, as well as a fairly significant number of institutionalized persons under the age of 17, is demonstrated in the distribution of the transportation handicapped by age group as estimated on the basis of secondary source data. The estimates derived from secondary source data indicate that within Walworth County 8 percent of the transportation handicapped, or 300 persons, are under the age of 17; about 29 percent, or 1,000 persons, are between the ages of 17 through 64; and about 63 percent, or 2,000 persons, are 65 years of age or older. In contrast, the survey findings which reflect the relatively large elderly population in Walworth County do not report any significant numbers of institutionalized persons under the age of 17, an understatement which is responsible for the differing age distributions found by the two methodologies for this County. The survey data indicate that within Walworth County 3 percent of the transportation handicapped, or less than 100 persons, are under the age of 17; about 19 percent, or 400 persons, are between the ages of 17 through 64; and about 78 percent, or 1,600 persons, are 65 years of age or older.

# ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY AGE GROUP AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

Age Group		Kenosha County				Southeastern
		Urbanized Area	Nonurbanized Area	Total	Walworth County	Wisconsin Region
Under 17			_			
	Number	123	53	176	260	3,084
	Percent	3.8	3.9	3.8	8.0	4.2
17 through 6	54					
	Number	1,355	495	1,850	956	29,291
	Percent	41.8	36.7	40.3	29.4	40.0
65 and Over						
	Number	1,766	801	2,567	2,033	40,915
	Percent	54.4	59.4	55.9	62.6	55.8
All Ages						
	Number	3,244	1,349	4,593	3,249	73,290
	Percent	100.0	100.0	100.0	100.0	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

### Table 31

## TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY AGE GROUP

Age Group		Kenosha County				Southeastern
		Urbanized Area	Nonurbanized Area	Total	Walworth County	Wisconsin Region
Under 17						
	Number	74	146	220	68	1,993
	Percent	3.0	8.0	5.2	3.2	3.2
17 through 6	4					
	Number	1,116	281	1,397	405	16,688
	Percent	45.8	15.3	32.7	19.2	26.7
65 and Over						
	Number	1,246	1,406	2,652	1,641	43,713
	Percent	51.2	76.7	62.1	77.6	70.1
All Ages						
	Number	2,436	1,833	4,269	2,114	62,394
	Percent	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.
### Difficulty of Transit Use

The estimates of the chronically disabled transportation handicapped living in private households and classified by mobility limitation were subdivided to obtain estimates of the number of transportation handicapped who can use transit although such use is difficult and the number who, due to their disabilities, are entirely prevented from using the existing transit service. The technique used in deriving the estimates from secondary source data correlated mobility limitation with ability to use the bus. Consequently, the percentage distribution of transportation handicapped classified by difficulty using transit, as obtained from the secondary source data estimates, is very similar within each of the subareas. In contrast, the survey required that the sampled individuals state their perception of their ability to use a bus. As a result, the survey data reflect a greater variety of mobility limitation classifications within the "difficult" and "impossible" categories than found in the estimates based on secondary source data. Nevertheless, in total, the resultant percentage distributions of the transportation handicapped population classified by ability to use a bus are very similar for the two estimating techniques. As seen in Tables 32 and 33, the survey data indicate that in the Region about 59 percent of the transportation handicapped population believe that they can use transit, albeit with difficulty; the secondary source data for the comparable figure indicate 51 percent. The following discussion presents the estimates of the transportation handicapped by difficulty of bus use as shown in Table 32 and Table 33 for Kenosha County and Walworth County.

Kenosha Urbanized Area: As indicated in the estimates derived from secondary source data, within the Kenosha urbanized area approximately 1,300 of the transportation handicapped persons, or 51 percent, have difficulty using public transit and another 1,200 persons, or 49 percent, cannot use the existing transit service as a result of their disabilities. Among those who have difficulty using transit are 1,100 individuals who have trouble getting around and another 200 individuals who use aids other than wheelchairs. Among those transportation handicapped who cannot use transit as a result of their disabilities, approximately 300 use an aid other than a wheelchair, 200 need help from another person, another 200 use wheelchairs, and 600 are confined to the house.

The transportation handicapped and elderly survey data indicate that approximately 1,300 persons, or 57 percent of the chronically and acutely disabled

transportation handicapped persons living in private households in the Kenosha urbanized area, have difficulty using transit but can use the public bus system while another 1,000 persons, or 43 percent of such transportation handicapped persons, cannot use the existing transit service at all. Among those who have difficulty using transit are reported to be about 900 individuals who have trouble getting around; about 200 persons who use aids other than wheelchairs; and about 100 persons who need help from another person to get around. Among those transportation handicapped who cannot use transit as a result of their disabilities, approximately 200 have trouble getting around; another 200 use aids other than wheelchairs; another 200 need help from another person; about 300 use wheelchairs; and about 100 are confined to the house.

Kenosha Nonurbanized Area: Based on secondary source data estimates, within the nonurbanized area of Kenosha County approximately 500 persons, or 51 percent of the transportation handicapped, have difficulty using transit and slightly less than 500 persons, or 49 percent of the transportation handicapped, cannot use transit at all as a result of their disabilities. Among those who have difficulty using transit, about 400 persons have trouble getting around and about 100 persons use aids other than a wheelchair. Among those persons who are prevented from using transit as a result of their disabilities, about 100 use aids other than wheelchairs, another 100 need the help of another person; less than 100 use wheelchairs; and about 200 are confined to the house.

For this nonurbanized area the estimates derived from the survey data are almost identical to the secondary source data estimates described above. As reported in the survey, within the nonurbanized area of Kenosha County approximately 500 persons, or 51 percent of the transportation handicapped, have difficulty using transit and slightly less than 500 persons, or 49 percent of the transportation handicapped, are prevented from using transit as a result of their disabilities. Among those who have difficulty using transit, about 300 persons have trouble getting around; about 100 persons use aids other than wheelchairs; and about 100 persons need help from another person to get around. Among those persons who cannot use transit at all as a result of their disabilities, about 100 persons have trouble getting around; about 100 persons use aids other than wheelchairs; another 100 persons need help from another

## ESTIMATES OF CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED PERSONS LIVING IN PRIVATE HOUSEHOLDS IN KENOSHA AND WALWORTH COUNTIES BY DEGREE OF DIFFICULTY USING TRANSIT AND MOBILITY LIMITATION AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

			Chronically Disabled Transportation Handicapped Persons Living in Private Households							
				Kenosha County		Southeastern				
Degree of Difficulty	Mobilit Limitati	MobilityUrbanizedNonurbanizedLimitationAreaArea		Total	Walworth County	Wisconsin Region				
Has Difficulty Using Transit	Has Trouble Getting A Uses Aid Other Than V	1,057 224	405 86	1,462 310	867 200	21,430 4,587				
	Subtotal	Number Percent	1,281 51.3	491 51.1	1,772 51.2	1,067 50.4	26,017 51.1			
Cannot Use Transit	Uses Aid Other Than V Needs Help from Anot Uses Wheelchair Confined to House	Vheelchair her Person	251 242 168 557	98 93 66 213	349 335 234 770	225 209 143 473	5,174 4,940 3,426 11,350			
	Subtotal	Number Percent	1,218 48.7	470 48.9	1,688 48.8	1,050 49.6	24,890 48.9			
Total Chronically Disabled Number Living in Private Households Percent		2,499 100.0	961 100.0	3,460 100.0	2,117 100.0	50,907 100,0				

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 33

#### TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF CHRONICALLY AND ACUTELY DISABLED TRANSPORTATION HANDICAPPED PERSONS LIVING IN PRIVATE HOUSEHOLDS IN KENOSHA AND WALWORTH COUNTIES BY DEGREE OF DIFFICULTY USING TRANSIT AND MOBILITY LIMITATIONS

			Chronically and Acutely Disabled Transportation Handicapped Persons Living in Private Households								
				Kenosha County		Southeastern					
Degree of Difficulty	Mobi Limita	lity ation	Urbanized Area	Nonurbanized Area	Total	Walworth County	Wisconsin Region				
Has Difficulty	Has Trouble Getting	Around	925	335	1,260	315	13,957				
Using Transit	Uses Aid Other Tha	n Wheelchair	232	80	312	104	5,547				
	Needs Help from Ar	other Person 👢	147	79	226	179	6,706				
	Uses Wheelchair	••••				36	835				
	Subtotal	Number	1,304	494	1,798	634	27,045				
		Percent	57.1	50.8	55.3	52.9	58.8				
Cannot Use	Has Trouble Getting	Around	172	100	272		3.107				
Transit	Uses Aid Other Tha	h Wheelchair	224	80	304	106	3,147				
	Needs Help from Ar	other Person	224	70	294	279	5,935				
	Uses Wheelchair		288	149	437	77	3,042				
	Confined to House	•••••	70	79	149	103	3,726				
	Subtotal	Number	978	478	1,456	565	18,957				
		Percent	42.9	49.2	44.7	47.1	41.2				
Total Chronically	Total Chronically and Acutely Disabled Number		2,282	972	3.254	1,199	46.002				
Living in Private	Households	Percent	100.0	100.0	100.0	100.0	100.0				

Source: SEWRPC.

person to get around; slightly more than 100 persons use wheelchairs; and about 100 persons are confined to the house.

Total Kenosha County: In total, estimates derived from secondary source data indicate that about 1,800 persons, or 51 percent of the transportation handicapped residing in Kenosha County, have difficulty using transit and another 1,700 persons, or 49 percent of the transportation handicapped, are prevented entirely from using transit as a result of their disabilities. Among those who have difficulty using transit, approximately 1,500 have trouble getting around and another 300 use aids other than wheelchairs. Among those persons who are prevented from using transit, about 300 use aids other than wheelchairs; another 300 need the help of another person; about 200 use wheelchairs; and about 800 are confined to the house.

Estimates based on the survey data indicate that in Kenosha County approximately 1.800 persons, or 55 percent of the transportation handicapped, have difficulty using transit and about 1,500 persons, or 45 percent of the transportation handicapped, are prevented entirely from using transit as a result of their disabilities. Among those who have difficulty using transit, approximately 1,300 persons have trouble getting around; about 300 persons use aids other than wheelchairs; and about 200 persons need help from another person to get around. Among those who cannot use transit as a result of their disabilities, almost 300 persons have trouble getting around; about 300 persons use aids other than wheelchairs; another 300 persons need help from another person to get around; about 400 persons use wheelchairs; and slightly more than 100 persons are confined to the house.

Walworth County: Estimates based on secondary source data indicate that approximately 1,100 persons, or 50 percent of the transportation handicapped in Walworth County, would have difficulty using transit but could use a public bus system. Another 1,100 persons, 50 percent of the transportation handicapped in Walworth County, cannot use an existing public bus system at all. Among those persons in Walworth County who would have difficulty using transit, approximately 900 have trouble getting around and another 200 use an aid other than a wheelchair. Among those transportation handicapped persons in Walworth County who cannot use transit, approximately 200 use an aid other than a wheelchair; another 200 need help from another person; about 100 use a wheelchair; and about 500 are confined to the house.

Although the numbers of transportation handicapped reported by the survey data are considerably fewer than such numbers derived from secondary source data, the percentage distributions of the transportation handicapped population by difficulty of bus use are very similar in Walworth County. The survey data indicate that slightly more than 600 persons, or 53 percent of the transportation handicapped in Walworth County, have difficulty using transit and slightly less than 600 persons, or 47 percent of the transportation handicapped, are prevented entirely from using transit as a result of their disabilities. Among those persons who would have difficulty in using transit in Walworth County, about 300 have trouble getting around; about 100 use aids other than wheelchairs; about 200 need help from another person to get around; and less than 50 use wheelchairs. Among those persons who are prevented from using transit, about 100 use aids other than wheelchairs; about 300 need help from another person to get around; about 100 use wheelchairs; and another 100 are confined to the house.

## The Locationally Disadvantaged

An important element in the preparation of an effective plan for improving the mobility of the transportation handicapped is the determination of how many persons would benefit from alterations-exclusive of route relocation-to the existing fixed route transit system. Those persons who live beyond a reasonable walking distance from a bus stop would clearly derive minimal, or only occasional, benefit from alterations to passenger bus design, such as wheelchair lifts, or kneeling features, and might be better served by development of an effective, publicly sponsored, demand responsive system or user side-subsidies. Data collected in this survey indicate that a few persons living in Walworth County and in the nonurbanized area of Kenosha County have bus service within four blocks of their home. In some cases this service consists of a local service; in other cases, a form of local service is provided by the intercity bus lines on routes which allow boarding and deboarding at any point on the route. In most instances, the number and percent of the transportation handicapped or able-bodied elderly population who are living in these nonurbanized or "rural" areas and indicate they have some form of bus service available to them represent such small portions of the population as to be considered negligible totals. However, a rather substantial group of persons, 800 transportation handicapped individuals, or 42 percent of the transportation handicapped residing in the Kenosha nonurbanized

area, is reported to be within one block of a bus stop in this nonurbanized area. Analysis of the survey findings indicated that approximately 700 of these individuals are residing in the County institutions which are located immediately outside the boundary line of the urbanized area and are served by the Kenosha Transit Service. Survey data pertaining to persons in Walworth County and in the Kenosha nonurbanized area who indicate that they live within four blocks of bus service are shown in the following tabular presentations solely as a point of interest. All transportation handicapped persons and all able-bodied elderly persons residing in these two areas are considered in this study to be locationally disadvantaged (see Table 34 and Table 35).

Three estimates of the numbers of the locationally disadvantaged transportation handicapped and ablebodied elderly persons were prepared. The most stringent estimate requires that the person's residence be within one block of a bus stop or route; the medium estimate requires a distance of two blocks; and the least restrictive estimate requires a distance of four blocks. By using these three criteria, a range of probable numbers of locationally disadvantaged was developed. The survey data indicates a much wider range and higher total of locationally disadvantaged transportation handicapped and able-bodied elderly persons than that found by the secondary source data estimate in the Kenosha urbanized area. It is important to note that the methodology utilized to obtain estimates of the locationally disadvantaged from secondary source data employed distance from the bus route as a criterion whereas the survey data collected information concerning the distance of the respondent's residence from the nearest bus stop.

Kenosha Urbanized Area: The estimates derived from secondary source data indicate that only 100 transportation handicapped persons in this urbanized area, or 3 percent, are estimated to live more than four blocks from a bus route; about 300, or 9 percent, more than two blocks; and about 700, or 21 percent, more than one block. In contrast, survey data indicates that about 400 transportation handicapped persons in this urbanized area, or 17 percent, live more than four blocks from a bus stop; about 800, or 33 percent, more than two blocks; and about 1,400, or 56 percent, more than one block.

Based on secondary source data, it is estimated that within this urbanized area only 200 ablebodied elderly, or 3 percent, live more than four blocks from a bus route; about 500, or 8 percent, more than two blocks; and about 1,400, or 20 percent, more than one block. On the other hand, survey data indicates that about 300 able-bodied

#### Table 34

#### ESTIMATES OF THE LOCATIONALLY DISADVANTAGED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF KENOSHA AND WALWORTH COUNTIES AS DERIVED FROM INCIDENCE RATES BASED ON SECONDARY SOURCE DATA

			Tr	ansportation	Handicapp	bed		[		Able-Bodi	ed Elderly		
	Maximum Allowed Distance of Residence		Locationally Disadvantaged (Outside Distance To Bus Route)		Not Disadvantaged (Inside Distance To Bus Route)		Total Population (Inside and Outside Distance To Bus Route)		Locationally Disadvantaged (Outside Distance To Bus Route)		Not Disadvantaged (Inside Distance To Bus Route)		tal ation e and Distance Route)
Area	From Bus Route	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha Urbanized Area	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	109 289 689	3.4 8.9 21.2	3,135 2,955 2,555	96.6 91.1 78.8	3,244 3,244 3,244	100.0 100.0 100.0	174 525 1,386	2.5 7.7 20.3	6,661 6,310 5,449	97.5 92.3 79.7	6,835 6,835 6,835	100.0 100.0 100.0
Kenosha Nonurbanized Area		1,349	100.0			1,349	100.0	2,493	100.0			2,493	100.0
Total Kenosha County	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	1,458 1,638 2,038	31.7 35.7 44.4	3,135 2,955 2,555	68.3 64.3 55.6	4,593 4,593 4,593	100.0 100.0 100.0	2,667 3,018 3,879	28.6 32.4 41.6	6,661 6,310 5,449	71.4 67.6 58.4	9,328 9,328 9,328 9,328	100.0 100.0 100.0
Walworth County		3,249	100.0			3,249	100.0	6,219	100.0			6,219	100.0
Southeastern Wisconsin Region	Four Blocks to Bus Route Two Blocks to Bus Route One Block to Bus Route	29,677 32,138 35,065	40.5 43.9 47.8	43,613 41,152 38,225	59.5 56.1 52.2	73,290 73,290 73,290	100.0 100.0 100.0	45,988 50,327 55,541	33.1 36.2 40.0	92,893 88,554 83,340	66.9 63.8 60.0	138,881 138,881 138,881	100.0 100.0 100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

elderly, or 5 percent, live more than four blocks from a bus stop; about 900, or 15 percent, more than two blocks; and about 2,700, or 48 percent, more than one block.

Total Kenosha County: Both sets of estimates of the numbers of locationally disadvantaged in total Kenosha County are strongly influenced by the numbers of persons living in the Kenosha nonurbanized area. Comparison of the data obtained in the survey with the data obtained through the use of secondary source information for Kenosha County as a whole indicates a much greater degree of similarity between the two sets of estimates than found in the Kenosha urbanized area. Based on secondary source data, it is estimated that within Kenosha County about 1,500 transportation handicapped persons, or 32 percent, live more than four blocks from a bus route; about 1,600 persons, or 36 percent, more than two blocks; and about 2,000 persons, or 44 percent, more than one block. Of the total transportation handicapped persons in Kenosha County, estimates based on secondary source data indicate that between 2,600, or 56 percent, and 3,100, or 68 percent, are not locationally disadvantaged. Estimates based on the transportation handicapped and elderly survey indicate that about 1,500 transportation handicapped persons, or 35 percent, live more than four blocks from a bus stop; about 1,900 persons, or 44 percent, more than two blocks; and about 2,400 persons, or 57 percent, more than one block. Of the total transportation handicapped persons reported by the survey in Kenosha County, between 1,800, or 43 percent, and 2,800, or 65 percent, are not locationally disadvantaged.

Estimates based on secondary source data indicate that of the 9,300 able-bodied elderly persons residing in Kenosha County, about 2,700 able-bodied elderly, or 29 percent, live more than four blocks from a bus route; about 3,000, or 32 percent, more than two blocks; and about 3,900, or 42 percent, more than one block. The secondary source data estimates indicate that in Kenosha County between 5,400 and 6,700 able-bodied elderly persons, or between 58 percent and 71 percent, respectively, are not locationally disadvantaged. Survey data pertaining to Kenosha County indicates that about 2,000 able-bodied elderly, or 27 percent, live more than four blocks from a bus stop; about 2,600, or 35 percent, more than two blocks; and about 4,400, or 59 percent, more than one block. It is reported in the survey that in Kenosha County between 3,000 and 5,500 able-bodied elderly persons, or between 41 percent and 73 percent, respectively, are not locationally disadvantaged.

#### Table 35

TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY ESTIMATES OF THE LOCATIONALLY DISADVANTAGED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF KENOSHA AND WALWORTH COUNTIES

								<u> </u>					
			Tr	ansportation	h Handicapp	ped				Able-Bodi	ed Elderly		
	Maximum Allowed Distance of Residence	Locationally Disadvantaged (Outside Distance To Bus Stop)		Not Disadvantaged (Inside Distance To Bus Stop)		Total Population (Inside and Outside Distance To Bus Stop)		Locationally Disadvantaged (Outside Distance To Bus Stop)		Not Disadvantaged (Inside Distance To Bus Stop)		Total Population (Inside and Outside Distance To Bus Stop)	
Area	From Bus Stop	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenosha Urbanized Area	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	404 792 1,356	16.6 32.5 55.7	2,032 1,644 1,080	83.4 67.5 44.3	2,436 2,436 2,436	100.0 100.0 100.0	306 863 2,729	5.4 15.2 48.0	5,383 4,826 2,960	94.6 84.8 52.0	5,689 5,689 5,689 5,689	100.0 100.0 100.0
Kenosha Nonurbanized Area	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	1,072 1,072 1,072	58.5 58.5 58.5	761 761 761	41.5 41.5 41.5	1,833 1,833 1,833	100.0 100.0 100.0	1,719 1,719 1,719	95.2 95.2 95.2	86 86 86	4.8 4.8 4.8	1,805 1,805 1,805	100.0 100.0 100.0
Total Kenosha County	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	1,476 1,864 2,428	34.6 43.7 56.9	2,793 2,405 1,841	65.4 56.3 43.1	4,269 4,269 4,269	100.0 100.0 100.0	2,025 2,582 4,448	27.0 34.5 59.4	5,469 4,912 3,046	73.0 65.5 40.6	7,494 7,494 7,494	100.0 100.0 100.0
Walworth County	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	2,114 2,114 2,114	100.0 100.0 100.0		 	2,114 2,114 2,114	100.0 100.0 100.0	5,109 5,183 5,290	95.3 96.6 98.6	254 180 73	4.7 3.4 1.4	5,363 5,363 5,363	100.0 100.0 100.0
Southeastern Wisconsin Region	Four Blocks to Bus Stop Two Blocks to Bus Stop One Block to Bus Stop	17,761 26,398 35,805	28.5 42.3 57.4	44,633 35,996 26,589	71.5 57.7 42.6	62,394 62,394 62,394	100.0 100.0 100.0	35,353 48,838 71,558	28.2 39.0 57.2	89,809 76,324 53,604	71.8 61.0 42.8	125,162 125,162 125,162	100.0 100.0 100.0

Source: SEWRPC.

## Economically Disadvantaged

Another important consideration in the development or alteration of transit systems in Kenosha and Walworth Counties is the establishment of an equitable and feasible fare schedule. Regardless of how effectively designed the system is, if the user cannot afford the fare, the ridership will be low and the system will not, therefore, perform the primary function of providing for increased mobility among persons in the target groups. The following discussion examines the household annual incomes of the transportation handicapped and able-bodied elderly. It should be noted that, as discussed previously, such data are difficult to obtain and may in some cases exhibit some degree of sampling variability. However, estimates based on 1972 National Health Survey data indicate that within the United States an average of 57 percent of the transportation handicapped and 57 percent of the able-bodied elderly are economically disadvantaged. The estimates below, which were derived through application of ratios obtained from local 1976 survey data, indicate that in the Region approximately 62 percent of the transportation handicapped and 66 percent of the ablebodied elderly live in households making under \$8,000 a year and consequently are considered to be economically disadvantaged. Therefore, although the following estimates are based on small sample survey data, on an overall basis these estimates are similar to the national data and warrant serious consideration (see Table 36).

Kenosha Urbanized Area: Within the Kenosha urbanized area approximately 60 percent of the transportation handicapped and about 51 percent of the able-bodied elderly live in households making less than \$8,000 a year--i.e., are economically disadvantaged. Of the chronically disabled transportation handicapped living in private households in the Kenosha Urbanized Area, approximately 800 persons, or 32 percent, have a household annual income of less than \$4,000; about 700 persons, or 28 percent, between \$4,000 and \$7,999; about 300 persons, or 13 percent, between \$8,000 and \$11,999; and about 700 persons, or 27 percent, \$12,000 or more. Of the able-bodied elderly living in this area, about 1,700 persons, or 25 percent, have a household annual income of less than \$4,000; about 1,800 persons, or 26 percent, between \$4,000 and \$7,999; another 1,700 persons, or 25 percent, between \$8,000 and \$11,999; and about 1,600 persons, or 24 percent, \$12,000 or more.

Kenosha Nonurbanized Area: Within the nonurbanized area of Kenosha County approximately 72 percent of the transportation handicapped and about 74 percent of the able-bodied elderly are estimated to be economically disadvantaged. Of the chronically disabled transportation handicapped living in private households within the nonurbanized area of Kenosha County, about 300 persons, or 28 percent, live in households making less than \$4,000 a year; about 400 persons, or 44 percent, between \$4,000 and \$7,999 a year; almost 200 persons, or 17 percent, between \$8,000 and \$11,999 a year; and about 100 persons, or 11 percent, \$12,000 or more a year. Of the ablebodied elderly living in this nonurbanized area, about 600 persons, or 23 percent, live in households making less than \$4,000 a year; about 1,300 persons, or 51 percent, between \$4,000 and \$7,999; about 400 persons, or 16 percent, between \$8,000 and \$11,999; and about 200 persons, or 10 percent, \$12,000 or more.

Total Kenosha County: In total, within Kenosha County approximately 64 percent of the transportation handicapped and 57 percent of the ablebodied elderly live in households making less than \$8,000 a year and therefore are considered to be economically disadvantaged. Of the chronically disabled transportation handicapped living in private households in Kenosha County, almost 1,100, or 31 percent, have a household annual income of less than \$4,000 a year; another 1,100 persons, or 32 percent, between \$4,000 and \$7,999; about 500, or 14 percent, between \$8,000 and \$11,999; and about 800, or 22 percent, more than \$12,000 a year. Of the able-bodied elderly living in this County, about 2,300 persons, or 24 percent, are members of households making under \$4,000 a year; about 3,100 persons, or 33 percent; between \$4,000 and \$7,999; about 2,100 persons, or 23 percent, between \$8,000 and \$11,999; and about 1,900 persons, or 20 percent, more than \$12,000 a year.

<u>Walworth County</u>: In Walworth County approximately 67 percent of the transportation handicapped and 76 percent of the able-bodied elderly live in households making less than \$8,000 a yeari.e., are economically disadvantaged. Of the chronically disabled transportation handicapped living in private households in Walworth County, approximately 700, or 33 percent, are members of households with an annual income of less than \$4,000 a year; slightly more than 700, or 34 percent, between \$4,000 and \$7,999 a year; about 500, or

# ESTIMATES OF THE CHRONICALLY DISABLED TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDENTS OF KENOSHA AND WALWORTH COUNTIES BY HOUSEHOLD ANNUAL INCOMES

	Household		Kenosha County			Southoostorn
Population	Annual	Urbanized	Nonurbanized		Walworth	Wisconsin
Group	Income	Area	Area	Total	County	Region
Chronically Disabled	Under \$4,000					
Transportation	Number	810	272	1,082	705	14,817
Handicapped	Percent	32.4	28.3	31.3	33.3	29.1
	\$4,000-7,999					
	Number	694	423	1,117	720	16,968
	Percent	27.8	44.0	32.3	34.0	33.3
	\$8,000-11,999					
	Number	330	159	489	504	7,189
	Percent	13.2	16.6	14.1	23.8	14.1
	\$12,000 or More					
	Number	665	107	772	188	11,933
	Percent	26.6	11.1	22.3	8.9	23.5
	Total					
	Number	2,499	961	3,460	2,117	50,907
	Percent	100.0	100.0	100.0	100.0	100.0
Able-Bodied Elderly	Under \$4,000					
	Number	1,702	571	2,273	2,090	36,153
	Percent	24.9	22.9	24.4	33.6	26.0
	\$4,000-7,999					
	Number	1,784	1,281	3,065	2,649	55,306
	Percent	26.1	51.4	32.9	42.6	39.8
	\$8,000-11,999					
	Number	1,709	394	2,103	715	26,161
	Percent	25.0	15.8	22.5	11.5	18.9
	\$12,000 or More					
	Number	1,640	247	1,887	765	21,261
	Percent	24.0	9.9	20.2	12.3	15.3
	Total					
	Number Percent	6,835 100.0	2,493 100.0	9,328 100.0	6,219 100.0	138,881 100.0

Source: SEWRPC.

24 percent, between \$8,000 and \$11,999 a year; and about 200, or 9 percent, \$12,000 or more a year. Of the able bodied elderly living in Walworth County, about 2,100, or 34 percent, have household annual incomes of less than \$4,000; about 2,600, or 43 percent, between \$4,000 and \$7,999; about 700, or 11 percent, between \$8,000 and \$11,999; and about 800, or 12 percent, \$12,000 or more.

## SUMMARY

Sound data relevant to the size, composition, and spatial distribution of the transportation handicapped and able-bodied elderly are essential to any study of the transportation needs of the elderly and handicapped. To provide accurate data on such relatively small subgroups of the general population, careful attention must be given to the construction of the estimating methodology. In this study, two distinct, independent estimates of these population subgroups were obtained through utilization of two contrasting methodologies, namely: 1) estimation of these populations through application to the total population of incidence rates obtained from secondary source data, and 2) estimation of these populations through expansion of primary source data obtained in a random sample survey of households and institutions in the Region, conducted by the SEWRPC as a part of the Elderly and Handicapped Transportation Study. By comparing these two estimates, a measure of the reliability of the estimates is established, an understanding of the ranges within which these estimates are encompassed is enhanced, and the possibility of severely overstating or understating the number of persons in these population groups is diminished.

As a mechanism in the survey procedure, a prerequisite for collection of mobility limitation data was the establishment of either difficulty with bus use due to a mental or physical problem or the establishment of the elderly status of the members of the responding household. This is the converse of the procedure utilized in the estimates derived from secondary source data in that mobility limitations were the prerequisite to a determination that a population group would find bus use to be difficult. As a result, the survey estimates represent that segment of the population which is included within the confines of a strict interpretation of the definition of transportation handicapped persons as those persons who perceive that they have difficulty with bus use as a result of their disabilities. In contrast, the estimates derived through the use of secondary source data equate mobility limitation with difficulty of bus use and, as such, represent a less restrictive interpretation of the definition of transportation handicapped. The estimates based on secondary source data indicate that there are 73,290 transportation handicapped persons in the Region; the survey data indicate that there are 62,394 such persons in the Region, a difference of about 15 percent between the two estimates. Following adjustment for the strict versus less restrictive interpretation of the definition of the transportation handicapped employed by the two methodologies, the true difference between the two estimates is found to consist of approximately 1.500 persons, or only about 2 percent.

It is recognized that actually not all persons suffering from a mobility limitation-particularly the least restrictive mobility limitation of having "trouble getting around"-are transportation handicapped in that they do not perceive that their mobility limitation affects in any way their ability to use a public bus; and, indeed, it may not. However, in devising transportation system alternatives, it is not practical to rely upon a definition of a transportation handicapped person that depends upon that person's perception of personal difficulty in using a bus as a means of establishing eligibility for use of the system. Therefore, although the strict criterion used in the survey more narrowly quantifies those persons who perceive difficulty with transit use due to a mental or physical problem or disability, the estimate obtained through applying to the total population incidence rates derived from secondary sources provides a functional and realistic estimate of the total population which would probably be eligible for any special program or funding effort. This is true even though such an estimate is less restrictive and extends beyond a strict interpretation of the definition of transportation handicapped. Therefore, although the survey estimate of transportation handicapped population is accurate within the strict confines of the definition and, thereby, provides a reasonable lower limit for the estimates of the transportation handicapped population groupas well as having provided an instrument through which the degree of reliability of secondary source data estimates could be greatly improved-the estimates derived from the use of secondary source data are considered to be the most functional in terms of plan development and implementation. Consequently, those estimates obtained by applying to the total population incidence rates

derived from secondary source data were selected as the population total to be utilized in the plan design. They may be utilized in the planning process with confidence that not only are these estimates within acceptable limits of reliability but also that these estimates are sufficiently broad so as to avoid unintentionally eliminating any eligible handicapped or elderly population segment from the plan design.

In order that the reader may make his or her own comparisons, the data derived from both estimating methodologies have been included.

This chapter presents the estimates of the transportation handicapped and able-bodied elderly as obtained through these two differing methodologies. In this chapter, the transportation handicapped and able-bodied elderly were quantified by type, by mobility limitation, by age, by degree of difficulty encountered in transit use, by the number who are locationally disadvantaged, and by the number who are economically disadvantaged. Those findings, which are salient to the study effort, are summarized below for each of the analysis areas (SMSA's, urban and nonurban areas, and counties) discussed in this chapter as well as for the entire Region.

## Estimates Obtained Through

#### Use of Secondary Source Data

Milwaukee SMSA: Residing in the Milwaukee SMSA are about 58,900 transportation handicapped persons and about 113,000 able bodied elderly persons, or approximately 80 and 81 percent, respectively, of such persons in the Southeastern Wisconsin Region. Of the transportation handicapped in the Milwaukee SMSA, about 4,000. or 7 percent, are acutely disabled; almost 13,900, or 24 percent, are institutionalized; and about 41,000, or 70 percent, are chronically disabled persons living in private households. Of these chronically disabled persons, about 17,200 have trouble getting around; about 7,900 use aids other than wheelchairs; about 4,000 need help from another person; about 2,800 use wheelchairs; and about 9,200 are confined to the house. Within this SMSA about 4 percent of the transportation handicapped population are under 17 years of age; about 40 percent are between the ages of 17 through 64; and about 56 percent are 65 years of age or older. Among the chronically disabled transportation handicapped persons living in private households in the Milwaukee SMSA, approximately 20,900 persons, or 51 percent, can use the

public bus system, albeit with difficulty, and another 20,100 persons, or 49 percent, cannot use the existing transit service at all as a result of their disabilities. It is estimated that within the Milwaukee SMSA between 38 percent and 45 percent of the transportation handicapped residents and between 30 percent and 36 percent of the able-bodied elderly residents are locationally disadvantaged; that is, do not live within reasonable walking distance of a public transit route. In addition, within this SMSA approximately 63 percent of the transportation handicapped and 65 percent of the able-bodied elderly live in households making less than \$8,000 a year—i.e., are economically disadvantaged.

Milwaukee Urbanized Area: Residing in the Milwaukee urbanized area are approximately 102,500 able-bodied elderly and about 52,800 transportation handicapped, or approximately 90 percent of the transportation handicapped and able-bodied elderly persons in the entire Milwaukee SMSA. Of the total transportation handicapped population in the Milwaukee SMSA, about 36,800, or 70 percent, are chronically disabled persons living in private households; about 12,400, or 23 percent, are persons that are institutionalized; and another 3,600, or 7 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped persons living in private households, approximately 15,500 have trouble getting around; about 7,100 use aids other than wheelchairs; about 3,600 need help from another person; about 2,500 use wheelchairs; and 8,200 are confined to the house. Of the total transportation handicapped population in the urbanized area, approximately 3 percent are under the age of 17; about 40 percent are 17 through 64 years of age; and 57 percent are 65 years of age or older. Within this urbanized area, approximately 18,800 persons, or 51 percent of the chronically disabled transportation handicapped living in private households, have difficulty using public transit and another 18,100 persons, or 49 percent, cannot use the existing transit service as a result of their disability. It is estimated that between 30 percent and 38 percent of the transportation handicapped persons living within the Milwaukee urbanized area and between 22 percent and 30 percent of the able-bodied elderly in this area are locationally disadvantaged. In addition handicapped and about 66 percent of the abletion handicapped and about 66 percent of the able bodied elderly in this urbanized area are considered to be economically disadvantaged.

Milwaukee Nonurbanized Area: It is estimated that about 10,500 able-bodied elderly and about 6,100 transportation handicapped are residing in the nonurbanized, or "rural" area, of the Milwaukee SMSA. Of the 6,100 transportation handicapped persons in the nonurbanized area, slightly less than 4,200, or 68 percent, are chronically disabled persons living in private households; another 1,500, or 24 percent, are institutionalized individuals; and almost 500, or 8 percent, are acutely disabled. The distribution by mobility limitation of the chronically disabled persons living in private households in the nonurbanized area of the Milwaukee SMSA indicates that about 1,800 persons have trouble getting around; about 800 persons use aids other than wheelchairs; about 400 persons need help from another person to get around; about 300 persons use wheelchairs; and 900 persons are confined to the house. In this area, about 6 percent of the total transportation handicapped are under the age of 17; about 38 percent are between the ages of 17 through 64; and about 56 percent are 65 years of age and older. Within this nonurbanized area, approximately 2,100 persons, or 51 percent of the chronically disabled transportation handicapped living in private households would have difficulty using transit, and about 2,000 such persons, or 49 percent, could not use public transit at all. All transportation handicapped and able-bodied elderly persons residing in the nonurbanized area of the Milwaukee SMSA are considered to be locationally disadvantaged since they reside in areas without any extensive public transit service. In addition, it is estimated that within this nonurbanized area approximately 76 percent of the transportation handicapped and 63 percent of the able-bodied elderly are economically disadvantaged.

Racine Urbanized Area: Approximately 69 percent of the transportation handicapped and 73 percent of the able-bodied elderly persons in Racine County reside within the urbanized area of that County. This urbanized area is estimated to contain approximately 7.600 able-bodied elderly and about 4,500 transportation handicapped persons. Of the transportation handicapped population in the Racine urbanized area, about 3,100, or 68 percent, are chronically disabled persons living in private households; another 300, or 8 percent, are acutely disabled individuals; and about 1,100, or 24 percent, are institutionalized. Of the chronically disabled transportation handicapped persons living in private households in the Racine urbanized area, approximately 1,300 have trouble getting around; about 600 use aids other than wheelchairs; about 300 need help from another person; about 200 use wheelchairs; and about 700 are confined to the house. Of the total transportation handicapped residing in this urbanized area, about 4 percent are under the age of 17; about 42 percent are between the ages of 17 through 64; and about 54 percent are 65 years of age and older. Of the chronically disabled transportation handicapped living in private households in the urbanized area of Racine County, approximatey 1,600, or 52 percent, can use transit although such use is difficult, and another 1,500, or 48 percent, are entirely prevented from using the existing transit service as a result of their disabilities. It is estimated that within the Racine urbanized area between 19 percent and 33 percent of the transportation handicapped residents and between 11 percent and 23 percent of the able-bodied elderly residents are locationally disadvantaged. In addition, within this urbanized area approximately 60 percent of the transportation handicapped and about 69 percent of the able-bodied elderly are considered to be economically disadvantaged.

Racine Nonurbanized Area: The nonurbanized area of Racine County is estimated to contain approximately 2,000 transportation handicapped persons, or 31 percent of the transportation handicapped in the County, and about 2,800 able-bodied elderly persons, or about 27 percent of the able-bodied elderly in the County. Review of the percentage distribution of transportation handicapped in the Racine nonurbanized area by type indicates a substantial difference from the distribution found in the urbanized area and in the Southeastern Wisconsin Region. This difference, which results from the relatively larger portion of institutionalized transportation handicapped in this subarea, reflects the population of a single institution, Southern Colony. Of the 2,000 transportation handicapped persons in the nonurbanized area, about 1,200, or slightly more than 60 percent, are chronically disabled persons living in private households; another 600, or 32 percent, are institutionalized individuals; and about 200, or 8 percent, are acutely disabled. Of the chronically disabled persons living in private households in the nonurbanized area of Racine County, about 500 persons have trouble getting around; 200 persons use aids other than wheelchairs; 100 persons need help from another person to get around; 100 persons use wheelchairs; and 300 persons are confined to the house. Within this nonurbanized area, about 22 percent of the transportation handicapped are under the age of 17; about 50 percent between

17 through 64 years of age; and about 29 percent are 65 years of age or older. Slightly more than 600 persons, or 52 percent of the chronically disabled transportation handicapped persons living in private households in the nonurbanized area of Racine County, would have difficulty using transit and slightly less than 600 such persons, or 48 percent, cannot use transit at all as a result of their disabilities. All transportation handicapped and able-bodied elderly persons residing in the nonurbanized area of Racine County are considered to be locationally disadvantaged. In addition, within this nonurbanized area approximately 53 percent of the transportation handicapped and about 70 percent of the able-bodied elderly are estimated to be economically disadvantaged.

Kenosha Urbanized Area: Approximately 71 percent of the transportation handicapped and 73 percent of the able-bodied elderly persons in Kenosha County live within the urbanized area of that County. The urbanized area of Kenosha County is estimated to contain approximately 6,800 able-bodied elderly and 3,200 transportation handicapped persons. Due to a relatively small proportion of institutionalized transportation handicapped within this urbanized area, the chronically disabled individuals living in private households represent a much larger portion of the total transportation handicapped than in any other subarea of the Region with the exception of Ozaukee County. Of the transportation handicapped in the Kenosha urbanized area, about 300, or 8 percent, are acutely disabled; approximately 500, or 15 percent, are institutionalized; and about 2,500, or 77 percent, are chronically disabled persons living in private households. The distribution by mobility limitation of the chronically disabled persons living in private households in this urbanized area indicates: about 1,100 persons have trouble getting around; 500 persons use aids other than wheelchairs; 200 persons need help from another person to get around; 200 persons use wheelchairs; and 600 persons are confined to the house. Of the total transportation handicapped population in this area, 4 percent are under the age of 17; 42 percent are 17 through 64 years of age; and 54 percent are 65 years of age or older. Within the Kenosha urbanized area, approximately 1,300 persons, or 51 percent of the chronically disabled transportation handicapped persons living in private households, have difficulty using public transit and another 1,200 such persons, or 49 percent, cannot use the existing transit service as a result of their disability. It is estimated that within the Kenosha urbanized area, between

3 percent and 21 percent of the transportation handicapped residents and between 3 percent and 20 percent of the able-bodied elderly residents are locationally disadvantaged. In addition, within this urbanized area approximately 60 percent of the transportation handicapped and about 51 percent of the able-bodied elderly live in households making less than \$8,000 a year—i.e., are economically disadvantaged.

Kenosha Nonurbanized Area: The nonurbanized area of Kenosha County is estimated to contain approximately 29 percent of the transportation handicapped in the County and about 27 percent of the able-bodied elderly. It is estimated that about 2,500 able-bodied elderly and somewhat more than 1,300 transportation handicapped are residing in this nonurbanized or "rural" area. Of the slightly more than 1,300 transportation handicapped persons in the nonurbanized area, almost 1,000, or 71 percent, are chronically disabled persons living in private households; almost 300, or 21 percent, are institutionalized individuals; and approximately 100, or almost 8 percent, are acutely disabled. Of the 1,000 chronically disabled transportation handicapped persons living in private households in the nonurbanized area of Kenosha County, about 400 have trouble getting around; 200 use aids other than wheelchairs; 100 need help from another person; less than 100 use wheelchairs; and 200 are confined to the house. About 4 percent of the transportation handicapped in this area are under the age of 17; about 37 percent are between the ages of 17 through 64; and about 59 percent are 65 years of age and older. Within the nonurbanized area of Kenosha County, approximately 500 persons, or 51 percent, have difficulty using transit and slightly less than 500 persons, or 49 percent, cannot use transit at all. All transportation handicapped and all able-bodied elderly persons residing in the nonurbanized area of Kenosha County are considered to be locationally disadvantaged. In addition, within this nonurbanized area approximately 72 percent of the transportation handicapped and about 74 percent of the able-bodied elderly are estimated to be economically disadvantaged.

Kenosha County: Residing in Kenosha County are approximately 4,600 transportation handicapped persons, or 6 percent of the transportation handicapped residing in the Region, and approximately 9,300 able-bodied elderly persons, or about 7 percent of the able-bodied elderly residing in the Southeastern Wisconsin Region. The distribution of the transportation handicapped population within Kenosha County reflects the low incidence of institutionalized transportation handicapped in the urbanized area of this County. Of the 4,600 transportation handicapped individuals residing in Kenosha County, about 3,500, or 75 percent, are chronically disabled persons living in private households; almost 800, or 17 percent, are institutionalized; and slightly less than 400, or 8 percent, are acutely disabled. Of the 3,500 chronically disabled transportation handicapped persons living in private households in Kenosha County, about 1,500 have trouble getting around: 700 use aids other than wheelchairs; 300 need help from another person; 200 use wheelchairs; and 800 are confined to the house. About 4 percent of the transportation handicapped in Kenosha County are under 17 years of age; about 40 percent are between the ages of 17 through 64; and 56 percent are 65 years of age or older. About 1,800 persons, or 51 percent of the chronically disabled transportation handicapped living in private households in Kenosha County, have difficulty using transit and another 1,700 persons, or 49 percent, are prevented entirely from using transit as a result of their disabilities. It is estimated that within Kenosha County between 32 percent and 44 percent of the transportation handicapped and between 29 percent and 42 percent of the able-bodied elderly are locationally disadvantaged. In addition, within this County, approximately 64 percent of the transportation handicapped and 57 percent of the able-bodied elderly live in households making less than \$8,000 a year and, as such, are considered to be economically disadvantaged.

Milwaukee County: Estimated to be living in Milwaukee County are about 63 percent of the transportation handicapped and about 67 percent of the able-bodied elderly persons residing in the Region and about 78 percent and 82 percent, respectively, of such persons residing in the Milwaukee SMSA. Of the total 1,009,200 persons estimated to be living in Milwaukee County, approximately 92,600, or 9 percent, are ablebodied elderly residents and about 46,100, or almost 5 percent, are transportation handicapped residents. Of these transportation handicapped individuals in Milwaukee County, an estimated 31,900, or 69 percent, are chronically disabled persons who live in private households; about 11,300, or 25 percent, are institutionalized; and another 2,900, or 6 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped living in private households in Milwaukee County, about 13,200 have trouble

getting around; about 6,300 use aids other than wheelchairs: 3.100 need help from another person; about 2,100 use wheelchairs; and about 7,200 are confined to the house. Within Milwaukee County, only 3 percent of the transportation handicapped are under the age of 17; about 39 percent are between the ages of 17 through 64; and about 58 percent are 65 years of age or older. About 16,200 persons, or 51 percent of the chronically disabled transportation handicapped living in private households in Milwaukee County, have difficulty using transit and another 15,700 such persons, or 49 percent, are prevented entirely from using transit as a result of their disabilities. Between 20 percent and 29 percent of the transportation handicapped and between 14 percent and 22 percent of the able-bodied elderly in Milwaukee County are locationally disadvantaged. In addition, within this County approximately 65 percent of the transportation handicapped and about 66 percent of the able-bodied elderly are considered to be economically disadvantaged.

Ozaukee County: Approximately 3,600 able-bodied elderly persons, or 6 percent of the County population, and 1,900 transportation handicapped persons, or 3 percent of the population, are estimated to be residing in Ozaukee County. Due to a very small institutionalized population reported by the 1970 census in Ozaukee County, the distribution of transportation handicapped by primary grouping is significantly different than the distribution found in the remainder of the Milwaukee SMSA or within the Southeastern Wisconsin Region. Of the transportation handicapped in Ozaukee County, somewhat less than 200, or 9 percent, are institutionalized individuals; about 200, almost 10 percent, are acutely disabled individuals; and, 1,500, or 81 percent, are chronically disabled transportation handicapped who live in private households. Of these chronically disabled transportation handicapped persons living in private households in Ozaukee County, about 700 have trouble getting around; almost 300 use aids other than wheelchairs; slightly more than 100 need help from another person; about 100 use wheelchairs; and approximately 300 are confined to the house. Of the total transportation handicapped in this County, approximately 5 percent are under the age of 17; approximately 49 percent are between the ages of 17 through 64; and 46 percent are 65 years of age and older. About 800 persons, or 52 percent of the chronically disabled transportation handicapped living in private households in Ozaukee County, have difficulty using transit and another 700 persons, or 48 percent, are prevented entirely from using transit as a result of their disabilities. All transportation handicapped persons and all able-bodied elderly persons residing in Ozaukee County are considered to be locationally disadvantaged. In addition, it is estimated that within Ozaukee County, approximately 69 percent of the transportation handicapped and about 64 percent of the able-bodied elderly are economically disadvantaged.

Racine County: Racine County contains approximately 6,500 transportation handicapped, or 9 percent of the transportation handicapped residing in the Region, and approximately 10,300 able bodied elderly, or about 7 percent of the able bodied elderly residing in the Southeastern Wisconsin Region. Of the 6,500 transportation handicapped persons in Racine County, about 4,300, or 66 percent, are chronically disabled persons living in private households; about 500, or 8 percent, are acutely disabled; and about 1,700, or 26 percent, are institutionalized. The distribution by mobility limitation of the chronically disabled persons living in private households in Racine County indicates that about 1,900 persons have trouble getting around; almost 800 persons use aids other than wheelchairs; about 400 persons need help from another person to get around; about 300 persons use wheelchairs; and almost 1,000 persons are confined to the house. Due to the influence of the relatively young institutionalized population found in the nonurbanized area of Racine County, the transportation handicapped population in this County exhibits the youngest age characteristics of any county or analysis subarea in the Region. About 9 percent of the total transportation handicapped in this County are under the age of 17: almost 45 percent are between the ages of 17 through 64; and about 46 percent are 65 years of age and older. About 2,200 persons, or 52 percent of the chronically disabled transportation handicapped living in private households in Racine County, have difficulty using transit and another 2,100 such persons, or 48 percent, are prevented entirely from using transit as a result of their disability. Within Racine County between 44 percent and 54 percent of the transportation handicapped and between 35 percent and 43 percent of the able-bodied elderly are estimated to be locationally disadvantaged. In addition, within this County approximately 58 percent of the transportation handicapped and 69 percent of the ablebodied elderly live in households making less than \$8,000 a year and consequently are considered to be economically disadvantaged.

Walworth County: Living in Walworth County are an estimated 3,200 transportation handicapped individuals, or 4 percent of the transportation handicapped in the Region, and approximately 6,200 able-bodied elderly, or about 5 percent of the able-bodied elderly in the Region. Of the transportation handicapped persons residing in Walworth County, about 2,100, or 65 percent, are chronically disabled individuals living in private households; about 900, or 29 percent, are persons in institutions; and approximately 200, or 6 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped living in private households in Walworth County, approximately 900 have trouble getting around; 400 use aids other than wheelchairs; 200 need help from another person; 100 use wheelchairs; and 500 are confined to the house. Within Walworth County, 8 percent of the transportation handicapped are under the age of 17; about 29 percent are between the ages of 17 through 64; and about 63 percent are 65 years of age or older. Approximately 1,100 of the chronically disabled transportation handicapped persons living in private households in Walworth County would have difficulty using transit but could use a public bus system, and another 1,100 such persons cannot use an existing public bus system at all due to their disabilities. All transportation handicapped and all able-bodied elderly persons residing in Walworth County are considered to be locationally disadvantaged. In addition, in Walworth County approximately 67 percent of the transportation handicapped and 76 percent of the able-bodied elderly live in households making less than \$8,000 a year-i.e., are economically disadvantaged.

Washington County: In Washington County there are about 4,400 able-bodied elderly persons and slightly more than 2,600 transportation handicapped persons. Of these transportation handicapped persons, about 1,800, or 69 percent, are chronically disabled persons living in private households; about 600, or 24 percent, are institutionalized; and about 200, or 8 percent, are acutely disabled. Of the chronically disabled transportation handicapped persons living in private households in Washington County, about 800 have trouble getting around; 300 use aids other than wheelchairs; 200 need help from another person; 100 use wheelchairs; and 400 are confined to the house. Of the total transportation handicapped in this County, about 5 percent are under the age of 17; about 40 percent are between the ages of 17 through 64; and about 56 percent are 65 years of age or older. Somewhat more than 900 persons, or 51 percent of the chronically disabled transportation handicapped persons living in private households in Washington County have difficulty using transit and slightly less than 900 persons, or 49 percent, are prevented entirely from using transit as a result of their disabilities. All transportation handicapped and all able-bodied elderly persons residing in Washington County are considered to be locationally disadvantaged. In addition, in this County it is estimated that approximately 83 percent of the transportation handicapped and about 70 percent of the able-bodied elderly may be economically disadvantaged.

Waukesha County: The second most populous county in the Milwaukee SMSA, Waukesha County accounts for about 14 percent of the transportation handicapped persons and almost 11 percent of the able-bodied elderly persons residing in the Milwaukee SMSA. There are estimated to be 12,300 able-bodied elderly and about 8,200 transportation handicapped persons living in Waukesha County. Of the transportation handicapped persons residing in Waukesha County, about 5,700, or 70 percent, are chronically disabled individuals living in private households; about 1,800, or 21 percent, are persons in institutions; and approximately 700, or 9 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped living in private households in Waukesha County, approximately 2,500 have trouble getting around; 1,000 use aids other than wheelchairs; 500 need help from another person; 400 use wheelchairs; and 1,300 are confined to the house. Of the transportation handicapped population in this County, about 7 percent are under 17 years of age; about 44 percent are 17 through 64 years of age; and about 49 percent are 65 years of age or older. Within Waukesha County approximately 3,000 persons, or 52 percent of the chronically disabled transportation handicapped living in private households, have difficulty using public transit and another 2,700 such persons, or 48 percent, cannot use the existing transit service as a result of their disabilities. All transportation handicapped and all able-bodied elderly persons residing in Waukesha County are considered to be locationally disadvantaged. In addition, it is estimated that within this County approximately 42 percent of the transportation handicapped and 60 percent of the able-bodied elderly are considered to be economically disadvantaged.

Southeastern Wisconsin Region: In total, in the Southeastern Wisconsin Region there are estimated to be 73,300 transportation handicapped indi-

viduals, or about 4 percent of the total resident population of the Region, and about 138,900 ablebodied elderly persons, or about 8 percent of the total resident population of the Region. Of the 73,300 transportation handicapped individuals in the Region, an estimated 50,900, or 69 percent, are chronically disabled persons who live in private households: about 17,300, or 24 percent, are institutionalized; and another 5,000, or 7 percent, are acutely disabled individuals. Of the chronically disabled transportation handicapped persons living in private households in the Region, about 21,400 have trouble getting around; about 9,800 use aids other than wheelchairs; approximately 4,900 need help from another person; about 3,400 use wheelchairs; and about 11,400 are confined to the house. Of the total transportation handicapped in the Region, about 4 percent are under the age of 17; about 40 percent are between the ages of 17 and 64; and about 56 percent are 65 years of age through 64; and about 56 percent are 65 years of age and older. Of the chronically disabled transportation handicapped living in private households in or 51 percent, can use transit although such use is difficult, and about 24,900, or 49 percent, are entirely prevented from using the existing transit service as a result of their disabilities. It is estimated that within the Region between 41 percent and 48 percent of the transportation handicapped residents and between 33 percent and 40 percent of the able-bodied elderly residents are locationally disadvantaged. In addition, within this Region approximately 62 percent of the transportation handicapped and 66 percent of the able-bodied elderly live in households making under \$8,000 a year and therefore are considered to be economically disadvantaged.

# Estimates Obtained Through the Transportation Handicapped

# and Elderly Survey

<u>Milwaukee SMSA</u>: Survey data indicate that residing in the Milwaukee SMSA are about 50,200 transportation handicapped persons and 100,400 able-bodied elderly persons, or approximately 80 percent of such persons in the Southeastern Wisconsin Region. Of the transportation handicapped in the Milwaukee SMSA, about 13,300 persons, or 26 percent, are institutionalized and about 36,900 persons, or 74 percent, are chronically or acutely disabled persons living in private households. Of the chronically and acutely disabled persons, about 14,100 are reported to have trouble getting around; about 7,000 use aids other than wheelchairs; about 9,800 need help from another person; about 2,900 use wheelchairs; and about 3,200 are confined to the house and cannot get out at all. Within the SMSA, the survey reports that about 3 percent of the transportation handicapped population are under 17 years of age; about 28 percent between the ages of 17 through 64; and about 69 percent are 65 years of age or older. Among the chronically and acutely disabled transportation handicapped persons living in private households in the Milwaukee SMSA, approximately 22,000, or 60 percent, have difficulty using transit but can use the public bus system; and another 14,900, or 40 percent, cannot use the existing transit service at all. Survey data indicates that within the Milwaukee SMSA about 20,200 persons, or 40 percent of the transportation handicapped, live more than two blocks from a bus stop and about 35,100 able-bodied elderly, or 35 percent, live more than two blocks from a bus stop. Within this SMSA, approximately 63 percent of the transportation handicapped and 65 percent of the able-bodied elderly live in households making less than \$8,000 a year-i.e., are economically disadvantaged.

Milwaukee Urbanized Area: The survey results indicate that in the Milwaukee urbanized area about 45,000 persons, or 4 percent of the resident population, are transportation handicapped and about 90,600 persons, or 7 percent of the population, are able-bodied elderly. About 33,000 persons, or 73 percent of the transportation handicapped, are chronically or acutely disabled persons living in private households, and about 12,000 persons, or 27 percent of the transportation handicapped, are institutionalized individuals. Of the chronically and acutely disabled transportation handicapped living in private households reported by the survey, about 11,900 persons in the urbanized area have trouble getting around; about 6,700 persons use aids other than wheelchairs; about 9,000 need help from another person when they go out; about 2,700 use wheelchairs; and about 2,800 persons are confined to the house. Of the transportation handicapped population in the urbanized area, approximately 3 percent are under the age of 17; 28 percent between the ages of 17 through 64 years; and 69 percent are 65 years of age or older. Within this urbanized area, approximately 19,400 persons, or 59 percent of the chronically and acutely disabled transportation handicapped living in private households, have difficulty using public transit and another 13,600 persons, or 41 percent, are prevented from using the existing transit service due to their disabilities. Survey data indicate that within this urbanized area, about

15,100 transportation handicapped persons, or 34 percent, and about 25,500 able-bodied elderly persons, or 28 percent, live more than two blocks from a bus stop. Approximately 61 percent of the transportation handicapped and about 66 percent of the able-bodied elderly in this urbanized area are considered to be economically disadvantaged.

Milwaukee Nonurbanized Area: The transportation handicapped and elderly survey estimates of the nonurbanized area population indicate that about 9,800 persons, or about 5 percent of the population, are able-bodied elderly, and about 5,200 persons, or 3 percent of the population, are transportation handicapped. Survey data indicate that somewhat more than 3,900 persons, or 76 percent of the transportation handicapped, are chronically and acutely disabled persons living in private households, and slightly more than 1,200 persons, or 24 percent of the transportation handicapped, are institutionalized individuals. Of those chronically and acutely disabled persons living in private households, about 2,200 persons have trouble getting around; almost 400 persons use aids other than wheelchairs; almost 800 persons need help from another person to get around; almost 300 persons use wheelchairs; and about 300 persons are confined to the house. The survey data indicate that about 2 percent of the transportation handicapped in this area are under the age of 17; about 24 percent between the ages of 17 through 64; and about 75 percent, 65 years of age or older. Within this nonurbanized area, approximately 2,600 persons, or 67 percent of the chronically and acutely disabled transportation handicapped persons living in private households, have difficulty using transit, and about 1,300 persons, or 33 percent, cannot use transit at all. All transportation handicapped and able-bodied elderly residing in the nonurbanized area of the Milwaukee SMSA are considered for the purposes of this study to be locationally disadvantaged. It is estimated that, within this nonurbanized area, approximately 76 percent of the transportation handicapped and 63 percent of the able-bodied elderly are economically disadvantaged.

Racine Urbanized Area: Survey data indicate that within this urbanized area are about 8,300 ablebodied elderly, or about 8 percent of the total population, and about 4,500 transportation handicapped, or about 4 percent of the total population. Of the transportation handicapped population in this urbanized area, about 3,500, or 77 percent, are chronically or acutely disabled persons living in private households, and about 1,000, or 23 percent, are institutionalized. Of the chronically and acutely disabled transportation handicapped persons living in private households, approximately 800 persons have trouble getting around; about 700 use aids other than wheelchairs; about 1,500need help from another person; about 300 use wheelchairs; and about 200 are confined to the house. The survey indicate that about 2 percent of the transportation handicapped in the Racine urbanized area are under the age of 17; about 21 percent between the ages of 17 through 64; and about 77 percent, 65 years of age or older. Approximately 1,800 persons, or 51 percent of the transportation handicapped in this urbanized area, can use public transit, although with difficulty, whereas about 1,700 persons, or 49 percent of the handicapped, cannot use transportation the existing transit service at all. Survey data indicate that about 1,000 persons, or 21 percent of the transportation handicapped, and about 2,500 ablebodied elderly, or 30 percent, live more than two blocks from a bus stop. Within this urbanized area, approximately 60 percent of the transportation handicapped and about 69 percent of the ablebodied elderly are considered to be economically disadvantaged.

Racine Nonurbanized Area: The survey estimate, which does not include the population residing in Southern Colony, indicates that there are in this nonurbanized area about 3,600 able - bodied elderly, or about 5 percent of the nonurbanized area population, and about 1,300 transportation handicapped persons, or about 2 percent of the nonurbanized area population. Of the 1,300 transportation handicapped persons in the Racine nonurbanized area, about 1,200, or 87 percent, are chronically and acutely disabled persons living in private households; another 200 persons, or 13 percent, live in institutions other than Southern Colony. Of the chronically and acutely disabled persons living in private households in the nonurbanized area of Racine County, somewhat more than 300 persons have trouble getting around; about 200 persons use aids other than wheelchairs; about 400 persons need help from another person to get around; slightly more than 100 persons use wheelchairs; and about 100 persons are confined to the house. The survey data indicate that about 4 percent of the transportation handicapped are under the age of 17; about 9 percent between 17 through 64 years of age; and about 87 percent, 65 years of age or older. It is important to note that this age distribution reflects a population estimate derived from a sample which excluded the

population of Southern Colony-a large portion of which is under the age of 17. Survey estimates indicate that, within this nonurbanized area, slightly more than 800 persons, or 71 percent of the transportation handicapped, can use existing transit service, albeit with difficulty, and about 300 persons, or 29 percent of the transportation handicapped, cannot use transit at all. All transportation handicapped and able-bodied elderly persons residing in the nonurbanized area of Racine County are considered for the purposes of this study to be locationally disadvantaged. Within this nonurbanized area, approximately 53 percent of the transportation handicapped and about 70 percent of the able-bodied elderly are estimated to be economically disadvantaged.

Kenosha Urbanized Area: Transportation handicapped and elderly survey data indicate that about 5,700 persons in the Kenosha urbanized area, or 8 percent of the population, are able-bodied elderly and about 2,400 persons, or 3 percent of the population, are transportation handicapped. Of the transportation handicapped population in this urbanized area, about 2,300, or 94 percent, are chronically or acutely disabled persons living in private households, and about 200, or 6 percent, are institutionalized. Of the chronically and acutely disabled transportation handicapped persons living in private households, approximately 1,100 persons have trouble getting around, somewhat less than 500 use aids other than wheelchairs; almost 400 need help from another person to get around; almost 300 use wheelchairs; and almost 100 are confined to the house. Survey data indicate that approximately 3 percent of the transportation handicapped are under the age of 17; about 46 percent, 17 through 64 years of age; and about 51 percent, 65 years of age or older. Approximately 1,300 persons, or 57 percent of the chronically and acutely disabled transportation handicapped persons living in private households in the Kenosha urbanized area, have difficulty using transit but can use the public bus system while another 1,000 persons, or 43 percent of such transportation handicapped persons, cannot use the existing transit service at all. Survey data indicate that about 800 transportation handicapped persons, or 33 percent, and about 900 able-bodied elderly persons, or 15 percent, live more than two blocks from a bus stop. Within this urbanized area, approximately 60 percent of the transportation handicapped and about 51 percent of the able-bodied elderly live in households making less than \$8,000 a year-that is, are economically disadvantaged.

Kenosha Nonurbanized Area: Transportation handicapped and elderly survey estimates indicate that about 1,800 persons, or about 4 percent of the area population, are able-bodied elderly and another 1,800 persons, also 4 percent, are transportation handicapped. In this nonurbanized area, the survey data indicate that slightly less than 1,000 persons, 53 percent of the transportation handicapped, are chronically and acutely disabled persons living in private households, and almost 900 persons, or 47 percent of the transportation handicapped, are institutionalized individuals. Of the chronically and acutely disabled persons living in private households within this nonurbanized area, about 400 people have trouble getting around; about 200 people use aids other than wheelchairs; about 150 people need help from another person to get around; about 150 use wheelchairs; and about 100 people are confined to the house. Survey data indicate that about 8 percent of the transportation handicapped in the Kenosha nonurbanized area are under the age of 17; about 15 percent between the ages of 17 through 64; and about 77 percent, 65 years of age or older. Within the nonurbanized area of Kenosha County, survey data indicate that approximately 500 persons, or 51 percent of the transportation handicapped, have difficulty using transit, and slightly less than 500 persons, or 49 percent, are prevented from using transit as a result of their disabilities. All transportation handicapped and all able-bodied elderly persons residing in the nonurbanized area of Kenosha County are considered to be locationally disadvantaged. In addition, within this nonurbanized area approximately 72 percent of the transportation handicapped and about 74 percent of the able-bodied elderly are estimated to be economically disadvantaged.

Kenosha County: Survey data indicate that in this County, about 4,300 persons, or slightly more than 3 percent of the population, are transportation handicapped, and about 7,500 persons, or 6 percent of the population, are able-bodied elderly. Of the transportation handicapped individuals found by the survey to be residing in Kenosha County, about 3,300, or 76 percent, are chronically and acutely disabled persons living in private households and about 1,000, or 24 percent, are institutionalized individuals. Of the chronically and acutely disabled transportation handicapped persons, somewhat more than 1,500 have trouble getting around; about 600 use aids other than wheelchairs; slightly more than 500 need help from another person to get around; slightly more than

400 use wheelchairs; and almost 200 are confined to the house. Survey data indicate that of the transportation handicapped population in this County, about 5 percent are under the age of 17; about 33 percent, 17 through 64 years of age; about 62 percent, 65 years of age or older. In Kenosha County, approximately 1,800 persons, or 55 percent of the transportation handicapped, have difficulty using transit and about 1,500 persons, or 45 percent of the transportation handicapped, are prevented entirely from using transit as a result of their disability. Estimates based on the transportation handicapped and elderly survey indicate that about 1,900 transportation handicapped persons, or 44 percent, and about 2,600 able-bodied elderly, or 35 percent, live more than two blocks from a bus stop. Within this County, approximately 64 percent of the transportation handicapped and 57 percent of the able-bodied elderly live in households making less than \$8,000 a year and consequently, are considered to be economically disadvantaged.

Milwaukee County: The survey indicates that within Milwaukee County live approximately 83,200 able-bodied elderly persons, or 8 percent of the total population, and about 39,700 transportation handicapped persons, or 4 percent of the total population. Approximately 29,400 persons, or 74 percent of the transportation handicapped population in Milwaukee County, are chronically or acutely disabled persons living in private households while 10,300 persons, or about 26 percent of the transportation handicapped population, are institutionalized individuals. Of the chronically and acutely disabled persons living in private households, about 10,700 have trouble getting around; about 6,100 use aids other than wheelchairs; about 8,100 need help from another person to get around; about 2,300 use wheelchairs; and about 2.200 are confined to the house. Survey data indicate that within Milwaukee County almost 3 percent of the transportation handicapped are under the age of 17; almost 30 percent between the ages of 17 through 64; and almost 68 percent, 65 years of age or older. As reported by the survey, about 17,300 persons, or 59 percent of the chronically and acutely disabled transportation handicapped residing in private households in this County, have difficulty using transit and another 12,100 persons, or 41 percent, are prevented entirely from using transit as a result of their disabilities. Estimates based on survey data indicate that about 10,700 transportation handicapped persons, or 27 percent, and about 18,500 able-bodied elderly persons, or

22 percent, live more than two blocks away from a bus stop. Within this County approximately 65 percent of the transportation handicapped and about 66 percent of the able bodied elderly are considered to be economically disadvantaged.

Ozaukee County: The transportation handicapped and elderly survey indicates that about 1,400 persons, or 2 percent of the Ozaukee County population, are transportation handicapped and about 2,400 persons, or about 4 percent of the County population, are able-bodied elderly. The data obtained from the transportation handicapped and elderly survey reflect the growth observed in the institutional population in Ozaukee County between 1970 and the present. Based on survey data, approximately 400 persons, or 29 percent of the transportation handicapped population in Ozaukee County, are shown to be institutionalized and about 1,000 persons, or 71 percent of the transportation handicapped population in this County, are chronically or acutely disabled persons living in private households. Of such disabled persons, about 400 have trouble getting around; about 100 use aids other than wheelchairs; less than 50 need help from another person to get around; slightly more than 100 use wheelchairs; and about 300 are confined to the house. Survey data indicate that within Ozaukee County slightly less than 500 persons, or 48 percent of the chronically and acutely disabled transportation handicapped living in private households, have difficulty using transit and another 500 persons, or 52 percent, are prevented entirely from using transit as a result of their disability. All transportation handicapped persons and all able-bodied elderly persons residing in Ozaukee County are considered to be locationally disadvantaged. In addition, it is estimated that within Ozaukee County, approximately 69 percent of the transportation handicapped and about 64 percent of the able-bodied elderly are economically disadvantaged.

Racine County: The transportation handicapped and elderly survey indicates that in this County live approximately 5,800 transportation handicapped persons, or 3 percent of the total County population, and about 11,900 able-bodied elderly persons, or about 7 percent of the County population. Survey estimates, which exclude the population of Southern Colony, indicate that within the whole of Racine County, there are about 4,600 persons, or 79 percent of the transportation handicapped, who are chronically and acutely disabled individuals living in private households and another 1,200 persons, 21 percent of the transportation handicapped, who are residing in institutions other than Southern Colony. Of the chronically and acutely disabled persons living in private households, almost 1,200 have trouble getting around; almost 900 use aids other than wheelchairs; almost 1,900 need help from another person to get around; almost 400 use wheelchairs; and about 300 are confined to the house. Of the total transportation handicapped in this Countyexclusive of the population of Southern Colonyabout 2 percent are under the age of 17; about 19 percent between 17 through 64 years of age; and about 79 percent, 65 years of age or older. The transportation handicapped and elderly survey indicates that about 2,600 persons, or 56 percent of the transportation handicapped residing in Racine County, have difficulty using transit, and another 2,000 persons, or 44 percent of the transportation handicapped, are prevented entirely from using transit due to their disabilities. Within County about 2,200 transportation handicapped persons, or 38 percent, and about 6,000 ablebodied elderly persons, or 51 percent, are reported to live more than two blocks from a bus stop. Within this County approximately 58 percent of the transportation handicapped and 69 percent of the able-bodied elderly live in households making less than \$8,000 and, as such, are considered to be economically disadvantaged.

Walworth County: Transportation handicapped and elderly survey data indicate that about 2,100 persons in Walworth County, or about 3 percent of the population, are transportation handicapped and about 5,400 persons, or 8 percent of the population, are able-bodied elderly. The survey data indicate that, of the 2,100 transportation handicapped persons found to be residing in Walworth County, about 1,200, or 57 percent, are chronically or acutely disabled individuals living in private households and about 900, or 43 percent, are persons living in institutions. Of the chronically and acutely disabled transportation handicapped, the survey data indicate that about 300 have trouble getting around; about 200 use aids other than wheelchairs; about 500 need help from another person; about 100 use wheelchairs; and another 100 are confined to the house. The survey data indicate that slightly more than 600 persons, or 53 percent of the transportation handicapped in Walworth County, have difficulty using transit and slightly less than 600 persons, or 47 percent of the transportation handicapped, are prevented entirely from using transit as a result of their disabilities. All transportation handicapped and all able-bodied elderly persons residing in Walworth County are considered to be locationally disadvantaged. In addition, in Walworth County approximately 67 percent of the transportation handicapped and 76 percent of the able bodied elderly live in households making less than \$8,000 a year—i.e., are economically disadvantaged.

Washington County: Survey data indicate that about 4 percent of the population, about 3,300 persons, are able-bodied elderly and about 3 percent of the Washington County population, or about 2,600 persons, are transportation handicapped. Of the transportation handicapped individuals residing in Washington County, about 1,900, or 72 percent, are chronically and acutely disabled persons living in private households and about 700, or 28 percent, are institutionalized individuals. Of the chronically and acutely disabled transportation handicapped persons living in private households as reported by the survey, slightly more than 1,100 have trouble getting around; slightly more than 100 use aids other than wheelchairs: slightly more than 400 need help from another person to get around; almost 100 use wheelchairs; and another 100 are confined to the house. Survey data indicate that, of the total transportation handicapped population in this County, about 4 percent are under the age of 17; about 25 percent, 17 through 64 years of age; and about 71 percent, 65 years of age or older. In Washington County about 1,500 persons, or 79 percent of the chronically and acutely disabled transportation handicapped persons, can use transit, albeit with difficulty, and another 400, or 21 percent, are entirely prevented from using transit as a result of their disabilities. All transportation handicapped and all able-bodied elderly persons residing in Washington County are considered to be locationally disadvantaged. In addition, in this County it is estimated that approximately 83 percent of the transportation handicapped and about 70 percent of the able-bodied elderly may be economically disadvantaged.

Waukesha County: Transportation handicapped and elderly survey data indicate that about 6,500 persons in Waukesha County, or slightly more than 2 percent of the population, are transportation handicapped and about 11,500 persons, or 4 percent of the population, are able-bodied elderly. Of the transportation handicapped persons recorded by the survey to be residing in Waukesha County about 4,700, or 72 percent, are chronically and acutely disabled individuals living in private households, and about 1,800, or 28 percent, are persons living in institutions. Of the chronically and disabled transportation handicapped. acutelv almost 1,900 have trouble getting around; about 700 use aids other than wheelchairs; about 1,200 need help from another person; about 400 use wheelchairs; and about 500 are confined to the house. The survey estimates indicate that, of the transportation handicapped population in this County, about 7 percent are under 17 years of age; about 16 percent, 17 through 64 years of age; and about 77 percent, 65 years of age and older. Estimates derived from the survey data indicate that within Waukesha County approximately 2,800 persons, or 59 percent of the chronically and acutely disabled transportation handicapped persons living in private households, have difficulty using public transit, and about 1,900 persons, or 41 percent, are prevented entirely from using transit as a result of their disabilities. All transportation handicapped and all able-bodied elderly persons residing in Waukesha County are considered to be locationally disadvantaged. In addition, it is estimated that within this County approximately 42 percent of the transportation handicapped and 60 percent of the able-bodied elderly may be economically disadvantaged.

#### Southeastern Wisconsin Region

Survey data indicate that in the entire Southeastern Wisconsin Region there are estimated to be 62.400 transportation handicapped individuals, or almost 4 percent of the total resident population of the Region, and about 125,200 able-bodied elderly persons, or about 7 percent of the total resident population of the Region. Of the 62,400 transportation handicapped individuals in the Region, an estimated 46,000, or 74 percent, are chronically or acutely disabled persons who live in private households, and about 16,400, or 26 percent, are institutionalized. Of the chronically disabled transportation handicapped persons living in private households in the Region, about 17,100 have trouble getting around, about 8,700 use aids other than wheelchairs, approximately 12,600 need help from another person, about 3,900 use wheelchairs, and about 3,700 are confined to the house. Of the total transportation handicapped in the Region reported by the survey, about 3 percent are under the age of 17; about 27 percent are between the ages of 17 through 64; and about 70 percent are 65 years of age and older. Of the chronically and acutely disabled transportation handicapped living in private households in the Southeastern Wisconsin Region, about 27,000, or 59 percent, can use transit, although such use is difficult, and about 19,000, or 41 percent, are entirely prevented from using the existing transit service as a result of their disabilities. Survey data indicate that within the Southeastern Wisconsin Region about 26,400 transportation handicapped persons, or 42 percent, and about 48,800 able-bodied elderly persons, or 39 percent, live more than two blocks from a bus stop. In addition, within this Region approximately 62 percent of the transportation handicapped and 66 percent of the able-bodied elderly live in households making under \$8,000 a year and consequently, are considered to be economically disadvantaged.

#### **Chapter IV**

### CHARACTERISTICS AND TRAVEL BEHAVIOR OF THE TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY

#### INTRODUCTION

One function of the elderly and handicapped study is to identify and quantify the number and location of the transportation handicapped and elderly in the Region and their travel habits, demands, needs, and attitudes. Such information is essential to accurately appraise the effectiveness of existing public and private transportation services to accommodate the needs of the elderly and transportation handicapped as well as to provide necessary information for the preparation of a workable and cost-effective transportation plan design to meet the current and future needs of the transportation handicapped in the Region.

Since study objectives implicitly reflect an underlying value system which is unique to the particular area and subareas for which the plan is devised, citizen participation in the plan preparation is essential. The use of an extensive citizen advisory committee structure and the conduct of public informational meetings and hearings provide an opportunity for the expression of informed citizen opinion. Importantly, however, the avenues of citizen participation also have included, on many occasions, the Commission's conduct of special attitudinal and behavioral studies in order to ascertain some measure of public values and preferences concerning the problems to be addressed in the planning effort. Although data pertaining to the study in question exists as it relates to national, regional, or community profiles from other urban areas, and such data frequently provides broad-based quantification which may be considered relevant in general terms to the Southeastern Wisconsin Region, application of such generalized ratios cannot reflect either the social, economic, or attitudinal diversity found in this particular Region or the more specific behavioral and attitudinal aspects which are unique to this Region and which may be generalized when data is compiled on a national or multistate regional basis. For these reasons, the Commission undertook telephone and personal interview surveys of the transportation handicapped and elderly residing

in private households and in nursing homes and residential treatment centers within the Region, and—through the consultant, Applied Resources Integration, Ltd.—an on-board survey of users of two special transportation services in the Region.

#### FORMAT OF PRESENTATION

The target group of this study is the transportation handicapped population defined as that group of people who have a physical or mental handicap which makes their use of public transit either difficult or impossible. This group includes all age groups, i.e., those under 65 years of age, as well as those 65 years old or older. To provide for comparison and to make data available which may be of interest to certain groups and agencies within the Region, however, the behavioral and attitudinal elements of the household and institutional surveys also were collected from the elderly population-often called the able bodied elderlydefined here as those persons 65 years old or older who indicate they have no difficulty using public transit. It should be noted that some able-bodied elderly live in surveyed institutions. Nevertheless, in order to remain consistent with methodologies utilized by other studies conducted throughout the United States, the entire population represented in the institutional segment of the transportation handicapped and elderly survey is considered to be transportation handicapped. Therefore, the data in this chapter is presented separately for the elderly, the transportation handicapped and the institutionalized, with "elderly" representing only the able-bodied elderly, "transportation representing those handicapped" persons residing in private households who are transportation handicapped as defined above, and "institutionalized" representing those persons who live in nursing homes and residential treatment centers and are all considered to be transportation handicapped.

The following discussion presents a description of survey conduct, a statement of survey accuracy, and documentation of salient inventory findings as they relate to the following subareas of the Region: the Milwaukee SMSA and its subareas; Racine County and its subareas; and Kenosha and Walworth Counties and its subareas.

# SURVEY CONDUCT

To collect the data necessary to obtain a thorough understanding of the characteristics, needs, and attitudes affecting transportation of the elderly and transportation handicapped population in the Region and to provide the information required by the consultant to implement planning models, three separate surveys were designed and conducted. These included a household survey conducted by telephone, an institutional survey of nursing home and Type I residential care facility residents, and an on-board survey of users of special transportation services. The latter two surveys were conducted by personally interviewing respondents.

## HOUSEHOLD SURVEY

The household survey was designed to provide the data requested by the consultant for use in preparing the transportation plan for elderly and handicapped. Specifically, a minimum of 450¹ interviews was required with transportation handicapped persons geographically distributed through the urbanized areas of Milwaukee, Racine, and Kenosha and the remainder of the Region in order to quantify the transportation handicapped population living in private homes by their mobility limitations, travel habits, use of existing facilities, and intended use of new and improved services. A two part questionnaire—a set of socioeconomic questions pertaining to all contacted households and a detailed set of questions addressed to all elderly and transportation handicapped persons—was the instrument used in obtaining the necessary information. See Appendix D.

## Sample Size

Certain assumptions were made in determining sample size. Based on data from the 1972

national health survey it was estimated that 2.7 percent of the household population in the 12 states comprising the north central region of the United States is transportation handicapped. Since the 2.7 percent applies to a 1972 estimated household population of 56,577,000 in 12 states and since the estimated 1976 household population in the Southeastern Wisconsin Region of 1,760,000 represents only about 3 percent of the total 12 state population, a difference of  $\pm 20$  percent of the 2.7 percent was allowed in determining the number of household samples needed to obtain a minimum of 450 interviews with transportation handicapped persons. By applying the  $\pm 20$  percent to 2.7 percent, a range of 2.2 to 3.2 percent of the household population was estimated to be transportation handicapped. Using the lower end of the range-2.2 percent-the estimated population required to obtain 450 interviews is approximately 20,460 persons. Assuming that the 1970 average household size of 3.20 persons per household in the Region has not dramatically changed, it was estimated that approximately 6,400 households would need to be contacted in the household telephone survey. This represented a sample rate of slightly over 1 percent of the estimated 567,000 occupied housing units in southeastern Wisconsin.

Since able-bodied elderly persons were estimated to represent approximately 8 percent of the population, more than the 450—a minimum number of samples—would be collected. By collecting a relatively large number of samples of the total able-bodied and transportation handicapped elderly, comparisons to independent estimates can be made to validate the survey results.

## Sample Selection

To adequately represent all geographic portions of the Region, telephone exchanges were classified as urban or nonurban and varying sample rates—ranging from about 0.7 percent of the households in densely populated urban areas to about 3.0 percent of the households in the rural areas—were assigned to each exchange classification. After determining the number of samples to be drawn from a given phone book, a systematic procedure of selecting residential telephone numbers was defined for implementation by telephone interviewers. The process of selecting every "nth" residential telephone number in all phone books in the Region assured that a random, geographically

¹Data Collection Alternatives, Proposed Demand Model and Small Sample Telephone Survey For SEWRPC Elderly and Handicapped Study, Memo Report No. 1, Applied Resource Integration, Ltd., September 9, 1976.

representative cross section of the population would be interviewed and that the samples could be readily expanded by a reciprocal factoring process to represent the total population from which it was drawn.

## Survey Method

Thirty-five temporary telephone interviewers most of whom had previously been employed in a similar position by the Commissionworked from their own homes during the period of November 8, 1976, to November 22, 1976. By so doing, interviewers were able to efficiently make calls and schedule callbacks. Upon procedurally selecting a household as a sample, a minimum of six attempts was made during various morning, afternoon, and evening hours on at least two different days to contact the household before procedurally replacing the sample. Basic socioeconomic data were gathered on all households on one form, and a second questionnaire form was used to collect detailed information on all transportation handicapped and able-bodied elderly persons. See Appendix D.

# INSTITUTION SURVEY

The institution survey was designed to collect from persons residing in institutions the same information collected in the household survey. Since institutionalized persons generally do not have telephones listed in their names and for the most part cannot be communicated with easily, a personal interview technique was designed to collect information on their mobility limitations, travel habits, use of existing facilities, and intended use of new and improved services. A questionnaire parallel in overall content to the household survey was specifically designed for use in interviewing institutionalized persons. See Appendix D.

# Sample Size

In order to secure a sufficient number of samples for cross tabulation of data, it was estimated that a minimum of 50 samples per county was required. Institutions selected for interviewing of randomly selected residents were drawn from the Directory of Nursing Homes Licensed in Wisconsin—1975, Division of Health, Department of Health and Social Services, which provided, among other items of information, the name, address, administrator's name, ownership characteristics, phone number, and bed capacity. The list was grouped into counties by nursing homes and Type I residential care facilities. Varying sample rates were established to adequately represent both nursing home and Type I residential care facility residents. Excluded from the survey because of their special orientation were Type II residential care facilities (halfway houses with a total bed capacity of 215 and Southern Wisconsin Colony with a bed capacity of 972).

Due to the small number of institutions, the samples in all except Milwaukee County were easily spread by geographic location. In Milwaukee County the 72 nursing home locations were posted on a map, grouped into six generally similar transit service areas, and an approximate 25 percent sampling rate applied. In all counties samples were drawn from institutions of varying bed capacities.

A total of 526, or 3.2 percent of all residents in nursing homes and Type I residential care facilities in the Region, were sampled. In the nursing home portion of the survey the sample rate varied from 1.8 percent in Milwaukee County to 12.5 percent in Ozaukee County. In the Type I facilities inventory the sampling rate varied from 3.0 percent in Milwaukee County to 11.1 percent in Walworth and Waukesha Counties. The sample selection procedure took into account the actual number of occupied beds and, using a random starting number and taking into account the total number of beds in the institution, determined the number of samples to be drawn from each institution. This procedure ensured a random cross section of the institutionalized population.

# Survey Method

In order to explain in general terms the study and the importance of obtaining data on residents of institutions, a letter was sent to the administrator of each institution selected for interviewing. The letter further explained the survey procedure and said that the administrator would be contacted by telephone to arrange a specific date for an interviewer to conduct the survey with randomly selected residents.

In those cases in which respondents were unable because of handicap to communicate with an interviewer, personnel at the institution provided the basic data necessary in completing the interview.

## ON-BOARD VEHICLE USER SURVEY

The on-board user survey was designed to collect data on socioeconomic characteristics, travel habits, and attitudes of those persons using specialized transportation services. Such data, complementing data collected on the household and institution surveys, provided additional information for consideration in designing alternative plans to meet the needs of the transportation handicapped population. See Appendix D.

The intent of the on-board survey was qualitative rather than quantitative. For this reason a mathematically correct sample of all users of special transportation services was not required since their socioeconomic and travel characteristics are already represented on the household and institution sample surveys.

In the on-board vehicle survey data were collected on users of Handicabs in the Milwaukee area and on users of Lincoln Lutheran Specialized Transportation Service in the Racine area in order to obtain representative data from the highly urbanized areas of Milwaukee, the smaller urbanized area of Racine, and the nonurban area of eastern Racine County, also served by Lincoln Lutheran.

On Handicabs an interviewer rode a different van each day during the period March 1, 1977, to March 7, 1977, collecting 61 usable interviews. In Racine three interviewers provided by the Racine County Planning Council collected 140 usable interviews during the period March 3, 1977, to March 9, 1977.

## DATA REDUCTION, CONVERSION, EXPANSION, AND RETRIEVAL

The completed survey forms collected on the household and institution surveys were edited for inadequacies, coded to numeric digits, keypunched, and the data converted to electronic data processing form. The data files were then subjected to extensive legitimate entry and logic contingency checks in order to purge the files of erroneous and misplaced information.

Due to the small number of completed survey forms collected on the on-board user survey, conversion to electronic data processing was not considered necessary. However, the data were thoroughly edited for consistency and reliability before compiling data summaries.

# **Expansion Factoring**

Household Survey: In total, samples of 6,482 occupied households out of an estimated 566,800 occupied households, representing a population in excess of 20,400 out of an estimated 1,760,000, were completed during the course of the telephone survey. These samples resulted in 503 interviews with transportation handicapped persons and 1,370 interviews with able-bodied elderly persons. With the exception of the City of Milwaukee, the 1976 estimated household population was apportioned by household size on the basis of the 1970 census to estimate the number of occupied housing units. In the City of Milwaukee, the 1975 special census on population and housing units was used to best approximate the number of occupied housing units by household size. Reciprocal factors for the household survey were obtained by dividing the estimated number of occupied housing units by the number of samples within the same household size category.

Institution Survey: A total of 526 interviews at institutions were completed. Reciprocal factoring took into account the number of occupied beds on a county basis in both the nursing home and Type I residential care portions of the survey. These 526 samples represent an estimated 16,392 residents of nursing homes and Type I residential care facilities. As previously noted, Type II residential care facilities accounting for 215 beds and Southern Wisconsin Colony in Racine County having a bed capacity of 972 are excluded from these figures because of the special care orientation of these facilities. Data summaries of the expanded socioeconomic data were prepared and compared to independent estimates in order to establish how well household and institution sample surveys represented the total population involved.

## ACCURACY CHECKS

The sampling methodology for the surveys conducted as a part of the elderly and handicapped study was designed to ensure that representative samples could be obtained from the total population involved. To determine the degree of accuracy and completeness actually achieved by the sampling methodology, accuracy checks were performed in which expanded household and institution survey data were compared to similar independent source data. The on-board vehicle user survey data, which represent the characteristics and attitudes of users of Handicabs and Lincoln Lutheran special transportation services, could not be similarly checked since the needed independent source data are not currently available. The following discussion details the findings of the accuracy checks conducted on the household and institutional transportation handicapped and elderly surveys.

## **Occupied Year-Round Housing Units**

The SEWRPC transportation handicapped and elderly (STHE) survey tabulations of the number of occupied housing units by county and for the Region were compared with 1970 census enumerations of occupied housing units and 1972 SEWRPC home interview survey estimates of occupied housing units (see Table 37). The distributions of occupied housing units within each county as a percent of total regional occupied housing units are very similar among the three data sources and adequately reflect the known trends of development occurring within the Region between 1970 and 1976. The

numbers of occupied housing units also are consistent among data sources. In addition, the slowing in the regional population growth rate which has occurred since 1972 is reflected in the 1976 (STHE) data. Only in Walworth County do the trends from 1970 to 1972 appear to be counter to expectations. This apparent difference in Walworth County arises from a definitional problem encountered during the 1972 SEWRPC home interview survey. The home interview survey which was principally aimed at the collection of travel data was expanded through the use of year-round housing unit data. Included in this data were certain year-round housing units which are utilized as "second homes" by their owners and are classified by the U.S. Bureau of the Census as vacant units held for occasional use. In the home interview survey these second homes were considered occupied, and either the occupants were contacted through one or more personal calls at the unit or it was determined that the occupants were "out of the Region on the travel day." As a result, the 1970 census data indicate a vacancy rate in Walworth County of 11.68 percent whereas the 1972 SEWRPC home interview survey vacancy rate

#### Table 37

OCCUPIED HOUSING UNITS BY COUNTY AS DETERMINED IN THE 1976 SEWRPC TRANSPORTATION HANDICAPPED AND ELDERLY (STHE) SURVEY AND BY INDEPENDENT ESTIMATES-THE 1970 CENSUS AND THE SEWRPC 1972 HOME INTERVIEW SURVEY

· · · · · · · · · · · · · · · · · · ·		00	cupied Year-Ro	ound Housing Un	its	
	1970	Census	1972 S Home Inte	SEWRPC erview Survey	1976 Househo	STHE old Survey
County	Number	Percent of Region Total	Number	Percent of Region Total	Number	Percent of Region Total
Kenosha	35,468 338,605 14,753 49,796 18,544 17,385 61,935	6.6 63.1 2.8 9.3 3.5 3.2 11.5	37,215 342,965 16,715 52,596 21,720 19,544 66,504	6.7 61.6 3.0 9.4 3.9 3.5 11.9	38,453 343,089 18,229 52,744 20,086 21,534 72,921	6.8 60.5 3.2 9.3 3.5 3.8 12.9
Region	536,486	100.0	557,259	100.0	567,056	100.0

Source: U.S. Bureau of the Census and SEWRPC.

for this County is 2.25 percent.² Therefore, in terms of the trends in number and percent distribution of occupied housing units which are primary residences within Walworth County, the comparison between 1970 census data and the 1976 STHE household data is considered to be an accurate representation.

# Total Population

A comparison between the population by county and for the Region, as found by the transportation handicapped and elderly survey with Wisconsin Department of Administration estimates of total population, indicated a high degree of similarity for the Region and for each county. The STHE 1976 population total is within 2 percent of the Wisconsin Department of Administration 1976 estimate in every county except Walworth County. The difference occurring in this County, as well as other lesser differences in other counties, arises from the fact that the two estimates are not entirely compatible. As enumerated by the 1970 census, approximately 17,000 persons in the Region reside in "other group quarters" such as college dormitories, detoxification centers, general hospitals, missions, monasteries, convents and other such group quarters. An additional 3,000 persons live in penal institutions or specialty schools where the institution entirely provides for the client's transportation needs.

The Wisconsin Department of Administration estimates, which are of total population, include these 20,000 persons. Since the STHE survey was designed to represent solely persons living in private households, nursing homes, and 20.000 residential treatment centers, the persons living in other group quarters or other institutions are not included in the STHE population total. Current data are not available on the specific numbers of such persons by county. However, since rapid significant change in such populations is unusual, the following 1970 census approximations should provide a fairly accurate representation of the number of "other" groups quartered and "other"

institutionalized populations by county: 1,110 persons in Kenosha County; 10,300 in Milwaukee County; 200 in Ozaukee County; 2,300 in Racine County; 3,500 in Walworth County; less than 100 in Washington County; and 2,500 in Waukesha County. Addition of these numbers to the STHE totals as shown in Table 3 or subtraction from the Wisconsin Department of Administration estimates indicates that the two sets of population estimates are within one-tenth of 1 percent of each other for the total Region, as can be determined from Table 38.

# Persons Per Household

Average persons per household for the Region and within each county, as reported in the household segment of the STHE surveys, were compared to the averages obtained from 1970 census data and from 1972 SEWRPC home interview survey data. As shown in Table 39, there is a marked similarity among the three sets of data, with the STHE Region average within about one-tenth of a person per household in both comparisons, and with the county comparisons all ranging within 0.05 persons per household with the exception of a difference of about a two-tenths smaller persons per household in Milwaukee County as determined in the STHE survey than as reported by 1970 census or 1972 home interview. As might be expected, the household size in the Region is generally decreasing over time.

## Automobiles Available

Automobile availability figures as obtained from the household portion of the STHE survey were compared with automobile availability estimates based on vehicle registrations for fiscal 1976 (see Table 40). The two estimates are not entirely compatible-the STHE survey data being an estimate based on the number of automobiles available to the household for personal use regardless of area of registration while the Wisconsin Department of Transportation (DOT) estimate for fiscal 1976 representing a percent reduction applied to the number of nonmunicipal automobiles reported by the Wisconsin Department of Motor Vehicles to be registered within each of the counties. Comparison of these two data sets indicates that the STHE data tend to record a larger number of available autos then the estimates. Nevertheless, the comparisons indicate that the STHE survey adequately represents auto-

²For a more detailed discussion, see Benchmark Report #3, "Origin-Destination Survey Accuracy Checks," on file at the SEWRPC.

#### POPULATION BY COUNTY AS DETERMINED IN THE SEWRPC TRANSPORTATION HANDICAPPED AND ELDERLY (STHE) SURVEY AND BY WISCONSIN DEPARTMENT OF ADMINISTRATION ESTIMATES: 1976 AND 1977

<u> </u>		·			
				Wisconsin	Percent Difference
	Population	Population		Department	Between Total STHE
	in 1976 STHE	in 1977 STHE		of Administration	Survey and Department
	Household	Institution	Total STHE	Estimated 1976	of Administration
County	Survey	Survey	Population	Total Population ^a	Estimated Populations
Kenosha	124,420	1,015	125,435	127,053	-1.3
Milwaukee	985,797	10,302	996,099	1,004,139	-0.8
Ozaukee	65,997	400	66,397	66,713	-0.5
Racine	175,064	1,210	176,274	179,334	-1.7
Walworth	63,582	915	64,497	68,170	-5.4
Washington	77,755	735	78,490	78,287	0.3
Waukesha	267,500	1,815	269,315	269,927	-0.2
Region	1,760,115	16,392	1,776,507	1,793,623	-1.0

^aThe Wisconsin Department of Administration estimates are of total population including approximately 20,000 persons, as reported in the 1970 census, residing in mental hospitals, college dormitories, penal institutions, detoxification centers, monasteries, convents, and other such group quarters. Since the transportation handicapped and elderly survey was designed to represent solely persons in private households, nursing homes, and residential treatment centers, these 20,000 persons living in other group quarters are not included in the STHE population total and when added to such total would be 1,796,507 for the Region or less than one-tenth of 1 percent difference.

Source: Wisconsin Department of Administration and SEWRPC.

#### Table 39

## AVERAGE PERSONS PER HOUSEHOLD BY COUNTY AS DETERMINED IN THE SEWRPC TRANSPORTATION HANDICAPPED AND ELDERLY (STHE) SURVEY AND BY INDEPENDENT ESTIMATES-THE 1970 CENSUS AND THE 1972 SEWRPC HOME INTERVIEW SURVEY

		Pe	rsons Per Household		
County	1970 Census	STHE 1976 Household Survey	Numerical Difference Between 1970 Census and 1976 STHE Household Survey	1972 SEWRPC Home Interview Survey	Numerical Difference Between 1972 SEWRPC Home Interview Survey and Household Survey
Kenosha	3.26	3.24	-0.02	3.26	-0.02
Milwaukee	3.04	2.87	-0.17	3.07	-0.20
Ozaukee	3.66	3.62	-0.04	3.67	-0.05
Racine	3.35	3.32	-0.03	3.34	-0.02
Walworth	3.16	3.17	0.01	3.17	0.00
Washington	3.63	3.61	-0.02	3.64	-0.03
Waukesha	3.66	3.67	0.01	3.67	0.00
Region	3.20	3.10	-0.10	3.22	-0.12

Source: U.S. Bureau of the Census and SEWRPC.

	Automo	biles Available		
County	1976 Fiscal Year ^a Estimate	1976 STHE Household Survey	Numerical Difference	Percent Difference
Kenosha	53,084	57,037	3,953	7.4
Milwaukee	416,733	454,667	37,934	9.1
Ozaukee	29,678	31,241	1,563	5.3
Racine	75,542	80,043	4,861	6.4
Walworth	29,770	27,471	- 2,299	- 7.7
Washington	32,675	35,423	2,748	8.4
Waukesha	119,722	134,265	14,543	12.1
Total	757,204	820,147	62,943	8.3

#### COMPARISON OF AUTOMOBILES AVAILABLE BY COUNTY AS DETERMINED IN THE SEWRPC TRANSPORTATION HANDICAPPED AND ELDERLY (STHE) SURVEY AND THE 1976 FISCAL YEAR ESTIMATES

^aBased upon Wisconsin Department of Transportation (DOT) motor vehicle registration data for the fiscal year ending June 30, 1976. Automobile availability estimates are based on the assumption that 10 percent of the registered automobiles are not in use either because the vehicles have been removed from the State or because they are in salvage yards, used car lots, or similar storage.

Source: Wisconsin DOT AND SEWRPC.

mobile availability within acceptable ranges of accuracy. 3 

#### Structure Type

The percentage distribution of occupied housing units by structure type by county, as determined in the STHE 1976 household survey, was compared to the equivalent distribution derived from the Commission 1972 home interview survey data and a similar distribution of total year-round housing units obtained through a 20 percent sample utilized during the 1970 census. As shown in Table 41, the STHE survey distributions are markedly similar to the distributions obtained in the SEWRPC home interview. There also is a high degree of similarity between the STHE survey distribu-

³For discussion of acceptable ranges of accuracy on an automobile availability accuracy check, see the U.S. Department of Transportation Federal Highway Administration publication, <u>Urban Origin–Destination Surveys</u>, 1973, p. 130. tions and the 1970 census, particularly in view of the fact that the 1970 census data array is of total year-round housing units regardless of vacancy status. It is noteworthy that the STHE survey sample was effective in obtaining adequate representation of mobile homes which constitute only 0.7 of 1 percent of the regional housing units.

#### Trip Rates

Trip rates of persons 65 years of age and older reported in the STHE household survey compare favorably with trip rates for persons in the same age group reported in the 1972 home interview survey. It should be noted that: 1972 trip rate data excludes walking trips except for purpose "work", while the 1976 trip rate data include walking trips for all purposes except general exercise. In addition, 1972 trip rate data are linked; that is, incidental stops in the total trip are removed, while 1976 trip rate data are unlinked. Also, 1972 trip rate data include persons and trips by institutionalized persons and trips made by institu-

## PERCENTAGE DISTRIBUTION OF YEAR-ROUND HOUSING UNITS BY STRUCTURE TYPE BY COUNTY AS DETERMINED IN THE SEWRPC TRANSPORTATION HANDICAPPED AND ELDERLY (STHE) HOUSEHOLD SURVEY AND BY INDEPENDENT ESTIMATES-THE 1970 CENSUS AND THE SEWRPC 1972 HOME INTERVIEW SURVEY

		Percer	nt of Year-F	lound Hous	ing Units ^a	by Structu	re Type
County	Source	Single Family	Two Family	Three- Four Family	Five or More Family	Mobile Home	Total ^b
Kenosha	STHE Survey	78.0	10.5	2.5	5.4	3.6	100.0
	1972 SEWRPC Home Interview Survey	75.6	15.9	4.8	2.9	0.8	100.0
	1970 Census	70.6	16.6	5.1	5.3	2.4	100.0
Milwaukee	STHE Survey	52.9	24.9	6.1	15.9	0.2	100.0
	1972 SEWRPC Home Interview Survey	52.2	27.0	6.5	14.1	0.2	100.0
	1970 Census	47.1	27.1	7.8	17.6	0.4	100.0
Ozaukee	STHE Survey	82.0	10.8	1.7	5.3	0.2	100.0
	1972 SEWRPC Home Interview Survey	84.4	9.9	0.8	4.6	0.3	100.0
	1970 Census	82.6	10.1	2.7	4.2	0.4	100.0
Racine	STHE Survey	77.0	13.3	2.6	5.6	1.5	100.0
	1972 SEWRPC Home Interview Survey	76.9	12.4	4.3	6.1	0.3	100.0
	1970 Census	69.8	17.6	4.6	7.5	0.5	100.0
Walworth	STHE Survey	83.8	6.7	5.2	2.6	1.7	100.0
	1972 SEWRPC Home Interview Survey	85.4	7.7	2.2	3.6	1.1	100.0
	1970 Census	80.7	8.8	2.9	5.2	2.4	100.0
Washington	STHE Survey	81.1	8.2	2.3	6.5	1.9	100.0
	1972 SEWRPC Home Interview Survey	82.2	9.1	2.0	5.1	1.6	100.0
	1970 Census	77.3	14.4	3.1	3.7	1.5	100.0
Waukesha	STHE Survey	85.5	6.2	2.6	5.4	0.3	100.0
	1972 SEWRPC Home Interview Survey	87.1	5.8	2.1	4.7	0.3	100.0
	1970 Census	83.4	7.1	3.6	5.3	0.6	100.0
Region	STHE Survey	64.1	18.7	4.8	11.7	0.7	100.0
	1972 SEWRPC Home Interview Survey	63.6	20.4	5.2	10.4	0.4	100.0
	1970 Census	58.2	21.6	6.4	13.1	0.7	100.0

^aU.S. Census tabulation is of total year-round housing units regardless of occupancy status. Both the household survey and the home interview survey distributions are of occupied housing units. Mobile homes, however, are enumerated in all three sources only if they are occupied.

^bCertain rooming house, hotel, and motel living quarters which provide permanent residences for a small portion of the population also were sampled in the household survey. These living quarters are not shown in the above table, since they do not conform to the strict definition of a housing unit. When incorporated in the total percentage distribution, such living quarters were found by the transportation handicapped and elderly survey to constitute 0.23 percent of the regional housing units. The 1972 SEWRPC home interview survey found that such living quarters constituted 0.28 percent of the regional housing units.

Source: U.S. Bureau of the Census and SEWRPC.

tionalized persons. Since walking trips in 1976 account for less than 9 percent of total trips, the effect on reducing 1972 trip rates for the elderly is believed to be minimal. Secondly, in 1976 institutionalized persons over 65 years of age also account for less than 9 percent of the total over 65 years of age population. These two exceptions appear to have no significant effect on the overall trip rates. As shown in Table 42, the differences in the 1972 and 1976 trip rate are only 0.15 at the Region level and vary most in Waukesha County where the difference is 0.42 and least in Washington County where the difference is only 0.06. Trip rates are amazingly close-allowing for the differences previously stated-considering that there is a time difference of four and one-half years during which inflation and rising energy costs affected a greater proportion of those over 65 as opposed to those under 65. since many elderly persons are on fixed incomes and are more likely to reduce tripmaking as an economic necessity.

# DATA RELIABILITY

Overall, the data on the household and institution surveys are considered to be reliable. It should be noted, however, that in certain subareas of the Region the number of samples collected is insufficient to adequately represent characteristics within that subarea and therefore the expanded data, although presented, may not accurately reflect characteristics and attitudes of transportation handicapped and ablebodied elderly persons within the given subarea. The survey design required that only enough transportation handicapped and ablebodied elderly persons be surveyed to provide reliability within the Milwaukee SMSA, Racine County, and a combined study area of Kenosha and Walworth Counties. Accuracy check comparisons to independent and secondary sources demonstrate that these objectives were met.

Subsequent to the actual data collection and at the request of the advisory committees, specific subgeographic areas of the Region were defined for the purpose of arraying the survey data (see Map 2). Such areas were considered useful for local decisionmakers to evaluate alternative transportation needs so as to most effectively meet the requirements of the local populace. Disaggregation of the survey data into subareas revealed that certain subareas had an insufficient number of samples for reliability of the diverse data summaries presented here. Specifically, on the household survey, transportation handicapped samples in Ozaukee County, Walworth County, the Milwaukee nontransit area, the Racine nonurban area, the Kenosha urbanized area, the Kenosha nonurbanized area, and the Kenosha transit service area were insufficient for many of the data summaries

Table 42

TRIP RATES OF PERSONS 65 YEARS OF AGE AND OLDER AS DETERMINED IN THE SEWRPC TRANSPORTATION HANDICAPPED AND ELDERLY (STHE) SURVEY AND THE SEWRPC 1972 HOME INTERVIEW SURVEY

County	1972 SEWRPC Home Interview Survey	1976 STHE Household Survey	Numerical Difference	Percent Difference
Kenosha	2.07	1.86	-0.21	-10.1
Milwaukee	1.58	1.47	-0.11	- 7.0
Ozaukee	1.51	1.36	-0.15	-10.0
Racine	1.84	1.54	-0.30	-16.3
Walworth	1.33	1.43	0.10	7.5
Washington	1.25	1.19	-0.06	- 4.8
Waukesha	1.98	1.56	-0.42	-21.2
Region Total	1.65	1.50	-0.15	-9.1

Source: SEWRPC

presented here. In the summaries pertaining to the able-bodied elderly population, the Milwaukee nontransit area and the Kenosha nonurbanized area do not meet minimums for sample reliability. In the institution survey, the Racine nonurban area and the Kenosha urban area have an insufficient number of samples, thereby not meeting minimums for sample reliability.

Much of the data presented on characteristics and attitudes of transportation handicapped and able-bodied elderly persons has not previously been locally collected and presented. The summaries here serve as a benchmark for making future comparisons of change over time in characteristics and attitudes. Therefore. although data in certain subareas are not precisely accurate, at the regional level and for most of the subareas defined here, data sets will be useful to define current conditions for planners and for decisionmakers who wish to make immediate decisions based on current needs and will be useful, further, as a reference point for comparing the measurement of transportation system changes in the future.

## CHARACTERISTICS OF THE

## TRANSPORTATION HANDICAPPED AND ABLE-BODIED ELDERLY RESIDING IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA)

The four-county Milwaukee Standard Metropolitan Statistical Area (SMSA) contains about 80 percent of the transportation handicapped and able-bodied elderly population in the Southeastern Wisconsin Region. For the purpose of data tabulation and comparison of the travel habits, characteristics, and attitudes of the transportation handicapped and able-bodied elderly, the SMSA has been divided into different types of geographic areas including: 1) the four individual counties of Milwaukee, Ozaukee, Washington, and Waukesha; 2) the urbanized area portion of the SMSA, consisting of Milwaukee County and portions of Ozaukee, Washington, and Waukesha Counties; and the nonurban portion of the SMSA containing those parts of Ozaukee, Washington, and Waukesha Counties excluded in the urban area. In addition, data tabulation and analyses are presented for both the transit service area serving the densely populated portions of Milwaukee County and a nontransit area consisting of those areas in Milwaukee County that are not served by transit (see Map 2).

Following is a description of the characteristics as obtained from the various surveys of each of the above mentioned geographical areas:

## **Transportation Handicapped**

Persons by Disability

Responses to the disability question are grouped into commonly used terminology. Most respondents specified the type of disability in medical terms; however, to provide an understanding of what the effect of a disability might be on mobility, simple, descriptive terms are utilized. Specifically, the terms used in Table 43 include the following replies to the questionnaire by individual responses:

- 1. <u>Stroke</u>—Includes stroke, brain damage, mental problems, brain tumor, loss of memory, brain surgery, mental instability, speech disorder, and nervousness.
- 2. <u>Old Age</u>—Includes diabetes, multiple or unspecified operations, general poor health, Tic Doulourux, Parkinson's disease, blackouts, and cancer and associated illnesses.
- 3. <u>Arthritis</u>—Includes arthritis, rheumatism, and bone disease.
- 4. <u>Visual</u>—Includes total blindness, partial blindness, weak eyes, loss of sight, cataracts, and cataract operations.
- 5. Impaired Lower Trunk—Ambulatory— Includes injured or artificial hips; artificial legs, hands, or feet; bad ankles, hips, knees, legs, and feet; no toes; bad circulation in feet, legs, or hips; crippled, unsteady, hip bursitis, one leg shorter than the other, and other such defects which did not affect the person's ability to walk.
- 6. Impaired Trunk—Nonambulatory— Includes amputated leg or legs or broken leg, hip, or back; weak back or surgery on back; fractured hip or hip surgery; paralysis or use of wheelchair for any cause; polio; softening of bones; and general infirmities preventing walking.
- 7. <u>Developmental Disabilities</u>—Includes mental retardation, epilepsy, cerebral palsy, mongoloid, slow learners, and learning disabilities.

		Milwau	kee County	Çou	nties Within	Milwaukee SM	SA	N	lilwaukee SMSA		
		Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Stroke	Number	4,131	570	4,701	195	219	692	5,403	404	5,807	6,893
	Percent	13.2	13.8	13.2	14.8	9.8	11.9	13.4	8.8	12.9	12.3
Old Age	Number	3,893	399	4,292	401	514	917	5,273	851	6,124	8,173
	Percent	12.4	9.7	12.1	30.4	23.1	15.7	13.1	18.6	13.6	14.6
Arthritis	Number	7,205	939	8,144	158	538	788	8,619	1009	9,628	10,982
	Percent	22.9	22.7	22.9	12.0	24.1	13.5	21,4	22.1	21.4	19.7
Visual	Number	2,952	114	3,066	149	121	461	3,429	368	3,797	4,284
	Percent	9.4	2.8	8.6	11.3	5.4	7.9	8.5	8.0	8.4	7.7
Impaired Trunk	Number	4,187	553	4,740	94	131	988	5,409	544	5,953	8,232
Ambulatory	Percent	13,3	13.4	13.3	7.1	5.9	17.0	13.4	11.9	13.3	14.7
Impaired Trunk	Number	2.368	428	2,796	100	213	562	3,167	504	3,671	4,937
Nonambulatory	Percent	7.5	10.4	7.9	7.6	9.6	9.6	7.8	11.0	8.2	8.8
Developmental	Number	2,413	412	2,825	72	75	558	3,341	189	3,530	4,252
Disabilities	Percent	7.7	10.0	7.9	5.5	3.4	9.6	8.3	4.2	7.9	7.6
Heart	Number	3,229	376	3,605	46	204	492	4,008	339	4,347	5,291
	Percent	10.3	9.1	10.2	3.4	9.1	8.5	9.9	7.4	9.7	9.5
Other	Number	1,036	337	1,373	104	215	367	1,692	367	2,059	2,821
	Percent	3.3	8.1	3.9	7.9	9.6	6.3	4.2	8.0	4.6	5.1
Total Reported	Number	31,414	4,128	35,542	1,319	2,230	5,825	40,341	4,575	44,916	55,865
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported ^a	Number Percent	3,819 	385 	4,204 	40	376	655 	4,684	591 	5,275 	6,529
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

#### TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY DISABILITY: 1977

^a Includes persons on the institutional survey who indicated they were not transportation handicapped.

Source: SEWRPC.

- 8. <u>Heart</u>—Includes heart problems of all kinds, including specific references to the arteries or a pacemaker.
- 9. Other—Includes asthma, respiratory problems, chest pain, lung pain, removed lung, bronchitis, arthritis of sternum, trouble breathing, emphysema, hearing, multiple sclerosis, and muscular dystrophy.

<u>Milwaukee SMSA</u>: Of the 50,190 transportation handicapped persons in the SMSA, 44,920 or about 89 percent, reported their disability. Among the 6,530 persons in the Region who did not report their disability, 4,080 are institutionalized able-bodied persons who, as previously discussed, are considered to be transportation handicapped. Of the number of persons reporting disabilities, the number and percent distribution in descending order of occurrence is: arthritis, 9,630 or about 21 percent; old age, 6,120, or about 14 percent; impaired trunk—ambulatory, 5,950, or about 13 percent; stroke, 5,810, or about 13 percent; heart, 4,350, or about 10 percent; impaired trunk—nonambulatory, 3,670, or about 8 percent; developmental disabilities, 3,530, or about 8 percent; and other, 2,060, or about 5 percent. These distributions vary only slightly from the distributions in the Region as a whole.

<u>Milwaukee Urbanized Area</u>: The number and approximate percent distribution of transportation handicapped persons by descending order of occurrence is: arthritis, 8,620, or about 21 percent; impaired trunk—ambulatory, 5,410, stroke, 5,400, and old age, 5,270, all three of which are about 13 percent; heart, 4,010, or 10 percent; visual, 3,430, or about 9 percent; developmental disabilities, 3,340, and impaired trunk—nonambulatory, 3,170, both of which are about 8 percent; and other, 1,690, or about 4 percent.

<u>Milwaukee Nonurbanized Area</u>: In order of descending occurrence, the number of persons and approximate percent distribution by disability are: arthritis, 1,010, or about 22 percent; old age, 850, or about 19 percent; impaired trunk—ambulatory, 540, or about 12 percent; impaired trunk—nonambulatory, 500, or about 11 percent; stroke, 400, or about 9 percent; visual, 370, or about 8 percent; other, 370, also about 8 percent; heart, 340, or about 7 percent; and developmental disabilities, 190, or about 4 percent.

Milwaukee County: In Milwaukee County, the number and approximate percent distribution of transportation handicapped persons by descending order of occurrence are: arthritis, 8,140, or about 23 percent; impaired trunk ambulatory, 4,740, or about 13 percent; stroke, 4,700, or about 13 percent; old age, 4,290, or about 12 percent; heart, 3,610, or about 10 percent, visual, 3,070, or about 9 percent; developmental disabilities, 2,830, or about 8 percent; impaired trunk—nonambulatory, 2,800, also about 8 percent; and other, 1,370, or about 4 percent.

Ozaukee County: The distribution of transportation handicapped persons in descending order of disability classification is: old age, 400, or about 30 percent; stroke, 200, or about 15 percent; arthritis, 160, or about 12 percent; visual, 150, or about 11 percent; other, 100, or about 8 percent; impaired trunk—nonambulatory, 100, also about 8 percent; impaired trunk—ambulatory, 90, or about 7 percent; developmental disabilities, 70, or about 6 percent; and heart, 50, or about 3 percent. Due to the low number of samples collected in the household survey, the classification by disability may not be representative of the total transportation handicapped population in Ozaukee County.

Washington County: The number and approximate percent distribution of transportation handicapped persons by descending order of occurrence in Washington County are: arthritis, 540, or about 24 percent; old age, 510, or about 23 percent; stroke, 220, or about 10 percent; other, 220, also about 10 percent; impaired trunk—nonambulatory, 210, also about 10 percent; heart, 200, or about 9 percent; impaired trunk—ambulatory, 130, or about 6 percent; visual, 120, or about 5 percent; and developmental disabilities, 80, or about 3 percent.

<u>Waukesha County</u>: In Waukesha County, the number of transportation handicapped persons and their approximate percent distribution by disability classification are: impaired trunk ambulatory, 990, or about 17 percent; old age, 920, or about 16 percent; arthritis, 790, or about 14 percent; stroke, 690, or about 12 percent; impaired trunk—nonambulatory, 560, and developmental disabilities, 560, both of which account for approximately 10 percent each; heart, 490, or about 9 percent; visual, 460, or about 8 percent; and other, 370, or about 6 percent.

<u>Milwaukee Transit Service Area</u>: In descending order of occurrence, the number of persons and approximate percent distribution by disability are: arthritis, 7,210, or about 23 percent; impaired trunk—ambulatory, 4,190, or about 13 percent; stroke, 4,130, also about 13 percent; old age, 3,890, or about 12 percent; heart, 3,230, or about 10 percent; visual, 2,950, or about 9 percent; developmental disabilities, 2,410, or about 8 percent; impaired trunk nonambulatory, 2,370, also about 8 percent; and other, 1,040, or about 3 percent.

<u>Milwaukee Nontransit Area</u>: The number and approximate percent distribution of transportation handicapped persons in descending order of occurrence in the Milwaukee nontransit area are: arthritis, 940, or about 23 percent; stroke, 570, or about 14 percent; impaired trunk—ambulatory, 550, or about 13 percent; impaired trunk—nonambulatory, 430, or about 10 percent; developmental disabilities, 410, also about 10 percent; old age, 400, or about 10 percent; heart, 380, or about 9 percent; other, 340, or about 8 percent; and visual, 110, or about 3 percent. Due to the low number of samples collected on the household survey, the disability classifications may not necessarily represent the total transportation handicapped population in the Milwaukee nontransit area.

#### Transportation Handicapped Persons by Type of Aid Used

The type of aids used by transportation handicapped persons can be classified into commonly used terms. For study purposes all the aids were grouped into five general classifications as follows:

- 1. Cane
- 2. Walker, crutches, grab rails, and quad.
- 3. Wheelchair.
- 4. None.
- 5. Miscellaneous, covering artificial leg, hearing aid, leg braces, aid in car for driving, hydraulic lifts, special shoes, and supervision.

It should be noted that the 4,084 able-bodied persons in institutions are recorded in the "Not reported" line in Table 44. As noted previously, these persons are considered to be transportation handicapped. <u>Milwaukee SMSA</u>: Of the 38,440 persons, or approximately 77 percent of the total 50,190 persons reporting the type of aid used in the Milwaukee SMSA, 16,760, or about 44 percent, reported using no mechanical aid; 9,280, or about 24 percent, reported using a wheelchair; 9,190, also about 24 percent, reported using a cane; 2,730, or about 7 percent, reported using a walker or crutches; and 490 or about 1 percent, reported using miscellaneous aids. The percent distribution is very similar to the regional distribution varying by only about 1 percent in the classification of walker and crutches.

<u>Milwaukee Urbanized Area</u>: In descending order of use, of the 34,570 persons who account for about 77 percent of the 45,030 persons in the Milwaukee urbanized area: 15,110, or about 44 percent, do not use an aid; 8,350, or about 24 percent, use a cane; 8,340, also about 24 percent, use a wheelchair; 2,320, or about 7 percent, use a walker or crutches; and 450, or about 1 percent use miscellaneous aids.

<u>Milwaukee Nonurbanized Area</u>: In the Milwaukee nonurbanized area, the 3,870 persons reporting the type of aid used represent about 75 percent of the 5,170 persons in the nonurbanized area.

#### Table 44

		Milwaukee County		Cou	unties Within	Milwaukee SM	SA	Milwaukee SMSA			
Type of Aid		Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Cane	Number	7,020	599	7,619	168	47 1	931	8,349	840	9,189	11,237
	Percent	26.0	16.5	24.9	16.0	24.7	19.2	24.2	21.7	23.9	23.5
Walker, Crutches and	Number	1,881	166	2,047	45	230	410	2,315	417	2,732	3,893
Similar Devices	Percent	7.0	4.6	6.7	4.3	12.1	8.4	6.7	10.7	7.1	8.1
Wheelchair	Number	5,340	1,565	6,905	375	344	1,652	8,340	936	9,276	11,512
	Percent	19.8	43.0	22.5	35.7	18.0	34.0	24.1	24.2	24.1	24.0
None	Number	12,329	1,307	13,636	453	801	1,867	15,111	1,646	16,757	20,467
	Percent	45.7	85.9	44.5	43.2	42.0	38.4	43.7	42.5	43.6	42.7
Miscellaneous	Number Percent	419 1.5	0	419	8 0.8	61 3.2	0	453 1.3	35 0.9	488 1.3	805
Total Reported	Number	26,989	3,637	30,626	1,049	1,907	4,860	34,568	3,874	38,442	47,914
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported Not Applicable	Number Percent	8,244	876 	9,120	310	699 	1,620	10,457	1,292	11,749	14,480
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

## TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY TYPE OF AID USED: 1977

Source: SEWRPC.

The number of persons and approximate percent distribution in descending order of use are, respectively: none, 1,650, or about 43 percent; wheelchair, 940, or about 24 percent; cane, 840, or about 22 percent; walker and crutches, 420, or about 11 percent; and miscellaneous, 40, or about 1 percent.

Milwaukee County: In Milwaukee County, 77 percent of the 39,750 transportation handicapped persons reported their use of an aid. The number and approximate percent distribution of these 30,630 persons by use of an aid are: none, 13,640, or about 45 percent; cane, 7,620, or about 25 percent; wheelchair, 6,910, or about 23 percent; walker and crutches, 2,050, or about 7 percent; and miscellaneous, 420, or slightly more than 1 percent.

Ozaukee County: The 1,050 transportation handicapped persons reporting use of an aid account for about 77 percent of the 1,360 total transportation handicapped persons in Ozaukee County. The number of persons by use of an aid and the percent distribution are: none, 450, or about 43 percent; wheelchair, 380, or about 36 percent; cane, 170, or about 16 percent; walker and crutches, 50, or about 16 percent; and miscellaneous, 10, or about 1 percent. Due to the low number of samples collected, classification by use of an aid may not necessarily represent the total transportation handicapped population in Ozaukee County.

Washington County: Of the 2,610 transportation handicapped persons in Washington County, 1,910, or about 73 percent, reported their use of an aid. The number of persons and approximate percent distribution of persons by aid type are: none, 800, or about 42 percent; cane, 470, or about 25 percent; wheelchair, 340, or about 18 percent; walker and crutches, 230, or about 12 percent; and miscellaneous, 60 or about 3 percent.

<u>Waukesha County</u>: In Waukesha County, 4,860 persons of the 6,480 total transportation handicapped persons representing about 75 percent reported their use of an aid. The number of persons and their approximate percent distribution by aid type are: none, 1,870, or about 38 percent; wheelchair, 1,650, or about 34 percent; cane, 930, or about 19 percent; walker and crutches, 410, or about 8 percent. None of the transportation handicapped persons reporting use of an aid in Waukesha County was reported in the miscellaneous classification.

<u>Milwaukee Transit Service Area</u>: Of the 35,230 persons in the Milwaukee transit service area, 26,990, or about 77 percent, reported the type of aid used. The number of persons and the approximate percent distribution by type of aid are: none, 12,330, or about 46 percent; cane, 7,020, or about 26 percent; wheelchair, 5,340, or about 20 percent; walker and crutches, 1,880, or about 7 percent; and miscellaneous, 420, or slightly more than 1 percent.

Milwaukee Nontransit Area: Of the 4,510 transportation handicapped persons in the Milwaukee nontransit area, 3,640, or about 81 percent, reported their use of an aid. The number of persons and their approximate percent distribution by type of an aid used are: wheelchair, 1,570, or about 43 percent; none, 1,310, or about 36 percent; cane, 600, or about 17 percent; and walker and crutches, 170, or about 5 percent. Of the transportation handicapped persons reporting their use of an aid, no one indicated any type of aid used in the miscellaneous classification. Due to the low number of samples collected in the nontransit area, classification by use of an aid may not necessarily represent the total transportation handicapped population.

# Transportation Handicapped and

Able-Bodied Elderly Persons by

Auto Available To Drive

Tables 45 and 46 include the numbers and percent of the transportation handicapped persons and able-bodied elderly persons who have an auto available to drive.

<u>Milwaukee SMSA</u>: Within the SMSA, 7,120 transportation handicapped persons, or about 14 percent, have an automobile available to drive, and 43,070 transportation handicapped persons, or about 86 percent, do not have an auto available to drive. Of the able-bodied elderly persons, about 44 percent, or 44,060, do not have an auto available to drive and about 56 percent, or about 56,380, do have an auto available to drive.

<u>Milwaukee</u> Urbanized Area: In the urbanized area 5,860 transportation handicapped persons, or about 13 percent, have an auto available to drive and 39,170, or about 87 percent, do not

#### TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY AUTO AVAILABLE TO DRIVE: 1977

	Milwaukee County		Cou	unties Within	Milwaukee SM	SA	Milwaukee SMSA				
Auto Available to Drive		Transit Service Area	Nontransit Area	Miłwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Yes	Number	4,405	769	5,174	202	715	1,030	5,856	1,264	7,120	9,272
	Percent	12.5	17.0	13.0	14.9	27.4	15.9	13.0	24.5	14.2	14.9
No	Number	30,828	3,744	34,572	1,157	1,891	5,450	39,169	3,902	43,071	53,122
	Percent	87.5	83.0	87.0	85.1	72.6	84.1	87.0	75.5	85.8	85.1
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

#### Table 46

#### ABLE-BODIED ELDERLY PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY AUTO AVAILABLE TO DRIVE: 1977

Auto Availability		Milwaukee County		Counties Within Milwaukee SMSA				Milwaukee SMSA			
		Transit Service Nontransi Area Area		Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Yes	Number	42,495	2,690	45,185	1,684	2,155	7,357	49,684	6,696	56,381	74,028
	Percent	54.1	57.4	54.3	70.1	65.3	63.7	54.8	68.2	56.1	59.1
No	Number	36,013	1,997	38,010	719	1,143	4,191	40,940	3,124	44,063	1,134
	Percent	45.9	42.6	45.7	29.9	34.7	36.3	45.2	31.8	43.9	40.9
Total	Number	78,508	4,687	83,195	2,403	3,298	11,548	90,624	9,820	100,444	125,162
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

have auto available to drive. Of the 90,620 able-bodied elderly persons 49,680, or about 55 percent, have an auto available to drive and 40,940, or about 45 percent, do not have an auto available to drive.

<u>Milwaukee Nonurbanized Area</u>: Of the 5,170 transportation handicapped persons in the nonurbanized area 1,260, or about 25 percent, have an auto available to drive and 3,900, or about 75 percent, do not have an auto available to drive. Of the able-bodied elderly in the nonurbanized area 6,700, or about 68 percent, have an auto available to drive and 3,120, or about 32 percent, do not have an auto available to drive.

<u>Milwaukee County</u>: In Milwaukee County 5,170 of the transportation handicapped persons representing about 13 percent of the total transportation handicapped persons have an auto available to drive while 34,570, or about 87 percent of the total transportation handicapped persons, do not have an auto available to drive. Within Milwaukee County 45,190 ablebodied elderly persons, or about 54 percent of the total able-bodied elderly persons within the county, have an auto available to drive and 38,010, or about 46 percent of the able bodied elderly persons do not have an auto available to drive.

Ozaukee County: Of the 1,360 transportation handicapped persons in Ozaukee County 200, or about 15 percent, have an auto available to drive and 1,160, or about 85 percent, do not have an auto available to drive. In Ozaukee County 1,680 able-bodied elderly persons, or about 70 percent of the total able-bodied elderly persons, have an auto available to drive and 720, or
about 30 percent of the able-bodied elderly persons, do not have an auto available to drive.

Washington County: In Washington County 720 transportation handicapped persons, or about 27 percent of the total transportation handicapped persons, have an auto available to drive while 1,890, or about 73 percent of the total transportation handicapped persons, do not have an auto available to drive. Of the 3,300 able-bodied elderly persons in Washington County, 2,160, or about 65 percent, have an auto available to drive and 1,140, or about 35 percent, do not have an auto available to drive.

<u>Waukesha County</u>: In Waukesha County about 16 percent, or 1,030 of the transportation handicapped persons, have an auto available to drive and about 84 percent, or 5,450, do not have an auto available to drive. Of the 11,550 able-bodied elderly persons in Waukesha County, 7,360, or about 64 percent, have an auto available to drive while 4,190, or about 36 percent, do not have an auto available to drive.

<u>Milwaukee Transit Service Area</u>: In the transit service area 4,410, or about 13 percent of the transportation handicapped persons, have an auto available to drive while 30,830, or about 87 percent of the transportation handicapped persons, do not have an auto available to drive. Of the 78,510 able-bodied elderly persons in the transit service area, 42,500, or about 54 percent, have an auto available to drive while 36,010, or about 46 percent, do not have an auto available to drive.

<u>Milwaukee Nontransit Area</u>: In the nontransit area 770 transportation handicapped persons, or about 17 percent of the total transportation handicapped persons, have an auto available to drive while 3,740, or about 83 percent of the total transportation handicapped persons, do not have an auto available to drive. Of the 4,690 able-bodied elderly persons in the nontransit area 2,690, or about 57 percent, have an auto available to drive while 2,000, or about 43 percent, do not have an auto available to drive.

## Transportation Handicapped and Able-Bodied Elderly Persons by Frequency of Auto Available to Ride In

The "Not reported—not applicable" classification includes those persons who have an auto available to drive. At the regional level 9,270 transportation handicapped persons and 74,030 able-bodied elderly persons indicated they had an auto available to drive and as a result are excluded from answering the question of auto available to ride in. Tables 47 and 48 present the number and percent distribution of transportation handicapped persons and ablebodied elderly persons by their response to the auto available to ride in question.

Milwaukee SMSA: Of the 41,900 transportation handicapped persons, 8,150, or about 19 percent, never have an auto available to ride in; 14,360, or about 34 percent, have an auto available to ride in occasionally; 9,320, or about 22 percent, have an auto available to ride in most of the time; and 10,070, or about 24 percent, always have an auto available to ride in. Within the Milwaukee SMSA 5,260 able-bodied elderly persons, or about 13 percent of the total ablebodied elderly persons responding to this question, never have an auto available to ride in: 14,130 able-bodied elderly persons, or about 34 percent occasionally have an auto available to ride in; 10,230, or about 25 percent, have an auto available to ride in most of the time; and 11,710, or about 28 percent, always have an auto available to ride in.

Milwaukee Urbanized Area: In the Milwaukee urbanized area 38,080 transportation handicapped persons responded to this question. By frequency of auto available to ride in, the number of persons and the approximate percent distribution are: never, 7,810, or about 21 percent; occasionally, 12,970, or about 34 percent; most of the time, 8,410, or about 22 percent, and always, 8,880, or about 23 percent. Of the 52,250 able-bodied elderly persons responding to this question, the number of persons and approximate percent distribution by frequency classification are never, 5,150, or about 13 percent; occasionally, 13,320, or about 35 percent; most of the time, 9,200, or about 24 percent; and always, 10,710, or about 28 percent.

<u>Milwaukee Nonurbanized Area</u>: Of the 5,170 transportation handicapped persons in the Milwaukee nonurbanized area, 3,820 responded to the auto available to ride in question. The number of persons and approximate percent distribution by frequency are: never, 340, or about 9 percent; occasionally, 1,400, or about 37 percent; most of the time, 910, or about

[											
		Milwau	kee County	Cou	Inties Within	Milwaukee SM	SA	Ν	Ailwaukee SMSA		
Auto Available to Frequency	Ride	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Never	Number	5,643	1,329	6,972	136	220	819	7,812	335	8,147	9,478
	Percent	18.9	35.5	20.8	12.2	11.6	15.4	20.5	8.8	19.4	18.5
Occasionally	Number	10,170	1,325	11,495	555	603	1,710	12,968	1,395	14,363	17,186
	Percent	34.1	35.4	34.3	49.6	31.9	32.1	34.1	36.5	34.3	33.6
Most of The Time	Number	7,078	553	7,631	185	398	1,106	<b>8,41</b> 4	906	9,320	10,581
	Percent	23.7	14.8	22,7	16.5	21.0	20.7	22.1	23.7	22.2	20.7
Always	Number	6,922	537	7,459	243	670	1,696	8,884	1,184	10,068	13,864
	Percent	23.3	14.3	22.2	21.7	35.5	31.8	23.3	31.0	24.1	27.2
Total Reported	Number	29,813	3,744	33,557	1,119	1,891	5,331	38,078	3,820	41,898	51,109
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported ^a Not Applicable	Number Percent	5,420	769 	6,189 	240	715	1,149	6,947	1,346	8,293	11,285
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
	Percent	100,0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

# TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY FREQUENCY OF AUTO AVAILABLE TO RIDE IN: 1977

^a Includes persons who have an auto available to drive.

Source: SEWRPC.

#### Table 48

# ABLE-BODIED ELDERLY PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY FREQUENCY OF AUTO AVAILABLE TO RIDE IN: 1977

		Milwau	kee County	Co	unties Within	Milwaukee SN	15A				
Auto Available Frequen	e to Ride cy	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Never	Number Percent	4,762 14.2	177 8.8	4.939 13.9	38 5.9	0	282 6.9	5,149 13.4	110 3.7	5,259 12.7	5,902 12.3
Occasionally	Number	12,151	442	12,593	38	91	1,410	13,317	815	14,132	15,420
	Percent	36.2	22.1	35.5	5.9	8.4	34.6	34.7	27.7	34.2	32.2
Most of	Number	8,134	219	8,353	384	350	1,138	9,202	1,023	10,225	12,207
the Time	Percent	24.3	11.0	23.5	60.0	32.3	27.9	24.0	34.7	24.8	25.5
Always	Number	8,482	1,160	9,642	180	643	1,246	10,710	1,001	11,711	14,359
	Percent	25.3	58.1	27.1	28.2	59.3	30.6	27.9	33.9	28.3	30.0
Total Reported	Number	33,529	1,998	35,527	640	1,084	4,076	38,378	2,949	41,327	47,888
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Applicable ^a Not Reported	Number Percent	44,979 	2,689	<b>47</b> ,668 	1,763 	2,214	7,472	52,2 <b>4</b> 6 	6,871	59,117 	77,274
Total	Number	78,508	4,687	83,195	2,403	3,298	11,548	90,624	9,820	100,444	125,162
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aIncludes persons who have an auto available to drive.

24 percent; and always, 1,180, or about 31 percent. There are 9,820 able-bodied elderly persons in the Milwaukee nonurbanized area; of these, 2,950 supplied answers to the auto available to ride in question. Of these 110, or about 4 percent, answered that they never had an auto available to ride in, 820, or about 28 percent, answered they occasionally had an auto available to ride in; 1,020, or about 35 percent, answered that they had an auto available to ride in most of the time; and 1,000, or about 34 percent, answered that they always had an auto available to ride in.

Milwaukee County: Within Milwaukee County are 33,560 transportation handicapped persons who answered the auto available to ride in question. The number of persons and the approximate percent distribution by frequency is: never, 6,970, or about 21 percent; occasionally, 11,500, or about 34 percent; most of the time, 7,630, or about 23 percent; always, 7,460, or about 22 percent. Of the 35,520 able-bodied elderly persons in Milwaukee County who responded to the auto available to ride in question, the number and approximate percent distribution by frequency is: never, 4,940, or about 14 percent; occasionally, 12,590, or about 36 percent; most of the time, 8,350, or about 24 percent; always, 9,640, or about 27 percent.

Ozaukee County: By frequency the number of transportation handicapped persons responding to the auto available to ride in question in Ozaukee County is: never, 140, or about 12 percent; occasionally, 560, or about 50 percent; most of the time, 190, or about 17 percent; always, 240, or about 22 percent. Due to the low number of samples collected, the response to the auto available to ride in question may not necessarily represent the total transportation handicapped and able-bodied elderly population in Ozaukee County. The distribution by frequency of the 640 able-bodied elderly persons responding to this question in Ozaukee County is: never, 40, or about 6 percent; occasionally, 40, also about 6 percent; most of the time, 380, or about 60 percent; always, 180, or about 28 percent.

Washington County: Of the 1,890 transportation handicapped persons responding to this question, the number of persons and the approximate percent distribution by frequency are: never, 220, or about 12 percent; occasionally, 600, or about 32 percent; most of the time, 400, or about 21 percent; and always, 670, or about 36 percent. The distribution by frequency of the 1,080 able-bodied elderly persons in Washington County is: occasionally, 90, or about 8 percent; most of the time, 350, or about 32 percent; and always, 640, or about 59 percent. The household survey found no one in the classification "never" in Washington County.

<u>Waukesha County</u>: The number of persons and approximate percent distribution of the 5,330 transportation handicapped persons in Waukesha County are: never, 820, or about 15 percent; occasionally, 1,710, or about 32 percent; most of the time, 1,110, or about 21 percent; always, 1,700, or about 32 percent. The frequency distribution of 4,080 able-bodied elderly persons responding to this question in Waukesha County is: never, 280, or about 7 percent; occasionally, 1,410, or about 35 percent; most of the time, 1,140, or about 28 percent; always, 1,250, or about 31 percent.

<u>Milwaukee Transit Service Area</u>: Within the Milwaukee transit service area 29,810 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by frequency are: never, 5,640, or about 19 percent; occasionally, 10,170, or about 34 percent; most of the time, 7,080, or about 24 percent; and always, 6,920, or about 23 percent. Of the 33,530 able-bodied elderly persons responding to this question in the Milwaukee transit service area the distribution by frequency is: never, 4,760, or about 14 percent; occasionally, 12,150, or about 36 percent; most of the time, 8,130, or about 24 percent; and always, 8,480, or about 25 percent.

<u>Milwaukee Nontransit Area</u>: In the nontransit area 3,740 transportation handicapped persons responded to the auto available to ride question. The number of persons and percent distribution by frequency of these persons are: never, 1,330, or about 36 percent; occasionally, 1,330, or about 35 percent; most of the time, 550, or about 15 percent; and always, 540, or about 14 percent. Due to the low number of samples collected, the response to the auto available to ride in question may not necessarily represent the total transportation handicapped and able-bodied elderly population in the Milwaukee nontransit area. Only about 43 percent, or 2,000, of the 4,690 able-bodied elderly persons responded to this question in the Milwaukee nontransit area. The number of persons and percent distribution by frequency of these persons is: never, 180, or about 9 percent; occasionally, 440, or about 22 percent; most of the time, 220, or about 11 percent; and always, 1,160, or about 58 percent.

# Transportation Handicapped Persons by Ability to Ride in an Auto

An examination of transportation handicapped persons and auto availability is not complete without an understanding of their ability to ride in an auto. Table 49 summarizes the number of persons and percent distribution of persons who responded to the question of ability to ride in an auto. The relatively large number of transportation handicapped persons in the "Not reported—not applicable" line results from the fact that the survey design excluded persons who were able to drive an automobile.

<u>Milwaukee SMSA</u>: In the Milwaukee SMSA the number of transportation handicapped persons and their percent distribution are: impossible, 4,370, or about 10 percent; difficult, 12,680, or about 30 percent; some difficulty, 10,720, or about 25 percent; and no problem, 14,370, or about 34 percent. In terms of percent distribution the SMSA percent distribution varies from the regional distribution in the classification difficult by nearly 3 percent. The percent distribution varies by less than 2 in the other classifications.

<u>Milwaukee</u> Urbanized Area: The degree of ability to ride in an automobile among the 38,400 transportation handicapped persons in the Milwaukee urbanized area is: impossible, 4,100, or about 11 percent; difficult, 11,260, or about 29 percent; some difficulty, 9,800, or about 26 percent; and no problem, 13,240, or about 35 percent.

<u>Milwaukee Nonurbanized Area</u>: The number of transportation handicapped persons and their approximate percent distribution by degree of ability to ride in an auto are: impossible, 270, or about 7 percent; difficult, 1,420, or about 38 percent; some difficulty, 910, or about 25 percent; and no problem, 1,130 or about 30 percent.

## Table 49

# TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY ABILITY TO RIDE IN AN AUTO: 1977

		Milwau	kee County	Cou	unties Within	Milwaukee SM	SA		lilwaukee SMSA		Γ
Ride in Auto	Ability	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Impossible	Number	2,644	969	3,613	169	215	372	4,096	273	4,369	4,977
	Percent	8.8	25.9	10.7	15.7	11.4	7.1	10.7	7.3	10.4	9.7
Difficult	Number	8,131	984	9,115	477	706	2,379	11,257	1,420	12,677	16,743
	Percent	27.0	26.3	26.9	44.5	37.3	45.1	29.3	38.0	30.1	32.7
Some Difficulty	Number	8,310	486	8,796	110	389	1,419	9,801	914	10,715	12,722
	Percent	27.6	13.0	26.0	10,3	20.6	26.9	25.5	24.5	25.4	24.8
No Problem	Number	11,061	1,305	12,366	317	581	1,103	13,241	1,125	14,366	16,838
	Percent	36.6	34.8	36.4	29.5	30.7	20.9	34.5	30.2	34.1	32.8
Total Reported	Number	30,146	3,744	33,890	1,073	1,891	5,273	38,395	3,732	42,127	51,280
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported Not Applicable	Number Percent	5,087	769	5,856	286	715	1,207	6,630 	1,434	8,064	11,114
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50, 19 1	62,394
	Percent	100.0	1 <b>0</b> 0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<u>Milwaukee County</u>: Within Milwaukee County are 33,890 transportation handicapped persons who answered this question. The number of transportation handicapped persons and their approximate percent distribution by degree of ability to ride in an auto are: impossible, 3,610, or about 11 percent; difficult, 9,120, or about 27 percent; some difficulty, 8,800, or about 26 percent; and no problem, 12,370, or about 36 percent.

<u>Ozaukee County</u>: Of the 1,070 persons who answered this question, the number of persons and the approximate percent distribution by degree of ability to ride in an automobile are: impossible, 170, or about 16 percent; difficult, 480, or about 45 percent; some difficulty, 110, or about 10 percent; and no problem, 320, or about 30 percent. Due to the low number of samples collected, the respondents may not necessarily represent the total transportation handicapped population in Ozaukee County.

Washington County: A total of 1,890 persons answered this question on their degree of ability to ride in an auto as: impossible, 220, or about 11 percent; difficult, 710, or about 37 percent; some difficulty, 390, or about 21 percent; and no problem, 580, or about 31 percent.

<u>Waukesha County</u>: Of the 5,270 transportation handicapped persons in Waukesha County who answered this question, the number of persons and approximate percent distribution by degree of ability to ride in an auto are: impossible, 370, or about 7 percent; difficult, 2,380, or about 45 percent; some difficulty, 1,420, or about 27 percent; and no problem, 1,100, or about 21 percent.

<u>Milwaukee Transit Service Area</u>: Of the 30,150 transportation handicapped persons responding to this question, the number of persons and the approximate percent distribution by degree of ability to ride in an automobile are: impossible, 2,640, or about 9 percent; difficult, 8,130, or about 27 percent; some difficulty, 8,310, or about 28 percent; and no problem, 11,060, or about 37 percent.

<u>Milwaukee Nontransit Area</u>: The number of transportation handicapped persons and the approximate percent distribution of the 3,740 transportation handicapped persons who responded to this item are: impossible, 970, or about 26 percent; difficult, 980, or about 26 percent; some difficulty, 490, or about 13 percent; and no problem, 1,310, or about 35 percent. Due to the low number of samples collected, respondents to this question may not necessarily represent the total transportation handicapped population.

Perceived Ability of Transportation Handicapped Persons to Reach Bus Stop

The option of improving existing buses and service or extending service to areas not now served in order to meet transportation needs of transportation handicapped persons must account for the perceived ability of such persons to reach a bus stop. Table 50 summarizes by geographic area the number and percent distribution of transportation handicapped persons by their perceived ability to reach a bus stop and, when able to so do, the distance perceived as attainable by them.

<u>Milwaukee SMSA</u>: Of the 45,970 transportation handicapped persons in the Milwaukee SMSA who answered this question, the number of persons and approximate percent distribution by perceived ability are: impossible, 22,090, or about 48 percent; front of house, 6,770, or about 15 percent; one block, 3,770, or about 8 percent; and, two blocks, 13,350, or about 29 percent.

<u>Milwaukee Urbanized Area</u>: In the urbanized area 40,910 persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 19,630, or about 48 percent; front of house, 5,010, or about 12 percent; one block, 3,650, or about 9 percent; two blocks, 12,620, or about 31 percent.

<u>Milwaukee Nonurbanized Area</u>: Contained in the nonurbanized area are 5,060 persons who responded to this question. The number of transportation handicapped persons and the approximate percent distribution by perceived ability to reach a bus stop are: impossible, 2,450, or about 49 percent; front of house, 1,760, or about 35 percent; one block, 130, or slightly less than 3 percent; and two blocks, 720, or about 14 percent.

<u>Milwaukee County</u>: Of the 36,200 transportation handicapped persons in Milwaukee County who responded to this question, the number of persons and approximate percent distribution by perceived ability are: impossible, 16,730,

		Milwauk	ee County	Cou	unties Within	Milwaukee SM	SA	N			
Perceived Ab Reach Bus	ility to Stop	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Impossible	Number	14,536	2,191	16,727	925	1,214	3,219	19,633	2,452	22,085	26,697
	Percent	45.9	48.5	46.2	68.1	48.2	54.6	48.0	48.5	48.1	46.9
Front of House	Number	3,263	924	4,187	258	864	1,460	5,011	1,758	6,769	10,378
	Percent	10.3	20.5	11.6	19.0	34.3	24.8	12.2	34.7	14.7	18.2
One Block	Number Percent	3,130 9.9	321 7.1	3,451 9.5	0	74 2.9	246 4.2	3,646 8.9	125 2.5	3,771 8.2	4,318 7.6
Two Blocks	Number	10,758	1,077	11,835	176	369	966	12,622	724	13,346	15,508
	Percent	33.9	23.9	32.7	12.9	14.6	16.4	30.9	14.3	29.0	27.3
Total Reported	Number	31,687	4,513	36,200	1,359	2,521	5,891	40,912	5,059	45,971	56,901
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	3,546	0 	3,546	0	85 	589 	4,113		4,220 	5,493
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

# TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY PERCEIVED ABILITY TO REACH A BUS STOP: 1977

Source: SEWRPC.

or about 46 percent; front of house, 4,190, or about 12 percent; one block, 3,450, or about 10 percent; and two blocks, 11,840, or about 33 percent.

Ozaukee County: All of the 1,360 transportation handicapped persons in Ozaukee County responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 930, or about 68 percent; front of house, 260, or about 19 percent; and two blocks, 180, or about 13 percent. Due to the low number of samples collected, the respondents to this question may not necessarily represent the total transportation handicapped population.

Washington County: In Washington County 2,520 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 1,210, or about 48 percent; front of house, 860, or about 34 percent; one block, 70, or less than 3 percent; and two blocks, 370, or about 15 percent.

<u>Waukesha County</u>: Of the 6,480 transportation handicapped persons in Waukesha County, 5,890 responded to this question. The number of persons and approximate percent distribution by perceived ability to reach a bus stop are: impossible, 3,220, or about 55 percent; front of house, 1,460, or about 25 percent; one block, 250, or about 4 percent; and two blocks, 970, or about 16 percent.

<u>Milwaukee Transit Service Area</u>: Within the transit service area 31,690 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 14,540, or about 46 percent; front of house, 3,260, or about 10 percent; one block, 3,130, or about 10 percent; and two blocks, 10,760, or about 34 percent.

<u>Milwaukee Nontransit Area</u>: All of the 4,510 transportation handicapped persons in the Milwaukee nontransit area responded to this item. The number of persons and approximate percent distribution by perceived ability are: impossible, 2,190, or about 49 percent; front of house, 920, or about 21 percent; one block, 320, or about 7 percent; and two blocks, 1,080, or about 24 percent. Due to the low number of samples collected, the respondents to this question may not necessarily represent the total transportation handicapped population. Transportation Handicapped persons and Able-Bodied Elderly Persons by Perceived Availability of Special Transportation Services Another option for improving mobility of the transportation handicapped and able-bodied elderly population is to make special transportation services more available. A prerequisite to so doing is to understand what these groups perceive as currently available. Tables 51 and

52 summarize by geographic area the response of the transportation handicapped and ablebodied elderly to this question.

<u>Milwaukee SMSA</u>: Of the 50,010 transportation handicapped persons responding to this item, 27,990, or about 56 percent, perceive that they have no special transportation available and 22,020 or about 44 percent perceive special

## Table 51

# TRANSPORTATION HANDICAPPED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA BY PERCEIVED AVAILABILITY OF SPECIAL TRANSPORTATION SERVICES: 1977

		Milwaukee County		Соч	unties Within	Milwaukee SM	SA	N			
Perceiveo Transpo Availab	l Special rtation vility	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
No	Number	20,891	1,694	22,585	791	1,246	3,371	25,510	2,482	27,992	35,156
	Percent	59.6	37.5	57.0	58.2	47.8	52.3	56.8	48.3	56.0	56.5
Yes	Number	14,189	2,819	17,008	568	1,360	3,078	19,362	2,653	22,015	27,054
	Percent	40.4	62.5	43.0	41.8	52.2	47.7	43.2	51.7	44.0	_43.5
Total Reporte	d Number	35,080	4,513	39,593	1,359	2,606	6,449	44,872	5,135	50,007	62,210
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	153	0	153	0 	0	31 	153 	31 	184	184
Total	Number	35,233	4,513	39,746	1,359	2,606	6,480	45,025	5,166	50,191	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

#### Table 52

## ABLE-BODIED ELDERLY PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY PERCEIVED AVAILABILITY OF SPECIAL TRANSPORTATION SERVICES: 1977

		Milwaukee County		Counties Within Milwaukee SMSA				N		<u> </u>	
Perceived Spe Transportat Availabilit	ecial ion V	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
No	Number	62,187	3,407	65,594	1,342	1,639	8,618	70,707	6,486	77,193	93,5 <b>7</b> 9
	Percent	79.7	72.7	79.3	55.8	49.7	75.5	78.5	66.3	77.3	75.2
Yes	Number	15,863	1,280	17,143	1,061	1,659	2,791	19,363	3,291	22,654	30,857
	Percent	20,3	27.3	20.7	44.2	50.3	24.5	21.5	33.7	22.7	24.8
Total Reported	Number	78,050	4,687	82,737	2,403	3,298	11,409	90,070	9,777	99,847	124,436
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	458	0	458	0	0 	139	554	43	597 	726
Total	Number	78,508	4,687	83,195	2,403	3,298	11,548	90,624	9,820	100,444	125,162
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

transportation services as available. In the able-bodied elderly group 77,190, or about 77 percent, perceive that special transportation services are not available and 22,650, or about 23 percent, perceive special transportation services are available. The percentage distributions in both the transportation handicapped group and the ablebodied elderly group compare closely to those of the Regional level.

<u>Milwaukee Urbanized Area</u>: In the Milwaukee urbanized area 25,510 transportation handicapped persons, or about 57 percent, perceive that special transportation services are not available, and 19,360, or about 43 percent, perceive that special transportation services are available. In total 44,870 transportation handicapped persons in the Milwaukee urbanized area responded to this item. Of the 90,070 able-bodied elderly persons in the Milwaukee urbanized area, 70,710, or about 79 percent, perceive that special transportation services are not available and 19,360, or about 21 percent, perceive that the special transportation services are available.

<u>Milwaukee Nonurbanized Area</u>: In the Milwaukee nonurbanized area 2,480 transportation handicapped persons, or about 48 percent, perceive that special transportation services are not available and 2,650, or about 52 percent, perceive that special transportation services are available. Of the 9,780 ablebodied elderly persons in the Milwaukee nonurbanized area 6,490, or about 66 percent, perceive that special transportation services are not available and 3,290, or about 34 percent, perceive that special transportation services are available and 3,290, or about 34 percent, perceive that special transportation services are available.

<u>Milwaukee County</u>: Of the 39,590 transportation handicapped persons responding to this item, 22,590, or about 57 percent, perceive special transportation services as unavailable and 17,010, or about 43 percent, perceive that special transportation services are available. In the able-bodied elderly group in Milwaukee County 65,590, or about 79 percent, perceive that special transportation services are unavailable and 17,140, or about 21 percent, perceive that special transportation services are available. In total 82,740 able – bodied elderly persons responded to this item in Milwaukee County. Ozaukee County: All of the transportation handicapped persons and able-bodied elderly persons in Ozaukee County responded to this item. Of the 1,360 transportation handicapped persons in Ozaukee County, 790, or about 58 percent, perceive that special transportation services are not available and 570, or about 42 percent, perceive that special transportation services are available. In the able-bodied elderly group 1,340, or about 56 percent, perceive that special transportation services are not available and 1,060, or about 44 percent perceive that special transportation services are available.

<u>Washington County</u>: In Washington County 1,250 transportation handicapped persons perceive that special transportation services are not available accounting for about 48 percent of the total transportation handicapped persons. Of the 2,610 total transportation handicapped persons in Washington County, 1,360, or about 52 percent, perceive that special transportation services are available. Within the able-bodied elderly group 1,640, or about 50 percent of the able-bodied elderly, perceive that transportation services are not available and 1,660, also about 50 percent of the able-bodied elderly, perceive that special transportation services are available.

<u>Waukesha County</u>: In Waukesha County 3,370 transportation handicapped persons, or about 52 percent, perceive that special transportation services are not available and 3,080, or about 48 percent, perceive that special transportation services are available. Of the 11,410 ablebodied elderly persons responding to this item 8,620, or about 76 percent of the able bodied elderly persons, perceive that special transportation services are not available and 2,790, or about 24 percent, perceive that special transportation services are available.

<u>Milwaukee Transit Service Area</u>: In the Milwaukee transit service area 20,890, or about 60 percent of the transportation handicapped persons, perceive that special transportation services are not available and 14,190, or about 40 percent, perceive that special transportation services are available. In the able-bodied elderly group 62,190, or about 80 percent, perceive that special transportation services are not available, and 15,860, or about 20 percent, perceive that special transportation services are available. <u>Milwaukee Nontransit Area</u>: In the nontransit area 1,690 transportation handicapped persons, or about 38 percent, perceive that special transportation services are not available and 2,820, or about 63 percent, perceive that special transportation services are available. Due to the low number of samples collected, respondents to the question may not necessarily represent the total transportation handicapped population. Of the 4,690 able-bodied elderly persons in the nontransit area, 3,410, or about 73 percent, perceive that special transportation services are not available and 1,280, or about 27 percent, perceive that special transportation services are available.

Institutionalized Transportation Handicapped Persons by Tripmaking Impediments

For a better understanding of the travel impediments encountered by institutionalized persons, a series of questions was asked about their mobility upon leaving the institution; ability to enter a vehicle; ability to ride in a vehicle; and assistance required at destination. Table 53 summarizes these responses by geographic area.

Milwaukee SMSA: Upon leaving the institution 5,480, or about 41 percent, need to be carried; 2,100, or about 16 percent, need help; and 5,670, or about 43 percent, can leave the institution unassisted. When entering a vehicle 5,470, or about 41 percent, need to be carried onto the vehicle; 2,660, or about 20 percent, need to be helped into the vehicle; and 5,120, or about 39 percent, can enter the vehicle unassisted. While riding in a vehicle 1,180, or about 9 percent, need an ambulance; 4,520, or about 34 percent, require a special seat; and 7,550, or about 57 percent, can ride unassisted. Upon reaching their destination 9,300, or about 70 percent, need someone to accompany them and 3,910, or about 30 percent, do not need accompaniment at their destination. In terms of percent distribution the distribution within the SMSA is very close to the regional distribution.

<u>Milwaukee</u> Urbanized Area: Upon leaving the institution 4,980, or about 42 percent of the institutionalized persons, need to be carried; 1,900, or about 16 percent, need help; and 5,140, or about 43 percent, can leave unassisted. When entering the vehicle 5,030, or about 42 percent of the institutionalized persons, need to be carried; 2,340, or about 20 percent, need help; and 4,650, or about 39 percent, can enter a vehicle unassisted. While riding in a vehicle 1,060, or about 9 percent, require an ambulance to travel; 4,160, or about 35 percent, require a special seat to travel; and 6,800, or about 57 percent, can travel unassisted. Upon reaching their destination 8,620 of the institutionalized persons, or about 72 percent, need accompaniment and 3,400, or about 28 percent, require no accompaniment at their destination.

Milwaukee Nonurbanized Area: Of the nonurbanized area institutionalized persons 500, or about 41 percent, need to be carried when leaving the institution; 200, or about 16 percent, need help when leaving the institution; and 530, or about 44 percent, can leave the institution unassisted. Upon entering a vehicle 440, or about 36 percent, need to be carried; 320, or about 26 percent, need help entering the vehicle; and 470, or about 39 percent, can enter a vehicle unassisted. When riding in a vehicle 120 of the institutionalized persons, or about 10 percent, need an ambulance; 360, or about 30 percent, require a special seat; and 740, or about 61 percent, can travel unassisted in a vehicle. Upon reaching their destination 680 institutionalized persons, or about 57 percent, need accompaniment and 510, or about 43 percent, do not need accompaniment upon reaching their destination.

Milwaukee County: Upon leaving the institution 4,160, or about 40 percent of the institutionalized persons in Milwaukee County, need to be carried when leaving the institution; 1,430, or about 14 percent, need help when leaving the institution; and 4,710, or about 46 percent, can leave the institution unassisted. When entering a vehicle 4,220, or about 41 percent, need to be carried; 1,780, or about 17 percent, need help; and 4,310, or about 42 percent, can enter unassisted. While riding in a vehicle 910, or about 9 percent, require an ambulance; 3,420, or about 33 percent, need special seating; and 5,970, or about 58 percent, can enter a vehicle unassisted. Upon reaching their destination 6,980, or about 68 percent of the institutionalized persons, need accompaniment and 3,320, or about 32 percent, do not need accompaniment.

<u>Ozaukee County</u>: Upon leaving the institution 220 institutionalized persons, or about 57 percent, need to be carried; 110, or about 29 per-

# INSTITUTIONALIZED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY TRIPMAKING IMPEDIMENTS: 1977

		Milwau	kee County	Co	unties Withir	ı Milwaukee SM	SA	N	lilwaukee SMSA		
		Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Leaving Institution	Number	2,907	1,254	4,161	224	315	780	4,983	497	5,480	6,492
Carried	Percent	35.0	62.9	40.4	57.1	42.9	43.0	41.5	40.5	41.4	39.7
Need Help	Number	1,092	342	1,434	112	120	429	1,899	196	2,095	2,689
	Percent	13.1	17,1	13.9	28.6	16.3	23.6	15.8	16.0	15.8	16.4
Unassisted	Number	4,308	399	4,707	56	300	606	5,136	533	5,669	7,180
	Percent	51.9	20.0	45.7	14.3	40.8	33.4	42.7	43.5	42.8	43.9
Total Reported	Number	8,307	1,995	10.302	392	735	1,815	12,018	1,226	13,244	16,361
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	0 	8	0 	0	8	0 	8	31
Total	Number	8,307	1,995	10,302	400	735	1,815	12,026	1,226	13,252	16,392
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Entering Vehicle	_										
Carried	Number	3,021	1,197	4,218	216	315	720	5,032	437	5,469	6,469
	Percent	36.4	60.0	40.9	55.1	42.9	39.7	41.9	35.6	41.3	39.5
Need Help	Number	1,320	456	1,776	112	120	648	2,340	316	2,656	3,372
	Percent	15.9	22.9	17.3	28.6	16.3	35.7	19.5	25.8	20.0	20.6
Unassisted	Number	3,966	342	4,308	64	300	447	<b>4,646</b>	473	5,119	6,520
	Percent	47.7	17.1	41.8	16.3	40.8	24.6	38.6	38.6	38.7	39.9
Total Reported	Number	8,307	1,995	10,302	392	735	1,815	12,018	1,226	13,244	16,361
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0 	0	0 	8	0	0		0 	8 	31
Total	Number	8,307	1,995	10,302	400	735	1,815	12,026	1,226	13,252	16,392
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Riding in Vehicle	Number	627	285	912	56	120	90	1,058	120	1,178	1,442
Ambulance	Percent	7.5	14.3	8.8	14.3	16.3	5.0	8.8	9.8	8.9	8.8
Special Seat	Number	2,508	912	3,420	200	210	690	4,158	362	4,520	5,222
	Percent	30.2	45.7	33.2	51.0	28.6	38.0	34.6	29.5	34.1	31.9
Unassisted	Number	5,172	798	5,970	136	405	1,035	6,802	744	7,546	9,697
	Percent	62.3	40.0	58.0	34.7	55.1	57.0	56.6	60.7	57.0	59.3
Total Reported	Number	8,307	1,995	10,302	392	735	1,815	12,018	1,226	13,244	16,361
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	0	8	0	0	8	0	8 	31
Total	Number	8,307	1,995	10,302	400	735	1,815	12,026	1,226	13,252	16,392
	Percent	100.0	100.0	100.0	100,0	100.0	100.0	100.0	100.0	100.0	100.0
Destination Assistance											
Need	Number	5,328	1,653	6,981	344	420	1,554	8,621	678	9,299	11,216
Accompaniment	Percent	64.1	82.9	67.8	87.8	59.6	86.0	71.7	57.1	70.4	68.9
Do Not Need	Number	2,979	342	3,321	48	285	252	3,397	509	3,906	5,072
Accompaniment	Percent	35.9	17.1	32.2	12.2	40.4	14.0	28.3	42.9	29.6	31.1
Total Reported	Number	8,307	1 <i>,</i> 995	10,302	392	705	1,806	12,018	1,187	13,205	16,288
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0 	0	0	8	30 	9 	8	39 	47	104 
Total	Number	8,307	1,995	10,302	400	735	1,815	12,026	1,226	13,252	16,392
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

cent, need help; and 60, or about 14 percent, can leave the institution unassisted. When entering a vehicle 220 of the institutionalized persons, or about 55 percent, need to be carried on to the vehicle; 110, or about 29 percent, need help in entering the vehicle; and 60, or about 16 percent, can enter the vehicle unassisted. While riding in a vehicle 60 of the institutionalized persons, or about 14 percent, require an ambulance; 200, or about 51 percent, require special seating; and 140, or about 35 percent, can enter a vehicle unassisted. Upon reaching their destination 340, or about 88 percent, of the institutionalized persons. do not need accompaniment, and 50, or about 12 percent, do need accompaniment.

Washington County: Upon leaving the institution 320 of the institutionalized persons, or about 43 percent, need to be carried; 120, or about 16 percent, need help when leaving the institution; and 300, or about 41 percent, can leave the institution unassisted. Upon entering the vehicle 320 of the institutionalized persons, or about 43 percent, need to be carried; 120, or about 16 percent, need help; and 300, or about 41 percent, can enter the vehicle unassisted. While riding in a vehicle 120 of the institutionalized persons, or about 16 percent, need an ambulance; 210, or about 29 percent, require a special seat; and 410, or about 55 percent, can ride in a vehicle unassisted. At their destination 420 of the institutionalized persons, or about 60 percent, need accompaniment and 290, or about 40 percent, do not need accompaniment.

Waukesha County: Upon leaving the institution 780, or about 43 percent, of the institutionalized persons need to be carried; 430, or about 24 percent, need help when leaving the institution; and 610, or about 33 percent, can leave the institution unassisted. Upon entering a vehicle 720, or about 40 percent, need to be carried; 650, or about 36 percent, need help in entering the vehicle; and 450, or about 25 percent, can enter a vehicle unassisted. While riding in a vehicle 90, or about 5 percent, of the institutionalized persons in Waukesha County need to have an ambulance; 690, or about 38 percent, require a special seat; and 1,040, or about 57 percent, can ride unassisted. At their destination 1,550 of the institutionalized persons, or about 86 percent, need accompaniment and 250, or about 14 percent, do not need accompaniment.

Milwaukee Transit Service Area: Upon leaving the institution 2,910, or about 35 percent of the institutionalized persons, need to be carried; 1,090, or about 13 percent, need help; and 4,310, or about 52 percent, can leave the institution unassisted. Upon entering a vehicle, 3,020 of the institutionalized persons, or about 36 percent, need to be carried; 1,320, or about 16 percent, need help; and 3,970, or about 48 percent, can enter the vehicle unassisted. While riding in a vehicle 630 of the institutionalized persons, or about 8 percent, need an ambulance; 2,510, or about 30 percent, require a special seat; and 5,170, or about 62 percent, can ride in the vehicle unassisted. Upon reaching their destination 5,330, or about 64 percent of the institutionalized persons, need accompaniment and 2,980, or about 36 percent, do not need accompaniment.

Milwaukee Nontransit Area: When leaving the institution 1,250 of the institutionalized persons, or about 63 percent, need to be carried; 340, or about 17 percent, need help; and 400, or about 20 percent, can leave the institution unassisted. Upon entering a vehicle 1,200 of the institutionalized persons, or about 60 percent, need to be carried; 460, or about 23 percent, need help when entering the vehicle; and 340, or about 17 percent, can enter unassisted. While riding in a vehicle 290, or about 14 percent require an ambulance; 910, or about 46 percent, need a special seat; and 800, or about 40 percent, can ride unassisted. Upon reaching their destination 1,650 of the institutionalized persons, or about 83 percent, need accompaniment and 340, or about 17 percent, do not need accompaniment,

## Number of Person Trips of Transportation Handicapped Persons and Able-Bodied Elderly Persons on an Average Day by Trip Purpose

Activities by trip purpose of both the transportation handicapped and able bodied elderly persons center on the home as can be seen by the subgeographic areas where trip purpose home ranges from about 41 percent to nearly 50 percent of total trips. Tables 54 and 55 present the number of trips made by transportation handicapped persons and able-bodied elderly persons on an average day by trip purpose for each of the subgeographic areas. Knowledge of the magnitude of trips made by trip purpose and by mode of travel is necessary when considering alternative transportation system improvements. It should be noted that

# NUMBER OF PERSON TRIPS PER DAY MADE BY THE NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY TRIP PURPOSE: 1977

		Milwau	kee Conty	Cou	inties Within	Milwaukee SM	SA	M	iilwaukee SMSA		
Trip Purpo	ose	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Home	Number	10,455	1,450	11,905	343	666	2,527	13,761	1,680	15,441	20,493
	Percent	45.7	41.7	45.1	45.1	49.3	48.5	45.7	46.5	45.8	45.9
Work	Number	922	153	1,075	141	66	154	1,233	203	1,436	1,760
	Percent	4.0	4.4	4.1	18.5	4.9	3.0	4.1	5.6	4.3	4.0
School	Number	1,716	132	1,848	0	237	624	2,472	237	2,709	3,186
	Percent	7.5	3.8	7.0		17.5	12.0	8.2	6.6	8.0	7.1
Shopping	Number	2,920	218	3,138	34	46	452	3,214	456	3,670	5,066
	Percent	12.7	6.3	11.9	4.5	3.4	8.7	10.7	12.6	10.9	11.3
Social-	Number	3,743	1,233	4,976	104	126	736	5,383	559	5,942	7,478
Recreation	Percent	16.3	35.5	18.9	13.7	9.3	14.1	18.0	15.5	17.6	16.7
Personal	Number	2,924	287	3,211	104	210	435	3,705	255	3,960	5,481
Business	Percent	12.8	8.3	12.2	13.7	15.6	8.3	12.3	7.1	11.8	12.3
Medical	Number Percent	218 1.0	0	218 0.8	34 4.5	0	282 5.4	314 1.0	220 6.1	534 1.6	1,211 2.7
Total	Number	22,898	3,473	26,371	760	1,351	5,210	30,082	3,610	33,692	44,675
	Percent	1 <b>0</b> 0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

#### Table 55

# NUMBER OF PERSON TRIPS PER DAY MADE BY THE ABLE-BODIED ELDERLY IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY TRIP PURPOSE: 1977

		Milwauk	ee County	Co	unties Within	Milwaukee SM	SA	N			
Trip	Purpose	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Home	Number	54,786	3,690	58,476	1,634	2,211	8,512	64,268	6,565	70,833	91,079
	Percent	42.5	41.4	42.4	43.5	45.7	41.9	42.5	42.4	42.5	43.1
Work	Number	6,421	589	7,010	390	329	1,056	7,312	1,473	8,785	11,115
	Percent	5.0	6.6	5.1	10.4	6.8	5.2	4.8	9.5	5.3	5.2
School	Number Percent	726 0.6	0	726 0.5	0	40 0.8	0	726 0.5	40 0.2	766 0.5	1,062 0.5
Shopping	Number	22,178	2,577	24,755	367	884	3,692	26,875	2,823	29,698	37,449
	Percent	17.2	28.9	18.0	9.8	18.3	18.2	17.8	18.2	17.8	17.7
Social-	Number	23,643	698	24,341	667	903	4,104	27,015	3,000	30,015	38,177
Recreation	Percent	18.4	7.9	17.7	17.7	18.6	20.2	17.9	19.4	18.0	18.1
Personal	Number	18,873	1,353	20,226	557	441	2,930	22,698	1,456	24,154	29,212
Business	Percent	14.6	15.2	14.7	14.8	9.1	14.4	15.0	9.4	14.5	13.8
Medical	Number Percent	2,177 1.7	0	2,177 1.6	142 3.8	34 0.7	28 0.1	2,242 1.5	139 0.9	2,381 1.4	3,297 1.6
Total	Number	128,804	8,907	137,711	3,757	4,842	20,322	151,136	15,496	166,632	211,391
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tables 54 and 55 present the number of trips on an average day as found on the household survey. Trips on the institution survey are presented in Table 56 as average trips per week.

On an average day transportation handicapped persons reported making about 44,700 trips in the region which, compared to the 1972 inventory of travel, represents only about 1 percent of the total of 4,504,900 internal person trips, able-bodied elderly persons reported making 211,400 trips on the household survey which represents about 5 percent of the 1972 inventory of internal person trips.

Milwaukee SMSA: In the Milwaukee SMSA, transportation handicapped persons made a total of 33,690 trips on an average day. The number of trips and percent distribution by trip purpose is: home, 15,440, or about 46 percent; work, 1,440, or about 4 percent; school, 2,710, or about 8 percent; shopping, 3,670, or about 11 percent; social-recreation, 5,940, or about 18 percent; personal business, 3,960, or about 12 percent; and medical, 540, less than 2 percent. The 166,630 trips made by ablebodied elderly persons within the Milwaukee SMSA account for approximately 79 percent of the total trips made in the Region. The number of trips made by able-bodied elderly persons by trip purpose and approximate percent distribution is: home, 70,830, or about 43 percent; work, 8,790, or about 5 percent; school, 770, or about one-half of 1 percent; shopping, 29,700, or about 18 percent; socialrecreation, 30,020, also about 18 percent; personal business, 24,150, or about 15 percent; and medical, 2,380, slightly over 1 percent. In terms of percent distribution trips made by transportation handicapped persons and ablebodied elderly persons within the SMSA compare very closely to those found at the Regional level.

<u>Milwaukee Urbanized Area</u>: The number of trips by trip purpose and the approximate percent distribution of trips made by transportation handicapped persons in the Milwaukee urbanized area are: home, 13,760, or about 46 percent; work, 1,230, or about 4 percent; school, 2,470, or about 8 percent; shopping, 3,210, or about 11 percent; social-recreation, 5,380, or about 18 percent; personal business, 3,710, or about 12 percent; and medical, 310, or about 1 percent. A total of 30,080 trips were made by transportation handicapped persons in the Milwaukee urbanized area on an average day. The ablebodied elderly in the Milwaukee urbanized area made 151,140 trips on an average day. The number of trips made by the able-bodied elderly by trip purpose and approximate percent distribution are: home, 64,270, or about 43 percent; work, 7,310, or about 5 percent; school, 730 or, about one-half of 1 percent; school, 26,880, or about 18 percent; social-recreation, 27,020, or about 18 percent; personal business, 22,700, or about 15 percent; and medical 2,240, or about 1.5 percent.

Milwaukee Nonurbanized Area: On an average day the transportation handicapped persons in the Milwaukee nonurbanized area made a total of 3,610 trips. The number of trips and the approximate percent distribution for the transportation handicapped in the Milwaukee nonurbanized area are: home, 1,680, or about 47 percent; work, 200, or about 6 percent; school, 240, or about 7 percent; shopping, 460, or about 13 percent; social-recreation, 560, or about 16 percent; personal business, 260, or about 7 percent; and medical, 220, or about 6 percent. Able-bodied elderly persons in the Milwaukee nonurbanized area made a total of 15,500 trips on an average day. The number of trips made by the able-bodied elderly by trip purpose and approximate percent distribution is: home, 6,570, or about 42 percent; work, 1,470, or about 10 percent; school, 40, or about two-tenths of 1 percent; shopping, 2,820, or about 18 percent; social-recreation, 3,000, or about 19 percent; personal business, 1,460, or about 9 percent; and medical, 140, or about 1 percent.

Milwaukee County: In Milwaukee County transportation handicapped persons made a total of 26,370 trips on an average day. The number of trips and approximate percent distribution by trip purpose are: home, 11,910, or about 45 percent; work, 1,080, or about 4 percent; school, 1,850, or about 7 percent; shopping, 3,140, or about 12 percent; social-recreation, 4,980, or about 19 percent; personal business, 3,210, or about 12 percent; and medical, 220, slightly less than 1 percent. Able-bodied elderly persons in Milwaukee County made 137,710 trips on an average day. The number of trips and approximate percent distribution by trip purpose for the able-bodied elderly are: home, 58,480, or about 42 percent; work, 7,010, or about 5 percent; school, 730, or about one-half of 1 percent; shopping, 24,760, or about

18 percent; social-recreation, 24,340, or about 18 percent; personal business, 20,230, or about 15 percent; and medical, 2,180, somewhat less than 2 percent.

Ozaukee County: In Ozaukee County transportation handicapped persons made a total of 760 trips on an average day. The number of trips made by the transportation handicapped by trip purpose and approximate percent distribution is: home, 340, or about 45 percent; work, 140, or about 19 percent; shopping, 30, or about 5 percent; social-recreation, 100, or about 14 percent; personal business 100, also about 14 percent; and medical, 30, or about 5 percent. Able bodied elderly persons in Ozaukee County made a total of 3,760 trips. The number of trips by trip purpose and approximate percent distribution for the able bodied elderly is: home, 1,630, or about 44 percent; work, 390, or about 10 percent; shopping, 370, or about 10 percent; social-recreation, 670, or about 18 percent; personal business, 560, or about 15 percent; and medical, 140, or about 4 percent. Neither the transportation handicapped nor the ablebodied elderly reported any trips for trip purpose school in Ozaukee County. Due to the low number of samples collected, respondents to this question may not necessarily represent the total transportation handicapped and ablebodied elderly population.

Washington County: In Washington County transportation handicapped persons made a total of 1,350 trips on an average day. The number of trips by trip purpose and approximate percent distribution are: home, 670, or about 49 percent; work, 70, or about 5 percent; school, 240, or about 18 percent; shopping, 50, or about 3 percent; social-recreation, 130, or about 9 percent; personal business, 210, or about 16 percent. Transportation handicapped respondents to this survey did not report any medical trips in Washington County. Able-bodied elderly persons in Washington County made 4,840 trips on an average day. The number of trips for the able-bodied elderly by trip purpose and approximate percent distribution are: home, 2,210, or about 46 percent; work, 330, or about 7 percent; school, 40 or about 1 percent; shopping, 880, or about 18 percent; social-recreation, 900, or about 19 percent; personal business, 440, or about 9 percent; and medical, 30, or about 1 percent.

Waukesha County: On an average day 5,210 trips were reported for the transportation handicapped. The number of trips by trip purpose and approximate percent distribution in Waukesha County is as follows for the transportation handicapped: home, 2,530, or about 49 percent; work, 150, or about 3 percent; school, 620, or about 12 percent; shopping, 450, or about 9 percent; social-recreation. 740, or about 14 percent; personal business, 440, or about 8 percent; and medical, 280, or about 5 percent. Able-bodied elderly persons in Waukesha County made a total of 20,320 trips on an average day. The number of trips by trip purpose and approximate percent distribution are: home, 8,510, or about 42 percent; work, 1,060, or about 5 percent; shopping, 3,690, or about 18 percent; socialrecreation, 4,100, or about 20 percent; personal business, 2,930, or about 14 percent; and medical, 30, or about one-tenth of 1 percent.

Milwaukee Transit Service Area: Transportation handicapped persons in the Milwaukee transit service area made a total of 22,900 trips on an average day. By trip purpose the number of trips and approximate percent distribution for transportation handicapped persons are: home, 10,460, or about 46 percent; work, 922, or about 4 percent; school, 1,720, or about 8 percent; shopping, 2,920, or about 13 percent; social-recreation, 3,740, or about 16 percent; personal business, 2,920, or about 13 percent; and medical, 220, or about 1 percent. In the Milwaukee transit service area able-bodied elderly persons made a total of 128,800 trips on an average day. By trip purpose the number of trips and approximate percent distribution for the able-bodied elderly are: home, 54,790, or about 43 percent; work, 6,420, or about 5 percent; school, 730, somewhat less than 1 percent; shopping, 22,180, or about 17 percent; social-recreation, 23,640, or about 18 percent; personal business, 18,870, or about 15 percent; and medical, 2,180, or about 2 percent.

<u>Milwaukee Nontransit Area</u>: Transportation handicapped persons in the Milwaukee nontransit area made a total of 3,470 trips on an average day. By trip purpose the number of trips and approximate percent distribution for transportation handicapped persons are: home, 1,450, or about 42 percent; work, 150, or about 4 percent; school, 130, or about 4 percent; shopping, 220, or about 6 percent; socialrecreation, 1,230, or about 36 percent; and personal business, 290, or about 8 percent. The able-bodied elderly persons in the Milwaukee nontransit area made a total of 8,910 trips on an average day. By trip purpose the number of trips and approximate percent distribution for the able-bodied elderly are: home, 3,690, or about 41 percent; work, 590, or about 7 percent; shopping, 2,580, or about 29 percent; social-recreation, 700, or about 8 percent; and personal business, 1,350, or about 15 percent. Due to the low number of samples collected, respondents to this question may not necessarily represent the total transportation handicapped and able-bodied elderly population.

## <u>Number of Person Trips of</u> <u>Transportation Handicapped Persons</u> Per Week by Trip Purpose

Table 56 presents the number of trips made by institutionalized transportation handicapped persons during an average week by trip purpose for each of the subgeographic areas. Note that Tables 54 and 55 present the number of trips on an average day as found on the household survey. Milwaukee SMSA: Institutionalized transportation handicapped persons made a total of 13,750 trips during an average week. The number of trips and approximate percent distribution by trip purpose are: home, 6,820, or about 50 percent; work, 1,650, or about 12 percent; school, 2,370, or about 17 percent; shopping, 440, or about 3 percent; social-recreation, 1,580, or about 12 percent; personal business, 590, or about 4 percent; and medical, 310, or about percent. Expressed in terms of percent, 2 institutionalized persons make approximately 2 percent more work trips in the SMSA then they do in the Region and about 3 percent fewer social-recreation trips than are made in the Region. Percent distributions, when compared to the Region in the other trip purpose categories, are very similar.

<u>Milwaukee Urbanized Area</u>: By trip purpose the number of trips and approximate percent distribution are: home, 6,590, or about 50 percent; work, 1,610, or about 12 percent; school, 2,370, or about 18 percent; shopping, 410, or about 3 percent; social-recreation, 1,470, or about 11 percent; personal business, 560, or about 4 percent; and medical, 290, or about 2 percent. A total of 13,300 trips were made by

Table 56

		Milwau	kee County	Co	unties Within	Milwaukee SM	ISA	N	lilwaukee SMSA		
Trip f	^o urpose	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Home	Number Percent	6,096 49.5	228 50.0	6,324 49.6	24 50.0	90 50.0	381 50.0	6,594 49.6	225 50.0	6,819 49.6	9,082 49.3
Work	Number Percent	1,605 13.0	0	1,605 12.6	0	0	45 5.9	1,605 12,1	45 10.0	1,650 12.0	1,803 9.8
School	Number Percent	2,223 18.1	0 	2,223 17.4	0	0	150 19.7	2,373 17.8	0	2,373 17.2	2,466 13.4
Shopping	Number Percent	342 2.8	57 12.5	399 3.1	0 	0	39 5.1	408 3.1	30 6.7	438 3.2	674 3.7
Social- Recreation	Number Percent	1,323 10.8	57 12.5	1,380 10.8	16 33.3	45 25.0	138 18.1	1,474 11.0	105 23.3	1,579 11.5	2,793 15.2
Personal Business	Number Percent	489 4.0	57 12.5	546 4.3	0	30 16.7	9 1.2	555 4.2	30 6.7	585 4.3	1,113 6.0
Medical	Number Percent	228 1.8	5 <b>7</b> 12.5	285 2.2	8 16.7	15 8.3	0	293 2.2	15 3.3	308 2.2	488 2.6
Total	Number Percent	12,306 100.0	456 100.0	12,762 100.0	48 100.0	180 100.0	762 1 <b>00</b> .0	13,302 100.0	450 100.0	13,752 100.0	18,419 100.0

## NUMBER OF PERSON TRIPS PER WEEK MADE BY THE INSTITUTIONALIZED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY TRIP PURPOSE: 1977

institutionalized transportation handicapped persons in the Milwaukee urbanized area.

<u>Milwaukee Nonurbanized Area</u>: Residents of institutions in the Milwaukee nonurbanized area made a total of 450 trips during an average week. By trip purpose the number of trips and approximate percent distribution are: home, 230, or about 50 percent; work, 50, or 10 percent; shopping, 30, or about 7 percent; socialrecreation, 110, or about 23 percent; personal business, 30, or about 7 percent; and medical, 20, or about 3 percent.

<u>Milwaukee County</u>: Institutionalized residents of Milwaukee County made a total of 12,760 trips during an average week. By trip purpose the number of trips and approximate percent distribution are: home, 6,320, or about 50 percent; work, 1,610, or about 13 percent; school, 2,220, or about 17 percent; shopping, 400, or about 3 percent; social-recreation, 1,380, or about 11 percent; personal business, 550, or about 4 percent; and medical, 290, or about 2 percent.

<u>Ozaukee County</u>: In Ozaukee County during an average week only 50 trips were recorded for institutionalized persons. The number of trips in Ozaukee County by trip purpose are: home, 20; social-recreation, 20; and medical, 10.

Washington County: In Washington County a total of 180 trips were made during an average week. The number of trips and the approximate percent distribution by trip purpose are: home, 90, or 50 percent; socialrecreation, 50, or 25 percent; personal business, 30, or about 17 percent; and medical, 20, or about 8 percent.

<u>Waukesha County</u>: A total of 760 trips were made during an average week by Waukesha County institutionalized persons. The number of trips and approximate percent distribution by trip purpose are: home, 380, or 50 percent; work, 50, or about 6 percent; school, 150, or about 20 percent; shopping, 40, or about 5 percent; social-recreation, 140, or about 18 percent; personal business, 10, or about 1 percent. <u>Milwaukee Transit Service Area</u>: In the Milwaukee transit service area a total of 12,310 trips were made by institutionalized persons. The number of trips and approximate percent distribution by trip purpose are: home, 6,100, or about 50 percent; work, 1,610, or about 13 percent; school, 2,220, or about 18 percent; shopping, 340, or about 3 percent; socialrecreation, 1,320, or about 11 percent; personal business, 490, or about 4 percent; and medical, 230, or about 2 percent.

<u>Milwaukee Nontransit Area</u>: The number of trips and approximate percent distribution by trip purpose are: home, 230, or 50 percent, and 60 trips each for trip purposes of shopping, socialrecreation, personal business, and medical, each representing about 12.5 percent. In the Milwaukee nontransit area a total of 460 trips were made by institutionalized persons.

Number of Person Trips of Transportation Handicapped Persons and Able-Bodied Elderly Persons on an Average Day by Mode of Travel Tables 57 and 58 summarize the number of person trips made by transportation handicapped and able-bodied elderly persons on an average day by mode of travel for each subgeographic area. An understanding of the magnitude of trips made by both trip purpose and mode of travel is necessary when considering alternative transportation system improvements. These tables present the number of trips on an average day as found on the household survey by mode of travel. Average trips per week on the institution survey are shown in Table 59.

Milwaukee SMSA: By mode of travel the number of trips and approximate percent distribution are: auto driver, 7,010, or about 21 percent; auto passenger, 16,290, or about 48 percent; bus, 2,200, or about 7 percent; special transportation, 3,530, or about 11 percent; taxi, 40, only about one-tenth of 1 percent; bike or walk, 4,320, or about 13 percent; and other, 310, or about 1 percent. Transportation handicapped persons made a total of 33,690 trips in the Milwaukee SMSA. Able-bodied elderly persons made a total of 166,630 trips in the Milwaukee SMSA. The number of trips and approximate percent distribution by mode of travel for ablebodied elderly persons is: auto driver, 93,060, or about 56 percent; auto passenger, 45,490, or about 27 percent; bus, 12,300, or about 7 percent; special transportation, 1,610, or

# NUMBER OF PERSON TRIPS PER DAY MADE BY THE NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY MODE OF TRAVEL: 1977

		Milwaul	kee County	Cou	unties Within	Milwaukee SM	SA	N	lilwaukee SMSA		
Mode of Tr	avel	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Auto Driver	Number Percent	3,555 15.5	1,320 38.0	4,875 18.5	59 7.8	261 19.3	1,815 34.8	6,130 20.4	880 24.4	7,010 20.8	9,978 22.3
Auto Passenger	Number Percent	11,138 48.6	1,848 53.2	12,986 49.2	567 74.6	633 46.9	2,107 40.4	14,573 48.4	1,720 47.6	16,293 48.4	22,065 49.4
Bus	Number Percent	2,026 8.9	0	2,026 7.7	0	170 12.6	0 	2,026 6.7	170 4.7	2,196 6.5	2,603 5.8
Special Transportation	Number Percent	2,282 10.0	305 8.8	2,587 9.8	134 17.6	196 14.5	613 11.8	3,116 10.4	414 11.5	3,530 10.5	4,259 9.5
Taxi	Number Percent	0	0 	0 -	0	0 	42 0.8	0 	42 1.2	42 0.1	181 0.4
Bike - Walk	Number Percent	3,591 15.7	0 	3,591 13.6	0	91 6.7	633 12.2	3,931 13.1	384 10.6	4,315 12.8	4,842 10.9
Other	Number Percent	306 1.3	0 	306 1.2	0 	0 	0 	306 1.0	0	306 0.9	747 1.7
Total	Number Percent	22,898 100.0	3,473 100.0	26,371 100.0	760 100.0	1,351 100.0	5,210 100.0	30,082 100.0	3,610 100.0	33,692 1 <b>0</b> 0.0	44,675 100.0

Source: SEWRPC.

### Table 58

## NUMBER OF PERSON TRIPS PER DAY MADE BY THE ABLE-BODIED ELDERLY IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY MODE OF TRAVEL: 1977

		Milwau	kee County	Cou	unties Within	Milwaukee SM	SA	1	Ailwaukee SMSA		
Mode of Ti	ravel	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Auto Driver	Number Percent	69,590 54.0	5,962 66.9	75,552 54.9	2,652 70.6	3,019 62.4	11,838 58.3	83,620 55.3	9,441 60.9	93,061 55.8	121,665, 57.6
Auto Passenger	Number Percent	32,989 25.6	2,72 <b>7</b> 30.6	35,716 25.9	969 25.8	1,823 37.6	6,980 34.3	39,930 26.5	5,558 35.9	45,488 27.3	57,956 27.4
Bus	Number Percent	12,296 9.6	0	12,296 8.9	0	0	0	12,296 8.1	0	12,296 7.4	13,776 6.5
Special Transportation	Number Percent	1,065 0.8	0	1,065 0.8	0	0	540 2.7	1521 1.0	84 0.5	1,605 1.0	1,605 0.8
Taxi	Number Percent	483 0.4	0	483 0.3	0	0	96 0.5	579 0.4	0	579 0.3	696 0.3
Bike or Walk	Number Percent	12,203 9.5	0	12,203 8.9	136 3.6	0	677 3.3	12,603 8.3	413 2.7	13,016 7.8	15,106 7.1
Other	Number Percent	178 0.1	218 2.5	396 0.3	0 	0	191 0.9	587 0.4	0	587 0.4	587 0.3
Total	Number Percent	128,804 100.0	8,907 100.0	137,711 100.0	3,757 100.0	4,842 100.0	20,322 100.0	151,136 100.0	15,496 100.0	166,632 100.0	211,391 100.0

		Milwauk	kee County	Сон	unties Within	Milwaukee SM	SA	M			
Mode of Travel		Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Auto Driver	Number Percent	228 1.9	0 	228 1.8	0	0 	0 	228 1.7	0 	228 1.7	630 3.4
Auto Passenger	Number Percent	1,641 13.3	114 25.0	1,755 13.7	48 100.0	180 100.0	312 40.9	1,995 15.0	300 66.7	2,295 16.7	3,932 21.4
Bus	Number Percent	3,033 24.6	0	3,033 23.8	0	0	0	3,033 22.8	0 	3,033 22.0	3,359 18.2
Special Transportation	Number Percent	6,213 50.5	228 50.0	6,441 50.5	0	0	360 47.3	6,741 50.7	60 13.3	6,801 49.5	7,915 43.0
Taxi	Number Percent	0 	0	0	0	0 	0	0	0	0 	42 0.2
Bike or Walk	Number Percent	1,191 9.7	114 25.0	1,305 10.2	0	0	90 11.8	1,305 9.8	90 20.0	1,395 10.1	2,541 13.8
Total	Number Percent	12,306 100.0	456 100.0	12,762 100.0	48 100.0	180 100.0	762 100.0	13,302 100.0	450 100.0	13,752 100.0	18,419 100.0

## NUMBER OF PERSON TRIPS PER WEEK MADE BY THE INSTITUTIONALIZED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY MODE OF TRAVEL: 1977

Source: SEWRPC.

about 1 percent; taxi, 580, less than one-half of 1 percent; bike or walk, 13,020, or about 8 percent; and other, 590, slightly less than one-half of 1 percent. In terms of percent distribution a comparison to the regional level shows that the percent distributions within the SMSA and the Region are very similar.

Milwaukee Urbanized Area: Transportation handicapped residents of the Milwaukee urbanized area made a total of 30,080 trips on an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver, 6,130, or about 20 percent; auto passenger, 14,570, or about 48 percent; bus, 2,030, or about 7 percent; special transportation, 3,120, or about 10 percent; bike or walk, 3,930, or about 13 percent; and other, 310, or about 1 percent. By mode of travel the number of trips and approximate percent distribution for able-bodied elderly persons in the Milwaukee urbanized area are: auto driver, 83,620, or about 55 percent; auto passenger, 39,930, or about 27 percent; bus, 12,300, or about 8 percent; special transportation, 1,520, or about 1 percent; taxi, 580, slightly less than one-half of 1 percent; bike or walk, 12,600, or about 8 percent; and other, 590, slightly less than one-half of 1 percent.

Milwaukee Nonurbanized Area: In the Milwaukee nonurbanized area transportation handicapped persons made 3.610 trips during an average day. The number of trips and the approximate percent distribution by mode of travel is: auto driver, 880, or about 24 percent; auto passenger, 1,720, or about 48 percent; bus, 170, or about 5 percent; special transportation, 410, or about 12 percent; taxi, 40, or about 1 percent; and bike or walk, 380, or about 11 percent. Able-bodied elderly persons made a total of 15,500 trips during an average day in the Milwaukee nonurbanized area. The number of trips and approximate percent distribution by mode of travel is: auto driver, 9,440, or about 61 percent; auto passenger, 5,560, or about 36 percent; special transportation, 80, or about one-half of 1 percent; bike or walk, 410, or about 3 percent.

<u>Milwaukee County</u>: Transportation handicapped residents of Milwaukee County made a total of 26,370 trips during an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver, 4,880, or about 19 percent; auto passenger, 12,990, or about 49 percent; bus, 2,030, or about 8 percent; special transportation, 2,590, or about 10 percent; bike or walk, 3,590, or about 14 percent; and other, 310, or about 1 percent. By mode of travel and approximate percent distribution the number of trips made by able bodied elderly persons in Milwaukee County are: auto-driver, 75,550, or about 55 percent; auto passenger, 35,720, or about 26 percent; bus, 12,300, or about 9 percent; special transportation, 1,070, or about 1 percent; taxi, 480, slightly less than one-half of 1 percent; bike or walk, 12,200, or about 9 percent; and other, 400, also slightly less than one-half of 1 percent. In total, ablebodied elderly persons made 137,710 trips.

Ozaukee County: Transportation handicapped persons made a total of 760 trips on an average day in Ozaukee County. These trips were made on only three modes: auto driver, 60, or about 8 percent; auto passenger, 570, or about 75 percent; and special transportation, 130, or about 18 percent. The number of trips and approximate percent distribution on the three modes of travel utilized by able-bodied elderly persons in Ozaukee County are: auto driver, 2,650, or about 71 percent; auto passenger, 970, or about 26 percent; and bike or walk, 140, or about 4 percent. In total, able-bodied elderly persons made 3,760 trips in Ozaukee County. Due to the low number of samples collected, respondents to this question may not necessarily represent the total transportation handicapped and able-bodied elderly population.

Washington County: In Washington County transportation handicapped persons made a total of 1,350 trips on an average day. The number of trips and approximate percent distribution by mode of travel is: auto driver, 260, or about 19 percent; auto passenger, 630, or about 19 percent; bus, 170, or about 13 percent; special transportation, 200, or about 15 percent; and bike or walk, 90, or about 15 percent. The 4,840 trips on an average day recorded for able-bodied elderly persons by mode of travel as an auto driver are 3,020, or about 62 percent, and as an auto passenger, 1,820, or about 38 percent.

Waukesha County: A total of 5,210 trips were made by transportation handicapped persons in Waukesha County on an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver, 1,820, or about 35 percent; auto passenger, 2,110, or about 40 percent; special transportation, 610, or about 12 percent; taxi, 40, or about 1 percent; and bike or walk, 630, or about 12 percent. In Waukesha County ablebodied elderly persons made a total of 20,320 trips on an average day. By mode of travel the number of trips and approximate percent distribution for these persons are: auto driver, 11,840, or about 58 percent; auto passenger, 6,980, or about 34 percent; special transportation, 540, or about three percent; taxi, 100, slightly less than one-half of 1 percent; bike or walk, 680, or about 3 percent; and other, 190, slightly less than 1 percent.

Milwaukee Transit Service Area: In the Milwaukee transit service area transportation handicapped persons made a total of 22,900 trips during an average day. By mode of travel the number of trips and approximate percent distribution are: auto driver, 3,560, or about 16 percent; auto passenger, 11,140, or about 49 percent; bus, 2,030, or about 9 percent; special transportation, 2,280, or about 10 percent; bike or walk, 3,590, or about 16 percent; and other, 310, or about 1 percent. Within the Milwaukee transit service area able-bodied elderly persons made a total of 128,800 trips during an average day. By mode of travel the number of trips and approximate percent distribution for the able-bodied elderly are: auto driver, 69,590, or about 54 percent; auto passenger, 32,990, or about 26 percent; bus, 12,300, or about 10 percent; special transportation, 1,070, or about 1 percent; taxi, 480, or slightly less than one-half of 1 percent; bike or walk, 12,200, or about 10 percent; and other, 180, only about one-tenth of 1 percent.

Milwaukee Nontransit Area: Transportation handicapped persons made a total of 3,470 trips during an average day in the Milwaukee nontransit area. The number of trips and approximate percent distribution by mode of travel for these persons are: auto driver, 1.320, or about 38 percent; auto passenger, 1,850, or about 53 percent; and special transportation, 310, or about 9 percent. In the Milwaukee nontransit area able-bodied elderly persons made a total of 8,910 trips during an average day. By mode of travel the numbers of trips and approximate percent distribution for the able-bodied elderly are: auto driver, 5,960, or about 67 percent; auto passenger, 2,730, or about 31 percent; and other, 220, or about 3 percent. Due to the low number of samples collected, respondents to this question

may not necessarily represent the total transportation handicapped and able-bodied elderly population.

In this study special transportation includes all types of transportation provided by social service agencies: i.e., regularly scheduled special buses or vans and pickup or delivery of a client by social workers or volunteers.

# Number of Trips of Institutionalized Transportation Handicapped Persons Per Week by Mode of Travel

Table 59 presents the number of trips made during an average week by institutionalized persons. As noted, the number of trips per day by transportation handicapped persons and able-bodied elderly persons is shown in Tables 57 and 58. An understanding of the modes of travel currently being utilized by institutionalized persons is necessary when evaluating future alternative transportation system improvements.

<u>Milwaukee SMSA</u>: Within the SMSA institutionalized persons made a total of 13,750 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto driver, 230, or about 2 percent; auto passenger, 2,300, or about 17 percent; bus, 3,030, or about 22 percent; special transportation, 6,800, or approximately 50 percent; and bike or walk, 1,400, or about 10 percent.

<u>Milwaukee</u> Urbanized Area: By trip purpose the number of trips and approximate percent distribution are: auto driver, 230, or about 2 percent; auto passenger, 2,000, or about 15 percent; bus, 3,030, or about 23 percent; special transportation, 6,740, or about 51 percent; and bike or walk, 1,310, or about 10 percent. In the Milwaukee urbanized area institutionalized persons made a total of 13,300 trips during an average week.

<u>Milwaukee Nonurbanized Area</u>: During an average week only 450 trips were recorded for institutionalized persons. By mode of travel the number of trips and approximate percent distribution are: auto passenger, 300, or about 67 percent; special transportation, 60, or about 13 percent; and bike or walk, 90, or about 20 percent. <u>Milwaukee County</u>: In Milwaukee County institutionalized persons made a total of 12,760 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto driver, 230, or about 2 percent; auto passenger, 1,760, or about 14 percent; bus, 3,030, or about 24 percent; special transportation, 6,440, or about 51 percent; and bike or walk, 1,310, or about 10 percent.

Ozaukee County: In Ozaukee County institutionalized persons reported 50 trips as an auto passenger during an average week.

Washington County: In Washington County institutionalized persons reported 180 trips as an auto passenger during an average week.

<u>Waukesha County</u>: In Waukesha County a total of 760 trips were reported during an average week for institutionalized persons. The number of trips and approximate percent distribution by mode of travel are: auto passenger, 310, or about 41 percent; special transportation, 360, or about 47 percent; and bike or walk, 90, or about 12 percent.

<u>Milwaukee Transit Service Area</u>: In the Milwaukee transit service area institutionalized persons reported 12,310 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto driver, 230, or about 2 percent; auto passenger, 1,640, or about 13 percent; bus, 3,030, or about 25 percent; special transportation, 6,210, or about 51 percent; and bike or walk, 1,190, or about 10 percent.

<u>Milwaukee Nontransit Area</u>: The number of trips and approximate percent distribution by mode of travel in the Milwaukee nontransit area are: auto passenger, 110, or about 25 percent; special transportation, 230, or about 50 percent; and bike or walk, 110, or about 25 percent.

On-Board User Survey-Milwaukee Handicabs

Presented here are the findings of the on-board Milwaukee Handicabs survey. An interviewer rode a different van each day during the period March 1, 1977, to March 7, 1977, collecting 60 usable interviews. Since the intent of the on-board survey was qualitative rather than quantitative, representativeness of all users of special transportation services is not required, as these characteristics are already represented in the household and institution surveys. This survey examines in greater detail socioeconomic characteristics, travel habits, and attitudes of those persons using specialized transportation services.

<u>Riders by Age Group</u>: Of the 60 persons for whom age is recorded, the number of persons and approximate percent distribution are by age group: 19 years or less, three or about 5 percent; 20-39 years, three or about 5 percent; 40-59 years, 11 or about 18 percent; 60-69 years, 18 or about 30 percent; 70-79 years, 16 or about 27 percent; and 80-89 years, nine or about 15 percent (see Table 60).

Riders by Sex: By sex, 25 of the riders, or  $\overline{41}$  percent, were male and 36 of the riders, or 59 percent, were female (see Table 61).

Riders by Family Income: Information on family income was reported by 52 of the 61 riders in the Milwaukee Handicabs on-board Survey. By annual family income range, the number of riders and approximate percent distribution are: under \$4,000, 29, or about 56 percent; \$4,000-\$5,999, eight, or about 15 percent; \$6,000-\$7,999, eight, also about 15 percent; \$8,000-\$9,999, three, about or 6 percent; \$12,000-\$14,999, one, or about

### Table 60

## NUMBER OF RIDERS BY AGE GROUP-MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Age Group	Number	Percent
19 or Less	3	5.0
20-39	3	5.0
40-59	11	18.3
60-69	18	30.0
70-79	16	26.7
80-89	9	15.0
90 and Over	0	
Total Reported	60	100.0
Not Reported	1	
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

2 percent; and \$15,000 and over, three, or about 6 percent. It should be noted that approximately 87 percent of the riders were from households in which family income was under \$8,000 and these riders therefore are considered to be economically disadvantaged (see Table 62).

Riders by Observed Disability or Aid: All riders are classified by their observed disability or aid. On the Milwaukee on-board survey the number of persons and approximate percent distribution by observed disability or aid are: wheelchair, 29, or about 48 percent; braces, three, or about 5 percent; canes, six, or about 10 percent; and none apparent, 23, or about 38 percent (see Table 63).

## Table 61

## NUMBER OF RIDERS BY SEX-MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Sex	Number	Percent
Male	25 36	41.0 59.0
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 62

## NUMBER OF RIDERS BY FAMILY INCOME-MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Income Group	Number	Percent
\$3.000 or Less	20	65.9
\$5,999 01 Less	25	55.8
\$4,000-5,999	8	15.4
\$6,000-7,999	8	15.4
\$8,000-9,999	3	5.8
\$10,000-11,999	0	
\$12,000-14,999	1	1.9
\$15,000 and Over	3	5.8
Total Reported	52	100.1
Not Reported	9	
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

# NUMBER OF RIDERS BY OBSERVED DISABILITY OR AID-MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Disability or Aid	Number	Percent
Wheelchair	29	47.6
Brace	3	4.9
Cane	6	9.8
Blind	0	
Infirm	0	
Crutches	0	
None Apparent	23	37.7
Other	0	
Total Reported	61	100.0
Not Reported	0	
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

<u>Riders by Length of Time Using Service</u>: Of the 59 riders reporting the length of time they have been using Handicabs, the number of riders and approximate percent distribution by length of time is: under one month, nine, or about 15 percent; one month to six months, seven, or about 12 percent; seven months to 12 months, six, or about 10 percent; one year to two years, 10, or about 17 percent; three years to five years, 18, or about 31 percent; six years to 10 years, seven, or about 12 percent; over 11 years, two, or about 3 percent (see Table 64).

<u>Riders by Frequency of Use:</u> In the Milwaukee on-board survey 54 persons responded to the frequency of use question. Of these persons the number of persons and approximate percent distribution by frequency of 'use during the month are: less than once, 13 or about 24 percent; once, also 13, or about 24 percent; two to four times, 12, or about 22 percent; five to eight times, three, or about 6 percent; nine to 12 times, seven, or about 13 percent; 13 to 20 times, six, or about 11 percent. No one reported using this service more than 20 times a month (see Table 65).

## Table 64

# NUMBER OF RIDERS BY LENGTH OF TIME USING SERVICE-MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Time	Number	Percent
Under 1 Month1 Month to 6 Months7 Months to 12 Months1 Year to 2 Years3 Years to 5 Years6 Years to 10 YearsOver 11 Years	9 7 6 10 18 7 2	15.2 11.9 10.2 16.9 30.5 11.9 3.4
Total Reported	59	100.0
Not Reported	2	
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

Riders by Perceived Alternative Mode of <u>Travel</u>: Summarized here are the responses of the 50 persons who reported an alternative mode if special transportation services were not available. The number of riders and approximate percent distribution by the alternative mode of travel are: auto driver, 13, or 26 percent; taxi, seven, or 14 percent; bus, three, or 6 percent; walk, one, or 2 percent; other, seven, or 14 percent; and would not make trip, 19, or 38 percent (see Table 66).

Attitudes by Emotional Degree of Response: Summarized on Table 67 are the attitudinal responses of Milwaukee Handicab riders on a seven-point Likert Scale. The emotional response elicited by the interviewer first is classed as a positive, negative, or neutral emotional feeling and if positive or negative, then classed by degree of positive or negative feeling.

On the question of whether the vehicle is comfortable or uncomfortable, 57 persons responded. Of these persons 18, or about 32 percent, felt the vehicle is very comfortable; 14, or about 25 percent, felt the vehicle is somewhat comfortable; 11, or about 19

## 

Frequency	Number	Percent
Less Than Once a Month Once a Month 2-4 Times a Month 5-8 Times a Month 9-12 Times a Month 13-20 Times a Month More Than 20 Times	13 13 12 3 7 6	24.1 24.1 22.2 5.5 13.0 11.1
a Month	0	
Total Reported	54	100.0
Not Reported	7	•-
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

NUMBER OF RIDERS BY PERCEIVED ALTERNATIVE MODE OF TRAVEL IF SPECIAL TRANSPORTATION WERE UNAVAILABLE— MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Mode	Number	Percent
Auto DriverAuto PassengerTaxiBusWalkOtherWould Not Make Trip	0 13 7 3 1 7 19	26.0 14.0 6.0 2.0 14.0 38.0
Total Reported	50	100.0
Not Reported	11	
Total	61	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

Table 67

				 Di	egree of Respor	ise			Tatal			
Attitude Expressed		Very	Somewhat	Slightly	In-Between	Slightly	Somewhat	Very	Reported	Reported	Total	
Vehicle is—Comfortable to Uncomfortable	Number Percent	18 31.6	14 24.6	11 19.3	11 19.3	1 1.7	0	2 3.5	57 100.0	4	61 100.0	
Service is-Convenient to Inconvenient	Number Percent	24 42.1	19 33.3	9 15.8	4 7.0	1 1.8	0	0	57 100.0	4	61 100.0	
Drivers Are-Courteous to Rude	Number Percent	39 68.4	8 14.0	7 12.3	3 5.3	0	0	0	57 100.0	4	61 100.0	
Entering and Existing Vehicle Is- Easy to Difficult	Number Percent	31 55.4	8 14.3	5 8.9	0	4 7.1	2 3.6	6 10.7	56 100.0	5	61 100.0	
Waiting Time is-Short to Long	Number Percent	9 15.8	18 31.6	9 15.8	11 19.3	2 3.5	5 8.8	3 5.3	57 100.0	4	61 100.0	
Calling 24 Hours in Advance is- Convenient to Inconvenient	Number Percent	10 66.6	3 20.0	1 6.7	1 6.7	0 	0	0	15 100.0	46	61 100.0	
Service is-Safe to Unsafe	Number Percent	28 49.1	23 40.4	4 7.0	2 3.5	0 	0	0 	57 100.0	4	61 100.0	
Service Is-Reliable to Unreliable	Number Percent	27 47.4	20 35.1	6 10.5	4 7.0	0 	0	0 	57 100.0	4	61 100.0	
Privacy Is—Important to Unimportant	Number Percent	2 3.5	6 10.5	4 7.0	3 5.3	2 3.5	4 7.0	36 63.2	57 100.0	4	61 100.0	
Do You Mind Sharing Ride?— Much Much to Little	Number Percent	1 1.8	0 	0 	0	0 	6 10.5	50 87.7	57 100.0	4	61 100.0	
Having An Agency Pay the Fare Is— Good to Bad	Number Percent	25 55.6	10 22.2	4 8.9	5 11.1	0	1 2.2	0	<b>4</b> 5 100.0	16 	61 100.0	

# ATTITUDES OF SPECIAL TRANSPORTATION USERS ON A SEVEN-POINT LIKERT SCALE SHOWING EMOTIONAL DEGREES OF RESPONSE--MILWAUKEE HANDICABS ON-BOARD SURVEY: 1977

Source: Applied Resource Integration, Ltd., and SEWRPC.

percent, felt the vehicle is slightly comfortable; an additional 11 people, also about 19 percent, were neutral in their feelings of comfortable or uncomfortable; 1 person, or about 2 percent, felt the vehicle was slightly uncomfortable and two persons, or about 4 percent, felt the vehicle was very uncomfortable. In total, over 75 percent of the respondents felt the vehicle was comfortable.

A total of 57 people responded to the question of whether the service is convenient or inconvenient. Of these persons the number and approximate percent distribution by degree of response are: very convenient, 24, or about 42 percent; somewhat convenient, 19, or about 33 percent; slightly convenient, nine, or about 16 percent; neutral, four, or about 7 percent; slightly inconvenient, one, or about 2 percent. In total over 91 percent of the total respondents felt the service was convenient.

On the question of whether the drivers are courteous or rude, 57 persons responded. By degree of response the number of persons and approximate percent distribution are: very courteous, 39, or 68 percent; somewhat courteous, eight, or about 14 percent; slightly courteous, seven, or about 12 percent; and neutral, three, or about 5 percent. Nearly 95 percent of the respondents felt that the drivers are courteous.

On the question of ease in entering and exiting the vehicle, 56 persons responded. By degree of ease or difficulty, the number of persons and approximate percent distribution are: very easy, 31, or about 55 percent; somewhat easy, eight, or about 14 percent; slightly easy, five, or about 9 percent; slightly difficult, four, or about 7 percent; somewhat difficult, two, or about 4 percent; and very difficult, six, or about 11 percent. Nearly 79 percent of the respondents could enter a vehicle easily.

A total of 57 persons responded to the question of whether the waiting time is short or long. The number of persons and approximate distribution by degree of time are: very short, nine, or about 16 percent; somewhat short, 18, or about 32 percent; slightly short, nine, or about 16 percent; neutral, 11, or about 19 percent; slightly long, two, or about 4 percent; somewhat long, five, or about 9 percent; and very long, three, or about 5 percent. Approximately 63 percent of the respondents felt that the waiting time was short.

In response to the question regarding convenience of the respondent in calling in advance by 24 hours, only 15 persons actually reported. The number of persons and approximate percent distribution by degree of convenience are: very convenient, 10, or about 67 percent; somewhat convenient, three, or 20 percent; slightly convenient, one, or about 7 percent; and neutral, one, also about 7 percent. The relatively large number of persons not reporting—46—is attributable to the fact that most have their travel arrangements made for them by various social service agencies.

A total of 57 riders responded to the question on safety. The number of persons and approximate percent distribution by degree of safety are: very safe, 28, or about 49 percent; somewhat safe, 23, or about 40 percent; slightly safe, four, or about 7 percent; and neutral, two, or about 4 percent. Over 96 percent of the respondents felt that the service is safe.

On the question of whether the service is reliable or unreliable, 57 persons responded. The number of persons and approximate percent distribution by degree of reliability are: very reliable, 27, or about 47 percent; somewhat reliable, 20, or about 35 percent; slightly reliable, six, or about 11 percent; neutral, four, or about 7 percent. Of the 57 riders, 93 percent felt that the service is reliable.

Approximately 74 percent of the 57 respondents to the question on whether privacy is important or unimportant felt that privacy is not important. The number of persons and approximate percent distribution by degree of importance are: very important, two, or about 4 percent; somewhat important, six, or about 11 percent; slightly important, four, or about 7 percent; neutral, three, or about 5 percent; slightly unimportant, two, or about 4 percent; somewhat unimportant, four, or about 7 percent; very unimportant, 36, or about 63 percent.

On the question of whether or not the riders minded sharing a ride 57 persons responded. The number of persons and approximate percent distribution by reported degree are: very much, one, or somewhat less than 2 percent; somewhat little, six, or about 11 percent; very little, 50, or about 88 percent. In total over 98 percent of the respondents do not mind sharing a ride.

On the question of how the respondents felt either good or bad—about having an agency pay the fare 45 persons responded. The number of persons and approximate percent distribution are: very good, 25, or about 56 percent; somewhat good, 10, or about 22 percent; slightly good, four, or about 9 percent; neutral, five, or about 11 percent; somewhat bad, one, or about 2 percent. In total approximately 87 percent of the respondents felt good about having an agency pay the fare.

# Transportation Handicapped Persons by Number of Trips Per Day:

# Household Survey

Table 68 presents the number of transportation handicapped persons by the number of trips per day as reported in the household survey. When considering alternatives for improving transportation systems, it is important to adequately plan for the number of persons who might reasonably be expected to make trips on an average day. Therefore, the information presented here and the information presented in Table 69 on institutionalized persons are of interest in the planning process.

## Table 68

## NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY NUMBER OF TRIPS PER DAY: 1977

		Milwaukee County		Cou	unties Within	Milwaukee SM	SA	M			
Trips Per Day		Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
None	Number	17,792	1,178	18,970	615	1,146	2,617	21,106 2,242		23,348	28,387
	Percent	66.1	46.8	64.4	64.1	61.3	56.1	64.0 56.9		63.2	61.7
1 or 2	Number	6,171	944	7,115	272	725	1,508	8,192	1,428	9,620	12,370
	Percent	22.9	37.5	24.2	28.4	38.7	32.3	24.8	36.2	26.0	26.9
3 or More	Number Percent	2,963 11.0	396 15.7	3,359 11.4	72 7.5	0	540 11.6	3,701 11.2	270 6.9	3,971 10.8	5,245 11.4
Total	Number	26,926	2,518	29,444	959	1,871	4,665	32,999	3,940	36,939	46,002
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

#### Table 69

# INSTITUTIONALIZED PERSONS IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA) BY NUMBER OF TRIPS PER WEEK: 1977

Trips per Week		Milwaul	kee County	Co	unties Within	Milwaukee SM	SA	N			
		Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
None	Number	6,177	1,767	7,944	376	645	1,629	9,527	1,067	10,594	12,702
	Percent	74.4	88.6	77.1	94.0	87.8	89.8	79.2	87.0	80.0	77.5
1 or 2	Number	930	228	1,158	24	90	108	1,260	120	1,380	1,750
	Percent	11.2	11.4	11.2	6.0	12.2	5.9	10.5	9.8	10.4	10.7
3 or More	Number Percent	1,200 14.4	0	1,200 11.7	0	0	78 4.3	1239 10.3	39 3.2	1,278 9.6	1,940 11.8
Total	Number	8,307	1,995	10,302	400	735	1,815	12,026	1,226	13,252	16,392
	Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<u>Milwaukee SMSA</u>: The number and approximate percent distribution of transportation handicapped persons by trips per day in the Milwaukee SMSA are: none, 23,350, or about 63 percent; one or two, 9,620, or about 26 percent; and three or more, 3,970, or about 11 percent. In terms of percent distribution the percent distribution in the Milwaukee SMSA is very similar to that of the Region.

<u>Milwaukee Urbanized Area</u>: Of the 33,000 transportation handicapped persons in the Milwaukee urbanized area the number of persons and approximate percent distribution by number of trips per day are: none, 21,110, or 64 percent; one or two, 8,190, or about 25 percent; three or more, 3,700, or about 11 percent.

<u>Milwaukee Nonurbanized Area</u>: In the Milwaukee nonurbanized area the number of persons and approximate percent distribution by number of trips per day are: none, 2,240, or about 57 percent; one or two, 1,430, or about 36 percent; and three or more, 270, or about 7 percent.

<u>Milwaukee County</u>: In Milwaukee County the number of persons and approximate percent distribution by number of trips per day are: none, 18,970, or about 64 percent; one or two, 7,120, or about 24 percent; and three or more, 3,360, or about 11 percent. In total there are 29,440 transportation handicapped persons in Milwaukee County.

Ozaukee County: Of the 960 transportation handicapped persons in Ozaukee County, the number of persons and approximate percent distribution by trips per day are: none, 620, or about 64 percent; one or two, 270, or about 28 percent; and three or more, 70, or about 8 percent.

Washington County: In Washington County the number of transportation handicapped persons and the approximate percent distribution by number of trips per day are: none, 1,150, or about 61 percent; and one or two, 730, or about 39 percent. No one in Washington County reported making three or more trips per day.

<u>Waukesha County</u>: Of the 4,670 transportation handicapped persons in Waukesha County the number of persons and approximate percent distribution by number of trips per day are: none, 2,620, or about 56 percent; one or two, 1,510, or about 32 percent; and three or more, 540, or about 12 percent.

<u>Milwaukee Transit Service Area</u>: In the Milwaukee transit service area the number of persons and the approximate percent distribution by number of trips per day are: none, 17,790, or about 66 percent; one or two, 6,170, or about 23 percent; three or more, 2,960, or about 11 percent.

<u>Milwaukee Nontransit Area</u>: Of the 2,520 transportation handicapped persons in the Milwaukee nontransit area, the number of persons and approximate percent distribution by number of trips per day are: none, 1,180, or about 47 percent; one or two, 940, or about 38 percent; and three or more, 400, or about 16 percent.

# Transportation Handicapped Persons by Number of Trips Per Week:

Institution Survey

Table 69 presents the number of institutionalized persons by the number of trips per week as reported in the institution survey. Information on the number of transportation handicapped persons residing in private households is discussed in Table 68.

<u>Milwaukee SMSA</u>: Of the 13,250 institutionalized persons residing in the Milwaukee SMSA the number of persons and approximate percent distribution by the number of trips per week are: none, 10,590, or about 80 percent; one or two, 1,380, or about 10 percent; and three or more, 1,280, also about 10 percent. In terms of percent distribution the findings on the Milwaukee SMSA vary little from those in the Region.

<u>Milwaukee</u> Urbanized Area: The number of institutionalized persons and approximate percent distribution by trips per week in the Milwaukee urbanized area are: none, 9,530, or about 79 percent; one or two, 1,260, or about 11 percent; three or more, 1,240, or about 10 percent. In total 12,030 institutionalized persons reside in the Milwaukee urbanized area.

<u>Milwaukee Nonurbanized Area</u>: Living in the Milwaukee nonurbanized area are 1,230 institutionalized persons. Of these persons the number of persons and approximate distribution by the number of trips per week are: none, 1,070, or about 87 percent; one or two, 120, or about 10 percent; three or more, 40, or about 3 percent.

<u>Milwaukee County</u>: The number of institutionalized persons and the approximate percent distribution by the number of trips per week in Milwaukee County are: none, 7,940, or about 77 percent; one or two, 1,160, or about 11 percent; and three or more, 1,200, or about 12 percent. Living within Milwaukee County are 10,300 persons in institutions.

Ozaukee County: Of the 400 institutionalized persons living in Ozaukee County 380, or 94 percent, make no trips per week and 20, or about 6 percent, make one or two trips per week. None of the institutionalized persons in Ozaukee County reported making three or more trips per week.

Washington County:In Washington County about 88 percent of the institutionalized persons, or 650 persons, make no trips per week and only about 90, or 12 percent, make one or two trips per week. Of the 740 institutionalized persons in Washington County none reported making three or more trips per week.

Waukesha County: Residing in institutions in Waukesha County are 1,820 persons. Of these persons the number of persons and approximate percent distribution by trips per week are: none, 1,630, or about 90 percent; one or two, 100, or about 6 percent; and three or more, 80, or about 4 percent.

<u>Milwaukee Transit Service Area</u>: Living within the Milwaukee transit service area in institutions are 8,310 persons. The number of persons and approximate percent distribution by the number of trips per week in the Milwaukee transit service area are: none, 6,180, or about 74 percent; one or two, 930, or about 11 percent; and three or more, 1,200, or about 14 percent.

<u>Milwaukee Nontransit Area</u>: In the Milwaukee nontransit area 1,770 persons, or about 89 percent, make no trips per week and 230 persons, or about 11 percent, make one or two trips per week. None of the 2,000 institutionalized persons in the Milwaukee nontransit area reported making three or more trips per week. <u>Perceived Barriers to Public Bus Use</u> of Transportation Handicapped Persons: Household Survey

Transportation handicapped persons have a variety of impediments to travel. Previously presented were the behavorial characteristics of the transportation handicapped by subarea. Summarized in this section are the perceived barriers to travel of transportation handicapped persons living in private households. The discussion by subarea here presents the percent distribution by degree of difficulty (see Table 70).

Milwaukee SMSA: In the Milwaukee SMSA the degree of difficulty expressed as a percent by barrier is: reading schedules and mapssevere 26.3, some 19.9, and none 53.8; getting information by phone-severe 23.3, some 12.9, and none 63.8; walking on uneven ground and slopes—severe 47.4, some 40.8, and none 11.8; crossing streets and curbs-severe 39.1, some 38.1, and none 22.8; going in bad weathersevere 54.6, some 36.0, and none 9.4; waiting for bus—severe 47.0, some 34.9, and none 18.1; standing at bus stop—severe 46.3, some 35.2, and none 18.5; climbing bus steps—severe 53.4, some 29.8, and none 16.8; negotiating crowds on buses—severe 42.7, some 35.0, and none 22.3; handling change and transfers-severe 24.9. some 24.6, and none 50.5; getting a seat before bus starts-severe 42.1, some 36.7, and none 21.2, standing when seat is unavailable—severe 55.9, some 28.8, and none 15.3; affording bus fare—severe 15.7, some 20.1, and none 64.2; sitting on seat—severe 21.5, some 21.1, and none 57.4; reaching buzzer cord—severe 28.2. some 21.3, and none 50.5.

<u>Milwaukee Urbanized Area</u>: In the Milwaukee urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 27.9, some 20.3, and none 51.8; getting information by phone severe 24,0, some 13.4, and none 62.6; walking on uneven ground and slopes—severe 48.0, some 40.3, and none 11.7; crossing streets and curbs—severe 39.3, some 37.4, and none 23.3; going out in bad weather—severe 54.6, some 36.7, and none 8.7; waiting for bus—severe 47.8, some 34.6, and none 17.6; standing at bus stop—severe 46.6, some 35.2, and none 18.2; climbing bus steps—severe 53.2, some 30.0, and none 16.8; negotiating crowds on buses—

## PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA): 1977

		Milwauk	ee County	Cou	unties Within	Milwaukee SM	SA	м	ilwaukee SMSA		
		Transit									
Barrior	Detrop of Difficulty	Service	Nontransit	Milwaukee	Ozaukee	Washington	Waukesha	Urbanized	Nonurbanized	Total	Desian
Barrier		Area	Area	County	County	County	County	Area	Area	SINGA	Region
Reading	Severe	26.8	9.6	25.3	48.7	11.1	34.1	27.9	12.5	26.3	26.8
Schedules and Mans	Some	22.1	16.8	21.7	25.4	20.4	6.9	20.3	16.1	19.9	18.7
and maps	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		100.0	100.0		100.0	100.0	100.0	100.0		100.0	100.0
Getting	Severe	22.0	9.6	20.9	47.1	18.4	34.8	24.0	18.0	23.3	24.5
by Phone	None	63.5	80.0	65.0	39.7	10.3	6.2 59.0	13.4	8.1	12.9	12.6
	Tetel	100.0	400.0	400.0	33.2	71.5	100.0	02.0	/3.9	00.0	02.5
		100.0	100.0	100.0	100.0	100.0	100,0	100.0	100.0	100.0	100.0
Walking on	Severe	46.2	39.1	45.6	51. <b>9</b>	29.0	65.1	48.0	42.3	47.4	48.0
and Sloper	Some	42.2	41.9	42.2	26.6	55.9	29.0	40.3	45.0	40.8	39.8
and oropes		11.0	19.0	12.2	21.5	15.1	5.9	11.7	12.7	11.0	12.2
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Crossing Streets	Severe	37.6	27.8	36.7	51.7	23.2	57.5	39.3	37.4	39.1	39.8
and Curbs	Some	39.9	27.9	38.9	22.9	62.7	27.1	37.4	44.2	38.1	36.8
	None	22.5	44.3	24.4	25.4	14.1	15.4	23.3	18.4	22.8	23.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Going Out in	Severe	53. <b>6</b>	47.0	53.0	51.8	50.5	66.5	54.6	54.2	54.6	56.0
Bad Weather	Some	38.3	40.0	38.5	33.6	35.6	21.9	36.7	31.0	36.0	35.3
	None	8.1	13.0	8.5	14.6	13.9	11.6	8.7	14.8	9.4	8.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Waiting for Bus	Severe	45.4	59.2	46.5	58.5	38.3	51.5	47.8	41.2	47.0	48.2
	Some	36.3	25.6	35.4	22.8	39.3	32.0	34.6	36.8	34.9	34.2
	None	18.3	15.2	18.1	18.7	22.4	16.5	17.6	22.0	18.1	17.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Standing at	Severe	44.5	50.1	45.0	58.5	39.1	55.2	46.6	43.9	46.3	48.3
Bus Stop	Some	36.7	29.0	36.0	22.8	38.7	31.5	35.2	35.5	35.2	34.1
	None	18.8	20.9	19.0	18.7	22.2	13.3	18.2	20.6	18.5	17.6
	Total	100,0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Climbing Bus	Severe	50.6	67.0	52.0	55. <b>9</b>	53.0	61.8	53.2	55.0	53.4	52.7
Steps	Some	31.9	15.6	30.5	28.5	32.4	24.9	30.0	28.6	29.8	30.5
	None	17.5	17.4	17.5	15.6	14.6	13.3	16.8	16.4	16.8	16.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Negotiating	Severe	41.8	28.3	40.6	45.0	31.9	59.0	42.8	41.9	42.7	41.3
Crowds on	Some	35.6	42.7	36.2	36.3	47.6	22.2	35.3	32.7	35.0	34.6
Buses	None	22.6	29.0	23.2	18.7	20.5	18.8	21.9	25.4	22.3	24.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

severe 42.8, some 35.3, and none 21.9; handling change and transfers—severe 26.0, some 26.1, and none 47.9; getting a seat before bus starts severe 43.1, some 37.0, and none 19.9; standing when seat is unavailable—severe 56.7, some 28.0, and none 15.3; affording bus fare—severe 15.4, some 19.6, and none 65.0; sitting on seats—severe 22.1, some 20.1, and none 57.8; reaching buzzer cord—severe 28.8, some 21.7, and none 49.5. <u>Milwaukee Nonurbanized Area</u>: In the Milwaukee nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 12.5, some 16.1, and none 71.4; getting information by phone—severe 18.0, some 8.1, and none 73.9; walking on uneven ground and slopes—severe 42.3, some 45.0, and none 12.7; crossing streets and curbs—severe 37.4, some 44.2, and none 18.4; going out in bad weather—severe

## Table 70 (continued)

		kee County	e County Counties Within Milwaukee SMSA					ilwaukee SMSA			
Barrier	Degree of Difficulty	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Totał SMSA	Region
Handling Change and Transfers	Severe Some None	24.8 29.3 45.9	10.9 6.3 82.8	23.6 27.4 49.0	45.0 11.7 43.3	7.2 14.0 78.8	35.4 14.5 50.1	26.0 26.1 47.9	15.7 12.3 72.0	24.9 24.6 50.5	25.2 24.5 50.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Getting a Seat Before Bus Starts	Severe Some None	40.7 38.8 20.5	47.7 36.7 19.6	41.1 38.5 20.4	48.9 28.5 22.6	20.9 51.8 27.3	55.2 21.7 23.1	43.1 37.0 19.9	33.8 34.5 31.7	42.1 36.7 21.2	41.5 36.2 22.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Standing When Seat is Unavailable	Severe Some None	53.9 30.3 15.8	72.2 14.8 13.0	55.5 28.9 15.6	56.0 29.4 14.6	44.3 39.5 14.2	62.3 23.5 14.2	56.7 28.0 15.3	49.1 35.9 15.0	55.9 28.8 15.3	57.3 28.5 14.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Affording Bus Fare	Severe Some None	13.2 20.9 65.9	10.4 10.4 79.2	13.0 20.0 67.0	34.3 14.6 51.1	11.8 14.1 74.1	30.4 24.6 45.0	15.4 19.6 65.0	17.8 24.8 57.4	15,7 20,1 64,2	14.9 20.8 64.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sitting on Seats	Severe Some None	21.5 20.9 57.6	13.6 13.8 72.6	20.9 20.3 58.8	42.0 11.1 46.9	5.8 27.2 67.0	27.5 25.6 46.9	22.1 20.1 57.8	16.8 29.5 53.7	21.5 21.1 57.4	22.2 18.8 59.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer Cord	Severe Some None	26.9 23.4 49.7	21.3 17.5 61.2	26.4 22.9 50.7	45.0 3.3 51.7	9.0 25.5 65.5	42.8 14.0 43.2	28.8 21.7 49.5	22.9 19.0 58.1	28.2 21.3 50.5	27.2 21.3 51.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

54.2, some 31.0, and none 14.8; waiting for bus—severe 41.2, some 36.8, and none 22.0; standing at bus stop—severe 43.9, some 35.5, and none 20.6; climbing bus steps—severe 55.0, some 28.6, and none 16.4; negotiating crowds on buses—severe 41.9, some 32.7, and none 25.4; handling change and transfers—severe 15.7, some 12.3, and none 72.0; getting a seat before bus starts—severe 33.8, some 34.5, and none 31.7; standing when seat is unavailable severe 49.1, some 35.9, and none 15.0; affording bus fare—severe 17.8, some 24.8, and none 57.4; sitting on seats—severe 16.8, some 29.5, and none 53.7; reaching buzzer cord—severe 22.9, some 19.0, and none 58.1.

<u>Milwaukee County</u>: In Milwaukee County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps severe 25.3, some 21.7, and none 53.0; getting information by phone—severe 20.9, some 14.1, and none 65.0; walking on uneven ground and slopes—severe 45.6, some 42.2, and none 12.2; crossing streets and curbs-severe 36.7, some 38.9, and none 24.4; going out in bad weathersevere 53.0, some 38.5, and none 8.5; waiting for bus—severe 46.5, some 35.4, and none 18.1; standing at bus stop—severe 45.0, some 36.0, and none 19.0; climbing bus steps-severe 52.0, some 30.5, and none 17.5; negotiating crowds on buses-severe 40.6, some 36.2, and none 23.2; handling change and transferssevere 23.6, some 27.4, and none 49.0; getting a seat before bus starts—severe 41.1, some 38.5, and none 20.4; standing when seat is unavailable-severe 55.5, some 28.9, and none 15.6; affording bus fare-severe 13.0, some 20.0, and none 67.0; sitting on seat-severe 20.9, some 20.3, and none 58.8; reaching buzzer cord- severe 26.4, some 22.9, and none 50.7.

Ozaukee County: In Ozaukee County, the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 48.7, some 25.4, and none 25.9; getting information by phone—severe 47.1, some 13.7, and none 39.2; walking on uneven ground and slopes-severe 51.9, some 26.6, and none 21.5; crossing streets and curbs-severe 51.7, some 22.9, and none 25.4; going out in bad weather-severe 51.8. some 33.6, and none 14.6; waiting for bussevere 58.5, some 22.8, and none 18.7; standing at bus stop-severe 58.5, some 22.8, and none 18.7; climbing bus steps—severe 55.9, some 28.5, and none 15.6; negotiating crowds on buses-severe 45.0, some 36.3, and none 18.7; handling change and transfers-severe 45.0, some 11.7, and none 43.3; getting a seat before the bus starts-severe 48.9, some 28.5, and none 22.6; standing when seat is unavailablesevere 56.0, some 29.4, and none 14.6; affording bus fare-severe 34.3, some 14.6, and none 51.1; sitting on seat-severe 42.0, some 11.1, and none 46.9; reaching buzzer cord—severe 45.0, some 3.3, and none 51.7.

Washington County: In Washington County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 11.1, some 20.4, and none 68.5; getting information by phone-severe 18.4, some 10.3, and none 71.3; walking on uneven grounds and slopes-severe 29.0, some 55.9, and none 15.1; crossing streets and curbssevere 23.2, some 62.7, and none 14.1; going out in bad weather—severe 50.5, some 35.6, and none 13.9; waiting for bus-severe 38.3, some 39.3, and none 22.4; standing at bus stop-severe 39.1, some 38.7, and none 22.2; climbing bus steps-severe 53.0, some 32.4, and none 14.6; negotiating crowds on busessevere 31.9, some 47.6, and none 20.5: handling change and transfers—severe 7.2, some 14.0, and none 78.8; getting a seat before bus starts-severe 20.9, some 51.8, and none 27.3; standing when seat is unavailable-severe 44.3, some 39.5, and none 14.2; affording bus fare-severe 11.8, some 14.1, and none 74.1; sitting on seat—severe 5.8, some 27.2, and none 67.0; reaching buzzer cord—severe 9.0, some 25.5, and none 65.5.

<u>Waukesha County</u>: In Waukesha County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 34.1, some 6.9, and none 59.0; getting information by phone—severe 34.8,

some 6.2, and none 59.0; walking on uneven ground and slopes—severe 65.1, some 29.0, and none 5.9; crossing streets and curbssevere 57.5, some 27.1, and none 15.4; going out in bad weather-severe 66.5, some 21.9, and none 11.6; waiting for bus-severe 51.5, some 32.0, and none 16.5; standing at bus stop—severe 55.2, some 31.5, and none 13.3; climbing bus steps-severe 61.8, some 24.9, and none 13.3; negotiating crowds on busessevere 59.0, some 22.2, and none 18.8; handling change and transfers-severe 35.4, some 14.5, and none 50.1; getting a seat before the bus starts-severe 55.2, some 21.7, and none 23.1; standing when seat is unavailable-severe 62.3, some 23.5, and none 14.2; affording bus fare-severe 30.4, some 24.6, and none 45.0; sitting on seat-severe 27.5, some 25.6, and none 46.9; reaching buzzer cord-severe 42.8, some 14.0, and none 43.2.

Milwaukee Transit Service Area: In the Milwaukee transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 26.8, some 22.1, and none 51.1; getting information by phone-severe 22.0, some 14.5, and none 63.5; walking on uneven ground and slopessevere 46.2, some 42.2, and none 11.6; crossing streets and curbs-severe 37.6, some 39.9, and none 22.5; going out in bad weather-severe 53.6, some 38.3, and none 8.1; waiting for bus-severe 45.4, some 36.3, and none 18.3; standing at bus stop—severe 44.5, some 36.7, and none 18.8; climbing bus steps—severe 50.6, some 31.9, and none 17.5; negotiating crowds on buses-severe 41.8, some 35.6, and none 22.6; handling change and transfers-severe 24.8, some 29.3, and none 45.9; getting a seat before bus starts—severe 40.7, some 38.8, and none 20.5; standing when seat is unavailable-severe 53.9, some 30.3, and none 15.8; affording bus fare-severe 13.2, some 20.9, and none 65.9; sitting on seat-severe 21.5, some 20.9, and none 57.6; reaching buzzer cord-severe 26.9, some 23.4, and none 49.7.

<u>Milwaukee Nontransit Area</u>: The degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 9.6, some 16.8, and none 73.6; getting information by phone—severe 9.6, some 10.4, and none 80.0; walking on uneven ground and slopes—severe 39.1, some 41.9, and none 19.0; crossing streets and curbs—severe 27.8, some 27.9, and none 44.3; going out in bad weather—severe 47.0, some 40.0, and none 13.0; waiting for bus—severe 59.2, some 25.6, and none 15.2; standing at bus stop—severe 50.1, some 29.0, and none 20.9; climbing bus steps—severe 67.0, some 15.6, and none 17.4; negotiating crowds on buses—severe 28.3, some 42.7, and none 29.0; handling change and transfers severe 10.9, some 6.3, and none 82.8; getting a seat before bus starts—severe 47.7, some 36.7, and none 19.6; standing when seat is unavailable—severe 72.2, some 14.8, and none 13.0; affording bus fare—severe 10.4, some 10.4, and none 79.2; sitting on seat—severe 13.6, some 13.8, and none 72.6; reaching buzzer cord—severe 21.3, some 17.5, and none 61.2.

# Perceived Barriers to Public Bus Use of Able-Bodied Elderly Persons:

Household Survey

Summarized here are the perceived barriers to travel of able-bodied elderly persons living in private households. Table 71 presents by subarea the percent distribution by degree of difficulty.

Milwaukee SMSA: In the Milwaukee SMSA the degree of difficulty expressed as a percent by barrier is: reading schedules and maps severe 0.4, some 7.2, and none 92.4; getting information by phone-severe 0.4, some 3.0, and none 96.6; walking on eneven ground and slopes—severe 0.8, some 21.2, and none 78.0; crossing streets and curbs—severe 0.7, some 11.3, and none 88.0; going out in bad weather severe 5.6, some 28.2, and none 66.2; waiting for bus-severe 2.0, some 20.4, and none 77.6; standing at bus stop-severe 1.9, some 19.1, and none 79.0; climbing bus steps—severe 1.7, some 13.0, and none 85.3; negotiating crowds on buses—severe 1.1, some 11.1, and none 87.8; handling change and transfers—severe 0.3, some 3.3, and none 96.4; getting a seat before bus starts-severe 1.2, some 11.6, and none 87.2; standing when seat is unavailable-severe 3.1, some 19.1, and none 77.8; affording bus fare—severe 0.3, some 6.1, and none 93.6; sitting on seat—severe 0.1, some 1.5, and none 98.4; reaching buzzer cord-severe 0.1, some 1.8, and none 98.1.

<u>Milwaukee Urbanized Area</u>: In the Milwaukee urbanized area the degree of difficulty expressed as a percent by barrier is: reading maps and schedules—severe 0.4, some 7.7, and none 91.9; getting information by phone—severe 0.4, some 3.1, and none 96.5; walking on uneven

ground and slopes-severe 0.8, some 22.7, and none 76.5; crossing streets and curbs-severe 0.7, some 12.0, and none 87.3; going out in bad weather—severe 6.0, some 29.3, and none 64.7; waiting for bus-severe 2.0, some 21.8, and none 76.2; standing at bus stop-severe 2.0, some 20.2, and none 77.8; climbing bus stepssevere 1.9, some 13.9 and none 84.2; negotiating crowds on buses-severe 1.2, some 11.6, and none 87.2; handling changes and transferssevere 0.4, some 3.3, and none 96.3; getting a seat before bus starts—severe 1.3, some 12.2, and none 86.5; standing when seat is unavailable-severe 3.4, some 20.0, and none 76.6; affording bus fare—severe 0.3, some 5.6, and none 94.1; sitting on seat—severe 0.0, some 1.7, and none 98.3; reaching buzzer cord—severe 0.0, some 1.9, and none 98.1.

Milwaukee Nonurbanized Area: In the Milwaukee nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading maps and schedules—severe 0.3, some 2.7, and none 97.0; getting information by phone-severe 0.6, some 1.4, and none 98.0; walking on uneven ground and slopes-severe 0.3, some 7.8, and none 91.9; crossing streets and curbs—severe 0.3, some 4.9, and none 94.8; going out in bad weather-severe 3.0, some 17.2, and none 79.8; waiting for a bus-severe 1.9, some 8.3, and none 89.8; standing at bus stop—severe 1.0, some 8.8, and none 90.2; climbing bus stepssevere 0.3, some 5.3, and none 94.4; negotiating crowds on buses-severe 0.3, some 6.7, and none 93.0; handling change and transferssevere 0.0, some 3.1, and none 96.9; getting a seat before bus starts—severe 0.3, some 5.3, and none 94.4; standing when seat is unavailable—severe 0.3, some 11.4, and none 88.3; affording bus fare-severe 0.3, some 10.9, and none 88.8; sitting on seat-severe 0.3, some 0.0, and none 99.7; reaching buzzer cord-severe 0.3, some 1.6, and none 98.1.

<u>Milwaukee County</u>: In Milwaukee County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.3, some 7.8, and none 91.9; getting information by phone—severe 0.3, some 3.2, and none 96.5; walking on uneven ground and slopes severe 0.9, some 23.0, and none 76.1; crossing streets and curbs—severe 0.8, some 12.3, and none 86.9; going out in bad weather—severe 5.7, some 29.4, and none 64.9; waiting for bus—severe 2.1, some 21.8, and none 76.1; standing at bus stop—severe 2.0, some 20.5, and

# PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE ABLE-BODIED ELDERLY IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA): 1977

		Milwaukee County			inties Within	Milwaukee SM	SA	Milwaukee SMSA			
Barrier	Degree of Difficulty	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Reading Maps and Schedules	Severe Some None	0.3 7.9 91.8	7.2 92.8	0.3 7.8 91.9	 4.8 95.2	0.8 1.4 97.8	0.7 4.9 94.4	0.4 7.7 91.9	0.3 2.7 97.0	0.4 7.2 92.4	0.4 7.1 92.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Getting Information by Phone	Severe Some None Total	0.3 2.9 96.8 100.0	8.7 91.3 100.0	0.3 3.2 96.5 100.0	 100.0 100.0	0.8  99.2 100.0	0.9 2.7 96.4	0.4 3.1 96.5	0.6 1.4 98.0 100.0	0.4 3.0 96.6 100.0	0.4 3.1 96.5
Walking on Uneven Ground and Slopes	Severe Some None Total	1.0 22.3 76.7 100.0	 34.9 65.1 100.0	0.9 23.0 76.1 100.0	5.8 94.2 100.0	4.2 95.8 100.0	0.3 16.9 82.8 100.0	0.8 22.7 76.5 100.0	0.3 7.8 91.9 100.0	0.8 21.2 78.0 100.0	1.1 19.8 79.1 100.0
Crossing Streets and Curbs	Severe Some None Total	0.8 12.5 86.7 100.0	9.6 90.4 100.0	0.8 12.3 86.9 100.0	5.6 94.4	 4.2 95.8	0.3 6.9 92.8	0.7 12.0 87.3	0.3 4.9 94.8	0.7 11.3 88.0	0.6 10.0 89.4
Going Out in Bad Weather	Severe Some None Total	5.9 29.0 65.1	2.4 35.5 62.1 100.0	5.7 29.4 64.9	 11.7 88.3	4.2 2.0 93.8	6.7 30.3 63.0	6.0 29.3 64.7	3.0 17.2 79.8	5.6 28.2 66.2	5.1 28.5 66.4
Waiting for Bus	Severe Some None Total	2.2 21.6 76.2 100.0	 26.5 73.5 100.0	2.1 21.8 76.1 100.0	8.9 91.1 100.0	5.0 95.0 100.0	2.7 17.2 80.1 100.0	2.0 21.8 76.2 100.0	1.9 8.3 89.8 100.0	2.0 20.4 77.6 100.0	1.9 18.6 79.5 100.0
Standing at Bus Stop	Severe Some None Total	2.1 19.8 78.1 100.0	 32.0 68.0 100.0	2.0 20.5 77.5 100.0	 8.9 91.1 100.0	 5.0 95.0 100.0	1.8 15.3 82.9 100.0	2.0 20.2 77.8 100.0	1.0 8.8 90.2 100.0	1.9 19.1 79.0 100.0	1.8 17.6 80.6 100.0
Climbing Bus Steps	Severe Some None Total	1.9 13.6 84.5 100.0	3.3 19.2 77.5 100.0	2.0 13.9 84.1 100.0	  100.0 100.0	 4.2 95.8 100.0	0.3 8.2 91.5 100.0	1.9 13.9 84.2 100.0	0.3 5.3 94.4 100.0	1.7 13.0 85.3 100.0	1.5 12.3 86.2 100.0
Negotiating Crowds on Buses	Severe Some None Total	1.0 11.9 87.1 100.0	3.3 16.3 80.4 100.0	1.2 12.1 86.7 100.0	  100.0 100.0	 4.2 95.8 100.0	1.1 8.5 90.4 100.0	1.2 11.6 87.2 100.0	0.3 6.7 93.0 100.0	1.1 11.1 87.8 100.0	1.0 9.9 89.1 100.0

none 77.5; climbing bus steps—severe 2.0, some 13.9, and none 84.1; negotiating crowds on buses—severe 1.2, some 12.1, and none 86.7; handling change and transfers—severe 0.4, some 3.6, and none 96.0; getting a seat before bus starts—severe 1.4, some 12.5, and none 86.1; standing when seat is unavailable—severe 3.6, some 20.2, and none 76.2; affording bus fare—severe 0.4, some 5.4, and none 94.2; sitting on seat—severe 0.0, some 1.9, and none 98.1; reaching buzzer cord—severe 0.0, some 2.0, and none 98.0.

<u>Ozaukee County</u>: In Ozaukee County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.0, some 4.8, and none 95.2; getting information by phone—severe and some, both 0.0, and none

## Table 71 (continued)

		Milwau	kee County	Co	Counties Within Milwaukee SMSA				Milwaukee SMSA		
Barrier	Degree of Difficulty	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Handling Change and Transfers	Severe Some None	0.4 3.4 96.2	6.2 93.8	0.4 3.6 96.0	  100.0	100.0	3.3 96.7	0.4 3.3 96.3	 3.1 96.9	0.3 3.3 96.4	0.3 3.1 96.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Getting a Seat Before Bus Starts	Severe Some None	1.1 12.4 86.5	5.7 13.5 80.8	1.4 12.5 86.1	 3.4 96.6	 2.1 97.9	0.3 9.6 90.1	1.3 12.2 86.5	0.3 5.3 94.4	1.2 11.6 87.2	1.0 10.4 88.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Standing When Seat is Unavailable	Severe Some None	3.7 19.3 77.0	2.4 34.1 63.5	3.6 20.2 76.2	  100.0	2.1 3.5 94.4	0.3 20.3 79.4	3.4 20.0 76.6	0.3 11.4 88.3	3.1 19.1 77.8	3.3 18.3 78.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Affording Bus Fare	Severe Some None	0.4 5.3 94.3	6.5 93.5	0.4 5.4 94.2	 2.8 97.2	1.2 98.8	0.3 11.4 88.3	0.3 5.6 94.1	0.3 10.9 88.8	0.3 6.1 93.6	0.3 5.9 93.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sitting on Seats	Severe Some None	1.6 98.4	6.4 93.6	 1.9 98.1	  100.0	  100.0	0.3  99.7	 1.7 98.3	0.3  99.7	0.1 1.5 98.4	0.1 1.4 98.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer Cord	Severe Some None	 1.5 98.5	9.8 90.2	 2.0 98.0	 2.8 97.2	  100.0	0.3 1.3 98.4	 1.9 98.1	0.3 1.6 98.1	0.1 1.8 98.1	0.1 1.7 98.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

100.0 percent; walking on uneven ground and slopes—severe 0.0, some 5.8, and none 94.2: crossing streets and curbs-severe 0.0, some 5.6, and none 94.4; going out in bad weather severe 0.0, some 11.7, and none 88.3; waiting for bus-severe 0.0, some 8.9, and none 91.1; standing at bus stop—severe 0.0, some 8.9, and none 91.1; climbing bus steps-severe and some, both 0.0, and none 100.0; negotiating crowds on buses-severe and some, both 0.0, and none 100.0, handling change and transferssevere and some, both 0.0, and none 100.0; getting a seat before bus starts-severe 0.0, some 3.4, and none 96.6; standing when seat is unavailable-severe and some 0.0, and none 100.0; affording bus fare-severe 0.0, some 2.8, and none 97.2; sitting on seat-severe and some, both 0.0, and none 100.0; reaching buzzer cord—severe 0.0, some, both 2.8, and none 97.2.

Washington County: In Washington County, the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 0.8, some 1.4, and none 97.8; getting information by phone-severe 0.8, some 0.0, and none 99.2; walking on uneven ground and slopes severe 0.0, some 4.2, and none 95.8; crossing streets and curbs-severe 0.0, some 4.2, and none 95.8; going out in bad weather-severe 4.2, some 2.0, and none 93.8; waiting for bussevere 0.0, some 5.0, and none 95.0; standing at bus stop—severe 0.0, some 5.0, and none 95.0; climbing bus steps—severe 0.0, some 4.2, and none 95.8; negotiating crowds on busessevere 0.0, some 4.2, and none 95.8; handling change and transfers-severe and some, both 0.0, and none 100.0; getting a seat before bus starts-severe 0.0, some 2.1, and none 97.9; standing when seat is unavailable-severe 2.1,

some 3.5, and none 94.4; affording bus fare severe 0.0, some 1.2, and none 98.8; sitting on seat—severe and some, both 0.0, and none 100.0; reaching the buzzer cord—severe and some, both 0.0, and none 100.0.

Waukesha County: In Waukesha County, the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 0.7, some 4.9, and none 94.4; getting information by phone-severe 0.9, some 2.7, and none 96.4; walking on uneven ground and slopessevere 0.3, some 16.9, and none 82.8; crossing streets and curbs-severe 0.3, some 6.9, and none 92.8; going out in bad weather-severe 6.7, some 30.3, and none 63.0; waiting for bus-severe 2.7, some 17.2, and none 80.1; standing at bus stop—severe 1.8, some 15.3, and none 82.9; climbing bus steps—severe 0.3, some 8.2, and none 91.5; negotiating crowds on buses-severe 1.1, some 8.5, and none 90.4; handling change and transfers-severe 0.0, some 3.3, and none 96.7; getting a seat before bus starts—severe 0.3, some 9.6, and none 90.1; standing when seat is unavailable-severe 0.3, some 20.3, and none 79.4; affording bus fare—severe 0.3, some 11.4, and none 88.3; sitting on seat—severe 0.3, some 0.0, and none 99.7; reaching buzzer cord—severe 0.3, some 1.3, and none 98.4.

Milwaukee Transit Service Area: In the Milwaukee transit service area, the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.3, some 7.9, and none 91.8; getting information by phone-severe 0.3, some 2.9, and none 96.8; walking on uneven ground and slopes-severe 1.0, some 22.3, and none 76.7; crossing streets and curbs-severe 0.8, some 12.5, and none 86.7; going out in bad weather-severe 5.9, some 29.0, and none 65.0; waiting for bussevere 2.2, some 21.6, and none 76.2; standing at bus stop-severe 2.1, some 19.8, and none 78.1; climbing bus steps-severe 1.9, some 13.6, and none 84.5; negotiating crowds on buses—severe 1.0, some 11.9, and none 87.1; handling change and transfers—severe 0.4, some 3.4, and none 96.2; getting a seat before bus starts—severe 1.1 some 12.4, and none 86.5; standing when seat is unavailable-severe 3.7, some 19.3, and none 77.0; affording bus faresevere 0.4, some 5.3, and none 94.3; sitting on seat—severe 0.0, some 1.6, and none 98.4; reaching buzzer cord-severe 0.0, some 1.5, and none 98.5.

Milwaukee Nontransit Area: In the Milwaukee nontransit area, the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.0, some 7.2, and none 92.8; getting information by phonesevere 0.0, some 8.7, and none 91.3; walking on uneven ground and slopes-severe 0.0, some 34.9, and none 65.1; crossing streets and curbs-severe 0.0, some 9.6, and none 90.4; going out in bad weather-severe 2.4, some 35.5, and none 62.1; waiting for bus-severe 0.0, some 26.5, and none 73.5; standing at bus stop-severe 0.0, some 32.0, and none 68.0; climbing bus steps-severe 3.3, some 19.2, and none 77.5; negotiating crowds on buses-severe 3.3, some 16.3, and none 80.4; handling change and transfers-severe 0.0, some 6.2, and none 93.8; getting a seat before bus starts-severe 5.7, some 13.5, and none 80.8; standing when seat is unavailable-severe 2.4, some 34.1, and none 63.5; affording bus fare-severe 0.0, some 6.5, and none 93.5; sitting on seat—severe 0.0, some 6.4, and none 93.6; reaching buzzer cord—severe 0.0, some 9.8, and none 90.2.

Perceived Barriers to Public Bus Use of Institutionalized Persons: Institution Survey Table 72 presents the percent distribution to each of the barrier questions. Summarized here are the perceived barriers to travel of persons living in institutions.

Milwaukee SMSA: In the Milwaukee SMSA, the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 49.4. some 15.7, and none 34.9; getting information by phone-severe 51.6, some 12.3, and none 36.1; walking on uneven ground and slopes-severe 56.8, some 21.2, and none 22.0; crossing streets and curbs-severe 59.8, some 15.8, and none 24.4; going out in bad weathersevere 66.9, some 19.8, and none 13.3; waiting for a bus-severe 64.2, some 16.9, and none 18.9; standing at bus stop—severe 63.7, some 17.2, and none 19.1; climbing bus steps—severe 60.6, some 17.9, and none 21.5; negotiating crowds on buses-severe 60.9, some 19.0, and none 20.1; handling change and transferssevere 57.2, some 14.9, and none 27.9; getting to a seat before bus starts-severe 60.8, some 18.5, and none 20.7; standing when seat is unavailable-severe 64.4, some 16.5, and none 19.1; affording bus fare-severe 33.2, some 20.5, and none 46.3; sitting on seat-severe 51.0, some 11.2, and none 37.8; reaching buzzer cord-severe 56.8, some 13.6, and none 29.6.

Milwaukee Urbanized Area: In the Milwaukee urbanized area the degree of difficulty expressed as a percent by barrier is: severe-50.3, some 15.1, and none 34.6; getting information by phone-severe 52.5, some 11.7, and none 35.8; walking on uneven ground and slopes—severe 57.9, some 20.2, and none 21.9; crossing streets and curbs—severe 60.9, some 15.0, and none 24.1; going out in bad weathersevere 68.3, some 19.1, and none 12.6; waiting for a bus-severe 65.4, some 16.0, and none 18.6; standing at bus stop—severe 64.9, some 16.3, and none 18.8; climbing bus steps-severe 61.4, some 17.3, and none 21.3; negotiating crowds on buses-severe 61.7, some 18.7, and none 19.6; handling change and transferssevere 57.7, some 14.2, and none 28.1; getting to a seat before bus starts—severe 61.4, some 18.2, and none 20.4; standing when seat is unavailable-severe 65.3, some 15.9, and none 18.8; affording bus fare-severe 31.8, some 20.6, and none 47.6; sitting on seat-severe 51.2, some 10.3, and none 38.5; reaching buzzer cord-severe 57.3, some 13.3, and none 29.4.

Milwaukee Nonurbanized Area: In the Milwaukee nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 41.1, some 21.0, and none 37.9; getting information by phonesevere 42.3, some 17.9, and none 39.8; walking on uneven ground and slopes-severe 46.1; some 30.7, and none 23.2; crossing streets and curbs-severe 48.5, some 23.9, and none 27.6; going out in bad weather-severe 53.4, some 26.6, and none 20.0; waiting for bus-severe 52.2, some 25.8, and none 22.0; standing at bus stop-severe 52.2, some 25.8, and none 22.0; climbing bus steps—severe 53.4, some 23.3, and none also 23.3; negotiating crowds on buses—severe 53.4, some 22.1, and none 24.5; handling change and transfers—severe 51.6, some 22.0, and none 26.4; getting to a seat before bus starts—severe 55.3, some 21.5, and none 23.2; standing when seat is unavailablesevere 55.3, some 22.7, and none 22.0; affording bus fare-severe 46.8, some 20.2, and none 33.0; sitting on seat—severe 49.2, some 20.2, and none 30.6; reaching buzzer cord-severe 51.6, some 17.1, and none 31.3.

<u>Milwaukee County</u>: In Milwaukee County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 47.4, some 15.3, and none 37.3; getting information by phone—severe 50.7, some 11.2, and

none 38.1; walking on uneven ground and slopes severe 55.7, some 20.0, and none 24.3; crossing streets and curbs-severe 58.4, some 14.8, and none 26.8; going out in bad weather-severe 66.8, some 18.9, and none 14.3; waiting for a bus-severe 62.8, some 16.8, and none 20.4; standing at bus stop—severe 62.3, some 17.3, and none 20.4; climbing bus steps-severe 59.5, some 17.2, and none 23.3; negotiating crowds on buses-severe 60.1, some 17.8, and none 22.1; handling change and transferssevere 55.1, some 14.2, and none 30.7; getting to a seat before bus starts-severe 58.4, some 18.4, and none 23.2; standing when seat is unavailable-severe 62.8, some 15.6, and none 21.6; affording bus fare-severe 29.3, some 20.5, and none 50.2; sitting on seat-severe 50.1, some 9.3, and none 40.6; reaching buzzer cord—severe 56.0, some 11.6, and none 32.4.

Ozaukee County: In Ozaukee County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 54.0, some 26.0, and none 20.0; getting information by phone-severe 58.0, some 20.0, and none 22.0; walking on uneven ground and slopessevere 80.0, some 14.0, and none 6.0; crossing streets and curbs—severe 82.0, some 12.0, and none 6.0; going out in bad weather-severe 86.0, some 8.0, and none 6.0; waiting for a bus severe 82.0, some 14.0, and none 4.0; standing at bus stop—severe 80.0, some 16.0, and none 4.0; climbing bus steps—severe 80.0, some 16.0, and none 4.0; negotiating crowds on buses—severe 84.0, some 12.0, and none 4.0; handling change and transfers—severe 72.0, some 18.0, and none 10.0; getting to a seat before bus starts—severe 82.0, some 12.0, and none 6.0; standing when seat is unavailablesevere 86.0, some 10.0, and none 4.0; affording bus fare-severe 60.0, some 28.0, and none 12.0; sitting on seat—severe 72.0, some 14.0, and none, also 14.0; reaching buzzer cordsevere 80.0, some 12.0, and none 8.0.

<u>Washington County</u>: In Washington County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 44.9, some 18.4, and none 36.7; getting information by phone—severe 46.9, some 18.4, and none 34.7; walking on uneven ground and slopes—severe 51.0, some 24.5, and none, also 24.5; crossing streets and curbs—severe 55.1, some 22.5, and none, also 22.4; going out in bad weather—severe 59.2, some 20.4, and none, also 20.4; waiting for a bus—severe 57.1, some

r		Milwaukee Coun			unties Withir	Milwaukee SM	Milwaukee SMSA				
Barriers	Degree of Difficulty	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Reading Schedules and Maps	Severe Some None	42.9 17.7 39.4	65.7 5.7 28.6	47,4 15.3 37.3	54.0 26.0 20.0	44.9 18.4 36.7	62.0 14.2 23.8	50.3 15.1 34.6	41.1 21.0 37.9	49.4 15.7 34.9	48.1 15.8 36.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Getting Information by Phone	Severe Some None	45.7 13.2 41.1	71.4 2.9 25.7	50.7 11.2 38.1	58.0 20.0 22.0	46.9 18.4 34.7	57.2 14.2 28.6	52.5 11.7 35.8	42.3 17.9 39.8	51.6 12.3 36.1	49.7 13.1 37.2
Walking on Uneven Ground and Slopes	Severe Some None Total	100.0 49.8 22.1 28.1 100.0	100.0 80.0 11.4 8.6 100.0	100.0 55.7 20.0 24.3 100.0	100.0 80.0 14.0 6.0 100.0	100.0 51.0 24.5 24.5 100.0	100.0 60.5 28.4 11.1 100.0	100.0 57.9 20.2 21.9 100.0	100.0 46.1 30.7 23.2 100.0	100.0 56.8 21.2 22.0 100.0	100.0 55.7 21.4 22.9 100.0
Crossing Streets and Curbs	Severe Some None Total	52.5 16.3 31.2 100.0	82.8 8.6 8.6 100.0	58.4 14.8 26.8 100.0	82.0 12.0 6.0 100.0	55.1 22.5 22.4 100.0	64.3 19.7 16.0 100.0	60.9 15.0 24.1 100.0	48.5 23.9 27.6 100.0	59.8 15.8 24.4 100.0	57.9 16.4 25.7 100.0
Going Out in Bad Weather	Severe Some None Total	60.9 21.3 17.8 100.0	91.4 8.6  100.0	66.8 18.9 14.3 100.0	86.0 8.0 6.0 100.0	59.2 20.4 20.4 100.0	66.4 27.3 6.3 100.0	68.3 19.1 12.6 100.0	53.4 26.6 20.0 100.0	66.9 19.8 13.3 100.0	62.7 21.4 15.9 100.0
Waiting for a Bus	Severe Some None Total	56.7 18.0 25.3 100.0	88.6 11.4  100.0	62.8 16.8 20.4 100.0	82.0 14.0 4.0 100.0	57.1 20.4 22.5 100.0	70.9 17.0 12.1 100.0	65.4 16.0 18.6 100.0	52.2 25.8 22.0	64.2 16.9 18.9 100.0	61.2 16.9 21.9 100.0
Standing at Bus Stop	Severe Some None Total	55.3 19.4 25.3 100.0	91.4 8.6  100.0	62.3 17.3 20.4 100.0	80.0 16.0 4.0 100.0	57.1 20.4 22.5 100.0	70.9 15.4 13.7 100.0	64.9 16.3 18.8 100.0	52.2 25.8 22.0 100.0	63.7 17.2 19.1 100.0	61.1 17.2 21.7 100.0
Climbing Bus Steps	Severe Some None Total	53.9 17.3 28.8 100.0	82.9 17.1  100.0	59.5 17.2 23.3 100.0	80.0 16.0 4.0 100.0	55.1 20.4 24.5 100.0	64.8 20.8 14.4 100.0	61.4 17.3 21.3 100.0	53.4 23.3 23.3 100.0	60.6 17.9 21.5 100.0	58.3 17.9 23.8 100.0
Negotiating Crowds on Buses	Severe Some None Total	54.6 18.0 27.4 100.0	82.9 17.1  100.0	60.1 17.8 22.1 100.0	84.0 12.0 4.0 100.0	55.1 18.4 26.5 100.0	63.1 27.5 9.4 100.0	61.7 18.7 19.6 100.0	53.4 22.1 24.5 100.0	60.9 19.0 20.1 100.0	55.3 18.1 26.6 100.0

# PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE INSTITUTIONALIZED IN THE MILWAUKEE STANDARD METROPOLITAN STATISTICAL AREA (SMSA): 1977

20.4, and none 22.5; standing at bus stop—severe 57.1, some 20.4, and none 22.5; climbing bus steps—severe 55.1, some 20.4, and none 24.5; negotiating crowds on buses—severe 55.1, some 18.4, and none 26.5; handling change and transfers—severe 55.1, some 20.4, and none 24.5; getting to a seat before bus starts—severe 57.1, some 18.4, and none 24.5; standing when seat is unavailable—severe 57.1, some 20.4, and none 22.5; affording bus fare—severe 51.0, some 24.5, and none, also 24.5; stitting on seat—severe 55.1, some 20.4, and none 24.5; reaching buzzer cord—severe 55.1, some 20.4, and none 24.5.

<u>Waukesha County</u>: In Waukesha County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 62.0, some 14.2, and none 23.8; getting information by phone—severe 57.2, some 14.2, and
#### Table 72 (continued)

		Milwau	kee County	Co	unties Within	Milwaukee SM	SA	м	ilwaukee SMSA		
Barrier	Degree of Difficulty	Transit Service Area	Nontransit Area	Milwaukee County	Ozaukee County	Washington County	Waukesha County	Urbanized Area	Nonurbanized Area	Total SMSA	Region
Handling Change and Transfers	Severe Some None	49.8 16.3 33.9	77.2 5.7 17.1	55.1 14.2 30.7	72.0 18.0 10.0	55.1 20.4 24.5	66.4 15.9 17.7	57.7 14.2 28.1	51.6 22.0 26.4	57.2 14.9 27.9	53.4 15.8 30.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Getting to a Seat Before Bus Starts	Severe Some None	52.6 19.3 28.1	82.8 14.3 2.9	58.4 18.4 23.2	82.0 12.0 6.0	57.1 18.4 24.5	71.4 20.8 7.8	61.4 18.2 20.4	55.3 21.5 23.2	60.8 18.5 20.7	58.8 17.4 23.8
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Standing When Seat is Unavailable	Severe Some None	56.7 16.6 26.7	88.6 11.4 	62.8 15.6 21.6	86.0 10.0 4.0	57.1 20.4 22.5	71.4 21.8 6.8	65.3 15.9 18.8	55.3 22.7 22.0	64.4 16.5 19.1	62.8 16.1 21.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Affording Bus Fare	Severe Some None	25.4 19.9 54.7	45.7 22.9 31.4	29.3 20.5 50.2	60.0 28.0 12.0	51.0 24.5 24.5	41.8 17.5 40.7	31.8 20.6 47.6	46.8 20.2 33.0	33.2 20.5 46.3	29.6 19.1 51.3
	1018	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sitting on Seat	Severe Some None	44.2 10.9 44.9	74.2 2.9 22.9	50.1 9.3 40.6	72.0 14.0 14.0	55.1 20.4 24.5	50.1 17.5 32.4	51.2 10.3 38.5	49.2 20.2 30.6	51.0 11.2 37.8	47.1 10.6 42.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer Cord	Severe Some None	50.1 13.0 36.9	80.0 5.7 14.3	56.0 11.6 32.4	80.0 12.0 8.0	55.1 20.4 24.5	57.2 22.5 20.3	57.3 13.3 29.4	51.6 17.1 31.3	56.8 13.6 29.6	53.7 12.0 34.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

none 28.6; walking on uneven ground and slopes—severe 60.5, some 28.4, and none 11.1; crossing streets and curbs-severe 64.3, some 19.7, and none 16.0; going out in bad weathersevere 66.4, some 27.3, and none 6.3; waiting for a bus-severe 70.9, some 17.0, and none 12.1; standing at bus stop-severe 70.9, some 15.4, and none 13.7; climbing bus steps—severe 64.8, some 20.8, and none 14.4; negotiating crowds on buses-severe 63.1, some 27.5, and none 9.4; handling change and transfers-severe 66.4, some 15.9, and none 17.7; getting to a seat before bus starts—severe 71.4, some 20.8, and none 7.8; standing when seat is unavailablesevere 71.4, some 21.8, and none 6.8; affording bus fare-severe 41.8, some 17.5, and none 40.7; sitting on seat—severe 50.1, some 17.5, and none 32.4; reaching buzzer cord-severe 57.2, some 22.5, and none 20.3.

Milwaukee Transit Service Area: In the Milwaukee transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 42.9, some 17.7, and none 39.4; getting information by phone-severe 45.7, some 13.2, and none 41.1; walking on uneven ground and slopes severe 49.8, some 22.1, and none 28.1; crossing streets and curbs-severe 52.5, some 16.3, and none 31.2; going out in bad weather-severe 60.9, some 21.3, and none 17.8; waiting for a bus-severe 56.7, some 18.0, and none 25.3; standing at bus stop—severe 55.3, some 19.4, and none 25.3; climbing bus steps—severe 53.9, some 17.3, and none 28.8; negotiating crowds on buses-severe 54.6, some 18.0, and none 27.4; handling change and transfers-severe 49.8, some 16.3, and none 33.9; getting to a seat before bus starts-severe 52.6, some 19.3, and

none 28.1; standing when seat is unavailable severe 56.7, some 16.6, and none 26.7; affording bus fare—severe 25.4, some 19.9, and none 54.7; sitting on seat—severe 44.2, some 10.9, and none 44.9; reaching buzzer cord—severe 50.1, some 13.0, and none 36.9.

Milwaukee Nontransit Area: In the Milwaukee nontransit area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 65.7, some 5.7, and none 28.6; getting information by phonesevere 71.4, some 2.9, and none 25.7; walking on uneven ground and slopes-severe 80.0, some 11.4, and none 8.6; crossing streets and curbs-severe 82.8, some 8.6, and none also 8.6; going out in bad weather-severe 91.4, some 8.6, and none 0.0; waiting for a bussevere 88.6, some 11.4, and none 0.0; standing at bus stop-severe 91.4, some 8.6, and none 0.0; climbing bus steps—severe 82.9, some 17.1, and none 0.0; negotiating crowds on buses-severe 82.9, some 17.1, and none 0.0; handling change and transfers-severe 77.2, some 5.7, and none 17.1; getting to a seat before bus starts-severe 82.8, some 14.3, and none 2.9; standing when seat is unavailable—severe 88.6, some 11.4, and none 0.0; affording bus fares-severe 45.7, some 22.9, and none 31.4; sitting on seat-severe 74.2, some 2.9, and none 22.9; reaching buzzer cord—severe 80.0, some 5.7, and none 14.3.

CHARACTERISTICS OF THE TRANSPORTATION HANDICAPPED AND ABLE BODIED ELDERLY RESIDING IN RACINE COUNTY

Racine County contains about 9 percent of the transportation handicapped and able-bodied elderly population in Southeastern Wisconsin. For the purposes of data tabulations and comparisons of the travel habits, characteristics, and attitudes of the transportation handicapped and able bodied elderly, Racine County has been divided into different geographic areas including an urbanized area, a nonurbanized area, and a transit service area (see Map 2). Following is a description of the various characteristics, as obtained in the surveys, by each of the aforementioned geographic areas.

Transportation Handicapped

Persons by Disability

Responses to the disability question are grouped into commonly used terminology. Most respondents specified the type of disability in medical terms; however, to facilitate an understanding of the effect of a disability on mobility, simple descriptive terms are utilized. Specifically, the terms used in Table 73 include the following responses to the questionnaire by individual responses:

- 1. <u>Stroke</u>—Includes stroke, brain damage, mental problems, brain tumor, loss of memory, brain surgery, mental instability, speech disorder, and nervousness.
- 2. <u>Old Age</u>—Includes diabetes, multiple or unspecified operations, general poor health, Tic Doulourux, Parkinson's Disease, blackouts, and cancer and other associated illnesses.
- 3. <u>Arthritis</u>—Includes arthritis, rheumatism, and bone disease.
- 4. <u>Visual</u>—Includes total blindness, partial blindness, weak eyes, loss of sight, cataracts, and cataract operations.
- 5. <u>Impaired Lower Trunk—Ambulatory</u>— Includes injured or artificial hips; artificial legs, hands, or feet; bad ankles, hips, knees, legs, and feet; no toes; bad circulation in feet, legs or hips; crippled, unsteady, hip bursitis, one leg shorter than the other, and other such defects which do not affect the person's ability to walk.
- 6. Impaired Trunk—Nonambulatory—Includes amputated leg or legs or broken leg, hip, or back; weak back or surgery on back; fractured hip or hip surgery; paralysis or use of wheelchair for any cause; polio; softening of bones; and general infirmities preventing walking.
- 7. <u>Developmental Disabilities</u>—Includes mental retardation, epilepsy, cerebral palsy, mongoloid, slow learners, and learning disabilities.
- 8. <u>Heart</u>—Includes heart problems of all kinds, including specific references to the arteries or a pacemaker.
- 9. <u>Other</u>—Includes asthma, respiratory problems, chest pain, lung pain, removed lung, bronchitis, arthritis of

# TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY DISABILITY: 1977

			Racin	e County	-	
Disability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Stroke	Number	512	512	205	717	6,893
	Percent	12.1	12.6	17.1	13.6	12.3
Old Age	Number	1,016	927	155	1,082	8,173
	Percent	24.0	22.7	12.9	20.5	14.6
Arthritis	Number	566	566	197	763	10,982
	Percent	13.4	13.9	16.5	14.5	19.7
Visual	Number	239	239	59	298	4,284
	Percent	5.7	5.9	4.9	5.6	7.7
Impaired Trunk -	Number	600	534	385	919	8,232
Ambulatory	Percent	14.2	13.1	32.1	17.4	14.7
Impaired Trunk -	Number	556	556	80	636	4,937
Nonambulatory	Percent	13.1	13.7	6.7	12.1	8.8
Developmental	Number	267	267	117	384	4,252
Disabilities	Percent	6.3	6.5	9.8	7.3	7.6
Heart	Number Percent	209 4.9	209 5.1	0	209 4.0	5,291 9.5
Other	Number Percent	267 6.3	267 6.5	0	267 5.0	2,821 5.1
Total	Number	4,232	4,077	1,198	5,275	55,865
Reported	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	479	417	128	545	6,529
Total	Number	4,711	4,494	1,326	5,820	62,394
	Percent	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

sternum, trouble breathing, emphysema, hearing, multiple sclerosis, and muscular dystrophy.

<u>Racine County</u>: Of the 5,820 transportation handicapped persons in Racine County, 5,280, or about 91 percent, reported their disabilities; however 4,080 persons out of the 6,530 persons in the Region who did not report their disabilities are institutionalized able-bodied persons who, as previously discussed, are considered to be transportation handicapped. Of the number of persons reporting their disabilities, the number and percent distribution in descending order of occurrence are: old age, 1,080, or about 21 percent; impaired trunk ambulatory, 920, or about 17 percent; arthritis, 760, or about 15 percent; stroke, 720, or about 14 percent; impaired trunk nonambulatory, 640, or about 12 percent; developmental disabilities, 380, or about 7 percent; visual, 300, or about 6 percent; other, 270, or about 5 percent; and heart, 210, or about 4 percent.

Racine Urbanized Area: The number and approximate percent distribution of transportation handicapped persons by descending order of occurrence are: old age, 930, or about 23 percent; arthritis, 570, or about 14 percent; impaired trunk nonambulatory, 560, or about 14 percent; impaired trunk ambulatory, 530, or about 13 percent; stroke, 510, also about 13 percent; developmental disabilities and other, 270, or about 7 percent each; visual, 240, or about 6 percent; and heart, 210, or about 5 percent.

Racine Nonurbanized Area: In descending order of occurrence the number of persons and approximate percent distribution by disability are: impaired trunk ambulatory, 390, or about 32 percent; stroke, 200, or about 17 percent; arthritis, 200, also about 17 percent; old age, 160, or about 13 percent; developmental disabilities, 120, or about 10 percent; impaired trunk nonambulatory, 80, or about 7 percent; and visual, 60, or about 5 percent. Due to the low number of samples collected, respondents to the question may not necessarily represent the total transportation handicapped population.

Racine Transit Service Area: The number and approximate percent distribution of transportation handicapped persons in descending order of occurrence in the Racine transit service area are: old age, 1,020 or about 24 percent; impaired trunk ambulatory, 600, or about 14 percent; arthritis, 570, or about 13 percent; impaired trunk nonambulatory, 560, or about 13 percent; stroke, 510, or about 12 percent; developmental disabilities, 270, or about 6 percent; other, 270, also about 6 percent; visual, 240, slightly less than 6 percent; and heart, 210, or about 5 percent.

# Transportation Handicapped Persons by Type of Aid Used

The type of aid used by transportation handicapped persons is grouped into commonly used terms. For study purposes all of the aids were grouped into five general classifications as follows:

- 1. Cane.
- 2. Walker, crutches, grab rails, and quad.
- 3. Wheelchair.
- 4. None.
- 5. Miscellaneous, covering artificial leg, hearing aid, leg braces, aid in car for driving, hydraulic lifts, special shoes, and supervision.

It should be noted that the 4,080 able-bodied persons in institutions are recorded in the "not reported" line in Table 74. As noted previously, these persons are considered to be transportation handicapped.

Racine County: Of the 4,610 persons, or approximately 79 percent of the total 5,820 persons reporting the type of aid used in Racine County, the number in descending order of occurrence and approximate distribution by use of an aid are: none, 1,920, or about 42 percent; cane, 1,080, or about 24 percent; wheelchair, 880, or about 19 percent; walker and crutches, 600, or about 13 percent; and miscellaneous, 120, or about 3 percent.

Racine Urbanized Area: In the Racine urbanized area the 3,740 persons reporting the type of aid used represent about 83 percent of the 4,490 persons in the Racine urbanized area. The number of persons and the approximate percent distribution in descending order of use is: none, 1,660, or about 45 percent; cane, 820, or about 22 percent; wheelchair, 650, or about 18 percent; walker and crutches, 540, or about 14 percent; and miscellaneous, 60, or about 2 percent.

Racine Nonurbanized Area: In descending order of use the 870 persons who account for about 66 percent of the 1,330 persons in the Racine nonurbanized area the number of persons and approximate percent distribution are: cane, 260, or about 30 percent; none, 260, also about 30 percent; wheelchair, 230, or about 27 percent; walker and crutches, 70, or about 8 percent; and miscellaneous, 60, or about 7 percent. Due to the low number of samples collected, respondents to this question may not necessarily represent the total transportation handicapped population.

#### TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY TYPE OF AID USED: 1977

			Racine County			
Type of Aid		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Cane	Number	824	824	260	1,084	11,237
	Percent	21.2	22.0	29.8	23.5	23.5
Walker, Crutches	Number	604	538	66	604	3,893
and Similar Devices	Percent	15.5	14.4	7.6	13.1	8.1
Wheelchair	Number	653	653	231	884	11,512
	Percent	16.8	17.5	26.5	19.2	24.0
None	Number	1,753	1,664	258	1,922	20,467
	Percent	45.0	44.5	29.5	41.7	42.7
Miscellaneous	Number	58	58	58	116	805
	Percent	1.5	1.6	6.6	2.5	1.7
Total Reported	Number	3,892	3,737	873	4,610	47,914
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	819	757	453	1,210	14,480
Total	Number	4,711	4,494	1,326	5,820	62,394
	Percent	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

Racine Transit Service Area: Of the 4,710 transportation handicapped persons in the Racine transit service area, 3,890 or about 66 percent reported their use of an aid. The number of persons and approximate percent distribution by type of aid are: none, 1,750, or about 45 percent; cane, 820, or about 21 percent; wheelchair, 650, or about 17 percent; walker and crutches, 600, or about 16 percent; and miscellaneous, 60, or about 1.5 percent.

Transportation Handicapped and Able Bodied Elderly Persons by Auto Available to Drive

Tables 75 and 76 include the number and percent of the transportation handicapped persons and the able-bodied elderly persons who have an auto available to drive. Racine County: In Racine County 780 of the transportation handicapped persons accounting for about 13 percent of the total transportation handicapped persons in Racine County have an auto available to drive while 5,040, or about 87 percent of the total transportation handicapped persons, do not have an auto available to drive. Within Racine County 8,290 able-bodied elderly persons, or about 70 percent of the total able-bodied elderly persons within the County, have an auto available to drive and 3,580, or about 30 percent of the able-bodied elderly persons, do not have an auto available to drive.

Racine Urbanized Area: Of the 4,490 transportation handicapped persons in the Racine urbanized area 640, or about 14 percent, have an auto available to drive and 3,850, or about

## TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY AUTO AVAILABLE TO DRIVE: 1977

			Racine County					
Auto Available To Drive		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region		
Yes	Number	640	640	139	779	9,272		
	Percent	13.6	14.2	10.5	13.4	14.9		
No	Number	4,071	3,854	1,187	5,041	53,122		
	Percent	86.4	85.8	89.5	86.6	85.1		
Total	Number	4,711	4,494	1,326	5,820	62,394		
	Percent	100.0	100.0	100.0	100.0	100.0		

Source: SEWRPC.

#### Table 76

#### ABLE-BODIED ELDERLY PERSONS IN RACINE COUNTY BY AUTO AVAILABLE TO DRIVE: 1977

Auto Available to Drive		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Yes	Number	5,604	5,861	2,426	8,286	74,028
	Percent	69.0	70.5	68.3	69.9	59.1
No	Number	2,517	2,447	1,127	3,575	51,134
	Percent	31.0	29.5	31.7	30.1	40.9
Total	Number	8,121	8,308	3,553	11,861	125,162
	Percent	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

86 percent, do not have an auto available to drive. In the Racine urbanized area 5,860 ablebodied elderly persons, or about 71 percent of the total able-bodied elderly persons, have an auto available to drive and 2,450, or about 29 percent of the able-bodied elderly persons, do not have an auto available to drive.

Racine Nonurbanized Area: In the Racine nonurbanized area about 10 percent, or 140 of the transportation handicapped persons, have an auto available to drive and about 90 percent, or 1,190, do not have an auto available to drive. Of the 3,550 able-bodied elderly persons in the Racine nonurbanized area 2,430, or about 68 percent, have an auto available to drive while 1,130, or about 32 percent, do not have an auto available to drive.

Racine Transit Service Area: In the Racine transit service area 640, or about 14 percent of the transportation handicapped persons, have an auto available to drive while 4,070, or about 86 percent of the transportation handicapped persons, do not have an auto available to drive. Of the 8,120 able bodied elderly persons in the Racine transit service area 5,600, or about 69 percent, have an auto available to drive while 2,520, or about 31 percent, do not have an auto available to drive.

## Transportation Handicapped and Able-Bodied Elderly Persons by Frequency of Auto Available to Ride In

The "not reported—not applicable" classification includes those persons who have an auto available to drive. At the regional level 9,270 transportation handicapped persons and 74,030 able-bodied elderly persons indicated that they had an auto available to drive and as a result are excluded from answering the question on auto available to ride in. Tables 77 and 78 present the number and percent of distribution of transportation handicapped persons and ablebodied elderly persons by their response to the auto available to ride in question.

Racine County: Of the 4,240 transportation handicapped persons 560, or about 13 percent, never have an auto available to ride in; 1,340, or about 32 percent, have an auto available to ride in occasionally; 500, or about 12 percent, have an auto available to ride in most of the time; and 1,830, or about 43 percent, always have an auto available to ride in. Within Racine County 190 able-bodied elderly persons, or about 6 percent of the total able-bodied elderly persons responding to this question, never have an auto available to ride in; 510 able-bodied elderly persons, or about 16 percent, occasionally have an auto available to ride in; 1,010, or about 32 percent, have an auto available to ride in most of the time; and 1,460, or about 46 percent, always have an auto available to ride in.

#### Table 77

			Raci	ne County		
Auto Available To Ride In Frequency		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Never	Number	535	535	22	557	9,478
	Percent	16.1	17.2	2.0	13.1	18.6
Occasionally	Number	992	992	351	1,343	17,186
	Percent	29.8	31.9	31.1	31.7	33.6
Most of The Time	Number	331	270	234	504	10,581
	Percent	10.0	8.7	20.7	11.9	20.7
Always	Number	1,467	1,311	521	1,832	13,864
	Percent	44.1	42.2	46.2	43.3	27.1
Total Reported	Number	3,325	3,108	1,128	4,236	51,109
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported - Not Applicable ^a	Number Percent	1,386	1,386	198	1,584	11,285
Total	Number	4,711	4,494	1,326	5,820	62,394
	Percent	100.0	100.0	100.0	100.0	100.0

TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY FREQUENCY OF AUTO AVAILABLE TO RIDE IN: 1977

^a Includes persons who have an auto available to drive. Source: SEWRPC. Racine Urbanized Area: In the Racine urbanized area 3,110 transportation handicapped persons responded to this question. By frequency of auto available to ride in, the number of persons and the approximate percent distribution are: never, 540, or about 17 percent; occasionally, 990, or about 32 percent; most of the time 270, or about 9 percent; always, 1,310, or about 42 percent. Of the 2,040 able-bodied elderly persons responding to the question, the number of persons and approximate percent distribution by frequency classification are: never, 190, or about 9 percent; most of the time, 620, or about 16 percent; and always, 910, or about 45 percent.

Racine Nonurbanized Area: In the Racine nonurbanized area 1,130 transportation handicapped persons responded to this question. By frequency of auto available to ride in, the number of persons and the approximate percent distribution are: never, 20, or about 2 percent; occasionally, 350, or about 31 percent; most of the time, 230, or about 21 percent; and always, 520, or about 46 percent. There are 3,550 able-bodied elderly persons in the Racine nonurbanized area; of these 1,130 supplied answers to the auto available to ride in question. The distribution by frequency is: occasionally, 190, or about 17 percent; most of the time, 390, or about 35 percent; and always, 550, or about 48 percent. None of the able-bodied elderly persons in the Racine nonurbanized area answered never.

<u>Racine Transit Service Area</u>: Within the Racine transit service area 3,330 transportation handicapped persons responded to this question. The

Table 78

ABLE-BODIED ELDERLY PERSONS IN RACINE COUNTY	
BY FREQUENCY OF AUTO AVAILABLE TO RIDE IN: 1977	

			Racin	ne County		T
Auto Available To Ride Frequency		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Never	Number Percent	187 8.9	187 9.2	0	187 5.9	5,902 12.3
Occasionally	Number	325	325	187	512	15,420
	Percent	15.4	15.9	16.6	16.1	32.2
Most of the Time	Number	688	619	394	1,013	12,207
	Percent	32.6	30.3	35.0	32.0	25.5
Always	Number	911	911	546	1,457	14,359
	Percent	43.1	44.6	48.4	46.0	30.0
Total Reported	Number	2,111	2,042	1,127	3,169	47,888
	Percent	100.0	100.0	100.0	100.0	100.0
Not Applicable - Not Reported ^a	Number Percent	6,010	6,266	2,426	8,692	77,274
Total	Number	8,121	8,308	3,553	11,861	125,162
	Percent	100.0	100.0	100.0	100.0	100.0

^a Includes persons who have an auto available to drive.

number of persons and approximate percent distribution by frequency are: never, 540, or about 16 percent; occasionally, 990, or about 30 percent; most of the time, 330, or about 10 percent; and always, 1,470, or about 44 percent. Of the 2,110 able-bodied elderly persons responding to this question in the Racine transit service area, the distribution by frequency is: never, 190, or about 9 percent; occasionally, 330, or about 15 percent; most of the time, 690, or about 33 percent; and always, 910, or about 43 percent. The 2,110 able-bodied elderly persons responding to this question represent only about 26 percent of the total able-bodied elderly in the Racine transit service area.

#### Transportation Handicapped Persons by Ability to Ride in Auto

An examination of transportation handicapped persons and auto availability is not complete without an understanding of their ability to ride in an auto. Table 79 summarizes the number of persons and percent distribution of persons who responded to the question on ability to ride in an auto. The relatively large number of transportation handicapped persons in the "not reported—not applicable" line is due to the fact that the survey design excluded persons who were able to drive an automobile.

Racine County: The number of transportation handicapped persons and their approximate percent distribution by degree of ability to ride in an auto are: impossible, 410, or about 10 percent; difficult, 1,920, or about 45 percent; some difficulty, 1,070, or about 25 percent; and no problem, 840, or about 20 percent.

Racine Urbanized Area: Within the Racine urbanized area are 3,110 transportation handicapped persons who responded to this question. The number of transportation handicapped persons and their approximate percent distribution by degree of ability to ride in an auto are:

			Raci	ine County		
Ride In Auto Ability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Impossible	Number	351	352	58	410	4,977
	Percent	10.6	11.3	5.1	9.7	9.7
Difficult	Number	1,417	1,417	501	1,918	16,743
	Percent	42.6	45.6	44.4	45.3	32.7
Some Difficulty	Number	836	707	366	1,073	12,722
	Percent	25.1	22.8	32.5	25.3	24.8
No Problem	Number	721	632	203	835	16,838
	Percent	21.7	20.3	18.0	19.7	32.8
Total Reported	Number	3,325	3,108	1,128	4,236	51,280
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported - Not Applicable	Number Percent	1,386	1,386	198	1,584	11,114
Total	Number	4,711	4,494	1,326	5,820	62,394
	Percent	100.0	100.0	100.0	100.0	100.0

# TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY ABILITY TO RIDE IN AN AUTO: 1977

impossible, 350, or about 11 percent; difficult, 1,420, or about 46 percent; some difficulty, 710, or about 23 percent; and no problem, 630, or about 20 percent.

Racine Nonurbanized Area: The responses of 1,130 persons who answered the question of their degree of ability to ride in an auto are: impossible, 60, or about 5 percent; difficult, 500, or about 44 percent; some difficulty, 370, or about 33 percent; and no problem, 200, or about 18 percent.

Racine Transit Service Area: Of the 3,330 transportation handicapped persons in the Racine transit service area who answered this question, the number of persons and approximate percent distribution by degree of ability to ride in an auto are: impossible, 350, or about 11 percent; difficult, 1,420, or about 43 percent; some difficulty, 840, or about 25 percent; and no problem, 720, or about 22 percent.

# Perceived Ability to Reach a Bus Stop by Transportation Handicapped Persons

The option of improving existing buses and service or extending services to areas not now served in order to meet transportation needs of transportation handicapped must consider the perceived ability of such persons to reach a bus stop. Table 80 summarizes by geographic area the number and percent distribution of transportation handicapped persons by their perceived ability to reach a bus stop and, when able to so do, the distance perceived as attainable by them.

Racine County: Of the 5,270 transportation handicapped persons in Racine County who responded to this question, the number of persons and approximate percent distribution by perceived ability are: impossible, 2,040, or about 39 percent; front of house, 2,200, or about 42 percent; one block, 320, or about 6 percent; and two blocks, 720, or about 14 percent.

#### Table 80

			Raci	ne County		
Perceived Ability to Reach a Bus Stop		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Impossible	Number Percent	1,830 42.7	1,764 42.7	272 24.0	2,036 38.7	26,697 46.9
Front of House	Number Percent	1,558 36.3	1,558 37.7	637 56.2	2,195 41.7	10,378 18.2
One Block	Number Percent	316 7.4	316 7.6	0	316 6.0	4,318 7.6
Two Blocks	Number Percent	583 13.6	494 12.0	224 19.8	718 13.6	15,508 27.3
Total Reported	Number Percent	4,287 100.0	4,132 100.0	1,133 100.0	5,265 100.0	56,901 100.0
Not Reported	Number Percent	424	362	193	555	5,493
Total	Number Percent	4,711 100.0	4,494 100.0	1,326 100.0	5,820 100.0	62,394 100.0

# TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY PERCEIVED ABILITY TO REACH A BUS STOP: 1977

Racine Urbanized Area: In the Racine urbanized area, 4,130 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 1,760, or about 43 percent; front of house, 1,560, or about 38 percent; one block, 320, or about 8 percent; and two blocks, 490, or about 12 percent.

<u>Racine</u> Nonurbanized Area: Contained in the Racine nonurbanized area are 1,130 persons who responded to this question. The number of transportation handicapped persons and the approximate percent distribution by perceived ability to reach a bus stop are: impossible, 270, or about 24 percent; front of house, 640, or about 56 percent; and two blocks, 220, or about 20 percent. None of the transportation handicapped persons in the Racine nonurbanized area responded under the classification "one block." Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Racine Transit Service Area: Within the transit service area 4,290 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 1,830, or about 43 percent; front of house, 1,560, or about 36 percent; one block, 320, or about 7 percent; and two blocks, 580, or about 14 percent.

Transportation Handicapped Persons and Able-Bodied Elderly Persons by Perceived Availability of Special Transportation Services Another option for improving mobility of the transportation handicapped and able-bodied elderly population is to make special transportation services more available. A prerequisite to doing so is to understand what these groups perceive as gureently available. Toklag 81 and

perceive as currently available. Tables 81 and 82 summarize by geographic area the response of the transportation handicapped and ablebodied elderly to this question.

<u>Racine County:</u> Of the 5,820 transportation handicapped persons responding to this item, 3,000, or about 52 percent, perceive special transportation services as unavailable and 2,820, or about 48 percent, perceive special transportation services as available. In the able-bodied elderly group in Racine County, 6,960, or about 59 percent, perceive that special transportation services are unavailable, and 4,900, or about 41 percent, perceive that special transportation services are available.

## Table 81

<u> </u>			Rac	ine County		
Special Transportation Availability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
No	Number	2,100	1,882	1,114	2,996	35,156
	Percent	44.6	41.9	84.0	51.5	56.5
Yes	Number	2,611	2,612	212	2,824	27,054
	Percent	55.4	58.1	16.0	48.5	43.5
Total Reported	Number	4,711	4,494	1,326	5,820	62,210
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	0	0	184
Total	Number	4,711	4,494	1,326	5,820	62,394
	Percent	100.0	100.0	100.0	100.0	100.0

TRANSPORTATION HANDICAPPED PERSONS IN RACINE COUNTY BY PERCEIVED AVAILABILITY OF SPECIAL TRANSPORTATION SERVICES: 1977

Perceived Special Transportation Availability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
No	Number	4,331	4,528	2,429	6,957	93,579
	Percent	53.3	54.5	68.4	58.7	75.2
Yes	Number	3,790	3,780	1,124	4,904	30,857
	Percent	46.7	45.5	31.6	41.3	24.8
Total Reported	Number	8,121	8,308	3,553	11,861	124,436
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	0	0	726
Total	Number	8,121	8,308	3,553	11,861	125,162
	Percent	100.0	100.0	100.0	100.0	100.0

#### ABLE-BODIED ELDERLY PERSONS IN RACINE COUNTY BY PERCEIVED AVAILABILITY OF SPECIAL TRANSPORTATION SERVICES: 1977

Source: SEWRPC.

Racine Urbanized Area: In the Racine urbanized area 1,890, or about 42 percent of the transportation handicapped persons, perceive that special transportation services are not available and 2,610, or about 58 percent, perceive that special transportation services are available. Within the able bodied elderly group, 4,530, or about 55 percent of the able bodied elderly, perceive that special transportation services are unavailable and 3,780, or about 45 percent, perceive that special transportation services are available.

Racine Nonurbanized Area: In the Racine nonurbanized area 1,110, or about 84 percent of the transportation handicapped persons, perceive that special transportation services are unavailable and 210, or about 16 percent, perceive that special transportation services are available. Of the 3,550 able-bodied elderly persons in the Racine nonurbanized area, 2,430, or about 68 percent, perceive that special transportation services are not available and 1,120, or about 32 percent, perceive that special transportation services are available. Racine Transit Service Area: In the Racine transit service area 2,100 transportation handicapped persons, or about 45 percent, perceive that special transportation services are not available and 2,610, or about 55 percent, perceive that special transportation services are available. Of the 8,120 able-bodied elderly persons in the Racine transit service area, 4,330, or about 53 percent, perceive that special transportation services are not available and 3,790, or about 47 percent, perceive that special transportation services are available.

# Institutionalized Transportation Handicapped Persons by Tripmaking Impediments

For a better understanding of the travel impediments encountered by institutionalized persons, a series of questions was asked about their mobility upon leaving the institution, ability to enter a vehicle, ability to ride in a vehicle, and assistance required at destination. Table 83 summarizes these responses by geographic area.

Racine County: Upon leaving the institution, 330, or about 27 percent of the institutionalized persons, need to be carried; 240, or about 20 percent, need help, and 640, or about 53 percent, can leave unassisted. When entering the vehicle, 330, or about 27 percent, need to be carried; 350, or about 29 percent, need help; and 530, or about 44 percent, can enter unassisted. While riding in a vehicle, 180, or about 15 percent, need an ambulance; 200, or about 16 percent, need a special seat; and 840, or about 69 percent, can ride unassisted. Upon reaching their destination, 850, or about 71 percent, need accompaniment; and 340, or about 29 percent, do not need anyone to accompany them.

Racine Urbanized Area: Upon leaving the institution, 290, or about 28 percent, need to be carried; 200, or about 19 percent, need help; and 550, or about 53 percent, can leave unassisted. When entering a vehicle, 290, or about 28 percent, need to be carried; 310, or about 30 percent, need help; and 440, or about 43 percent, can enter a vehicle unassisted. While riding in a vehicle 180, or about 17 percent, need an ambulance; 150, or about 15 percent, require a special seat; and 700, or about 68 percent, can ride unassisted. Upon reaching their destination, 760, or about 73 percent, need accompaniment; and 280, or about 27 percent, do not need accompaniment.

Racine Nonurbanized Area: Upon leaving the institution, 40, or about 25 percent, need to be carried; 40, or another 25 percent, need help; and 88, or 50 percent, can leave the institution unassisted. When entering a vehicle 40 persons each are in the category of carried and need help—approximately 25 percent each—and 90 persons or 50 percent can enter a vehicle unassisted. While riding in a vehicle, 40 persons, or about 25 percent, require a special seat and 130, or about 75 percent, can ride unassisted. Upon reaching their destination, 90, or about 57 percent, need accompaniment and 70, or about 43 percent, do not need accompaniment.

Racine Transit Service Area: Upon leaving the institution, 290 persons, or about 28 percent, need to be carried; 200, or about 19 percent, need help; and 550, or about 53 percent, can leave the institution unassisted. Upon entering a vehicle, 290, or about 28 percent, need to be carried; 310, or about 30 percent, require help; and 440, or about 43 percent, can enter a vehicle unassisted. While riding in a vehicle, 180, or about 17 percent, require an ambulance; 150, or about 15 percent, require special seating; and 700, or about 68 percent, can ride unassisted. Upon reaching their destination, 760, or about 73 percent, need accompaniment and 280, or about 27 percent, do not need accompaniment.

## Number of Person Trips by Transportation Handicapped Persons and Able Bodied Elderly Persons on an Average Day by Trip Purpose: Household Survey

Activities by trip purpose by both the transportation handicapped and able-bodied elderly persons center on the home as can be seen by the subgeographic areas in which trip purpose home ranges from about 41 percent to nearly 50 percent of total trips. Tables 84 and 85 present the number of trips by transportation handicapped persons and able-bodied elderly persons on an average day by trip purpose for each of the subgeographic areas. Knowledge of the magnitude of trips made by trip purpose and by mode of travel is necessary when considering alternative transportation system improvements. It should be noted that Tables 84 and 85 present the number of trips on an average day as found in the household survey. Trips on the institution survey are presented in Table 86 as average trips per week.

On an average day transportation handicapped persons reported making about 44,700 trips in the region which, compared to the 1972 inventory of travel, represents only about 1 percent of the total 4,504,900 internal person trips. Ablebodied elderly persons reported making 211,400 trips on the household survey which represents about 5 percent of the 1972 inventory of internal person trips.

Racine County: In Racine County, transportation handicapped persons made a total of 5.870 trips on an average day. The number of trips and approximate percent distribution by trip purpose are: home, 2,720, or about 46 percent; work, 60, or about 1 percent; school, 180, or about 3 percent; shopping, 770, or about 13 percent; social-recreation, 860, or about 15 percent; personal business, 1,030, or about 18 percent; and medical, 260, or about 4 percent. Able-bodied elderly persons in Racine County made 20,160 trips on an average day. The number of trips and approximate percent distribution by trip purpose for the able-bodied elderly are: home, 9,250, or about, 46 percent; work, 860, or about 4 percent; school, 60, or somewhat less than one-half of 1 percent;

# INSTITUTIONALIZED PERSONS IN RACINE COUNTY BY TRIPMAKING IMPEDIMENTS: 1977

			Racine County				
Incidence of Impediments		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region	
Leaving Institution							
Carried	Number	286	286	44	330	6,492	
	Percent	27.7	27.7	25.0	27.3	39.7	
Need Help	Number	198	198	44	242	2,689	
	Percent	19.1	19.1	25.0	20.0	16.4	
Unassisted	Number	550	550	88	638	7,180	
	Percent	53.2	53.2	50.0	52.7	43.9	
Total Reported	Number	1,034	1,034	176	1,210	16,361	
	Percent	100.0	100.0	100.0	100.0	100.0	
Not Reported	Number Percent	0	0	0	0	31	
Total	Number	1,034	1,034	176	1,210	16,392	
	Percent	100.0	100.0	100.0	100.0	100.0	
Entering Vehicle							
Carried	Number	286	286	44	330	6,469	
	Percent	27.7	27.7	25.0	27.3	39.5	
Need Help	Number	308	308	44	352	3,372	
	Percent	29.8	29.8	25.0	29.1	20.6	
Unassisted	Number	440	440	88	528	6,520	
	Percent	42.5	42.5	50.0	43.6	39.9	
Total Reported	Number	1,034	1,034	176	1,210	16,361	
	Percent	100.0	100.0	100.0	100.0	100.0	
Not Reported	Number Percent	0	0	0	0	31	
Total	Number	1,034	1,034	176	1,210	16,392	
	Percent	100.0	100.0	100.0	100.0	100.0	

shopping, 3,140, or about 16 percent; socialrecreation, 3,930, or about 20 percent; personal business, 2,510, or about 12 percent; medical, 420, or about 2 percent.

Racine Urbanized Area: In the Racine urbanized area, transportation handicapped persons made a total of 4,750 trips on an average day. The number of trips made by the transportation

# Table 83 (continued)

Incidence of Impediments		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Riding In Vehicle						
Ambulance	Number Percent	176 17.0	176 17.0	0	176 14.5	1,442 8.8
Special Seat	Number	154	154	44	198	5,222
	Percent	14.9	14.9	25.0	16.4	31.9
Unassisted	Number	704	704	132	836	9,697
	Percent	68.1	68.1	75.0	69.1	59.3
Total Reported	Number	1,034	1,034	176	1,210	16,361
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	0	0	31
Total	Number	1,034	1,034	176	1,210	16,392
	Percent	100.0	100.0	100.0	100.0	100.0
Destination Assistance						
Need	Number	758	758	88	846	11,216
Accompaniment	Percent	73.3	73.3	57.1	71.2	68.9
Do Not Need	Number	276	276	66	342	5,072
Accompaniment	Percent	26.7	26.7	42.9	28.8	31.1
Total Reported	Number	1,034	1,034	154	1,188	16,288
	Percent	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	22	22	104
Total	Number	1,034	1,034	176	1,210	16,392
	Percent	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

handicapped by trip purpose and approximate percent distribution is: home, 2,260, or about 48 percent; school, 130, or about 3 percent; shopping, 700, or about 15 percent; socialrecreation, 680, or about 14 percent; personal business, 790, or about 17 percent; and medical, 200, or about 4 percent. Able-bodied elderly persons in the Racine urbanized area made a total of 16,220 trips. The number of trips by trip purpose and approximate percent distribu-

			Racir			1
Trip Purpose		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Home	Number	2,412	2,256	459	2,715	20,493
	Percent	46.8	47.5	40.8	46.2	45.9
Work	Number Percent	0	0	59 5.2	59 1.0	1,760 4.0
School	Number	125	125	58	183	3,186
	Percent	2.4	2.6	5.2	3.1	7.1
Shopping	Number	698	698	69	767	5,066
	Percent	13.6	14.7	6.1	13.1	11.3
Social - Recreation	Number	683	684	176	860	7,478
	Percent	13.3	14.4	15.6	14.6	16.7
Personal Business	Number	968	789	238	1,027	5,481
	Percent	18.8	16.6	21.2	17.5	12.3
Medical	Number	264	197	66	263	1,211
	Percent	5.1	4.2	5.9	4.5	2.7
Total	Number	5,150	4,749	1,125	5,874	44,675
	Percent	100.0	100.0	100.0	100.0	100.0

## NUMBER OF PERSON TRIPS PER DAY MADE BY THE NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN RACINE COUNTY BY TRIP PURPOSE: 1977

Source: SEWRPC.

tion for the able-bodied elderly are: home, 7,370, or about 45 percent; work, 440, or about 3 percent; school, 60, or slightly less than one-half of 1 percent; shopping, 2,360, or about 15 percent; social-recreation, 3,480, or about 21 percent; personal business, 2,210, or about 14 percent; and medical, 300, or about 2 percent.

<u>Racine Nonurbanized Area:</u> On an average, day transportation handicapped persons in the Racine nonurbanized area made a total of 1,130 trips. The number of trips and approximate percent distribution of the transportation handicapped in the Racine nonurbanized area are: home, 460, or about 41 percent; work, 60, or about 5 percent; school, 60, also about 5 percent; shopping, 70, or about 6 percent; socialrecreation, 180, or about 16 percent; personal business, 240, or about 21 percent; and medical, 70, or about 6 percent. Able-bodied elderly persons in the Racine nonurbanized area made a total of 3,940 trips on an average day. The number of trips made by the able-bodied elderly by trip purpose and approximate percent distribution are: home, 1,880, or about 48 percent; work, 420, or about 11 percent; shopping, 780, or about 20 percent; social-recreation, 450, or about 12 percent; personal business, 290, or about 7 percent; and medical, 120, or about 3 percent.

		Racine County				
Trip Purpose		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Home	Number	7,174	7,372	1,877	9,249	91,079
	Percent	45.3	45.4	47.6	45.9	43.1
Work	Number	439	439	417	856	11,115
	Percent	2.8	2.7	10.6	4.2	5.2
School	Number Percent	59 0.4	59 0.4	0	59 0.3	1,062 0.5
Shopping	Number	2,218	2,357	783	3,140	37,449
	Percent	14.0	14.5	19.9	15.6	17.7
Social - Recreation	Number	3,478	3,478	453	3,931	38,177
	Percent	22.0	21.4	11.5	19.5	18.1
Personal Business	Number	2,156	2,214	293	2,507	29,212
	Percent	13.6	13.7	7.4	12.4	13.8
Medical	Number	304	304	117	421	3,297
	Percent	1.9	1.9	3.0	2.1	1.6
Total	Number	15,828	16,223	3,940	20,163	211,391
	Percent	100.0	100.0	100.0	100.0	100.0

# NUMBER OF PERSON TRIPS PER DAY MADE BY THE ABLE-BODIED ELDERLY IN RACINE COUNTY BY TRIP PURPOSE: 1977

Source: SEWRPC.

Racine Transit Service Area: Transportation handicapped persons in the Racine transit service area made a total of 5,150 trips on an average day. By trip purpose, the number of trips and approximate percent distribution for the transportation handicapped are: home, 2,410, or about 47 percent; school, 130, or about 2 percent; shopping, 700, or about 14 percent; social-recreation, 680, or about 13 percent; personal business, 970, or about 19 percent; and medical, 260, or about 5 percent. In the Racine transit service area, able-bodied elderly persons made a total of 15,830 trips on an average day. By trip purpose, the number of persons and approximate percent distribution

for the able-bodied elderly are: home, 7,170, or about 45 percent; work, 440, or about 3 percent; school 60, slightly less than one-half of 1 percent; shopping, 2,220, or about 14 percent; social-recreation, 3,480, or about 22 percent; personal business, 2,160, or about 14 percent; and medical, 300, or about 2 percent.

# Number of Person Trips by Institutionalized Transportation Handicapped Persons

# Per Week by Trip Purpose

Table 86 presents the number of trips made by institutionalized transportation handicapped persons during an average week by trip purpose for each of the subgeographic areas. Note that

NUMBER OF PERSON TRIPS PER WEEK MADE BY THE
INSTITUTIONALIZED IN RACINE COUNTY BY TRIP PURPOSE: 1977

		Racine County				
Trip Purpose		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Home	Number Percent	602 50.0	602 50.0	66 50.0	668 50.0	9,082 49.3
Work	Number Percent	90 7.5	90 7.5	0	90 6.7	1,803 9.8
School	Number Percent	30 2.5	30 2.5	0	30 2.3	2,466 13.4
Shopping	Number Percent	32 2.6	32 2.6	22 16.7	54 4.0	674 3.7
Social - Recreation	Number Percent	312 25.9	312 25.9	22 16.6	334 25.0	2,793 15.2
Personal Business	Number Percent	0	0	22 16.7	22 1.7	1,113 6.0
Medical	Number Percent	138 11.5	138 11.5	0	138 10.3	488 2.6
Total	Number Percent	1,204 100.0	1,204 100.0	132 100.0	1,336 100.0	18,419 100.0

Source: SEWRPC.

Tables 84 and 85 present the number of trips on an average day as found in the household survey for the transportation handicapped living in private homes and the able-bodied elderly also living in private homes.

Racine County: Institutionalized residents of Racine County made a total 1,340 trips during an average week. By trip purpose the number of trips and approximate percent distribution are: home, 670, or 50 percent; work, 90, or about 7 percent; school, 30, or about 2 percent; shopping, 50, or about 4 percent; socialrecreation, 330, or about 25 percent; personal business, 20, or slightly less than 2 percent; and medical, 140, or about 10 percent. Racine Urbanized Area: A total of 1,200 trips were made during an average week by Racine urbanized area institutionalized persons. The number of trips and approximate percent distribution by trip purpose are: home, 600, or about 50 percent; work, 90, or about 8 percent; school, 30, or about 3 percent; shopping, 30, also about 3 percent; social-recreation, 310, or about 26 percent; and medical, 140, or about 12 percent.

Racine Nonurbanized Area: By trip purpose, the number of trips and approximate percent distribution are: home, 70, or about 50 percent; shopping, 20, or about 17 percent; socialrecreation, 20, or about 17 percent; and personal business, 20, again about 17 percent. A total of 130 trips were made by institutionalized transportation handicapped persons in the Racine nonurbanized area. Due to the low number of samples collected, respondents to this question may not necessarily represent the total institutionalized population.

<u>Racine Transit Service Area</u>: In the Racine transit service area, a total of 1,200 trips were made by institutionalized persons. The number of trips and approximate percent distribution by trip purpose are: home, 600, or about 50 percent; work, 90, or about 8 percent; school, 30, or about 3 percent; shopping, 30, also about 3 percent; social-recreation, 310, or about 26 percent; and medical, 140, or about 12 percent.

Number of Person Trips by Transportation Handicapped Persons and Able-Bodied

Elderly Persons on an Avera	age	Day
by Mode of Travel		

Tables 87 and 88 summarize the number of person trips made by transportation handicapped and able-bodied elderly persons on an average day by mode of travel for each subgeographic area. An understanding of the magnitude of trips made by both trip purpose and mode of travel is necessary when considering alternative transportation improvements. These tables

#### Table 87

## NUMBER OF PERSON TRIPS PER DAY MADE BY THE NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN RACINE COUNTY BY MODE OF TRAVEL: 1977

		Racine County				
Mode of Travel		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Auto Driver	Number Percent	1,865 36.2	1,865 39.3	117 10.4	1,982 33.7	9,978 22.3
Auto Passenger	Number Percent	2,619 50.9	2,218 46.7	832 74.0	3,050 51.9	22,065 49.4
Bus	Number Percent	139 2.7	139 2.9	0	139 2.4	2,603 5.8
Special Transport	Number Percent	249 4.8	249 5.3	176 15.6	425 7.2	4,259 9.5
Taxi	Number Percent	139 2.7	139 2.9	0	139 2.4	181 0.4
Bike or Walk	Number Percent	139 2.7	139 2.9	0	139 2.4	4,842 10.9
Other	Number Percent	0	0	0	0	747 1.7
Total	Number Percent	5,150 100.0	4,749 100.0	1,125 100.0	5,874 100.0	44,675 100.0

			4			
Mode of Travel		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Auto Driver	Number Percent	8,683 54.9	9,078 56.0	2,597 65.9	11,675 57.9	121,665 57.6
Auto Passenger	Number Percent	5,609 35.4	5,609 34.6	1,343 34.1	6,952 34.5	57,956 27.4
Bus	Number Percent	651 4.1	651 4.0	0	651 3.2	13,776 6.5
Special Transport	Number Percent	0	0	0	0	1,605 0.8
Taxi	Number Percent	117 0.7	117 0.7	0	117 0.6	696 0.3
Bike or Walk	Number Percent	768 4.9	768 4.7	0	768 3.8	15,106 7.1
Other	Number Percent	0	0	0	0	587 0.3
Total	Number Percent	15,828 100.0	16,223 100.0	3,940 100.0	20,163 100.0	211,391 100.0

# NUMBER OF PERSON TRIPS PER DAY MADE BY THE ABLE-BODIED ELDERLY IN RACINE COUNTY BY MODE OF TRAVEL: 1977

Source: SEWRPC.

present the number of trips on an average day as found in the household survey by mode of travel. Average trips per week on the institution survey are shown in Table 89.

Racine County: Transportation handicapped residents of Racine County made a total of 5,870 trips during an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver, 1,980, or about 34 percent; auto passenger, 3,050, or about 52 percent; bus, 140, or about 2 percent; special transportation, 430, or about 7 percent; taxi, 140, or about 2 percent; bike or walk, 140, also about 2 percent. By mode of travel and approximate percent distribution, the number of trips made by able-bodied elderly persons in Racine County is: auto driver, 11,680, or about 58 percent; auto passenger, 6,950, or about 35 percent; bus, 650, or about 3 percent; taxi, 120, slightly over one-half of 1 percent; bike or walk, 770, or about 4 percent. In total, able-bodied elderly persons in Racine County made 20,160 trips.

Racine Urbanized Area: Transportation handicapped residents of the Racine urbanized area made a total of 4,750 trips on an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver,

· · · · · · · · · · · · · · · · · · ·		Racine County				
Mode of Travel		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Auto Driver	Number Percent	0	0	132 100.0	132 9.9	630 3.4
Auto Passenger	Number Percent	566 47.0	566 47.0	0	566 42.4	3,932 21.4
Bus	Number Percent	150 12.4	150 12.4	0	150 11.2	3,359 18.2
Special Transport	Number Percent	404 33.6	404 33.6	0	404 30.2	7,915 43.0
Тахі	Number Percent	0	0	0	0	42 0.2
Bike or Walk	Number Percent	84 7.0	84 7.0	0	84 6.3	2,541 13.8
Total	Number Percent	1,204 100.0	1,204 100.0	132 100.0	1,336 100.0	18,419 100.0

# NUMBER OF PERSON TRIPS PER WEEK MADE BY THE INSTITUTIONALIZED IN RACINE COUNTY BY MODE OF TRAVEL: 1977

Source: SEWRPC.

1,870, or about 39 percent; auto passenger, 2,220, or about 47 percent; bus, 140, or about 3 percent; special transportation, 250, or about 5 percent; taxi, and bike or walk, 140, each about 3 percent. By mode of travel the number of trips and approximate percent distribution for able-bodied elderly persons in the Racine urbanized area are: auto driver, 9,080, or about 56 percent; auto passenger, 5,610, or about 35 percent; bus, 650, or about 4 percent; taxi, 120, slightly over one-half of 1 percent; and bike or walk, 770, or about 5 percent. Ablebodied elderly persons made a total of 16,220 trips during an average day in the Racine urbanized area.

Racine Nonurbanized Area: In the Racine nonurbanized area transportation handicapped persons made 1,130 trips during an average day. The number of trips and the approximate percent distribution by mode of travel are: auto driver, 120, or about 10 percent; auto passenger, 830, or about 74 percent; and special transportation, 180, or about 16 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. Able-bodied elderly persons made a total of 3,940 trips during an average day in the Racine nonurbanized area. Only two modes were utilized, auto driver accounting for 2,600 trips, or about 66 percent, and auto passenger accounting for 1,340 trips, or about 34 percent.

<u>Racine Transit Service Area</u>: In the Racine transit service area, transportation handicapped persons made a total of 5,150 trips during an average day. By mode of travel the number of trips and approximate percent distribution are: auto driver, 1,870, or about 36 percent; auto passenger, 2,620, or about 51 percent; regular bus, 140, or about 3 percent; special transportation, 250, or about 5 percent; and taxi and bike, or walk each, 140 trips, or about 3 percent. Within the Racine transit service area able-bodied elderly persons made a total of 15,830 trips during an average day. By mode of travel the number of trips and approximate percent distribution for the able-bodied elderly are: auto driver, 8,680, or about 55 percent; auto passenger, 5,610, or about 35 percent; bus, 650, or about 4 percent; taxi, 120, slightly over one-half of 1 percent; and bike or walk, 770, or about 5 percent.

# Number of Trips by Institutionalized Transportation Handicapped Persons per Week by Mode of Travel

Table 89 presents the number of trips made during an average week by institutionalized persons. As noted, the number of trips per day by transportation handicapped persons and ablebodied elderly persons is shown in Tables 87 and 88. An understanding of the mode of travel currently being utilized by institutionalized persons is necessary when evaluating the future alternative transportation system improvements.

Racine County: In Racine County institutionalized persons made a total of 1,340 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto driver, 130, or about 10 percent; auto passenger, 570, or about 42 percent; bus, 150, or about 11 percent; special transportation, 400, or about 30 percent; and bike or walk, 80, or about 6 percent.

Racine Urbanized Area: By mode of travel the number of trips and approximate percent distribution are: auto passenger, 570, or about 47 percent; bus, 150, or about 12 percent; special transportation, 400, or about 34 percent; and bike or walk, 80, or about 7 percent. In the Racine urbanized area institutionalized persons made a total of 1,200 trips during an average week.

Racine Nonurbanized Area: During an average week only 130 trips were recorded for institutionalized persons. All trips were made as an auto driver. Due to the low number of samples collected, respondents may not necessarily represent the total institutionalized population. Racine Transit Service Area: In the Racine transit service area institutionalized persons reported 1,200 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto passenger, 570, or about 47 percent; bus, 150, or about 12 percent; special transportation, 400, or about 34 percent; and bike or walk, 80, or about 7 percent.

# On-Board User Survey-Lincoln Lutheran

Presented here are the findings of the on-board Lincoln Lutheran survey. During the survey period March 3, 1977, to March 9, 1977, interviewers rode vans in the rural and urban areas of Racine County collecting 140 usable samples. Since the intent of the on-board survey was qualitative rather than quantitative, the representativeness of all users of special transportation services is not required, as their characteristics already are represented in the household and institution surveys. This survey examines in greater detail socioeconomic characteristics, travel habits, and attitudes of those persons using specialized transportation services. In total, 108 samples were collected in the urban portion of the Lincoln Lutheran survey and 32 samples were collected in the nonurban portion of the Lincoln Lutheran survey.

Riders by Age Group: In the urban survey 102 of the 108 persons interviewed reported their age. The number of persons and approximate percent distribution by age group are: 19 years or less, 1, or about 1 percent; 20-39 years, two, or about 2 percent; 40-59 years of age, five, or about 5 percent; 60-69 years of age, 20, or about 20 percent; 70-79 years of age, 44, or about 43 percent; 80-89 years of age, 28, or about 27 percent; and 90 years of age and over, two, or about 2 percent (see Table 90). In the nonurban portion of the Lincoln Lutheran survey the number of persons and approximate percent distribution by age group are: 19 years or less, one, or about 3 percent; 20-39 years of age. seven, or about 22 percent; 40-59 years of age, three, or about 9 percent; 60-69 years of age, four, or about 13 percent; 70-79 years of age, 11. or about 34 percent; 80-89 years of age, five, or about 16 percent; and 90 years of age and older, one, or about 3 percent (see Table 91).

<u>Riders by Sex:</u> On the urban survey the number of riders and approximate percent distribution by sex are: male, 12, or about 11 percent, and

#### Table 91

NUMBER OF RID	ERS BY AGE (	GROUP-URBAN
LINCOLN LUTHER	RAN ON-BOAR	D SURVEY: 1977

Age Group	Number	Percent
19 or Less   20-39   40-59   60-69   70-79   80-89   90 and Over	1 2 5 20 44 28 2	1.0 2.0 4.9 19.6 43.1 27.4 2.0
Total Reported	102	100.0
Not Reported	6	
Total	108	100.0



female, 96, or about 89 percent. On the nonurban survey, the number of riders and approximate percent distribution by sex are: male, seven, or about 22 percent, and female, 25, or about 78 percent (see Tables 92 and 93, respectively).

**Riders by Family Income: Information regarding** family income was reported by 86 of the 108 riders in the urban portion of the survey and 20 of the 32 riders in the nonurban portion of the survey. By annual family income range, the number of riders and approximate percent distribution on the urban survey are: under \$4,000, 51, or about 59 percent; \$4,000 - \$5,999, 19, or about 22 percent; \$6,000 - \$7,999, nine, or about 11 percent; \$8,000 - \$9,999, two, or about 2 percent; \$10,000 - \$11,999, three, or about 4 percent; and \$15,000 and over, two, or about 2 percent. On the nonurban portion of the survey, the number of riders and approximate percent distribution by family income group are: under \$4,000, 14, or about 70 percent; \$4,000 - \$5,999, two, or about 10 percent; \$6,000 - \$7,999, one, or about 5 percent; \$12,000 - \$14,999, one, also about 5 percent; and \$15,000 and over, two, or about 10 percent. It should be noted that in the urban portion of the survey approximately 92 percent of the riders are from households with family incomes under \$8,000 and in the nonurban portion of the survey approximately 85 percent of the riders

NUMBER OF RIDERS BY AGE GROUP-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Age Group	Number	Percent
19 or Less   20-39   40-59   60-69   70-79   80-89   90 and Over	1 7 3 4 11 5 1	3.1 21.9 9.4 12.5 34.4 15.6 3.1
Total Reported	32	100.0
Not Reported	0	
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

are from households with a family income of under \$8,000. These riders therefore are considered to be economically disadvantaged (see Tables 94 and 95).

<u>Riders by Observed Disability or Aid</u>: In the Lincoln Lutheran urban survey the number of persons and approximate percent distribution by observed disability or aid are: wheelchair, one, or about 1 percent; braces, three, or about 3 percent; cane, one, or about 1 percent; blind, eight, or about 8 percent; infirm, one, or about 1 percent; crutches, three, or about 3 percent; and none apparent, 84, or about 83 percent. On the Lincoln Lutheran nonurban survey, the number of persons and approximate percent distribution by observed disability or aid are: cane, two, or about 7 percent; infirm, one, or about 3 percent; and none apparent, 26, or about 90 percent (see Tables 96 and 97).

Riders by Length of Time Using Service: In the Lincoln Lutheran urban portion of the survey, the number of riders and approximate percent distribution by length of time using the services are: under one month, 13, or about 13 percent; one month to six months, 17, or about 17 percent; seven months to 12 months, 27, or about 27 percent; one year to two years, 14, or about 14 percent; three years to five years, 27, or about 27 percent; six years to 10 years, one,

# NUMBER OF RIDERS BY SEX–URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Sex	Number	Percent
Male	12 96	11.1 88.9
Total	108	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 93

# NUMBER OF RIDERS BY SEX-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Sex	Number	Percent
Male	7 25	21.9 78.1
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 94

# NUMBER OF RIDERS BY FAMILY INCOME-URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Income Group	Number	Percent
\$3,999 or Less \$4,000-5,999 \$6,000-7,999 \$8,000-9,999 \$10,000-11,999 \$12,000-14,999 \$15,000 and Over	51 19 9 2 3 0 2	59.3 22.1 10.5 2.3 3.5  2.3
Total Reported	86	100.0
Not Reported	22	
Total	108	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 95

## NUMBER OF RIDERS BY FAMILY INCOME-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Income Group	Number	Percent
\$3,999 or Less	14	70.0
\$4,000-5,999	2	10.0
\$6,000-7,999	1	5.0
\$8,000-9,999	0	
\$10,000-11,999	0	
\$12,000-14,999	1	5.0
\$15,000 and Over	2	10.0
Total Reported	20	100.0
Not Reported	12	
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 96

## NUMBER OF RIDERS BY OBSERVED DISABILITY OR AID-URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Disability or Aid	Number	Percent
WheelchairBraceCaneBlindInfirmCrutches	1 3 1 8 1 3	1.0 3.0 1.0 7.9 1.0 3.0
None Apparent	84	83.1
Other	0	
Total Reported	101	100.0
Not Reported	7	• -
Total	108	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

# NUMBER OF RIDERS BY OBSERVED DISABILITY OR AID-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Disability or Aid	Númber	Percent
Wheelchair	0	
Brace	0	
Crane	2	6.9
Blind	0	
Infirm	1	3.4
Crutches	0	
None Apparent	26	89.7
Other	0	
Total Reported	29	100.0
Not Reported	3	
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

or about 1 percent. In the Lincoln Lutheran nonurban portion of the survey, the number of riders and approximate percent distribution by length of time the services are being used are: under one month, three, or about 10 percent; one month to six months, six, or about 19 percent; seven months to 12 months, four, or about 13 percent; one year to two years, 17, or about 55 percent; and three years to five years, one, or about 3 percent (see Tables 98 and 99).

Riders by Frequency of Use: In the Lincoln Lutheran urban survey the number of persons and approximate percent distribution by frequency of use during the month are: less than once a month, three, or about 3 percent; once a month, five, or about 5 percent; two to four times a month, 53, or about 53 percent; five to eight times a month, 29, or about 29 percent; nine to 12 times a month, four, or about 4 percent; 13 to 20 times a month, three, or about 3 percent; and more than 20 times a month, three, also about 3 percent. In the nonurban portion of the Lincoln Lutheran survey, the number of persons and approximate percent distribution by frequency of use during a month are: less than once a month, one, or about 3 percent; once a month, one, or about 3 percent; two to four times a month, seven, or about

# NUMBER OF RIDERS BY LENGTH OF TIME USING SERVICE–URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Time	Number	Percent
Under 1 Month1 Month to 6 Months7 Months to 12 Months7 Months to 2 Years3 Years to 5 Years6 Years to 10 YearsOver 11 Years	13 17 27 14 27 1 0	13.1 17.2 27.3 14.1 27.3 1.0
Total Reported	99	100.0
Not Reported	9	
Total	108	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 99

## NUMBER OF RIDERS BY LENGTH OF TIME USING SERVICE--NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Time	Number	Percent
Under 1 Month1 Month to 6 Months7 Months to 12 Months1 Year to 2 Years3 Years to 5 Years6 Years to 10 YearsOver 11 Years	3 6 4 17 1 0 0	9.7 19.4 12.9 54.8 3.2
Total Reported	31	100.0
Not Reported	1	
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

23 percent; five to eight times a month, four, or about 13 percent; nine to 12 times a month, five, or about 17 percent; and 13 to 20 times a month, 12, or about 40 percent (see Tables 100 and 101).

# NUMBER OF RIDERS BY FREQUENCY OF USE–URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Frequency	Number	Percent
Less Than Once a Month Once a Month	3 5 53 29 4 3	3.0 5.0 53.0 29.0 4.0 3.0
More Than 20 Times a Month	3	3.0
Total Reported	100	100.0
Not Reported	8	
Total	108	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

#### Table 101

## NUMBER OF RIDERS BY FREQUENCY OF USE-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Frequency	Number	Percent
Less Than Once a Month Once a Month	1 7 4 5 12 0	3.3 3.3 23.4 13.3 16.7 40.0
Total Reported	30	100.0
Not Reported	2	
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

**Riders by Perceived Alternative Mode of Travel:** Summarized here are the responses of the riders who reported an alternative mode of travel if special transportation services were not available. In the urban portion of the survey the number of riders and approximate percent distribution by the alternative mode of travel are: auto driver, one, or about 1 percent; auto passenger, 18, or about 18 percent; bus, 24, or about 24 percent; walk, one, or about 1 percent; other, 20, or about 20 percent; and would not make trip, 38, or about 37 percent. In the nonurban portion of the survey the number of riders and approximate percent distribution by the alternative mode of travel are: auto driver, two, or about 6 percent; auto passenger, 13, or about 41 percent; taxi, three, or about 9 percent; other, three, also about 9 percent; and would not make trip, 11, or about 34 percent (see Tables 102 and 103).

Attitudes by Emotional Degree of Response: Summarized on Tables 104 and 105 are the attitudinal responses of Lincoln Lutheran riders on a seven-point Likert scale. The emotional response elicited by the interviewer first is classed as a positive, negative, or neutral emotional feeling and, if positive or negative, then classed by degree of positive or negative feeling.

#### Table 102

# NUMBER OF RIDERS BY PERCEIVED ALTERNATIVE MODE OF TRAVEL IF SPECIAL TRANSPORTATION WERE UNAVAILABLE-URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Mode	Number	Percent
Auto Driver   Auto Passenger   Taxi   Bus   Walk   Other   Would Not Make Trip	1 18 0 24 1 20 38	1.0 17.6 23.5 1.0 19.6 37.3
Total Reported	102	100.0
Not Reported	6	
Total	108	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

## NUMBER OF RIDERS BY PERCEIVED ALTERNATIVE MODE OF TRAVEL IF SPECIAL TRANSPORTATION WERE UNAVAILABLE-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Mode	Number	Percent
Auto Driver	2	6.2
Auto Passenger	13	40.6
Тахі	3	9.4
Bus	0	
Walk	0	
Other	3	9.4
Would Not Make Trip	11	34.4
Total Reported	32	100.0
Not Reported	0	
Total	32	100.0

Source: Applied Resource Integration, Ltd., and SEWRPC.

In the urban portion of the survey 106 riders responded to the question of whether the vehicle is comfortable or uncomfortable. Of these persons 81, or about 76 percent, felt the vehicle was very comfortable; 16, or about 15 percent, felt the vehicle is somewhat comfortable; five, or about 5 percent, felt the vehicle is slightly comfortable; three, or about 3 percent, were neutral in their feelings of comfortable or uncomfortable; and one, or about 1 percent, felt the vehicle is very uncomfortable. In the nonurban portion of the survey all 32 persons responded to the question of whether the vehicle is comfortable or uncomfortable. Of these persons 18, or about 56 percent, felt the vehicle is very comfortable; 12, or about 38 percent, felt the vehicle is somewhat comfortable; and two, or about 6 percent, felt the vehicle is slightly comfortable. In total over 96 percent of the urban respondents felt the vehicle is comfortable and all 100 percent of the nonurban respondents felt the vehicle is comfortable.

In the urban portion of the survey 106 riders responded to the question of whether the service was convenient or inconvenient. Of these persons, the number and approximate percent distribution by degree of response are: very convenient, 98, or about 92 percent; somewhat convenient, seven, or about 7 percent; and slightly convenient, one or about 1 percent. Responses of the 32 riders to the nonurban portion of the survey by the number of persons and approximate percent distribution by degree of response are: very convenient, 26, or about 81 percent; somewhat convenient, five, or about 16 percent; and slightly inconvenient, one, or about 3 percent. In total 100 percent of the urban respondents felt the service is convenient and about 97 percent of the nonurban respondents felt the service is convenient.

On the question of whether the drivers are courteous or rude, 107 persons on the urban portion of the Lincoln Lutheran survey responded. By degree of response the number of persons and approximate percent distribution are: very courteous, 104, or about 97 percent; somewhat courteous, one, or about 1 percent; and neutral, two, or about 2 percent. In the nonurban portion of the survey 32 riders responded to this question. Of these persons the number and approximate percent distribution are: very courteous, 30, or about 94 percent and somewhat courteous, two, or about 6 percent. In total about 98 percent of the urban riders felt that drivers are courteous and all 100 percent of the nonurban riders felt that the drivers are courteous.

On the question of ease of entering and exiting the vehicle, 106 persons in the urban portion responded. By degree of ease or difficulty the number of persons and approximate percent distribution are: very easy, 67, or about 63 percent; somewhat easy, 21, or about 20 percent; slightly easy, four, or about 4 percent; neutral, four, also about 4 percent; slightly difficult, one, or about 1 percent; somewhat difficult. six, or about 6 percent; and very difficult, three, or about 3 percent. On the nonurban portion of the survey all 32 riders responded to this question. By degree of ease or difficulty the number of persons and approximate percent distribution are: very easy, 12, or about 38 percent; somewhat easy, 17, or about 53 percent; slightly easy, two, or about 6 percent; and slightly difficult. one, or about 3 percent. In total about 87 percent of the urban riders and about 97 percent of the nonurban riders felt that entering and exiting the vehicle is easy.

As to whether the waiting is short or long, 103 persons in the urban portion of the survey responded to this question. The number of

		Degree of Attribute									
Attitude Expressed		Very	Somewhat	Slightly	In-Between	Slightly	Somewhat	Very	Total Reported	Not Reported	Total
Vehicle Is Comfortable to Uncomfortable	Number Percent	81 76.4	16 15.1	5 4.7	3 2.8	0	0 	1 1.0	106 100.0	2	108 100.0
Service Is Convenient to Inconvenient	Number Percent	98 92.4	7 6.6	1 1.0	0 _	0	0	0	106 100.0	2	108 100.0
Drivers Are Courteous to Rude	Number Percent	104 97.2	1 0.9	0 	2 1.9	0	0	0 	107 100.0	1	108 100.0
Entering and Exiting Vehicle Is Easy to Difficult	Number Percent	67 63.2	21 19.8	4 3.8	4 3.8	1 0.9	6 5.7	3 2.8	106 100.0	2	108 100.0
Waiting Time Is Short to Long	Number Percent	49 47.6	28 27.2	4 3.9	14 13.6	5 4.8	2 1.9	1 1.0	103 100.0	5	108 100.0
Calling 24 Hours In Advance Is Convenient to Inconvenient	Number Percent	67 63.8	15 14.3	3 2.9	10 9.5	2 1.9	4 3.8	4 3.8	105 100.0	3 	108 100.0
Service Is Safe to Unsafe	Number Percent	101 96.2	3 2.9	0	0	1 0.9	0	0	105 100.0	3 	108 100.0
Service Is Reliable to Unreliable	Number Percent	98 94.2	6 5.8	0 	0	0	0 	0	104 100.0	4 	108 100.0
Privacy Is Important to Unimportant	Number Percent	2 1.9	2 1.9	2 1.9	1 1.0	0	9 8.8	87 84.5	103 99.9	5	108 100.0
Do You Mind Sharing Ride? Much to Little	Number Percent	1 1.0	0	0 	0 	0	4 3.8	99 95.2	104 100.0	4	108 100.0
Having an Agency Pay the Fare Is – Good to Bad	Number Percent	74 77.9	14 14.7	0 	4 4.2	0 	1 1.1	2 2.1	95 100.0	13 -	108 100.0

# ATTITUDES OF SPECIAL TRANSPORTATION USERS ON A SEVEN-POINT LIKERT SCALE SHOWING EMOTIONAL DEGREE OF RESPONSE-URBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Source: Applied Resource Integration, Ltd., and SEWRPC.

persons and approximate percent distribution by degree of time are: very short, 49 or about 48 percent; somewhat short, 28, or about 27 percent; slightly short, four, or about 4 percent; neutral, 14, or about 14 percent; slightly long, five, or about 5 percent; somewhat long, two, or about 2 percent; very long, one, or about 1 percent. Of the 32 persons who responded to the nonurban portion of this survey. the number of persons and approximate percent distribution by degree of time are: very short, eight, or about 25 percent; somewhat short, 17, or about 53 percent; neutral, two, or about 6 percent; slightly long, three, or about 9 percent; somewhat long, two, or about 6 percent. In total about 79 percent of the urban riders felt that the waiting time is short, and about 78 percent of the nonurban riders felt that the waiting time is short.

In response to the question on convenience of the respondent in calling in advance by 24 hours. 105 persons in the urban portion of the survey answered the question. The number of persons and approximate percent distribution by degree of convenience are: very convenient, 67, or about 64 percent; somewhat convenient, 15, or about 14 percent; slightly convenient, three, or about 3 percent; neutral, 10, or about 10 percent: slightly inconvenient, two, or about 2 percent; somewhat inconvenient, four, or about 4 percent; and very inconvenient, four, also about 4 percent. In the nonurban portion of the survey 31 persons responded to this question. Of these persons 28, or about 90 percent, felt that calling in advance is very convenient and three, or about 10 percent, felt that calling in advance is somewhat convenient. In the urban portion of the survey about 81 percent of the

				D	egree of Attribu	ite					
Attitude Expressed		Very	Somewhat	Slightly	In-Between	Slightly	Somewhat	Very	Total Reported	Not Reported	Total
Vehicle Is Comfortable to Uncomfortable	Number Percent	18 56.2	12 37.5	2 6.3	0	0	0 	0	32 100.0	0	32 100.0
Service Is Convenient to Inconvenient	Number Percent	26 81.3	5 15.6	0 	0	1 3.1	0 	0	32 100.0	0	32 100.0
Drivers Are Courteous to Rude	Number Percent	30 93.8	2 6.2	0	0	0	0	0 	32 100.0	0 	32 100.0
Entering and Exiting Vehicle Is Easy to Difficult	Number Percent	12 37.5	17 53.1	2 6.3	0 	1 3.1	0	0 	32 100.0	0 	32 100.0
Waiting Time Is Short to Long	Number Percent	8 25.0	17 53.1	0 	2 6.2	3 9.4	2 6.3	0 	32 100.0	0	32 100.0
Calling 24 Hours In Advance Is Convenient to Inconvenient	Number Percent	28 90.3	3 9.7	0	0 	0 	0	0 	31 100.0	1	32 100.0
Service Is Safe to Unsafe	Number Percent	21 72.4	8 27.6	0 	0	0	0 	0 	29 100.0	3 	32 100.0
Service Is Reliable to Unreliable	Number Percent	24 80.0	3 10.0	1 3.3	0 	2 6.7	0	0 	30 100.0	2	32 100.0
Privacy Is Important to Unimportant	Number Percent	0 	0	0 	1 3.2	0 	1 3.2	29 93.6	31 100.0	1	32 100.0
Do You Mind Sharing Ride? Much to Little	Number Percent	0 	0	0 	1 3.2	0 	0 	30 96.8	31 100.0	1	32 100.0
Having an Agency Pay the Fare Is Good to Bad	Number Percent	18 62.1	7 24.1	0 	1 3.4	2 6.9	1 3.5	0	29 100.0	3-	32 100.0

# ATTITUDES OF SPECIAL TRANSPORTATION USERS ON A SEVEN-POINT LIKERT SCALE SHOWING EMOTIONAL DEGREE OF RESPONSE-NONURBAN LINCOLN LUTHERAN ON-BOARD SURVEY: 1977

Source: Applied Resource Integration, Ltd., and SEWRPC.

riders feel that calling 24 hours in advance is convenient, and all of the riders in the nonurban portion of the survey feel that calling in 24 hours in advance is convenient.

A total of 105 riders on the urban portion responded to the question on safety. The number of persons and approximate percent distribution by degree of safety are: very safe, 101, or about 96 percent; somewhat safe, three, or about 3 percent; and slightly unsafe, one, or about 1 percent. In the nonurban portion of the survey 29 riders responded to the safety question. Of these riders 21, or about 72 percent, felt that the service is very safe and eight, or about 28 percent, felt that the service is somewhat safe. In total over 99 percent of the urban riders felt that the service is safe and all 100 percent of the nonurban riders felt that the service is safe. On the question of whether the services is reliable or unreliable 104 persons on the urban survey responded to this question. The number of persons and approximate percent distribution by degree of reliability are: very reliable, 98, or about 94 percent and somewhat reliable, six, or about 6 percent. In the nonurban portion of the survey, 30 persons responded to this question. Of these persons the number of persons and approximate percent distribution by degree of reliability are: very reliable, 24, or about 80 percent; somewhat reliable, three, or about 10 percent; slightly reliable, one, or about 3 percent; and slightly unreliable, two, or about 7 percent. In total only about 7 percent of the nonurban riders felt that the service is not entirely reliable.

On the question of whether privacy is important or unimportant 103 riders on the urban survey responded. Of these riders the number of persons and approximate percent distribution by degree of importance of privacy are: very important, two, or about 2 percent; somewhat important, two, also about 2 percent; slightly important, two, or about 2 percent; neutral, one, or about 1 percent; somewhat unimportant, nine, or about 9 percent; and very unimportant 87, or about 85 percent. In the nonurban portion of the survey 31 persons answered this question. The number of persons and approximate percent distribution on the nonurban portion of the survey are: neutral, one, or about 3 percent; somewhat unimportant, one, also about 3 percent; and very unimportant, 29, or about 94 percent. In total about 93 percent of the on-board riders in the urban area felt that privacy is basically unimportant and about 97 percent of the riders in the nonurban area feel that privacy is basically unimportant.

On the question on whether or not the riders mind sharing a ride, 104 persons in the urban area responded to this question. Of these persons the number of persons and approximate percent distribution by degree is: very much. one, or about 1 percent; somewhat little, four, or about 4 percent; and very little, 99, or about 95 percent. In the nonurban portion of the survey 31 riders responded to this question. Of these riders the number of persons and approximate percent distribution by degree are: neutral, one, or about 3 percent and very little, 30, or about 97 percent. In total about 99 percent of the urban riders do not mind sharing a ride and about 97 percent of the nonurbanized riders do not mind sharing a ride.

On the question of how respondents feel-either good or bad-about having an agency pay the fare, 95 of the riders in the urban area responded. Of these riders the number of persons and approximate percent distribution by degree of response are: very good, 74, or about 78 percent; somewhat good, 14, or about 15 percent; neutral, four, or about 4 percent; somewhat bad, one, or about 1 percent; and very bad, two, or about 2 percent. In the nonurban portion of the survey the number of persons responding to this question is 29. Of these riders the number of persons and approximate percent distribution by degree of response are: very good, 18, or about 62 percent; somewhat good, seven, or about 24 percent; neutral, one, or about 4 percent; slightly bad, two, or about 7 percent; somewhat bad, one, or about

4 percent. In total 93 percent of the urban riders feel good about having an agency pay for their ride and about 86 percent of the nonurban riders feel good about having an agency pay for their ride.

Transportation Handicapped Persons by

Number of Trips Per Day: Household Survey Table 106 presents the number of transportation handicapped persons by the number of trips per day as reported in the household survey. When considering alternatives for improving transportation systems, it is important to plan adequately for the number of persons who might reasonably be expected to make trips on an average day. Therefore, the information presented here and the information presented in Table 107 on institutionalized persons is of interest in the planning process.

Racine County: In Racine County the number of persons and approximate percent distribution by number of trips per day are: none, 2,540, or about 55 percent; one or two, 1,360, or about 30 percent; and three or more, 710, or about 15 percent. In total there are 4,610 transportation handicapped persons in Racine County.

Racine Urbanized Area: Of the 3,460 transportation handicapped persons in the Racine urbanized area the number of persons and approximate percent distribution by number of trips per day are: none, 1,850, or about 53 percent; one or two, 1,050, or about 30 percent; and three or more, 560, or about 16 percent.

Racine Nonurbanized Area: In the Racine nonurbanized area the number of transportation handicapped persons and the approximate percent distribution by number of trips per day are: none, 690, or about 60 percent; one or two, 310, or about 27 percent; and three or more, 150, or about 13 percent.

Racine Transit Service Area: In the Racine transit service area the number of persons and approximate percent distribution by number of trips per day are: none, 1,910, or about 52 percent; one or two, 1,120, or about 30 percent; and three or more, 650, or about 18 percent.

# Transportation Handicapped Persons by Number of Trips Per Week: Institution Survey

Table 107 presents the number of institutionalized persons by the number of trips per week reported on the institution survey. Infor-

## NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN RACINE COUNTY BY NUMBER OF TRIPS PER DAY: 1977

			Racine County					
Trips Per Day		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region		
None	Number	1,909	1,847	691	2,538	28,387		
	Percent	51.9	53.4	60.1	55.1	61.7		
1 or 2	Number	1,116	1,050	311	1,361	12,370		
	Percent	30.4	30.3	27.0	29.5	26.9		
3 or More	Number	652	563	148	711	5,245		
	Percent	17.7	16.3	12.9	15.4	11.4		
Total	Number	3,677	3,460	1,150	4,610	46,002		
	Percent	100.0	100.0	100.0	100.0	100.0		

Source: SEWRPC.

## Table 107

## INSTITUTIONALIZED PERSONS IN RACINE COUNTY BY NUMBER OF TRIPS PER WEEK: 1977

Trips Per Week		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
None	Number	724	724	154	778	12,702
	Percent	70.0	70.0	87.5	70.1	77.5
1 or 2	Number Percent	130 12.6	130 12.6	0	130 11.7	1,750 10.7
3 or More	Number	180	180	22	202	1,940
	Percent	17.4	17.4	12.5	18.2	11.8
Total	Number	1,034	1,034	176	1,110	16,392
	Percent	100.0	100.0	100.0	100.0	100.0

mation on the number of transportation handicapped persons making trips and residing in private households is discussed in Table 106.

Racine County: The number of institutionalized persons and the approximate percent distribution by the number of trips per week in Racine County are: none, 780, or about 70 percent; one or two, 130, or about 12 percent; and three or more, 200, or about 18 percent.

Racine Urbanized Area: Residing in the Racine urbanized area are 1,030 institutionalized persons. Of these persons the number of persons and approximate distribution by number of trips per week are: none, 720, or about 70 percent; one or two, 130, or about 13 percent; and three or more, 180, or about 17 percent.

Racine Nonurbanized Area: Of the 180 institutionalized persons residing in the Racine nonurbanized area, the number of persons and approximate percent distribution by number of trips per week are: none, 150, or about 88 percent and three or more, 20, or about 12 percent. Due to the low number of samples collected, respondents may not necessarily represent the total institutionalized population.

Racine Transit Service Area: Living within the Racine transit service area in institutions are 1,030 persons. The number of persons and approximate percent distribution by the number of trips per week in the Racine transit service area are: none, 720, or about 70 percent; one or two, 130, or about 13 percent; and three or more, 180, or about 17 percent.

Barriers to Public Bus Use Perceived by Transportation Handicapped Persons: Household Survey

Transportation handicapped persons have a variety of impediments to travel. Presented previously were the behavorial characteristics of the transportation handicapped by subarea. Summarized in this section are the perceived barriers to travel of transportation handicapped persons living in private households. The discussion by subarea here presents the percent distribution by the degree of difficulty (see Table 108).

Racine County: In Racine County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 32.3, some

17.4, and none 50.3; getting information by phone-severe 33.4, some 9.6, and none 57.0; walking on uneven ground and slopes-severe 50.6, some 40.1, and none 9.3; crossing streets and curbs—severe 44.9, some 36.2, and none 18.9; going out in bad weather-severe 59.8, some 33.6, and none 6.5; waiting for a bussevere 56.6, some 29.4, and none 14.0; standing at bus stop-severe 57.8, some 29.4, and none 12.8; climbing bus steps—severe 49.7, some 33.4, and none 16.9; negotiating crowds on buses—severe 37.1, some 34.3, and none 28.6; handling change and transfers-severe 25.4, some 33.3, and none 41.3; getting a seat before bus starts-severe 44.0, some 30.7, and none 25.3; standing when seat is unavailable-severe 63.6, some 28.6, and none 7.8; affording bus fare—severe 11.6, some 23.0, and none 65.4; sitting on seat-severe 23.2, some 9.0, and none 67.8; reaching buzzer cord-severe 20.9, some 25.9, and none 53.2.

Racine Urbanized Area: In the Racine urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 33.4, some 15.4, and none 51.2; getting information by phone-severe 32.8, some 10.8, and none 56.4; walking on uneven ground and slopes-severe 54.7, some 36.6, and none 8.7; crossing streets and curbs-severe 47.2, some 34.8, and none 18.0; going out in bad weather-severe 63.7, some 29.3, and none 7.0; waiting for a bus-severe 61.0, some 29.3, and none 9.7; standing at bus stop—severe 61.1, some 27.3, and none 11.6; climbing bus stepssevere 51.8; some 34.0, and none 14.2; negotiating crowds on buses—severe 40.6, some 34.0, and none 25.4; handling change and transfers-severe 25.1, some 37.0, and none 37.9; getting a seat before bus starts-severe 43.3, some 26.5, and none 30.2; standing when seat is unavailable-severe 66.1, some 25.2, and none 8.7; affording bus fare-severe 11.8, some 19.2, and none 69.0; sitting on seat-severe 19.9, some 10.3, and none 69.8; reaching buzzer cord—severe 17.1, some 25.1, and none 57.8.

Racine Nonurbanized Area: In the Racine nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 29.1, some 23.2, and none 47.7; getting information by phone severe 35.1, some 6.0, and none 58.9; walking on uneven ground and slopes—severe 38.2, some 50.7, and none 11.1; crossing streets and curbs—severe 38.2, some 40.2, and none 21.6; going out in bad weather-severe 48.4, some 46.5, and none 5.1; waiting for bus-severe 43.3, some 29.4, and none 27.3; standing at bus stop-severe 48.4, some 35.4, and none 16.2; climbing bus steps—severe 43.3, some 31.8, and none 24.9; negotiating crowds on busessevere 27.1, some 35.1, and none 37.8; handling change and transfers-severe 26.4, some 22.2, and none 51.4; getting a seat before bus startssevere 46.0, some 42.9, and none 11.1; standing when seat is unavailable-severe 56.1, some 38.8, and none 5.1; affording bus fare-severe 10.9, some 34.3, and none 54.8; sitting on seat—severe 32.9, some 5.1, and none 62.0; reaching buzzer cord-severe 32.3, some 28.3, and none 39.4. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Racine Transit Service Area: In the Racine transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 33.9, some 14.4, and none 51.7; getting information by phonesevere 33.4, some 10.1, and none 56.5; walking on uneven ground and slopes-severe 53.3, some 38.5, and none 8.2; crossing streets and curbs severe 46.2, some 35.2, and none 18.6; going out in bad weather-severe 61.7, some 31.7, and none 6.6; waiting for a bus-severe 59.2, some 31.8, and none 9.0; standing at bus stop severe 59.2, some 29.9, and none 10.9; climbing bus steps—severe 50.5, some 33.6, and none 15.9; negotiating crowds on buses—severe 40.0, some 34.4, and none 25.6; handling change and transfers-severe 23.5, some 34.8, and none 41.7; getting a seat before bus starts—severe 45.1, some 26.6, and none 28.3; standing when seat is unavailable—severe 66.4, some 25.4, and none 8.2; affording bus fare-severe 11.1, some 18.0, and none 70.9; sitting on seatsevere 20.6, some 9.7, and none 69.7; reaching buzzer cord-severe 16.0, some 26.1, and none 57.9.

Barriers to Public Bus Use Perceived by

Able-Bodied Elderly Persons: Household Survey Summarized here are the perceived barriers to travel of the able-bodied elderly persons living in private households. Table 109 presents by subarea the percent distribution by degree of difficulty.

Racine County: In Racine County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe one-half

of 1 percent, some 7.4, and none 92.1; getting information by phone—severe 0.0, some 2.7, and none 97.3; walking on uneven ground and slopes-severe one-half of 1 percent, some 16.4, and none 83.1; crossing streets and curbs—severe one-half of 1 percent, some 4.3. and none 95.2; going out in bad weather-severe 3.2, some 36.4, and none 60.4; waiting for a bus-severe 2.2, some 13.0, and none 84.8; standing at bus stop—severe 2.2, some 13.6, and none 84.2; climbing bus steps-severe 0.0, some 11.1, and none 88.9; negotiating crowds on buses-severe one-half of 1 percent, some 3.7, and none 95.8; handling change and transfers-severe 0.0, some 2.8, and none 97.2; getting a seat before bus starts—severe 0.0, some 5.5, and none 94.5; standing when seats is unavailable—severe 3.2, some 19.1, and none 77.7; affording bus fare-severe 0.0, some 5.3, and none 94.7; sitting on seatsevere 0.0, some one-half of 1 percent, and none 99.5; reaching buzzer cord-severe 0.0, some 1.1, and none 98.9.

Racine Urbanized Area: In the Racine urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.0, some 6.8, and none 93.2; getting information by phone—severe 0.0, some 2.3, and none 97.7; walking on uneven ground and slopes-severe 0.7, some 15.0, and none 84.3; crossing streets and curbs—severe 0.7, some 3.1, and none 96.2; going out in bad weather-severe 3.8, some 36.3, and none 59.9; waiting for a bus-severe 3.1, some 11.2, and none 85.7; standing at bus stop-severe 3.1, some 10.5, and none 86.4; climbing bus stepssevere 0.0, some 12.1, and none 87.9; negotiating crowds on buses-severe 0.7, some 4.5, and none 94.8; handling change and transfers—severe 0.0, some 1.6, and none 98.4; getting a seat before bus starts-severe 0.0, some 4.8, and none 95.2; standing when seat is unavailable severe 3.1, some 16.8, and none 80.1; affording bus fare-severe 0.0, some 1.6, and none 98.4; sitting on seat-severe and some, both 0.0, and none 100.0; reaching buzzer cord-severe and some, both 0.0, and none 100.0.

Racine Nonurbanized Area: In the Racine nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 1.6, some 8.9, and none 89.5; getting information by phone—severe 0.0, some 3.6, and none 96.4; walking on uneven ground and slopes—severe 0.0, some 19.4, and none

# PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC USE PERCEIVED BY THE TRANSPORTATION HANDICAPPED IN RACINE COUNTY: 1977

Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Reading Schedules and Maps	Severe Some	33.9 14.4 51.7	33.4 15.4	29.1 23.2	32.3 17.4	26.9 18.7
	Total	100.0	100.0	100.0	100.0	100.0
Getting Information by Phone	Severe Some None	33.4 10.1 56.5	32.8 10.8 56.4	35.1 6.0 58.9	33.4 9.6 57.0	14.7 7.5 37.8
	Total	100.0	100.0	100.0	100.0	100.0
Walking on Uneven Ground and Slopes	Severe Some None	53.3 38.5 8.2	54.7 36.6 8.7	38.2 50.7 11.1	50.6 40.1 9.3	48.0 39.8 12.2
	Total	100.0	100.0	100.0	100.0	100.0
Crossing Streets and Curbs	Severe Some None Total	46.2 35.2 18.6	47.2 34.8 18.0	38.2 40.2 21.6	44.9 36.2 18.9	39.8 36.8 23.4
Going Out in Bad Weather	Severe Some None	61.7 31.7 6.6	63.7 29.3 7.0	48.4 46.5 5.1	59.8 33.7 6.5	56.0 35.3 8.7
Waiting for a Bus	Severe Some None	59.2 31.8 9.0	61.0 29.3 9.7	43.3 29.4 27.3	100.0 56.6 29.4 14.0	100.0 48.2 34.2 17.6
Standing at Bus Stop	Severe Some None Total	59.2 29.9 10.9	61.1 27.3 11.6	48.4 35.4 16.2	57.8 29.4 12.8	48.3 34.1 17.6
Climbing Bus Steps	Severe Some None	50.5 33.6 15.9	51.8 34.0 14.2	43.3 31.8 24.9	49.7 33.4 16.9	52.7 30.5 16.8

Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Negotiating Crowds	Severe	40.0	40.6	27.1	37.1	41.3
on Buses	Some	34.4	34.0	35.1	34.3	34.6
	None	25.6	25.4	37.8	28.6	24.1
	Total	100.0	100.0	100.0	100.0	100.0
Handling Change	Severe	23.5	25.1	26.4	25.4	25.2
and Transfers	Some	34.8	37.0	22.2	33.3	24.5
	None	41.7	37.9	51.4	41.3	50.3
	Total	100.0	100.0	100.0	100.0	100.0
Getting a Seat	Severe	45.1	43.3	46.0	44.0	41.5
Before Bus Starts	Some	26.6	26.5	42.9	30.7	36.2
	None	28.3	30.2	11.1	25.3	22.3
	Total	100.0	100.0	100.0	100.0	100.0
Standing When	Severe	66.4	66.1	56.1	63.6	57.3
Seat Is Unavailable	Some	25.4	25.2	38.8	28.6	28.5
	None	8.2	8.7	5.1	7.8	14.2
	Total	100.0	100.0	100.0	100.0	100.0
Affording Bus	Severe	11.1	11.8	10.9	11.6	14.9
Fare	Some	18.0	19.2	34.3	23.0	20.8
	None	70.9	69.0	54.8	65.4	64.3
	Total	100.0	100.0	100.0	100.0	100.0
Sitting on Seats	Severe	20.6	19.9	32.9	23.2	22.2
	Some	9.7	10.3	5.1	9.0	18.8
	None	69.7	69.8	62.0	67.8	59.0
	Total	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer	Severe	16.0	17.1	32.3	20.9	27.3
Cord	Some	26.1	25.1	28.3	25.9	21.2
	None	57.9	57.8	39.4	53.2	51.5
	Total	100.0	100.0	100.0	100.0	100.0

Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Reading Maps and Schedules	Severe Some None	 7.0 93.0	6.8 93.2	1.6 8.9 89.5	.5 7.4 92.1	.4 7.1 92.5
	Total	100.0	100.0	100.0	100.0	100.0
Getting Information by Phone	Severe Some None	2.3 97.7	2.3 97.7	3.6 96.4	 2.7 97.3	.4 3.1 96.5
		100.0	100.0	100.0	100.0	100.0
Walking on Uneven Ground and Slopes	Severe Some None	.7 14.6 84.7	.7 15.0 84.3	 19.4 80.6	.5 16.4 83.1	1.1 19.8 79.1
	Total	100.0	100.0	100.0	100.0	100.0
Crossing Streets and Curbs	Severe Some None	.7 3.2 96.1	.7 3.1 96.2	7.2 92.8	.5 4.3 95.2	.6 10.0 89.4
	Total	100.0	100.0	100.0	100.0	100.0
Going Out in Bad Weather	Severe Some None	3.9 36.4 59.7	3.8 36.3 59.9	1.7 36.8 61.5	3.2 36.4 60.4	5.1 28.5 66.4
		100.0	100.0		100.0	100.0
Waiting for Bus	Severe Some None	3.2 11.4 85.4	3.1 11.2 85.7	 17.1 82.9	2.2 13.0 84.8	1.9 18.6 79.5
	Total	100.0	100.0	100.0	100.0	100.0
Standing at Bus Stop	Severe Some None Total	3.2 10.7 86.1 100.0	3.1 10.5 86.4 100.0	21.0 79.0 100.0	2.2 13.6 84.2 100.0	1.8 17.6 80.6 100.0
Climbing Bus Steps	Severe Some None	 12.4 87.6	 12.1 87.9	8.9 91.1	 11.1 88.9	1.5 12.3 86.2

# PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC USE PERCEIVED BY THE ABLE-BODIED ELDERLY IN RACINE COUNTY: 1977
			Racine	County		
Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Negotiating Crowds on Buses	Severe Some	.7 4.7	.7 4.5	1.7	.5 3.7	.9 9.9
	Total	94.6	94.8 100.0	98.3	95.8	89.2 100.0
Handling Change and Transfers	Severe Some None Total	1.6 98.4 100.0	1.6 98.4 100.0	5.5 94.5 100.0	2.8 97.2 100.0	.3 3.1 96.6 100.0
Getting a Seat Before Bus Starts	Severe Some None	 4.9 95.1	4.8 95.2	7.2 92.8	 5.5 94.5	1.0 10.4 88.6
Standing When Seat is Unavailable	Severe Some None Total	3.2 16.4 80.4 100.0	3.1 16.8 80.1 100.0	3.6 24.4 72.0 100.0	3.2 19.1 77.7 100.0	3.3 18.3 78.4 100.0
Affording Bus Fare	Severe Some None Total	 1.6 98.4 100.0	 1.6 98.4 100.0	 14.1 85.9 100.0	5.3 94.7 100.0	.3 5.9 93.8 100.0
Sitting on Seats	Severe Some None Total	  100.0 100.0	  100.0 100.0	 1.7 98.3 100.0	 .5 99.5 100.0	.1 1.4 98.5 100.0
Reaching Buzzer Cord	Severe Some None Total	  100.0 100.0	  100.0 100.0	3.6 96.4 100.0	 1.1 98.9 100.0	.1 1.7 98.2 100.0

80.6; crossing streets and curbs—severe 0.0, some 7.2, and none 92.8; going out in bad weather-severe 1.7, some 36.8, and none 61.5; waiting for a bus-severe 0.0, some 17.1, and none 82.9; standing at bus stop-severe 0.0, some 21.0, and none 79.0; climbing bus steps severe 0.0, some 8.9, and none 91.1; negotiating crowds on buses-severe 0.0, some 1.7, and none 98.3; handling change and transferssevere 0.0, some 5.5, and none 94.5; getting a seat before bus starts-severe 0.0, some 7.2, and none 92.8; standing when seat is unavailable-severe 3.6, some 24.4, and none 72.0; affording bus fare-severe 0.0, some 14.1, and none 85.9; sitting on seat-severe 0.0, some 1.7, and none 98.3; reaching buzzer cord—severe 0.0, some 3.6, and none 96.4.

Racine Transit Service Area: In the Racine transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 0.0, some 7.0, and none 93.0; getting information by phonesevere 0.0, some 2.3, and none 97.7; walking on uneven ground and slopes—severe 0.7, some 14.6, and none 84.7; crossing streets and curbs—severe 0.7, some 3.2, and none 96.1; going out in bad weather-severe 3.9, some 36.4, and none 59.7; waiting for a bus-severe 3.2, some 11.4, and none 85.4; standing at bus stop—severe 3.2, some 10.7, and none 86.1; climbing bus step-severe 0.0, some 12.4, and none 87.6; negotiating crowds on buses-severe 0.7, some 4.7, and none 94.6; handling change and transfers-severe 0.0, some 1.6, and none 98.4; getting a seat before bus starts—severe 0.0, some 4.9, and none 95.1; standing when seat is unavailable-severe 3.2, some 16.4, and none 80.4; affording bus fare—severe 0.0, some 1.6, and none 98.4; sitting on seat-severe and some, both 0.0, and none 100.0; reaching buzzer cord-severe and some, both 0.0, and none 100.0.

Barriers to Public Bus Use Perceived by

Institutionalized Persons: Institution Survey

Table 110 presents the percent distribution to each of the barrier questions. Summarized here are the perceived barriers to travel of persons living in institutions.

Racine County: In Racine County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 47.3, some 17.0, and none 35.7; getting information

by phone-severe 45.4, some 14.4, and none 40.2; walking on uneven ground and slopessevere 52.7, some 20.5, and none 26.8; crossing streets and curbs-severe 49.1, some 19.7, and none 31.2; going out in bad weather-severe 41.8, some 33.2, and none 25.0; waiting for a bus—severe 47.3, some 20.5, and none 32.2; standing at bus stop—severe 50.9, some 19.7, and none 29.4; climbing bus steps—severe 47.3, some 20.7, and none 32.0; negotiating crowds on buses-severe 38.2, some 12.6, and none 49.2; handling change and transfers-severe 49.1, some 16.4, and none 34.5; getting to a seat before bus starts-severe 49.1, some 13.5, and none 37.4; standing when seat is unavailablesevere 56.4, some 15.2, and none 28.4; affording bus fare-severe 14.8, some 4.6, and none 80.6; sitting on bus seat—severe 29.1, some 10.9, and none 60.0; reaching buzzer cord-severe 36.3, some 7.3, and none 56.4.

Racine Urbanized Area: In the Racine urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 51.1, some 17.8, and none 31.1; getting information by phone-severe 46.8, some 12.6, and none 40.6; walking on uneven ground and slopes-severe 53.2, some 21.9, and none 24.9; crossing streets and curbs-severe 51.1, some 20.9, and none 28.0; going out in bad weather-severe 44.7, some 32.5, and none 22.8; waiting for a bus-severe 44.7, some 24.0, and none 31.3; standing at bus stop—severe 51.1, some 20.9, and none 28.0; climbing bus stepssevere 51.1, some 17.8, and none 31.1; negotiating crowds on buses-severe 44.7, some 14.7, and none 40.6; handling change and transfers-severe 55.3, some 14.9, and none 29.8; getting to a seat before bus starts—severe 51.1, some 13.7, and none 35.2; standing when seat is unavailable—severe 55.3, some 15.7, and none 29.0; affording bus fare-severe 17.4, some 1.0, and none 81.6; sitting on bus seatsevere 31.9, some 10.6, and none 57.5; reaching buzzer cord—severe 38.3, some 8.5, and none 53.2.

Racine Nonurbanized Area: In the Racine nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 25.0, some 12.5, and none 62.5; getting information by phone—severe 37.5, some 25.0, and none 37.5; walking on uneven ground and slopes—severe 50.0, some 12.5, and none 37.5; crossing streets and curbs—severe

	Γ		Racine	County		
		Transit				1
	Degree of	Service	Urbanized	Nonurbanized		
Barrier	Difficulty	Area	Area	Area	Total	Region
Reading Schedules	Severe	51.1	51.1	25.0	47.3	48.1
and Maps	Some	17.8	17.8	12.5	17.0	15.8
	None	31.1	31.1	62.5	35.7	36.1
	Total	100.0	100.0	100.0	100.0	100.0
Getting Information	Severe	46.8	46.8	37.5	45.4	49.7
by Phones	Some	12.6	12.6	25.0	14.4	13.1
	None	40.6	40.6	37.5	40.2	37.2
	Total	100.0	100.0	100.0	100.0	100.0
Walking on Uneven	Severe	53.2	53.2	50.0	52.7	55.7
Ground and Slopes	Some	21.9	21.9	12.5	20.5	21.4
	None	24.9	24.9	37.5	26.8	22.9
	Total	100.0	100.0	100.0	100.0	100.0
Crossing Streets	Severe	51.1	51.1	37.5	49.1	57.9
and Curbs	Some	20.9	20.9	12.5	19.7	16.4
	None	28.0	28.0	50.0	31.2	25.7
	Total	100.0	100.0	100.0	100.0	100.0
Going Out in Bad	Severe	44.7	44.7	25.0	41.8	62.7
Weather	Some	32.5	32.5	37.5	33.2	21.4
	None	22.8	22.8	37.5	25.0	15.9
	Total	100.0	100.0	100.0	100.0	100.0
Waiting for A Bus	Severe	44.7	44.7	62.5	47.3	61.2
	Some	24.0	24.0		20.5	16.9
	None	31.3	31.3	37.5	32.2	21.9
	Totai	100.0	100.0	100.0	100.0	100.0
Standing at Bus	Severe	51.1	51.1	50.0	50.9	61.1
Stop	Some	20.9	20.9	12.5	19.7	17.2
	None	28.0	28.0	37.5	29.4	21.7
	Total	100.0	100.0	100.0	100.0	100.0
Climbing Bus	Severe	51.1	51.1	25.0	47.3	58.3
Steps	Some	17.8	17.8	37.5	20.7	17.9
	None	31.1	31.1	37.5	32.0	23.8
	Total	100.0	100.0	100.0	100.0	100.0

#### PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE INSTITUTIONALIZED IN RACINE COUNTY: 1977

		1	Racine	County		
Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Region
Negotiating Crowds	Severe	44.7	44.7		38.2	55.3
on Buses	Some	14.7	14.7		12.6	18.1
	None	40.6	40.6	100.0	49.2	26.6
	Total	100.0	100.0	100.0	100.0	100.0
Handling Change	Severe	55.3	55.3	12.5	49.1	53.4
and Transfers	Some	14.9	14.9	25.0	16.4	15.8
	None	29.8	29.8	62.5	34.5	30.8
	Total	100.0	100.0	100.0	100.0	100.0
Getting to a Seat	Severe	51.1	51.1	37.5	49.1	58.8
Before Bus Starts	Some	13.7	13.7	12.5	13.5	17.4
	None	35.2	35.2	50.0	37.4	23.8
	Total	100.0	100.0	100.0	100.0	100.0
Standing When	Severe	55.3	55.3	62.5	56.4	62.8
Seat is Unavailable	Some	15.7	15.7	12.5	15.2	16.1
	None	29.0	29.0	25.0	28.4	21.1
	Total	100.0	100.0	100.0	100.0	100.0
Affording Bus	Severe	17.4	17.4		14.8	29.6
Fare	Some	1.0	1.0	25.0	4.6	19.1
	None	81.6	81.6	75.0	80.6	51.3
	Total	100.0	100.0	100.0	100.0	100.0
Sitting on Bus	Severe	31.9	31.9	12.5	29.1	47.1
Seats	Some	10.6	10.6	12.5	10.9	10.6
	None	57.5	57.5	75.0	60.0	42.3
	Total	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer	Severe	38.3	38.3	25.0	36.3	53.7
Cord	Some	8.5	8.5		7.3	12.0
	None	53.2	53.2	75.0	56.4	34.3
	Total	100.0	100.0	100.0	100.0	100.0

37.5, some 12.5, and none 50.0; going out in bad weather-severe 25.0, some 37.5, and none 37.5; waiting for a bus-severe 62.5, some 0.0, and none 37.5; standing at bus stop-severe 50.0, some 12.5 and none 37.5; climbing bus stepssevere 25.0, some 37.5, and none 37.5; negotiating crowds on buses—severe and some, both 0.0, and none 100.0; handling change and transfers-severe 12.5, some 25.0, and none 62.5; getting to a seat before bus starts-severe 37.5, some 12.5, and none 50.0; standing when seat is unavailable-severe 62.5, some 12.5, and none 25.0; affording bus fare-severe 0.0, some 25.0, and none 75.0; sitting on bus seatsevere 12.5, some 12.5 and none 75.0; reaching buzzer cord-severe 25.0, some 0.0, and none 75.0. Due to the low number of samples collected, respondents may not necessarily represent the total population.

Racine Transit Service Area: In the Racine transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 51.1, some 17.8, and none 31.1; getting information by phonesevere 46.8, some 12.6, and none 40.6; walking on uneven ground and slopes-severe 53.2, some 21.9, and none 24.9; crossing streets and curbs-severe 51.1, some 20.9, and none 28.0; going out in bad weather-severe 44.7, some 32.5, and none 22.8; waiting for a bus-severe 44.7, some 24.0, and none 31.3; standing at bus stop-severe 51.1, some 20.9, and none 28.0; climbing bus step—severe 51.1, some 17.8, and none 31.1; negotiating crowds on busessevere 44.7, some 14.7, and none 40.6; handling change and transfers—severe 55.3, some 14.9, and none 29.8; getting to a seat before bus starts-severe 51.1, some 13.7, and none 35.2; standing when seat is unavailable—severe 55.3, some 15.7, and none 29.0; affording bus faresevere 17.4, some 1.0, and none 81.6; sitting on bus seat-severe 31.9, some 10.6, and none 57.5; and reaching buzzer cord-severe 38.3, some 8.5, and none 53.2.

CHARACTERISTICS OF THE TRANSPORTATION HANDICAPPED AND ABLE BODIED ELDERLY RESIDING IN KENOSHA AND WALWORTH COUNTIES.

Kenosha and Walworth Counties contain about 10 percent of the transportation handicapped and able-bodied elderly population in the Southeastern Wisconsin Region. For the purpose of data tabulation and comparison of travel habits, characteristics, and attitudes of the transportation handicapped and able bodied elderly, the Kenosha—Walworth Counties study area has been divided into different geographic areas: Kenosha County, Walworth County, Kenosha urbanized area, Kenosha nonurbanized area, and Kenosha transit service area (see Map 2). Following is a description of the characteristics of each of the aforementioned geographic areas as obtained from the surveys.

# Transportation Handicapped

### Persons by Disability

Responses to the disability question are grouped by commonly used terminology. Most respondents specified the type of disability in medical terms. However, to facilitate an understanding of the effect of a disability on mobility, simple descriptive terms are utilized. Specifically, the terms used in Table 111 include the following responses to the questionnaire by individual responses:

- 1. <u>Stroke</u>—Includes stroke, brain damage, mental problems, brain tumor, loss of memory, brain surgery, mental instability, speech disorder, and nervousness.
- 2. <u>Old Age</u>—Includes diabetes, multiple or unspecified operations, general poor health, Tic Doulourux, Parkinson's Disease, blackouts, and cancer and associated illnesses.
- 3. <u>Arthritis</u>—Includes arthritis, rheumatism, and bone disease.
- 4. <u>Visual</u>—Includes total blindness, partial blindness, weak eyes, loss of sight, cataracts, and cataract operations.
- 5. Impaired Lower Trunk—Ambulatory— Includes injured or artificial hips; artificial legs, hands, or feet; bad ankles, hips, knees, legs, and feet; no toes; bad circulation in feet, legs, or hips; crippled, unsteady, hip bursitis, one leg shorter than the other, and other such defects which did not affect the person's ability to walk.
- 6. Impaired Trunk-Nonambulatory-Includes amputated leg or legs or broken leg, hip, or back; weak back or surgery on back; fractured hip or hip surgery;

#### TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY DISABILITY: 1977

			Kenos	ha County			
Disability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Stroke	Number	235	151	126	277	92	6,893
	Percent	7.9	6.6	7.7	7.1	5.3	12.3
Old Age	Number	340	151	478	629	338	8,173
	Percent	11.4	6.6	29.1	16.0	19.3	14.6
Arthritis	Number	260	239	89	328	263	10,982
	Percent	8.7	10.5	5.4	8.3	15.0	19.7
Visual	Number	95	74	21	95	94	4,284
	Percent	3.2	3.3	1.3	2.4	5.4	7.7
Impaired Trunk -	Number	822	759	173	932	428	8,232
Ambulatory	Percent	27.5	33.3	10.5	23.7	24.5	14.7
Impaired Trunk	Number	265	142	124	266	364	4,937
Nonambulatory	Percent	8.9	6.2	7.5	6.8	20.8	8.8
Developmental	Number	219	138	167	305	33	4,252
Disabilities	Percent	7.3	6.0	10.2	7.8	1.9	7.6
Heart	Number	359	276	356	632	103	5,291
	Percent	12.0	12.1	21.6	16.1	5.9	9.5
Other	Number	394	352	110	462	33	2,821
	Percent	13.1	15.4	6.7	11.8	1.9	5.1
Total Reported	Number	2,989	2,282	1,644	3,926	1,748	55,865
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported Not Applicable	Number Percent	322	154	189	343	366	6,529 
Total	Number	3,311	2,436	1,833	4,269	2,114	62,394
	Percent'	100.0	100.0	100.0	100.0	100.0	100.0

paralysis or use of wheelchair for any cause; polio; softening of bones; and general infirmities preventing walking.

- 7. <u>Developmental Disabilities—Includes</u> mental retardation, epilepsy, cerebral palsy, mongoloid, slow learners, and learning disabilities.
- 8. <u>Heart</u>—Includes heart problems of all  $\overline{kinds}$ , including specific references to the arteries or a pacemaker.
- 9. Other-Includes asthma, respiratory problems, chest pain, lung pain, removed lung, bronchitis, arthritis of sternum, trouble breathing, emphysema, hearing, multiple sclerosis, and muscular dystrophy.

Note that 4,080 persons out of the 6,530 persons in the Region who did not report their disabilities are institutionalized able-bodied persons who as previously discussed are considered to be transportation handicapped.

Kenosha County: In Kenosha County the number and approximate percent distribution of transportation handicapped persons by descending order of disability occurrence are: impaired trunk ambulatory, 930, or about 24 percent; heart, 630, or about 16 percent; old age, 630, also about 16 percent; other, 460, or about 12 percent; arthritis, 330, or about 8 percent; developmental disabilities, 300, also about 8 percent; stroke, 280, or about 7 percent; impaired trunk nonambulatory, 270, or about 7 percent; and visual, 100, or about 2 percent.

Walworth County: The distribution of transportation handicapped persons in descending order of disability classification is: impaired trunk ambulatory, 430, or about 25 percent; impaired trunk nonambulatory, 360, or about 21 percent; old age, 340, or about 19 percent; arthritis, 260, or about 15 percent; heart, 100, or about 6 percent; visual, 90, or about 5 percent; stroke, 90, also about 5 percent; developmental disabilities, 30; and other, also 30, each about 2 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Urbanized Area: In the urbanized area the number of transportation handicapped persons and their approximate percent distribution in descending order of disability classification are: impaired trunk ambulatory, 760, or about 33 percent; other, 350, or about 15 percent; heart, 280, or about 12 percent; arthritis, 240, or about 11 percent; stroke and old age, each 150, or slightly less than 7 percent each; impaired trunk nonambulatory, 140, or about 6 percent; developmental disabilities, 140, or about 6 percent; and visual, 70, or about 3 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Nonurbanized Area: In the nonurbanized area the number of transportation handicapped persons and their approximate percent distribution in descending order of disability classification are: old age, 480, or about 29 percent; heart, 360, or about 22 percent; impaired trunk ambulatory, 170, or about 11 percent; developmental disabilities, 170, or about 10 percent; stroke, 130, or about 8 percent; impaired trunk nonambulatory, 120, or about 8 percent; other, 110, or about 7 percent; arthritis, 90, or about 5 percent; and visual, 20, slightly more than 1 percent. Due to the low number of samples collected, respondents may not necessarily represent the total tranportation handicapped population.

Kenosha Transit Service Area: In order of descending occurrence the number of persons and approximate percent distribution by disability are: impaired trunk ambulatory, 820, or about 28 percent; other, 390, or about 13 percent; heart, 360, or about 12 percent; old age, 340, or about 11 percent; impaired trunk nonambulatory, 270, or about 9 percent arthritis, 260, also about 9 percent; stroke, 240, or about 8 percent; developmental disabilities, 220, or about 7 percent; and visual, 100, or about 3 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

#### Transportation Handicapped Persons by Type of Aid Used

The type of aid used by the transportation handicapped person is grouped into commonly used terms. For study purposes all the aids were grouped into five general classifications as follows:

1. Cane.

- 2. Walker, crutches, includes grab rails and quad.
- 3. Wheelchair.
- 4. None.
- 5. Miscellaneous, covering artificial legs, hearing aids, leg braces, aid in car for driving, hydraulic lifts, special shoes, and supervision.

It should be noted that 4,080 able-bodied persons in institutions are recorded in the "not reported" line in Table 112. As noted previously these persons are considered to be transportation handicapped.

Kenosha County: In Kenosha County 79 percent of the 4,270 transportation handicapped persons reported their use of an aid. The number of persons by use of an aid and the approximate percent distribution of these 3,350 persons in descending order of occurrence are: none, 1,240, or about 37 percent; wheelchair, 960, or about 29 percent; cane, 580, or about 17 percent; walker and crutches, 380, or about 11 percent; and miscellaneous, 200, or about 6 percent.

<u>Walworth County:</u> Of the 2,110 transportation handicapped persons in Walworth County 1,510, or about 71 percent, reported their use of an aid. The number of persons by use of an aid and their approximate percent distribution in descending occurrence are: none, 550, or about 36 percent; wheelchair, 400, or about 26 percent; cane, 390, also about 26 percent; and walker and crutches, 180, or about 12 percent.

#### Table 112

# TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY TYPE OF AID USED: 1977

			Keno				
Type of Aid		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Cane	Number	420	378	200	578	386	11,237
	Percent	16.4	20.5	13.3	17.2	25.6	23.5
Walker, Crutches, and	Number	311	290	89	379	178	3,893
Similar Devices	Percent	12.2	15.7	5.9	11.3	11.8	8.1
Wheelchair	Number	803	347	609	956	396	11,512
	Percent	31.5	18.8	40.4	28.5	26.3	24.0
None	Number	887	699	541	1,240	548	20,467
	Percent	34.7	37.8	35.9	37.0	36.3	42.7
Miscellaneous	Number Percent	133 5.2	133 7.2	68 4.5	201 6.0	0	805 1.7
Total Reported	Number	2,554	1,847	1,507	3,354	1,508	47,914
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	757	589	326	915	606	14,480
Total	Number	3,311	2,436	1,833	4,269	2,114	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

The survey reported no one in the classification miscellaneous. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Urbanized Area: The 1,850 transportation handicapped persons reporting use of an aid account for about 76 percent of the 2,440 transportation handicapped persons in the Kenosha urbanized area. The number of persons by use of an aid and the percent distribution in descending order of occurrence are: none, 700, or about 38 percent; cane, 380, or about 21 percent; wheelchair, 350, or about 19 percent; walker and crutches, 290, or about 16 percent; and miscellaneous, 130, or about 7 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Nonurbanized Area: Of the 1,830 transportation handicapped persons in the Kenosha nonurbanized area 1,510, or about 82 percent, reported the type of aid used. The number of persons and approximate percent distribution by type of aid in descending order of occurrence are: wheelchair, 610, or about 40 percent; none, 540, or about 36 percent; cane, 200, or about 13 percent; walker and crutches, 90, or about 6 percent; and miscellaneous, 70, or about 5 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Transit Service Area: Of the 3,310 transportation handicapped persons in the Kenosha transit service area 2,550, or about 77 percent, reported their use of an aid. The number of persons and their approximate percent distribution by type of an aid in descending order of occurrence are: none, 890, or about 35 percent; wheelchair, 800, or about 32 percent; cane, 420, or about 16 percent; walker and crutches, 310, or about 12 percent; and miscellaneous, 130, or about 5 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

#### Transportation Handicapped and Able-Bodied Elderly Persons by Auto Available to Drive

Tables 113 and 114 include the number and percent of the transportation handicapped persons and able-bodied elderly persons who have an auto available to drive.

Kenosha County: Of the 4,270 transportation handicapped persons in Kenosha County 1,030, or about 24 percent, have an auto available to drive and 3,240, or about 76 percent, do not have an auto available to drive. In Kenosha County 5,600 able-bodied elderly persons, or

			Kenos				
Auto Available To Drive		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Yes	Number	827	707	325	1,032	341	9,272
	Percent	25.0	29.0	17.7	24.2	16.1	14.9
No	Number	2,484	1,729	1,508	3,237	1,773	53,122
	Percent	75.0	71.0	82.3	75.8	83.9	85.1
Total	Number	3,311	2,436	1,833	4,269	2,114	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### Table 113

TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY AUTO AVAILABLE TO DRIVE: 1977

			Kenos				
Auto Available To Drive		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Yes	Number	4,364	4,152	1,449	5,601	3,760	74,028
	Percent	74.0	73.0	80.3	74.7	70.1	59.1
No	Number	1,537	1,537	356	1,893	1,603	51,134
	Percent	26.0	27.0	19.7	25.3	29.9	40.9
Total	Number	5,901	5,689	1,805	7,494	5,363	125,162
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### ABLE-BODIED ELDERLY PERSONS IN KENOSHA AND WALWORTH COUNTIES BY AUTO AVAILABLE TO DRIVE: 1977

Source: SEWRPC.

about 75 percent of the total able-bodied elderly persons, have an auto available to drive and 1,890, or about 25 percent of the able-bodied elderly persons, do not have an auto available to drive.

Walworth County: In Walworth County 340 transportation handicapped persons, or about 16 percent of the total transportation handicapped persons, have an auto available to drive while 1,770, or about 84 percent of the total transportation handicapped persons, do not have an auto available to drive. Of the 5,360 ablebodied elderly persons in Walworth County 3,760, or about 70 percent, have an auto available to drive and 1,600, or about 30 percent, do not have an auto available to drive.

Kenosha Urbanized Area: In the Kenosha urbanized area about 29 percent, or 700 of the transportation handicapped persons, have an auto available to drive and about 71 percent, or 1,730, do not have an auto available to drive. Of the 5,690 able-bodied elderly persons in the Kenosha urbanized area 4,150, or about 73 percent, have an auto available to drive while 1,540, or about 27 percent, do not have an auto available to drive.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area 330, or about 18 percent of the transportation handicapped persons, have an auto available to drive while 1,510, or about 82 percent of the transportation handicapped persons, do not have an auto available to drive. Of the 1,810 able-bodied elderly persons in the Kenosha nonurbanized area 1,450, or about 80 percent, have an auto available to drive while 360, or about 20 percent, do not have an auto available to drive.

Kenosha Transit Service Area: In the Kenosha transit service area 830 transportation handicapped persons, or about 25 percent of the total transportation handicapped persons, have an auto available to drive while 2,480, or about 75 percent of the total transportation handicapped persons, do not have an auto available to drive. Of the 5,900 able-bodied elderly persons in the Kenosha transit service area 4,360, or about 74 percent, have an auto available to drive while 1,540, or about 26 percent, do not have an auto available to drive.

#### Transportation Handicapped and Able-Bodied Elderly Persons by Frequency of Auto Available to Ride In

The "not reported—not applicable" classification includes those persons who have an auto available to drive. At the regional level 9,270 transportation handicapped persons and 74,030 able-bodied elderly persons indicated they had an auto available to drive and as a result are excluded from answering the question on auto available to ride in Tables 115 and 116 present the number and percent distribution of trans-

	m.,	1		_			
			Kenos	ha County			
Auto Available		Transit					
To Ride In		Service	Urbanized	Nonurbanized		Walworth	
Frequency		Area	Area	Area	Total	County	Region
Never	Number	396	165	252	417	357	9,478
	Percent	15.9	9.5	16.7	12.9	20.5	18.5
Occasionally	Number	740	300	682	982	498	17,186
	Percent	29.8	17.4	45.2	30.3	28.7	33.6
Most of the Time	Number	396	333	152	485	272	10,581
	Percent	16.0	19.3	10.1	15.0	15.6	20.7
Always	Number	952	931	422	1,353	611	13,864
	Percent	38.3	53.8	28.0	41.8	35.2	27.2
Total Reported	Number	2,484	1,729	1,508	3,237	1,738	51,109
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number	827	707	325	1,032	376	11,285
Not Applicable ^a	Percent						
Total	Number	3,311	2,436	1,833	4,269	2,114	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY FREQUENCY OF AUTO AVAILABLE TO RIDE IN: 1977

^aIncludes persons who answered auto driver.

Source: SEWRPC.

portation handicapped persons and able-bodied elderly persons by their response to the auto available to ride in question.

Kenosha County: Within Kenosha County are 3,240 transportation handicapped persons who answered the auto available to ride in question. The number of persons and the approximate percent distribution by frequency are: never, 420, or about 13 percent; occasionally, 980, or about 30 percent; most of the time, 490, or about 15 percent; and always, 1,350, or about 42 percent. Of the 1,890 able-bodied elderly persons in Kenosha County who responded to the auto available to ride in question, the number and approximate percent distribution by frequency are: never, 460, or about 24 percent; occasionally, 400, or about 21 percent; most of the time, 390, or about 20 percent; and always, 650, or about 34 percent.

Walworth County: By frequency the number of transportation handicapped persons responding to the auto available to ride in question in Walworth County is: never, 360, or about 21 percent; occasionally, 500, or about 29 percent; most of the time, 270, or about 16 percent; and always, 610, or about 35 percent. In total 1,740 transportation handicapped persons responded to this question. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. The distribution by frequency of the 3,860 able-bodied elderly persons

			Kenos	sha County			
Auto Available To Ride In Frequency		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Never	Number Percent	456 29.7	456 29.7	0	456 24.1	0	5,902 12.3
Occasionally	Number	249	249	151	400	376	15,420
	Percent	16.2	16.2	42.4	21.1	25.1	32.2
Most of the Time	Number	317	317	69	386	583	12,207
	Percent	20.6	20.6	19.4	20.4	38.9	25.5
Always	Number	515	515	136	651	540	14,359
	Percent	33.5	33.5	38.2	34.4	36.0	30.0
Total Reported	Number	1,537	1,537	356	1,893	1,499	47,888
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
Not Applicable Not Reported ^a	Number Percent	4,364	4,152	1,449	5,601 	3,864	77,274
Total	Number	5,901	5,689	1,805	7,494	5,363	125,162
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### ABLE-BODIED ELDERLY PERSONS IN KENOSHA AND WALWORTH COUNTIES BY FREQUENCY OF AUTO AVAILABLE TO RIDE IN: 1977

^aIncludes persons who answered auto driver.

Source: SEWRPC.

responding to this question in Walworth County is: occasionally, 380, or about 25 percent; most of the time, 580, or about 39 percent; and always, 540, or about 36 percent. In Walworth County none of the survey respondents answered never.

Kenosha Urbanized Area: In the Kenosha urbanized area 1,730 transportation handicapped persons responded to this question. By frequency of auto available to ride in, the number of persons and the approximate percent distribution are: never, 170, or about 10 percent; occasionally, 300, or about 17 percent; most of the time, 330, or about 19 percent; and always, 930, or about 54 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. Of the 4,150 able-bodied elderly persons responding to this question, the number of persons and approximate percent distribution by frequency classification are: never, 460, or about 30 percent; occasionally, 250, or about 16 percent; most of the time, 320, or about 21 percent; and always, 520, or about 34 percent.

Kenosha Nonurbanized Area: Of the 1,830 transportation handicapped persons in the Kenosha nonurbanized area, 1,510 responded to the auto available to ride in question. The number of persons and approximate percent distribution by frequency are: never, 250, or about 17 percent; occasionally, 680, or about 45 percent; most of the time, 150, or about 10 percent; and always, 420, or about 28 percent. There are 1,810 able-bodied elderly persons in the Kenosha nonurbanized area. Of these 360 supplied answers to the auto available to ride in question. The number of persons and approximate percent distribution by frequency classification of the able-bodied elderly respondents are: occasionally, 150, or about 42 percent; most of the time, 70, or about 19 percent; and always, 140, or about 38 percent. Of the able-bodied elderly in the Kenosha nonurbanized area no one indicated never having an auto available to ride in. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped and able-bodied elderly population.

Kenosha Transit Service Area: Within the Kenosha transit service area 2,480 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by frequency are: never, 400, or about 16 percent; occasionally, 740, or about 30 percent; most of the time, 400, or about 16 percent; and always, 950, or about 38 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. Of the 1,540 able-bodied elderly persons responding to this question in the Kenosha transit service area, the distribution by frequency is: never, 460, or about 30 percent; occasionally, 250, or about 16 percent; most of the time, 320, or about 21 percent; and always, 520, or about 34 percent.

#### Transportation Handicapped Persons by Ability to Ride in An Auto

An examination of transportation handicapped persons and auto availability is not complete without an understanding of their ability to ride in an auto. Table 117 summarizes the number of persons and approximate percent distribution of persons who responded to the question on ability to ride in an auto. The relatively large

#### Table 117

		1		sha County			
Ride In Auto		Transit Service	Urbanized	Nonurbanized		Walworth	
Ability		Area	Area	Area	Total	County	Region
Impossible	Number	42	0	63	63	135	4,977
	Percent	1.7	·-	4.2	1.9	8.0	9.7
Difficult	Number Percent	1,008 40.6	609 35.2	751 49.8	1,360 42.0	788 46.9	16,743 32.7
Some Difficulty	Number Percent	447 18.0	405 23.4	247 16.4	652 20.2	282 16.8	12,722 24.8
No Problem	Number Percent	987 39.7	715 41.4	447 29.6	1,162 35.9	475 28.3	16,838 32.8
Total Reported	Number Percent	2,484 100.0	1,729 100.0	1,508 100.0	3,237 100.0	1,680 100.0	51,280 100.0
Not Reported	Number	827	707	325	1,032	434	11,114
	reicent						
Total	Number Percent	3,311 100.0	2,436 100.0	1,833 100.0	4,269 100.0	2,114 100.0	62,394 100.0

# TRANSPORTATION HANDICAPPED PERSONS IN KENOSIIA AND WALWORTH COUNTIES BY ABILITY TO RIDE IN AN AUTO: 1977

number of transportation handicapped persons in the "not reported—not applicable" line is due to the fact that the survey design excluded persons who were able to drive an automobile.

Kenosha County: Within Kenosha County are 3,240 transportation handicapped persons who answered this question. The number of transportation handicapped persons and their approximate percent distribution by degree of ability to ride in an auto are: impossible, 60, or about 2 percent; difficult, 1,360, or about 42 percent; some difficulty, 650, or about 20 percent; and no problem, 1,160, or about 36 percent.

Walworth County: Of the 1,680 persons who answered this question the number of persons and the approximate percent distribution by degree of ability to ride in an auto are: impossible, 140, or about 8 percent; difficult, 790, or about 47 percent; some difficulty, 280, or about 17 percent; and no problem, 480, or about 28 percent.

Kenosha Urbanized Area: The responses of the 1,730 transportation handicapped persons who answered this question by their degree of ability to ride in an auto are: difficult, 610, or about 35 percent; some difficulty, 410, or about 23 percent; and no problem, 720, or about 41 percent. None of the urbanized area respondents answered impossible. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Nonurbanized Area: Of the 1,510 transportation handicapped persons in the Kenosha nonurbanized area who answered this question, the number of persons and approximate percent distribution by degree of ability to ride in an auto are: impossible, 60, or about 4 percent; difficult, 750, or about 50 percent; some difficulty, 250, or about 16 percent; and no problem, 450, or about 30 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

Kenosha Transit Service Area: Of the 2,480 transportation handicapped persons responding to this question, the number of persons and the approximate percent distribution by degree of ability to ride in an auto are: impossible, 40, or about 2 percent; difficult, 1,010, or about 41 percent; some difficulty, 450, or about 18 percent; and no problem, 990, or about 40 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population.

# Perceived Ability of Transportation

Handicapped Persons to Reach a Bus Stop The option of improving existing buses and service or extending service to areas not now served in order to meet transportation needs of transportation handicapped persons must consider the perceived ability of such persons to reach a bus stop. Table 118 summarizes by geographic area the number and percent distribution of transportation handicapped persons by their perceived ability to reach a bus stop and, when able to so do, the distance perceived as attainable by them.

Kenosha County: Of the 3,690 transportation handicapped persons in Kenosha County who responded to this question, the number of persons and approximate percent distribution by perceived ability are: impossible, 1,620, or about 44 percent; front of house, 960, or about 26 percent; one block, 140, or about 4 percent; and two blocks, 970, or about 26 percent.

<u>Walworth County:</u> In Walworth County 1,980 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 960, or about 49 percent; front of house, 450, or about 23 percent; one block, 90, or about 5 percent; and two blocks, 470, or about 24 percent.

Kenosha Urbanized Area: In the Kenosha urbanized area 2,290 persons responded to this question. The number of transportation handicapped persons and the approximate percent distribution by perceived ability are: impossible, 950, or about 41 percent; front of house, 540, or about 24 percent; one block, 140, or about 6 percent; and two blocks, 670, or about 29 percent.

Kenosha Nonurbanized Area: Of the 1,400 transportation handicapped persons in the Kenosha nonurbanized area who responded to this question, the number of persons and approximate percent distribution by perceived ability are: impossible, 670, or about 48 percent; front of house, 430, or about 30 percent;

			Kenos	ha County		1	
Perceived Ability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Impossible	Number	1,300	946	669	1,615	961	26,697
	Percent	43.0	41.3	47.8	43.8	48.6	46.9
Front of House	Number	747	537	425	962	452	10,378
	Percent	24.7	23.5	30.4	26.1	22.9	18.2
One Block	Number Percent	138 4.6	138 6.0	0	138 3.7	93 4.7	4,318 7.6
Two Blocks	Number	836	668	305	973	471	15,508
	Percent	27.7	29.2	21.8	26.4	23.8	27.3
Total Reported	Number	3,021	2,289	1,399	3,688	1,977	56,901
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	290	147	434	581	137	5,493
Total	Number	3,311	2,436	1,833	4,269	2,114	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY PERCEIVED ABILITY TO REACH A BUS STOP: 1977

Source: SEWRPC.

and two blocks, 310, or about 22 percent. None of the nonurbanized area respondents replied in the classification one block.

Kenosha Transit Service Area: Within the Kenosha transit service area 3,020 transportation handicapped persons responded to this question. The number of persons and approximate percent distribution by perceived ability are: impossible, 1,300, or about 43 percent; front of house, 750, or about 25 percent; one block, 140, or about 5 percent; and two blocks, 840, or about 28 percent.

Availability of Special Transportation Services Perceived by Transportation Handicapped Persons and Able-Bodied Elderly Persons

Another option for improving mobility of the transportation handicapped and able-bodied elderly population is to make special transportation services more available. The prerequisite to so doing is to understand what these groups perceive as currently available. Tables 119 and 120 summarize by geographic area the response of the transportation handicapped and ablebodied elderly to this question.

Kenosha County: Of the 4,270 transportation handicapped persons responding to this item, 3,090, or about 72 percent, perceive special transportation services as unavailable and 1,180, or about 28 percent, perceive that special transportation services are available. In the able-bodied elderly group in Kenosha County, 6,510, or about 88 percent, perceive that special transportation services are unavailable, and 850, or about 12 percent, perceive that special transportation services are available. In total 7,370 able-bodied elderly persons responded to this item in Kenosha County.

			Kenos	ha County			
Perceived Special Transportation Availability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Yes	Number	986	440	735	1,175	1,040	27,054
	Percent	29.8	18.1	40.1	27.5	49.2	43.5
No	Number	2,325	1,996	1,098	3,094	1,074	35,156
	Percent	70.2	81.9	59.9	72.5	50.8	56.5
Total Reported	Number	3,311	2,436	1,833	4,269	2,114	62,210
	Percent	100.0	100.0	100.0	100.0	100.0	100.0
Not Reported	Number Percent	0	0	0	0	0	184
Total	Number	3,311	2,436	1,833	4,269	2,114	62,394
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### TRANSPORTATION HANDICAPPED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY PERCEIVED AVAILABILITY OF SPECIAL TRANSPORTATION SERVICES: 1977

Source: SEWRPC.

#### Table 120

#### ABLE-BODIED ELDERLY PERSONS IN KENOSHA AND WALWORTH COUNTIES BY PERCEIVED AVAILABILITY OF SPECIAL TRANSPORTATION SERVICES: 1977

			Kenos	sha County			
Perceived Special Transportation Availability		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Yes	Number Percent	851 14.7	851 15.3	0	851 11.6	2,448 45.6	30,857 24.8
No	Number Percent	4,921 85.3	4,709 84.7	1,805 100.0	6,514 88.4	2,915 54.4	93,579 75.2
Total Reported	Number Percent	5,772 100.0	5,560 100.0	1,805 100.0	7,365 100.0	5,363 100.0	124,436 100.0
Not Reported	Number Percent	129	129	0	129	0	726
Total	Number Percent	5,901 100.0	5,689 100.0	1,805 100.0	7,494 100.0	5,363 100.0	125,162 100.0

<u>Walworth County</u>: In Walworth County 1,070 transportation handicapped persons perceive that special transportation services are not available, accounting for about 51 percent of the total transportation handicapped persons. Of the 2,110 total transportation handicapped persons in Walworth County, 1,040, or about 49 percent, perceive that special transportation services are available. Within the able-bodied elderly group 2,920, or about 54 percent of the able-bodied elderly, perceive that special transportation services are not available and 2,450, or about 46 percent of the able-bodied elderly, perceive that special transportation services are available.

Kenosha Urbanized Area: In the Kenosha urbanized area 2,000 transportation handicapped persons, or about 82 percent, perceive that special transportation services are not available and 440, or about 18 percent, perceive that special transportation services are available. In total 2,440 transportation handicapped persons in the Kenosha urbanized area responded to this item. Of the 5,560 able-bodied elderly persons in the Kenosha urbanized area who responded to this question, 4,710, or about 85 percent, perceive that special transportation services are unavailable and 850, or about 15 percent, perceive that special transportation services are available.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area 1,100 transportation handicapped persons, or about 60 percent, perceive that special transportation services are not available and 740, or about 40 percent, perceive that special transportation services are available. All of the 1,810 able-bodied elderly persons in the Kenosha nonurbanized area perceive that special transportation services are not available.

Kenosha Transit Service Area: In the Kenosha transit service area 2,330, or about 70 percent of the transportation handicapped persons, perceive that special transportation services are not available and 990, or about 30 percent, perceive that special transportation services are available. In the able-bodied elderly group 4,920, or about 85 percent, perceive that special transportation services are not available and 850, or about 15 percent, perceive that special transportation services are available.

### Institutionalized Transportation Handicapped Persons by Tripmaking Impediments

For a better understanding of the travel impediments encountered by institutionalized persons, a series of questions was asked concerning their: mobility upon leaving the institution; ability to enter a vehicle; ability to ride in a vehicle; and assistance required at destination. Table 121 summarizes these responses by geographic area.

Kenosha County: Upon leaving the institution 420, or about 41 percent of the institutionalized persons in Kenosha County, need to be carried when leaving the institution; 210, or about 21 percent, need help when leaving the institution; and 390, or about 38 percent, can leave the institution unassisted. When entering a vehicle 400, or about 39 percent, need to be carried; 230, or about 23 percent, need help; and 390, or about 38 percent, can enter a vehicle unassisted. While riding in a vehicle 40, or about 4 percent, require an ambulance; 360, or about 35 percent, need a special seat; and 620, or about 61 percent, can ride in a vehicle unassisted. Upon reaching their destination 630, or about 64 percent, need accompaniment and 350, or about 36 percent, do not need accompaniment.

Walworth County: Upon leaving the institution 260, or about 29 percent, need to be carried; 140, or about 16 percent, need help when leaving the institution; and 490 or about 55 percent, can leave the institution unassisted. When entering a vehicle 270, or about 30 percent, need to be carried; 130, or about 15 percent, need help; and 490, or about 55 percent, can enter a vehicle unassisted. While riding in a vehicle 50, or about 5 percent, need an ambulance; 150, or about 17 percent, require a special seat; and 700, or about 78 percent, can ride unassisted. When reaching their destination 440, or about 48 percent, need accompaniment and 470, or about 52 percent, do not need accompaniment.

<u>Kenosha Urbanized Area</u>: The 150 institutionalized persons in the Kenosha urbanized area responded to the question of leaving an institution as needing no assistance; responded to the question of entering a vehicle also as needing no assistance; responded to the question of riding in a vehicle as needing no assistance; and responded to the question of assistance at the destination by indicating that 40, or about

#### INSTITUTIONALIZED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY TRIPMAKING IMPEDIMENTS: 1977

			Kenos	sha County			
Trip Making Impediments		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Leaving Institution							
Carried	Number Percent	336 40.7	0	420 48.8	420 41.4	262 29.4	6,492 39.7
Need Help	Number Percent	126 15.2	0	210 24.4	210 20.7	142	2,689
Unassisted	Number Percent	364 44.1	154 100.0	231 26.8	385 37.9	488 54.7	7,180 43.9
Total Reported	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	892 100.0	16,361 100.0
Not Reported	Number Percent	0	0	0	0	23	31
Total	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	915 100.0	16,392 100.0
Entering Vehicle							
Carried	Number Percent	315 38.1	0	399 46.4	399 39.3	271 30.4	6,469 39.5
Need Help	Number Percent	147 17.8	0	231 26.8	231 22.8	133 14.9	3,372 20.6
Unassisted	Number Percent	364 44.1	154 100.0	231 26.8	385 37.9	488 54.7	6,520 39.9
Total Reported	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	892 100.0	16,361 100.0
Not Reported	Number Percent	0	0	0	0	23	31
Total	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	915 100.0	16,392 100.0

30 percent, need accompaniment and 100, or about 70 percent, do not need accompaniment. Due to the low number of samples collected, respondents may not necessarily represent the total institutionalized population.

Kenosha Nonurbanized Area: Upon leaving the institution 420, or about 49 percent, need to be carried; 210, or about 24 percent, need help; and 230, or about 27 percent, can leave the institution unassisted. When entering a vehicle

			Kenos	ha County			
Trip Making Impediments		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Riding in Vehicle							
Ambulance	Number Percent	42 5.1	0	42 4.9	42 4.1	46 5.2	1,442 8.8
Special Seat	Number Percent	273 33.0	0	357 41.5	357 35.2	147 16.5	5,222 31.9
Unassisted	Number Percent	511 61.9	154 100.0	462 53.6	616 60.7	699 78.3	9,697 59.3
Total Reported	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	892 100.0	16,361 100.0
Not Reported	Number Percent	0	0	0	0	23	31
Total	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	915 100.0	16,392 100.0
Destination Assistance							
Need Accompaniment	Number Percent	462 58.4	42 30.0	588 70.0	630 64.3	441 48.2	11,216 68.9
Do Not Need Accompaniment	Number Percent	329 41.6	98 70.0	252 30.0	350 35.7	474 51.8	5,072 31.1
Total Reported	Number Percent	791 100.0	140 100.0	840 100.0	980 100.0	915 100.0	16,288 100.0
Not Reported	Number Percent	35	14 	21	35	0	104
Total	Number Percent	826 100.0	154 100.0	861 100.0	1,015 100.0	915 100.0	16,392 100.0

Source: SEWRPC.

400, or about 46 percent, need to be carried onto the vehicle; 230, or about 27 percent, need help; and another 230, also about 27 percent, can enter a vehicle unassisted. While riding in a vehicle 40, or about 5 percent, require an ambulance; 360, or about 42 percent, need a special seat; and 460, or about 54 percent, can ride in a vehicle unassisted. Upon reaching their destination 590, or about 70 percent, need accompaniment and 250, or about 30 percent, do not need accompaniment.

<u>Kenosha Transit Service Area</u>: Upon leaving the institution 340, or 41 percent, need to be carried; 130, or about 15 percent, need help; and 360, or about 44 percent, can leave the institution unassisted. When entering a vehicle 320, or about 38 percent, need to be carried; 150, or about 18 percent, need help; and 360, or about 44 percent, can enter a vehicle unassisted. While riding in a vehicle 40, or about 5 percent, need an ambulance; 270, or about 33 percent, require a special seat; and 510, or about 62 percent, can ride unassisted. Upon reaching their destination 460, or about 58 percent, need accompaniment and 330, or about 42 percent, do not need accompaniment.

Number of Person Trips of Transportation Handicapped Persons and Able-Bodied Elderly Persons on an Average Day by Trip Purpose Activities by trip purpose of both the transportation handicapped and able-bodied elderly persons center on the home as can be seen by the subgeographic area where trip purpose home ranges from about 43 percent to nearly 50 percent of total trips. Tables 122 and 123 present the number of trips being made by transportation handicapped persons and ablebodied elderly persons on an average day by trip purpose for each of the subgeographic areas. Knowledge of the magnitude of trips made by trip purpose and by mode of travel is necessary when considering alternative transportation system improvements. It should be noted that Tables 122 and 123 present the number of trips of an average day as found on the household survey. Trips on the institution survey are presented in Table 124 as average trips per week.

#### Table 122

#### NUMBER OF PERSON TRIPS PER DAY MADE BY THE NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN KENOSHA AND WALWORTH COUNTIES BY TRIP PURPOSE: 1977

			Kenos				
Trip Purpose		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Home	Number	1,543	1,362	489	1,851	486	20,493
	Percent	44.9	44.3	50.0	45.7	46.1	45.9
Work	Number	198	138	60	198	67	1,760
	Percent	5.8	4.5	6.1	4.9	6.4	4.0
School	Number	134	74	60	134	160	3,186
	Percent	3.9	2.4	6.1	3.3	15.2	7.1
Shopping	Number	493	493	68	561	68	5,066
	Percent	14.3	16.0	7.0	13.8	6.4	11.3
Social - Recreation	Number	506	445	61	506	170	7,478
	Percent	14.7	14.4	6.2	12.5	16.1	16.7
Personal Business	Number	288	288	172	460	34	5,481
	Percent	8.4	9.4	17.6	11.3	3.2	12.3
Medical	Number	276	276	68	344	70	1,211
	Percent	8.0	9.0	7.0	8.5	6.6	2.7
Total	Number	3,438	3,076	978	4,054	1,055	44,675
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

			Keno	sha County	·		
Trip Purpose		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Home	Number	6,587	6,444	924	7,368	3,629	91,079
	Percent	44.9	44.8	50.0	45.4	43.4	43.1
Work	Number	893	893	69	962	512	11,115
	Percent	6.1	6.2	3.7	5.9	6.1	5.2
School	Number Percent	0	0	0	0	237 2.9	1,062 0.5
Shopping	Number	2,693	2,550	704	3,254	1,357	37,449
	Percent	18.4	17.7	38.1	20.0	16.2	17.7
Social - Recreation	Number	2,854	2,854	83	2,937	1,294	38,177
	Percent	19.4	19.8	4.5	18.1	15.5	18.1
Personal Business	Number Percent	1,356 9.2	1,356 9.4	0	1,356 8.4	1,195 14.3	29,212 13.8
Medical	Number	293	293	68	361	134	3,297
	Percent	2.0	2.1	3.7	2.2	1.6	1.6
Total	Number	14,676	14,390	1,848	16,238	8,358	211,391
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### NUMBER OF PERSON TRIPS PER DAY MADE BY THE ABLE-BODIED ELDERLY IN KENOSHA AND WALWORTH COUNTIES BY TRIP PURPOSE: 1977

Source: SEWRPC.

On an average day transportation handicapped persons reported making about 44,700 trips in the Region, which, compared to the 1972 inventory of travel, represents only about 1 percent of the total 4,504,900 internal person trips. Able-bodied elderly persons reported making 211,400 trips on the household survey which represents about 5 percent of the 1972 inventory of internal person trips.

Kenosha County: In Kenosha County, transportation handicapped persons made a total of 4,050 trips on an average day. The number of trips and approximate percent distribution by trip purpose are: home, 1,850, or about 46 percent; work, 200, or about 5 percent; school, 130, or about 3 percent, shopping, 560, or about 14 percent, social-recreation, 510, or about 13 percent; personal business, 460, or about 11 percent; and medical, 340, or about 9 percent. Able-bodied elderly persons in Kenosha County made 16,240 trips on an average day. The number of trips and approximate percent distribution by trip purpose for the able-bodied elderly are: home, 7,370, or about 45 percent; work, 960, or about 6 percent; shopping, 3,250, or about 20 percent; socialrecreation, 2,940, or about 18 percent; personal business, 1,360, or about 8 percent; and medical, 360, or about 2 percent.

<u>Walworth County</u>: In Walworth County transportation handicapped persons made a total of 1,060 trips on an average day. The number of trips made by the transportation handicapped by trip purpose and approximate percent distribution are: home, 490, or about 46 percent; work, 70, or about 6 percent; school, 160, or about 15 percent; shopping, 70, or about 6 percent; social-recreation, 170, or about 16 percent; personal business, 30, or about 3 percent; and medical, 70, or about 7 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. Able-bodied elderly persons in Walworth County made a total of 8,360 trips. The number of trips by trip purpose and approximate percent distribution for the able-bodied elderly are: home, 3,630, or about 43 percent; work, 510, or about 6 percent; school, 240, or about 3 percent; shopping, 1,360, or about 16 percent; socialrecreation, 1,290, or about 16 percent; personal business, 1,200, or about 14 percent; and medical, 130, or about 2 percent.

Kenosha Urbanized Area: The number of trips by trip purpose and the approximate percent distribution of trips made by transportation handicapped persons in the Kenosha urbanized area are: home, 1,360, or about 44 percent; work, 140, or about 5 percent; school, 70, or about 2 percent; shopping, 490, or about 16 percent, social-recreation, 450, or about 14 percent; personal business, 290, or about 9 percent; and medical, 280, also about 9 percent. A total of 3,080 trips were made by transportation handicapped persons in the Kenosha urbanized area on an average day. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. The able-bodied elderly in the Kenosha urbanized area made 14,390 trips on an average day. The number of trips made by the able-bodied elderly by trip purpose and the approximate percent distribution are: home, 6,440, or about 45 percent; work, 890, or about 6 percent; shopping, 2,550, or about 18 percent; social-recreation, 2,850, or about 20 percent; personal business, 1,360, or about 9 percent; and medical, 290, or about 2 percent.

<u>Kenosha Nonurbanized Area</u>: On an average day, the transportation handicapped persons in the Kenosha nonurbanized area made a total of 980 trips. The number of trips and the approximate percent distribution for the transportation handicapped in the Kenosha nonurbanized area are: home, 490, or about 50 percent; work, 60, or about 6 percent; school, 60, also about 6 percent; shopping, 70, or about 7 percent; social recreation, 60, or about 6 percent; personal business, 170, or about 18 percent; and medical, 70, or about 7 percent. Able-bodied elderly persons in the Kenosha nonurbanized area made a total of 1,850 trips on an average day. The number of trips made by the ablebodied elderly by trip purpose and approximate percent distribution is: home, 920, or about 50 percent; work, 70, or about 4 percent; shopping, 700, or about 38 percent; socialrecreation, 80, or about 5 percent; and medical, 70, or about 4 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped and able-bodied elderly population.

Kenosha Transit Service Area: Transportation handicapped persons in the Kenosha transit service area made a total of 3,440 trips on an average day. By trip purpose the number of trips and approximate percent distribution for transportation handicapped persons are: home, 1,540, or about 45 percent; work, 200, or about 6 percent; school, 130, or about 4 percent; shopping, 490, or about 14 percent; socialrecreation, 500, or about 15 percent; personal business, 290, or about 8 percent; and medical, 280, or about 8 percent. In the Kenosha transit service area, able-bodied elderly persons made a total of 14,680 trips on an average day. By trip purpose the number of persons and approximate percent distribution for the ablebodied elderly are: home, 6,860, or about 45 percent; work, 890, or about 6 percent; shopping, 2,690, or about 18 percent; socialrecreation, 2,850, or about 19 percent; personal business, 1,360, or about 9 percent; and medical, 290, or about 2 percent.

Number of Person Trips of Institutionalized Transportation Handicapped Persons Per Week by Trip Purpose

Table 124 presents the number of trips made by institutionalized transportation handicapped persons during an average week by trip purpose for each of the subgeographic areas. Note that Tables 122 and 123 present the number of trips on an average day as found in the household survey for transportation handicapped persons and able-bodied elderly persons.

Kenosha County: Institutionalized residents in Kenosha County made a total of 1,600 trips during an average week. By trip purpose the number of trips and approximate percent distribution are: home, 800, or about 50 percent; work, 60, or about 4 percent; school, also 60,

			Kenos	ha County			
Trip Purpose		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Home	Number Percent	777 50.0	483 50.0	315 50.0	798 50.0	797 45.9	9,082 49.3
Work	Number Percent	63 4.1	0	63 10.0	63 3.9	0	1,803 9.8
School	Number Percent	63 4.1	0	63 10.0	63 4.0	0	2,466 13.4
Shopping	Number Percent	28 1.8	28 2.9	0	28 1.8	154 8.9	674 3.7
Social - Recreation	Number Percent	560 36.0	455 47.1	126 20.0	581 36.4	299 17.2	2,793 15.2
Personal Business	Number Percent	21 1.3	0	21 3.3	21 1.3	485 28.0	1,113 6.0
Medical	Number Percent	42 2.7	0	42 6.7	42 2.6	0	488 2.6
Total	Number Percent	1,554 100.0	966 100.0	630 100.0	1,596 100.0	1,735 100.0	18,419 100.0

#### NUMBER OF PERSON TRIPS PER WEEK MADE BY THE INSTITUTIONALIZED IN KENOSHA AND WALWORTH COUNTIES BY TRIP PURPOSE: 1977

Source: SEWRPC.

or about 4 percent; shopping, 30, or about 2 percent; social-recreation, 580, or about 36 percent; personal business, 20, or slightly over 1 percent; and medical, 40, slightly less than 3 percent.

Walworth County: A total of 1,740 trips were made in an average week by Walworth County institutionalized persons. The number of trips and approximate percent distribution by trip purpose are: home, 800, or about 46 percent; shopping, 150, or about 9 percent; socialrecreation, 300, or about 17 percent; and personal business, 490, or about 28 percent.

Kenosha Urbanized Area: By trip purpose the number of trips and approximate percent distribution are: home, 480, or about 50 percent; shopping, 30, or about 3 percent; and social-recreation, 460, or about 47 percent. A total of 970 trips were made by institutionalized transportation handicapped persons in the Kenosha urbanized area. Due to the low number of samples collected, respondents may not necessarily represent total institutionalized persons.

Kenosha Nonurbanized Area: Residents of institutions in the Kenosha nonurbanized area made a total of 630 trips during an average week. By trip purpose the number of trips and approximate percent distribution are: home, 320, or about 50 percent; work, 60, or about 10 percent; school, also 60, or about 10 percent; social-recreation, 130, or about 20 percent; personal business, 20, or about 3 percent; and medical, 40, or about 7 percent.

Kenosha Transit Service Area: In the Kenosha transit service area a total of 1,550 trips were made by institutionalized persons during an average week. The number of trips and approximate percent distribution by trip purpose are: home, 780, or about 50 percent; work, 60, or about 4 percent; school, also 60, or about 4 percent; shopping, 30, or about 2 percent; social-recreation, 560, or about 36 percent; personal business, 20, or about 1 percent; and medical, 40, or about 3 percent.

#### Number of Persons Trips of Transportation Handicapped Persons and Able-Bodied Elderly Persons on an Average Day by Mode of Travel

Tables 125 and 126 summarize the number of person trips made by transportation handicapped and able-bodied elderly persons on an average day by mode of travel for each subgeographic area. An understanding of the magnitude of trips made by both trip purpose and mode of travel is necessary when considering alternative transportation system improvements. These tables present the number of trips on an average day as found in the household survey by mode of travel. Average trips per week in the institution survey are shown in Table 127.

Kenosha County: Transportation handicapped residents in Kenosha County made a total of 4,050 trips during an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver, 850, or about 21 percent; auto passenger, 2,110, or about 52 percent; bus, 270, or about 7 percent; bike or walk, 390, or about 10 percent; and other, 440, or about 11 percent. By mode of travel and approximate percent distribution the number of trips made by able-bodied elderly persons in Kenosha County is: auto driver, 12,380, or about 76 percent; auto passenger, 2,290, or about 14 percent; bus, 830, or about 5 percent; and bike or walk, 740, or about 5 percent. In total able-bodied elderly persons made a total of 16,240 trips on an average day.

<u>Walworth County</u>: Transportation handicapped persons made a total of 1,060 trips on an average day in Walworth County. These trips were made by only three modes: auto driver, 140, or about 13 percent; auto passenger, 610, or about 58 percent; and special transportation, 300, or about 29 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. The number of trips and approximate percent distribution for the three modes of travel used by able-bodied elderly persons in Walworth County are: auto driver, 4,540, or about 54 percent; auto passenger, 3,230, or about 39 percent; and bike or walk, 580, or about 7 percent. In total ablebodied elderly persons made 8,360 trips in Walworth County.

Kenosha Urbanized Area: Transportation handicapped residents in the Kenosha urbanized area made a total of 3,080 trips on an average day. The number of trips and approximate percent distribution by mode of travel are: auto driver, 330, or about 11 percent; auto passenger, 1,770, or about 58 percent; bus, 150, or about 5 percent; bike or walk, 390, or about 13 percent; and other, 440, or about 14 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped population. By mode of travel the number of trips and approximate percent distribution for able-bodied elderly persons in the Kenosha urbanized area are: auto driver, 10,970, or about 76 percent; auto passenger, 1,850, or about 13 percent; bus, 830, or about 6 percent; and bike or walk, 740, or about 5 percent. In total able-bodied elderly persons in the Kenosha urbanized area made 14,390 trips on an average day.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area transportation handicapped persons made a total of 980 trips during an average day. The number of trips and the approximate percent distribution by mode of travel are: auto driver, 510, or about 53 percent; auto passenger, 340, or about 35 percent; bus, 120, or about 12 percent. Able-bodied elderly persons made a total of 1,850 trips during an average day in the Kenosha nonurbanized area. The number of trips and approximate percent distribution by mode of travel are: auto driver, 1,410, or about 76 percent, and auto passenger, 440, or about 24 percent. Due to the low number of samples collected, respondents may not necessarily represent the total transportation handicapped and able-bodied elderly population.

			Kenos	ha County			
Mode of Travel		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Auto Driver	Number Percent	573 16.7	332 10.8	514 52.5	846 20.9	140 13.3	9,978 22.3
Auto Passenger	Number Percent	1,768 51.4	1,768 57.5	343 35.1	2,111 52.1	611 57.9	22,065 49.4
Bus	Number Percent	268 7.8	147 4.8	121 12.4	268 6.6	0	2,603 5.8
Special Transport	Number Percent	0	0	0	0	304 28.8	4,259 9.5
Taxi	Number Percent	0	0	0	0	0	181 0.4
Bike or Walk	Number Percent	388 11.3	388 12.6	0	388 9.5	0	4,842 10.9
Other	Number Percent	441 12.8	441 14.3	0	441 10.9	0	747 1.7
Total	Number Percent	3,438 100.0	3,076 100.0	978 100.0	4,054 100.0	1,055 100.0	44,675 100.0

#### NUMBER OF PERSON TRIPS PER DAY MADE BY THE NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN KENOSHA AND WALWORTH COUNTIES BY MODE OF TRAVEL: 1977

Source: SEWRPC.

Kenosha Transit Service Area: In the Kenosha transit service area transportation handicapped persons made a total of 3,440 trips during an average day. By mode of travel the number of trips and approximate percent distribution are: auto driver, 570, or about 17 percent; auto passenger, 1,770, or about 51 percent; bus, 270, or about 8 percent; bike or walk, 390, or about 11 percent; and other, 440, or about 13 percent. Due to the low number of samples collected. respondents may not necessarily represent the total transportation handicapped population. Within the Kenosha transit service area ablebodied elderly persons made a total of 14,680 trips during an average day. By mode of travel the number of trips and approximate percent

distribution for the able-bodied elderly are: auto driver, 11,260, or about 77 percent; auto passenger, 1,850, or about 13 percent; bus, 830, or about 6 percent, and bike or walk, 740, or about 5 percent.

#### Number of Trips of Institutionalized Transportation Handicapped Persons Per Week by Mode of Travel

Table 127 presents the number of trips made during an average week by institutionalized persons. As noted, the number of trips per day by transportation handicapped persons and able-bodied elderly persons is shown in Tables 125 and 126. An understanding of the modes of travel currently being utilized by

			Kenos	sha County			
Mode of Travel		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Auto Driver	Number Percent	11,259 76.7	10,972 76.2	1,409 76.2	12,381 76.2	4,548 54.4	121,665 57.6
Auto Passenger	Number Percent	1,849 12.6	1,849 12.9	440 23.8	2,289 14.1	3,227 38.6	57,956 27.4
Bus	Number Percent	829 5.7	829 5.8	0	829 5.1	0	13,776 6.5
Special Transport	Number Percent	0	0	0	0	0	1,605 0.8
Taxi	Number Percent	0	0	0	0	0	696 0.3
Bike or Walk	Number Percent	739 5.0	739 5.1	0	739 4.6	583 7.0	15,106 7.1
Other	Number Percent	0	0	0	0	0	587 0.3
Total	Number Percent	14,676 100.0	14,389 100.0	1,849 100.0	16,238 100.0	8,358 100.0	211,391 100.0

#### NUMBER OF PERSON TRIPS PER DAY MADE BY THE ABLE-BODIED ELDERLY IN KENOSHA AND WALWORTH COUNTIES BY MODE OF TRAVEL: 1977

Source: SEWRPC.

institutionalized persons is necessary when evaluating future alternative transportation system improvements.

Kenosha County: In Kenosha County institutionalized persons made a total of 1,600 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto passenger, 190, or about 12 percent; bus, 80, or about 5 percent; special transportation, 340, or about 21 percent; taxi, 40, or about 3 percent; and bike or walk, 950, or about 59 percent.

Walworth County: In Walworth County a total of 1,740 trips were reported during an average week for institutionalized persons. The number of trips and approximate percent distribution by mode of travel are: auto driver, 270, or about 16 percent; auto passenger, 880, or about 51 percent; bus, 90, or about 5 percent; special transportation, 370, or about 22 percent; and bike or walk, 120, or about 7 percent.

Kenosha Urbanized Area: By trip purpose the number of trips and approximate percent distribution in the Kenosha urbanized area are: auto passenger, 20, or about 2 percent; special transportation, 40, or about 4 percent; and bike or walk, 900, or about 94 percent. In the Kenosha urbanized area institutionalized persons made a total of 970 trips during an average

			Keno				
Mode of Travel		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Auto Driver	Number Percent	0	0	0	0	270 15.6	630 3.4
Auto Passenger	Number Percent	147 9.5	21 2.2	168 26.6	189 11.8	882 50.8	3,932 21.4
Bus	Number Percent	84 5.4	0	84 13.3	84 5.3	92 5.3	3,359 18.2
Special Transportation	Number Percent	336 21.6	42 4.3	294 46.7	336 21.1	374 21.6	7,915 43.0
Тахі	Number Percent	42 2.7	0 	42 6.7	42 2.6	0	42 0.2
Bike or Walk	Number Percent	945 60.8	903 93.5	42 6.7	945 59.2	117 6.7	2,541 13.8
Total	Number Percent	1,554 100.0	966 100.0	630 100.0	1,596 100.0	1,735 1 <b>0</b> 0.0	18,419 100.0

#### NUMBER OF PERSON TRIPS PER WEEK MADE BY THE INSTITUTIONALIZED IN KENOSHA AND WALWORTH COUNTIES BY MODE OF TRAVEL: 1977

Source: SEWRPC.

week. Due to the low number of samples, collected, respondents may not necessarily represent the total institutionalized population.

Kenosha Nonurbanized Area: During an average week 630 trips were recorded for institutionalized persons. By mode of travel the number of trips and approximate percent distribution are: auto passenger, 170, or about 27 percent; bus, 80, or about 13 percent; special transportation, 290, or about 47 percent; taxi, 40, or about 7 percent; and bike or walk, 40, also about 7 percent.

Kenosha Transit Service Area: In the Kenosha transit service area institutionalized persons reported 1,550 trips during an average week. By mode of travel the number of trips and approximate percent distribution are: auto passenger, 150, or about 10 percent; bus, 80, or about 5 percent; special transportation, 340, or about 22 percent; taxi, 40, or about 3 percent; and bike or walk, 950, or about 61 percent.

Transportation Handicapped Persons

by Number of Trips Per Day: Household Survey Table 128 presents the number of transportation handicapped persons by the number of trips per day as reported on the household survey. When considering alternatives for improving transportation systems, it is important to plan adequately for the number of persons who might reasonably be expected to make trips on an average day. Therefore, the information presented here and the information in Table 128 on institutionalized persons are of interest in the planning process.

Kenosha County: In Kenosha County the number of persons and approximate percent distribution by number of trips per day are: none, 1,750, or about 54 percent; one or two, 1,020, or about 31 percent; and three or more, 490, or about 15 percent. In total there are 3,250 transportation handicapped persons in Kenosha County living in private households.

<u>Walworth County</u>: Of the 1,200 transportation handicapped persons residing in private households in Walworth County, the number of persons and approximate percent distribution by number of trips per day are: none, 750, or about 62 percent; one or two, 370, or about 31 percent; and three or more, 80, or about 6 percent.

Kenosha Urbanized Area: Of the 2,280 transportation handicapped persons living in private households in the Kenosha urbanized area, the number of persons and approximate percent distribution by number of trips per day are: none, 1,120, or about 49 percent; one or two, 820, or about 36 percent; and three or more, 340, or about 15 percent.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area the number of persons residing in private households and the approximate percent distribution by number of trips per day are: none, 630, or about 65 percent; one or two, 200, or about 20 percent; and three or more, 150, or about 15 percent. In total there are 970 transportation handicapped persons in the Kenosha nonurbanized area living in private households.

Kenosha Transit Service Area: In the Kenosha transit service area the number of persons residing in private households and the approximate percent distribution by number of trips per day are: none, 1,210, or about 49 percent; one or two, 880, or about 35 percent; and three or more, 400, or about 16 percent.

#### **Transportation Handicapped Persons**

#### by Number of Trips Per Week:

#### Institution Survey

Table 129 presents the number of institutionalized persons by the number of trips per week as reported in the institution survey. Information on the number of transportation handicapped persons residing in private households is presented in Table 128.

Kenosha County: The number of institutionalized persons and the approximate percent distribution by number of trips per week in Kenosha County are: none, 690, or about 68 percent; one or two, 140, or about 14 percent; and three or more, 180, or about 18 percent. Living within Kenosha County are 1,020 persons in institutions.

#### Table 128

#### NONINSTITUTIONALIZED TRANSPORTATION HANDICAPPED IN KENOSHA AND WALWORTH COUNTIES BY NUMBER OF TRIPS PER DAY: 1977

			Kenos	ha County			
Trips Per Day		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
None	Number	1,206	1,123	630	1,753	748	28,387
	Percent	48.5	49.2	64.8	53.9	62.4	61.7
1 or 2	Number	879	819	196	1,015	374	12,370
	Percent	35.4	35.9	20.2	31.2	31.2	26.9
3 or More	Number	400	340	146	486	77	5,245
	Percent	16.1	14.9	15.0	14.9	6.4	11.4
Total	Number	2,485	2,282	972	3,254	1,199	46,002
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

			Kenos				
Trips Per Week		Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
None	Number	525	21	672	693	537	12,702
	Percent	63.6	13.6	78.1	68.3	58.7	77.5
1 or 2	Number	119	14	126	140	100	1,750
	Percent	14.4	9.1	14.6	13.8	10.9	10.7
3 or More	Number	182	119	63	182	278	1,940
	Percent	22.0	77.3	7.3	17.9	30.4	11.8
Total	Number	826	154	861	1,015	915	16,392
	Percent	100.0	100.0	100.0	100.0	100.0	100.0

#### INSTITUTIONALIZED PERSONS IN KENOSHA AND WALWORTH COUNTIES BY NUMBER OF TRIPS PER WEEK: 1977

Source: SEWRPC.

Walworth County: Residing in institutions in Walworth County are 920 persons. Of these persons the number of persons and approximate percent distribution by trips per week are: none, 540, or about 59 percent; one or two, 100, or about 11 percent; and three or more, 280, or about 30 percent.

Kenosha Urbanized Area: The number of institutionalized persons and approximate percent distribution by trips per week in the Kenosha urbanized area are: none, 20, or about 14 percent; one or two, 10, or about 9 percent; and three or more, 120, or about 77 percent. In total only 150 institutionalized persons live in the Kenosha urbanized area. Due to the low number of samples collected, respondents may not necessarily represent the total institutionalized population.

Kenosha Nonurbanized Area: Residing in the Kenosha nonurbanized area are 860 institutionalized persons. Of these persons the number of persons and approximate percent distribution by number of trips per week are: none, 670, or about 78 percent; one or two, 130, or about 15 percent; and three or more, 60, or about 7 percent.

Kenosha Transit Service Area: Living within the Kenosha transit service area in institutions are 830 persons. The number of persons and approximate percent distribution by number of trips per week in the Kenosha transit service area are: none, 530, or about 64 percent; one or two, 120, or about 14 percent; and three or more, 180, or about 22 percent.

#### Barriers to Public Bus Use Perceived by Transportation Handicapped Persons: Household Survey

Transportation handicapped persons have a variety of impediments to travel. Previously presented were the behavioral characteristics of the transportation handicapped persons by subarea. Summarized in this section are the perceived barriers to travel of transportation handicapped persons living in private households. The discussion by subarea here presents the percent distribution by degree of difficulty (see Table 130).

Kenosha County: In Kenosha County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 23.5,

#### PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE TRANSPORTATION HANDICAPPED IN KENOSHA AND WALWORTH COUNTIES: 1977

			Kenosł	a County			
		Transit					
	Degree of	Service	Urbanized	Nonurbanized		Walworth	
Barrier	Difficulty	Area	Area	Area	Total	County	Region
Reading Schedules	Severe	19.1	20.8	29.9	23.5	31.9	26.8
and Maps	Some	10.3	8.6	6.2	7.9	17.7	18.7
	None	70.6	70.6	63.9	68.6	50.4	54.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Getting Information	Severe	21.3	20.6	29.1	23.1	32.7	14.7
by Phone	Some	11.8	12.8	0.0	9.0	24.4	7.5
	None	66.9	66.6	70.9	67.9	42.9	37.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Walking on Uneven	Severe	46.5	45.3	51.1	47.0	59.3	48.0
Ground and Slopes	Some	26.8	29.3	22.7	27.4	40.7	39.8
	None	26.7	25.4	26.2	25.6		12.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Crossing Streets and	Severe	34.7	34,2	46.0	37.6	48.6	39.8
Curbs	Some	23.5	21.3	24.1	22.1	37.1	36.8
	None	41.8	44.5	29.9	40.3	14.3	23.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Going Out in Bad	Severe	61.4	64.2	71.2	66.4	53.8	56.0
Weather	Some	29.8	29.9	20.3	26.9	43.3	35.3
	None	8.8	5.9	8.5	6.7	2.9	8.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Waiting for Bus	Severe	44.4	45.7	50.2	47.1	56.5	48.2
	Some	34.3	34.8	34.3	34.6	31.4	34.2
	None	21.3	19.5	15.5	18.3	12.1	17.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Standing at Bus Stop	Severe	53.6	53.0	60.6	55.2	56.5	48.3
	Some	29.4	28.4	24.3	27.2	34.3	34.1
	None	17.0	18.6	15.1	17.6	9.2	17.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Climbing Bus Steps	Severe	45.2	42.3	51.9	45.1	63.0	52.7
	Some	37.0	39.0	15.4	32.2	37.0	30.5
	None	17.8	18.7	32.7	22.7		16.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0

			Kenosł		1		
Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Negotiating Crowds on Buses	Severe Some None	25.9 36.5 37 6	25.5 39.9 34.6	29.4 7.0 63.6	26.6 29.9 43.5	56.0 35.1 8 9	41.3 34.6 24 1
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Handling Change and Transfers	Severe Some None Total	18.9 17.8 63.3 100.0	17.9 15.7 66.4 100.0	29.1 8.5 62.4 100.0	21.2 13.6 65.2 100.0	46.4 17.6 36.0 100.0	25.2 24.5 50.3 100.0
Getting a Seat Before Bus Starts	Severe Some None	25.2 42.4 32.4	22.0 42.6 35.4	42.2 22.6 35.2	28.2 36.5 35.3	49.9 38.3 11.8	41.5 36.2 22.3
Standing When Seat is Unavailable	Severe Some None	58.0 29.6 12.4	57.9 32.4 9.7	63.4 7.0 29.6	59.6 24.5 15.9	71.6	57.3 28.5 14.2
Affording Bus Fare	Severe Some None Total	5.2 19.3 75.5 100.0	5.7 18.4 75.9 100.0	7.0 20.3 72.7 100.0	6.0 19.0 75.0 100.0	28.9 36.0 35.1	14.9 20.8 64.3 100.0
Sitting on Seats	Severe Some None Total	16.7 3.5 79.8 100.0	12.6 3.9 83.5 100.0	45.5 7.5 47.0 100.0	22.4 5.0 72.6	37.2 22.8 40.0	22.2 18.8 59.0 100.0
Reaching Buzzer Cord	Severe Some None Total	16.7 12.3 71.0 100.0	12.6 13.5 73.9 100.0	42.3 7.0 50.7 100.0	21.9 11.4 66.7 100.0	37.3 25.7 37.0 100.0	27.2 21.3 51.5 100.0

Source: SEWRPC.

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some 7.9, and none 68.6; getting information by phone—severe 23.1, some 9.0, and none 67.9; walking on uneven ground and slopes-severe 47.0, some 27.4, and none 25.6; crossing streets and curbs-severe 37.6, some 22.1, and none 40.3; going out in bad weather-severe 66.4, some 26.9, and none 6.7; waiting for a bussevere 47.1, some 34.6, and none 18.3; standing at bus stop-severe 55.2, some 27.3, and none 17.6; climbing bus steps-severe 45.1, some 32.2, and none 22.7; negotiating crowds on buses-severe 26.6, some 29.9, and none 43.5; handling change and transfers-severe 21.2, some 13.6, and none 65.2; getting a seat before bus starts-severe 28.2, some 36.5, and none 35.3; standing when seat is unavailable—severe 59.6, some 24.5, and none 15.9; affording bus fare—severe 6.0, some 19.0, and none 75.0; sitting on seat—severe 22.4, some 5.0, and none 72.6; reaching buzzer cord-severe 21.9, some 11.4, and none 66.7.

Walworth County: In Walworth County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 31.9, some 17.7, and none 50.4; getting information by phone—severe 32.7, some 24.4, and none 42.9; walking on uneven ground and slopessevere 59.3, some 40.7, and none 0.0; crossing streets and curbs-severe 48.6, some 37.1, and none 14.3; going out in bad weather-severe 53.8, some 43.3, and none 2.9; waiting for bussevere 56.5, some 31.4, and none 12.1; standing at bus stop-severe 56.5, some 34.3, and none 9.2; climbing bus steps—severe 63.0, some 37.0, and none 0.0; negotiating crowds on buses—severe 56.0, some 35.1, and none 8.9; handling change and transfers-severe 46.4, some 17.6, and none 36.0; getting a seat before bus starts-severe 49.9, some 38.3, and none 11.8; standing when seat is unavailable-severe 71.6, some 28.4, and none 0.0; affording bus fare—severe 28.9, some 36.0, and none 35.1; sitting on seat-severe 37.2, some 22.8, and none 40.0; reaching buzzer cord-severe 37.3, some 25.7, and none 37.0.

Kenosha Urbanized Area: In the Kenosha urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 20.8, some 8.6, and none 70.6; getting information by phone—severe 20.6, some 12.8, and none 66.6; walking on uneven ground and slopes—severe 45.3, some 29.3, and none 25.4; crossing streets and curbs—severe 34.2, some 21.3, and none 44.5;

going out in bad weather-severe 64.2, some 29.9, and none 5.9; waiting for bus-severe 45.7, some 34.8, and none 19.5; standing at bus stop-severe 53.0, some 28.4, and none 18.6; climbing bus steps—severe 42.3, some 39.0, and none 18.7; negotiating crowds on busessevere 25.5, some 39.9, and none 34.6; handling change and transfers-severe 17.9, some 15.7, and none 66.4; getting a seat before bus startssevere 22.0, some 42.6, and none 35.4; standing when seat is unavailable-severe 57.9, some 32.4, and none 9.7; affording bus fare-severe 5.7, some 18.4, and none 75.9; sitting on seatsevere 12.6, some 3.9, and none 83.5; reaching buzzer cord-severe 12.6, some 13.5, and none 73.9.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 29.9, some 6.2, and none 63.9; getting information by phonesevere 29.1, some 0.0, and none 70.9; walking on uneven ground and slopes—severe 51.1, some 22.7, and none 26.2; crossing streets and curbs-severe 46.0, some 24.1, and none 29.9; going out in bad weather-severe 71.2, some 20.3, and none 8.5; waiting for a bus-severe 50.2, some 34.3, and none 15.5; standing at bus stop—severe 60.6, some 24.3, and none 15.1; climbing bus steps-severe 51.9, some 15.4, and none 32.7; negotiating crowds on busessevere 29.4, some 7.0, and none 63.6; handling change and transfers-severe 29.1, some 8.5, and none 62.4; getting a seat before bus starts severe 42.2, some 22.6, and none 35.2; standing when seat is unavailable-severe 63.4, some 7.0, and none 29.6; affording bus fare-severe 7.0, some 20.3, and none 72.7; sitting on seatsevere 45.5, some 7.5, and none 47.0; reaching buzzer cord-severe 42.3, some 7.0, and none 50.7.

Kenosha Transit Service Area: In the Kenosha transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 19.1, some 10.3, and none 70.6; getting information by phone severe 21.3, some 11.8, and none 66.9; walking on uneven ground and slopes—severe 46.5, some 26.8, and none 26.7; crossing streets and curbs—severe 34.7, some 23.5, and none 41.8; going out in bad weather—severe 61.4, some 29.8, and none 8.8; waiting for a bus—severe 44.4, some 34.3, and none 21.3; standing at bus stop—severe 53.6, some 29.4, and none 17.0; climbing bus steps—severe 45.2, some 37.0, and none 17.8; negotiating crowds on buses severe 25.9, some 36.5, and none 37.6; handling change and transfers—severe 18.9, some 17.8, and none 63.3; getting a seat before bus starts severe 25.2, some 42.4, and none 32.4; standing when seat is unavailable—severe 58.0, some 29.6, and none 12.4; affording bus fare—severe 5.2, some 19.3, and none 75.5; sitting on seat severe 16.7, some 3.5, and none 79.8; reaching buzzer cord—severe 16.7, some 12.3, and none 71.0.

#### Barriers to Public Bus Use Perceived by Able Bodied Elderly Persons: Household Survey

Summarized here are the perceived barriers to travel of able-bodied elderly persons living in private households. Table 131 presents by subarea the percent distribution by degree of difficulty.

Kenosha County: In Kenosha County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.0, some 6.4, and none 93.6; getting information by phone-severe 0.0, some 4.9, and none 95.1; walking on uneven ground and slopes-severe 4.0, some 11.6, and none 84.4; crossing streets and curbs-severe 0.0, some 5.8, and none 94.2; going out in bad weather-severe 0.0, some 28.8, and none 71.2; waiting for a bus-severe 1.0, some 10.2, and none 88.8; standing at bus stop severe 0.0, some 8.9, and none 91.1; climbing bus steps-severe 0.9, some 13.0, and none 86.1; negotiating crowds on buses—severe 0.0, some 4.9, and none 95.1; handling change and transfers-severe 0.0, some 1.0, and none 99.0; getting a seat before bus starts—severe 0.9, some 6.2, and none 92.9; standing when seat is unavailable—severe 5.3, some 9.6, and none 85.1; affording bus fare-severe 0.0, some 2.1, and none 97.9; sitting on seats—severe and some, both 0.0, and none 100.0; reaching buzzer cord—severe 0.0, some 2.2, and none 97.8.

Walworth County: In Walworth County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.6, some 5.7, and none 93.7; getting information by phone—severe 1.9, some 3.8, and none 94.3; walking on uneven ground and slopes—severe 3.2, some 12.5, and none 84.3; crossing streets and curbs—severe 0.6, some 4.4, and none 95.0; going out in bad weather—severe 5.7, some 16.9, and none 77.4; waiting for a bus—severe 1.3, some 8.7, and none 90.0; standing at bus stop—severe 2.6, some 11.2, and none 86.2; climbing bus steps—severe 1.2, some 8.9, and none 89.9; negotiating crowds on buses—severe 1.3, some 7.0, and none 91.7; handling change and transfers—severe 0.7, some 1.9, and none 97.4; getting a seat before bus starts—severe 0.0, some 6.3, and none 93.7; standing when seat is unavailable—severe 4.5, some 13.2, and none 82.3; affording bus fare—severe 0.7, some 8.9, and none 90.4; sitting on seat—severe 0.0, some 2.6, and none 97.4; reaching buzzer cord—severe 0.7, some 1.2, and none 98.1.

Kenosha Urbanized Area: In the Kenosha urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.0, some 8.5, and none 91.5; getting information by phone-severe 0.0, some 6.6, and none 93.4; walking on uneven ground and slopes—severe 4.1, some 13.8, and none 82.1; crossing streets and curbs—severe 0.0, some 7.7, and none 92.3; going out in bad weather-severe 0.0, some 35.4, and none 64.6; waiting for a bus-severe 1.4, some 9.8, and none 88.8; standing at bus stop—severe 0.0, some 10.5, and none 89.5; climbing bus stepssevere 0.0, some 16.0, and none 84.0; negotiating crowds on buses-severe 0.0, some 6.6, and none 93.4; handling change and transfers—severe 0.0, some 1.3, and none 98.7; getting a seat before bus starts-severe 1.3, some 7.0, and none 91.7; standing when seat is unavailablesevere 7.1, some 11.5, and none 81.4; affording bus fare—severe 0.0, some 1.5, and none 98.5; sitting on seat—severe and some, both 0.0, and none 100.0; reaching buzzer cord-severe 0.0, some 2.9, and none 97.1.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe and some, both 0.0, and none 100.0; getting information by phone-severe and some, both 0.0, and none 100.0; walking on uneven ground and slopessevere 3.8, some 4.6, and none 91.6; crossing streets and curbs—severe and some, both 0.0, and none 100.0; going out in bad weather-severe 0.0, some 8.4, and none 91.6; waiting for a bussevere 0.0, some 11.4, and none 88.6; standing at bus stop-severe 0.0, some 3.9, and none 96.1; climbing bus steps—severe 3.8, some 3.8, and none 92.4; negotiating crowds on busessevere and some, both 0.0, and none 100.0;

#### PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE ABLE-BODIED ELDERLY IN KENOSHA AND WALWORTH COUNTIES: 1977

		Kenosha County					
Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Reading Maps and Schedules	Severe Some	8.1	8.5		6.4	0.6 5.7	0.4 7.1
	None	91.9	91.5	100.0	93.6	93.7	92.5
		100.0	100.0	100.0	100.0	100.0	100.0
Getting Information by Phone	Severe Some None	6.3 93.7	6.6 93.4	  100.0	4.9 95.1	1.9 3.8 94.3	.4 3.1 96.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Walking on Uneven Ground and Slopes	Severe Some None	4.0 13.3 82.7	4.1 13.8 82.1	3.8 4.6 91.6	4.0 11.6 84.4	3.2 12.5 84.3	1.1 19.8 79.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Crossing Streets and Curbs	Severe Some None	7.4 92.6	7.7		5.8 94.2	.6 4.4 95.0	.6 10.0 89.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Going Out in Bad Weather	Severe Some None	34.1 65.9	35.4 64.6	8.4 91.6	28.8 71.2	5.7 16.9 77.4	5.1 28.5 66.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Waiting for Bus	Severe Some None	1.3 9.5 89.2	1.4 9.8 88.8	 11.4 88.6	1.0 10.2 88.8	1.3 8.7 90.0	1.9 18.6 79.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Standing at Bus Stop	Severe Some None Total	10.1 89.9 100.0	10.5 89.5 100.0	3.9 96.1 100.0	8.9 91.1 100.0	2.6 11.2 86.2 100.0	1.8 17.6 80.6 100.0
Climbing Bus Steps	Severe Some None Total	15.4 84.6 100.0	16.0 84.0 100.0	3.8 3.8 92.4 100.0	.9 13.0 86.1 100.0	1.2 8.9 89.9 100.0	1.5 12.3 86.2 100.0

		Kenosha County					
Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Negotiating Crowds	Severe					1.3	.9
on Buses	Some None	6.3 93.7	6.6 93.4	 100.0	4.9 95.1	7.0 91.7	9.9 89.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Handling Change and Transfers	Severe Some	1.3	1.3		 1.0	.7 1.9	.3 3.1
	None	98.7	98.7	100.0	99.0	97.4	96.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Getting a Seat Before Bus Starts	Severe Some None	1.2 6.7 92.1	1.3 7.0 91.7	3.8 96.2	.9 6.2 92.9	6.3 93.7	1.0 10.4 88.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Standing When Seat Is Unavailable	Severe Some None	6.8 11.1 82.1	7.1 11.5 81.4	3.8 96.2	5.3 9.6 85.1	4.5 13.2 82.3	3.3 18.3 78.4
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Affording Bus Fare	Severe Some None	1.4 98.6	1.5 98.5	3.8 96.2	2.1 97.9	.7 8.9 90.4	.3 5.9 93.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Sitting on Seats	Severe Some None	100.0		100.0	100.0	2.6 97.4	.1 1.4 98.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer Cord	Severe Some None	2.8 97.2	2.9 97.1	  100.0	2.2 97.8	.7 1.2 98.1	.1 1.7 98.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0

handling change and transfers—severe and some, both 0.0, and none 100.0; getting a seat before bus starts—severe 0.0, some 3.8, and none 96.2; standing when seat is unavailable severe 0.0, some 3.8, and none 96.2; affording bus fare—severe 0.0, some 3.8, and none 96.2; sitting on seat—severe and some, both 0.0, and none 100.0; reaching buzzer cord—severe and some, both 0.0, and none 100.0.

Kenosha Transit Service Area: In the Kenosha transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 0.0, some 8.1, and none 91.9; getting information by phone-severe 0.0, some 6.3, and none 93.7; walking on uneven ground and slopes-severe 4.0, some 13.3, and none 82.7; crossing streets and curbs-severe 0.0, some 7.4, and none 92.6; going out in bad weather—severe 0.0, some 34.1, and none 65.9; waiting for a bus—severe 1.3, some 9.5, and none 89.2; standing at bus stop—severe 0.0, some 10.1, and none 89.9; climbing bus steps severe 0.0, some 15.4, and none 84.6; negotiating crowds on buses—severe 0.0, some 6.3, and none 93.7; handling change and transfers—severe 0.0, some 1.3, and none 98.7; getting a seat before bus starts-severe 1.2, some 6.7, and none 92.1; standing when seat is unavailablesevere 6.8, some 11.1, and none 82.1; affording bus fare-severe 0.0, some 1.4, and none 98.6; sitting on seat—severe and some, both 0.0, and none 100.0; reaching buzzer cord—severe 0.0, some 2.8, and none 97.2.

## Barriers to Public Bus Use Perceived by Institutionalized Persons:

Institution Survey

Table 132 presents the percent distribution to each of the barrier questions. Summarized here are the perceived barriers to travel of persons living in institutions.

Kenosha County: In Kenosha County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 46.2, some 20.0, and none 33.8; getting information by phone—severe 46.9, some 24.1, and none 29.0; walking on uneven ground and slopes severe 54.9, some 19.0, and none 26.1; crossing streets and curbs—severe 55.9, some 18.6, and none 25.5; going out in bad weather—severe 47.6, some 28.3, and none 24.1; waiting for a bus severe 55.9, some 17.9, and none 26.2; standing at bus stop—severe 55.9, some 16.5, and none 27.6; climbing bus steps—severe 51.7, some 16.6, and none 31.7; negotiating crowds on buses—severe 16.9, some 14.1, and none 69.0; handling change and transfers—severe 28.3, some 28.3, and none 43.4; getting to a seat before bus starts—severe 57.9, some 16.6, and none 25.5; standing when seat is unavailable—severe 64.1, some 14.5, and none 21.4; affording bus fare—severe 2.1, some 29.6, and none 68.3; sitting on bus seat—severe 28.1, some 8.6, and none 63.3; reaching buzzer cord—severe 47.6, some 4.1, and none 48.3.

Walworth County: In Walworth County the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 33.1, some 10.5, and none 56.4; getting information by phone-severe 30.2, some 11.0, and none 58.8; walking on uneven ground and slopes severe 45.1, some 27.0, and none 27.9; crossing streets and curbs—severe 45.1, some 17.5, and none 37.4; going out in bad weather—severe 44.7, some 21.5, and none 33.8; waiting for a bussevere 42.6, some 10.9, and none 46.5; standing at bus stop—severe 42.6, some 14.4, and none 43.0; climbing bus steps—severe 46.3, some 16.4, and none 37.3; negotiating crowds on buses-severe 38.2, some 17.9, and none 43.9; handling change and transfers—severe 32.1, some 14.6, and none 53.3; getting to a seat before bus starts-severe 42.6, some 7.0, and none 50.4; standing when seat is unavailablesevere 47.1, some 12.0, and none 40.9; affording bus fare-severe 27.7, some 5.0, and none 67.3; sitting on bus seat—severe 34.0, some 4.5 and none 61.5; reaching buzzer cord-severe 39.1, some 3.5, and none 57.4.

Kenosha Urbanized Area: In the Kenosha urbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 31.8, some 22.7, and none 45.5; getting information by phone—severe 22.7, some 36.4, and none 40.9; walking on uneven ground and slopes-severe 0.0, some 15.8, and none 84.2; crossing streets and curbs-severe 0.0, some 13.6, and none 86.4; going out in bad weather-severe 0.0, some 50.0, and none, also 50.0; waiting for a bus-severe 0.0, some 22.7, and none 77.3; standing at bus stop—severe 0.0, some 13.6, and none 86.4; climbing bus stepssevere 0.0, some 13.6, and none 86.4; negotiating crowds on buses-severe 0.0, some 22.7, and none 77.3; handling change and transfers-
severe 22.7, some 36.4, and none 40.9; getting to a seat before bus starts—severe 0.0, some 13.6, and none 86.4; standing when seat is unavailable—severe 0.0, some 13.6, and none 86.4; affording bus fare—severe 0.0, some 45.5, and none 54.5; sitting on bus seat—severe 0.0, some 13.6, and none 86.4; reaching buzzer cord—severe and some, both 0.0, and none 100.0.

Kenosha Nonurbanized Area: In the Kenosha nonurbanized area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps—severe 48.8, some 19.5, and none 31.7; getting information by phonesevere 51.2, some 22.0, and none 26.8; walking on uneven ground and slopes-severe 63.4, some 19.5, and none 17.1; crossing streets and curbs-severe 65.9, some 19.5, and none 14.6; going out in bad weather-severe 56.1, some 24.4, and none 19.5; waiting for a bus-severe 65.8, some 17.1, and none, also 17.1; standing at bus stop—severe 65.8, some 17.1, and none, also 17.1; climbing bus steps—severe 61.0, some 17.1, and none 21.9; negotiating crowds on buses—severe 20.0, some 12.5, and none 67.5; handling change and transfers-severe 29.3, some 26.8, and none 43.9; getting to a seat before bus starts—severe 68.3, some 17.1, and none 14.6; standing when seat is unavailablesevere 75.6, some 14.6, and none 9.8; affording bus fare-severe 2.5, some 26.8, and none 70.7; sitting on bus seat-severe 33.3, some 7.7, and none 59.0; reaching buzzer cord—severe 56.1, some 4.9, and none 39.0.

Kenosha Transit Service Area: In the Kenosha transit service area the degree of difficulty expressed as a percent by barrier is: reading schedules and maps-severe 46.6, some 17.0, and none 36.4; getting information by phonesevere 44.9, some 22.0, and none 33.1; walking on uneven ground and slopes—severe 52.2, some 15.7, and none 32.1; crossing streets and curbssevere 50.9, some 20.3, and none 28.8; going out in bad weather-severe 40.6, some 29.7, and none, also 29.7; waiting for a bus-severe 53.4, some 14.4, and none 32.2; standing at bus stop—severe 53.4, some 12.7, and none 33.9; climbing bus steps—severe 45.8, some 15.2, and none 39.0; negotiating crowds on busessevere 12.7, some 11.9, and none 75.4; handling change and transfers—severe 22.0, some 27.1. and none 50.9; getting to a seat before bus starts-severe 53.4, some 15.3, and none 31.3; standing when seat is unavailable-severe 58.5, some 15.2, and none 26.3; affording bus faresevere 2.5, some 33.9, and none 63.6; sitting on bus seat—severe 31.3, some 2.6, and none 66.1; reaching buzzer cord—severe 45.8, some 2.5, and none 51.7.

# SUMMARY

This chapter presents the basic characteristics and attitudes affecting current travel reported in the Commission's transportation handicapped and able-bodied elderly inventory. An understanding of current travel habits and attitudes is essential in determining effectiveness of alternatives on new and improved transportation system services. Comparison on an overall basis to independent and secondary source data demonstrated the reliability of the inventory data. More specifically, accuracy check comparisons made as part of the planning process indicate that:

- 1. The numbers of occupied housing units in 1976 and in the 1970 census and the 1972 Commission home interview survey are consistent and agree with development trends occurring within the Region between 1970 and 1976.
- 2. Total population estimates for persons living in private households and institutions included in this study vary by less than one-tenth of 1 percent when compared to Wisconsin Department of Administration 1976 population estimates.
- 3. The average of 3.10 persons per household reflects the existing trend toward smaller household size compared to the 1970 census finding of 3.20 persons per household.
- 4. A total of 8.3 percent more automobiles available is reported in the inventory than by an independent Commission estimate of automobiles available based on Wisconsin Department of Transportation Motor Vehicle Registration Data for the fiscal year ending June 30, 1976. Nevertheless the comparisons indicate that the inventory data adequately represents automobile availability within acceptable ranges of accuracy.
- 5. Structure type reported in the inventory is markedly similar to the distributions obtained in the Commission 1972 home

#### Table 132

#### PERCENTAGE DISTRIBUTION OF BARRIERS TO PUBLIC BUS USE PERCEIVED BY THE INSTITUTIONALIZED IN KENOSHA AND WALWORTH COUNTIES: 1977

			Kenost				
		Transit					
	Degree of	Service	Urbanized	Nonurbanized		Walworth	
Barrier	Difficulty	Area	Area	Area	Total	County	Region
Reading Schedules	Severe	46.6	31.8	48.8	46.2	33.1	48.1
and Maps	Some	17.0	22.7	19.5	20.0	10.5	15.8
	None	36.4	45.5	31.7	33.8	56.4	36.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Getting Information	Severe	44.9	22.7	51.2	46.9	30.2	49.7
by Phone	Some	22.0	36.4	22.0	24.1	11.0	13.1
	None	33.1	40.9	26.8	29.0	58.8	37.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Walking on Uneven	Severe	52.2		63.4	54.9	45.1	55.7
Ground and Slopes	Some	15.7	15.8	19.5	19.0	27.0	21.4
	None	32.1	84.2	17.1	26.1	27.9	22.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Crossing Streets	Severe	50.9		65.9	55.9	45.1	57.9
and Curbs	Some	20.3	13.6	19.5	18.6	17.5	16.4
	None	28.8	86.4	14.6	25.5	37.4	25.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Going Out in Bad	Severe	40.6		56.1	47.6	44.7	62.7
Weather	Some	29.7	50.0	24.4	28.3	21.5	21.4
	None	29.7	50.0	19.5	24.1	33.8	15.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Waiting for a Bus	Severe	53.4		65.8	55.9	42.6	61.2
<b>j</b>	Some	14.4	22.7	17.1	17.9	10.9	16.9
	None	32.2	77.3	17.1	26.2	46.5	21.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Standing at Bus Stop	Severe	53.4		65.8	55.9	42.6	61 1
	Some	12 7	13.6	17 1	16.5	14 4	17.2
	None	33.9	86.4	17.1	27.6	43.0	21.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Climbing Bus Steps	Severe	45.8		61.0	517	16.2	50.2
	Some	15.0	13.6	17.1	166	16 /	17 0
	None	39.0	86.4	21.9	31.7	37.3	23.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0

			Kenos				
Barrier	Degree of Difficulty	Transit Service Area	Urbanized Area	Nonurbanized Area	Total	Walworth County	Region
Negotiating Crowds	Severe	12.7		20.0	16.9	38.2	55.3
on Buses	Some	11.9	22.7	12.5	14.1	17.9	18.1
	None	75.4	77.3	67.5	69.0	43.9	26.6
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Handling Change	Severe	22.0	22.7	29.3	28.3	32.1	53.4
and Transfers	Some	27.1	36.4	26.8	28.3	14.6	15.8
	None	50.9	40.9	43.9	43.4	53.3	30.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Getting to a Seat	Severe	53.4		68.3	57.9	42.6	58.8
Before Bus Starts	Some	15.3	13.6	17.1	16.6	7.0	17.4
	None	31.3	86.4	14.6	25.5	50.4	23.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Standing When Seat	Severe	58.5		75.6	64.1	47.1	62.8
is Unavailable	Some	15.2	13.6	14.6	14.5	12.0	16.1
	None	26.3	86.4	9.8	21.4	40.9	21.1
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Affording Bus Fare	Severe	2.5		2.5	2.1	27.7	29.6
	Some	33.9	45.5	26.8	29.6	5.0	19.1
	None	63.6	54.5	70.7	68.3	67.3	51.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Sitting on Bus Seats	Severe	31.3		33.3	28.1	34.0	47.1
	Some	2.6	13.6	7.7	8.6	4.5	10.6
	None	66.1	86.4	59.0	63.3	61.5	42.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Reaching Buzzer	Severe	45.8		56.1	47.6	39.1	53.7
Cord	Some	2.5		4.9	4.1	3.5	12.0
	None	51.7	100.0	39.0	48.3	57.4	34.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: SEWRPC.

interview survey. There is also a high degree of similarity between the inventory distributions of housing units and the 1970 census data, particularly when it is considered that the 1970 census data array is of total year-round housing units, regardless of vacancy status.

6. The trip rate of persons 65 years of age and older-transportation handicapped and able-bodied elderly-is 1.50 trips per day and compares favorably with a trip rate of 1.65 trips per day for persons in the same age group reported on the 1972 home interview survey. Trip rates are amazingly close, considering that there is a time difference of four and one-half years during which inflation and rising energy costs affected a greater proportion of those over 65 as opposed to those under 65 since many elderly persons are on fixed incomes and are more likely to reduce trip making as an economic necessity.

Overall, the data obtained in the household and institution inventories are considered to be very reliable, particularly on a large geographic area basis. It should be noted, however, that in certain subareas of the Region the number of samples collected is insufficient to adequately represent characteristics within that subarea and therefore the expanded data, although presented, may not adequately reflect characteristics and attitudes of the transportation handicapped and-able bodied elderly within that given subarea. The survey design required only that enough transportation handicapped and able-bodied elderly be surveyed to provide for reliability within the Milwaukee SMSA. Racine County, and the combined area of Kenosha and Walworth Counties. Accuracy check comparisons with independent and secondary sources demonstrate that these objectives were met.

Disaggregation of the inventory data into component geographic subareas reveals that certain subareas had an insufficient number of samples for reliability of the diverse data summaries presented herein. Specifically, on the household survey, samples of transportation handicapped in Ozaukee County, Walworth County, the Milwaukee nontransit area, the Racine nonurbanized area, the Kenosha urbanized area, the Kenosha nonurbanized area, and the Kenosha transit service area were not adequate to be reliably used. In the summaries pertaining to the able-bodied elderly population, the Milwaukee nontransit area and the Kenosha nonurbanized area do not meet minimums for sample reliability. On the institution inventories the Racine nonurbanized area and the Kenosha urbanized area have an insufficient number of samples, thereby not meeting minimums for sample reliability. Although accuracy of data in certain subareas is not precise, at the regional level and the level of most of the subareas defined here, the establishment of data sets will be useful in defining current conditions for planners and decision makers to make immediate decisions based on current needs. The data sets will be used also as a reference point from which measurement of transportation system changes can be made and compared at a future date.

Those findings discussed in the chapter which are salient to the transportation planning process or are significant for consideration in transportation plan development are summarized for the Region and for each of the subareas.

# Region

Disabilities affecting mobility and the approximate percent distribution, classified in descending order of occurrence for the 62,400 transportation handicapped, include: arthritis and related conditions, about 20 percent; conditions which impair the trunk, but leave the person ambulatory, about 15 percent; diseases and conditions associated with old age, also about 15 percent; conditions resulting from a stroke, about 12 percent; heart and other circulatory conditions, about 10 percent; conditions and diseases which impair the trunk, resulting in a nonambulatory state of being, less than 9 percent; diseases and conditions affecting vision, less than 8 percent; developmental disabilities, also about 8 percent; and a variety of other miscellaneous diseases and conditions affecting mobility, about 5 percent.

About 85 percent of the transportation handicapped in the Region do not have an auto available to drive and about 41 percent of the 125,200 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, approximately 19 percent never have an auto available to ride in. Of the total able-bodied elderly, about 12 percent of those who do not have an auto available to drive never have an auto available to ride in.

About 47 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 18 percent perceive that they can board a bus only directly in front of their houses; and about 35 percent perceive that they are able to reach a bus stop one or more blocks from their place of residence. About 57 percent of the transportation handicapped and about 75 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution or entering a vehicle, about 40 percent of the 16,400 institutionalized persons need to be carried. Also, upon reaching their destination about 69 percent of all institutionalized persons in the Region need accompaniment.

Approximately three-fourths of the trips made by the noninstitutionalized transportation handicapped—excluding trips home—are for purposes of social-recreation, personal business, and shopping. On an average day, the noninstitutionalized transportation handicapped make a total of approximately 44,700 trips. Such trips account for about 1 percent of the total trips made in the Region on an average weekday as reported in the 1972 inventory of travel. Of the total number of trips made by the noninstitutionalized transportation handicapped, approximately 49 percent are made as an auto passenger and 22 percent are made as an auto driver. Special transportation is utilized as a mode of travel in less than 10 percent of the trips, and a bus is utilized in less than 6 percent of the trips.

The able-bodied elderly make a total of 211,400 trips during an average day. When compared to the 1972 inventory of travel, these trips account for less than 5 percent of total tripmaking during an average weekday. The three largest tripmaking purposes—excluding home are social-recreation, shopping, and personal business, accounting for more than 87 percent of the trips. The majority, about 58 percent of trips, are made as an auto driver while 27 percent of the trips are made as an auto passenger. The institutionalized transportation handicapped make a total of 18,400 trips during an average week. The three most important trip purposes, accounting for about 76 percent of total tripmaking, are social-recreation, school, and work. Institutionalized persons make about 43 percent of all trips on special transportation services, 21 percent of all trips as an auto passenger, and 18 percent of all trips by bus. The on-board vehicle inventories revealed that users of special transportation services, in general, find the service comfortable, convenient, easy to use, safe, and reliable.

On an average day approximately 62 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 78 percent of the institutionalized persons do not make trips. The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, standing at a bus stop, and waiting for a bus.

#### Milwaukee SMSA

In the Milwaukee SMSA disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 50,200 transportation handicapped include: arthritis and related conditions, more than 21 percent; diseases and conditions associated with old age, less than 14 percent; conditions which impair the trunk but leave the person ambulatory, more than 13 percent; conditions resulting from a stroke, less than 13 percent; heart and other circulatory problems, less than 10 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, more than 8 percent; developmental disabilities, less than 8 percent; and a variety of other miscellaneous diseases and conditions affecting mobility, less than 5 percent.

Nearly 86 percent of the transportation handicapped do not have an auto available to drive and about 44 percent of the 100,400 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, more than 19 percent never have an auto available to ride in. Of the able-bodied elderly less than 13 percent of those persons who do not have an auto available to drive never have an auto available to ride in.

More than 48 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 15 percent perceive that they can only board a bus directly in front of their house; and more than 37 percent perceive that they are able to go one or more blocks to board a bus. About 56 percent of the transportation handicapped and more than 77 percent of the able-bodied elderly perceive that special transportation services are not available to them. Upon leaving an institution or entering a vehicle about 41 percent of the 13,300 institutionalized persons need to be carried. Upon reaching their destination about 70 percent of all institutionalized persons need accompaniment.

Approximately 74 percent of the trips made by the transportation handicapped—excluding home—are for the purposes of social-recreation, personal business, and shopping. On an average day these persons make a total of approximately 33,700 trips. Of this number, about 48 percent are made as an auto passenger and about 21 percent are made as an auto driver. Special transportation is utilized as a mode of travel in less than 11 percent of the trips and the bus is utilized in about 7 percent of the trips.

The able-bodied elderly make a total of 166,600 trips during an average day. The three largest trip purposes—other than home—are socialrecreation, shopping, and personal business, accounting for about 88 percent of the trips. The majority, 56 percent, of the trips made are as an auto driver, while 27 percent are made as an auto passenger.

Institutionalized persons make a total of 13,800 trips during an average week. The three most important trip purposes accounting for about 81 percent of total tripmaking are school, work, and social-recreation. Institutionalized persons travel primarily on special transportation services, about 49 percent of all trips, and as a bus passenger, about 22 percent of all trips, and as an auto passenger, about 17 percent of all trips. The on-board vehicle inventory revealed that users of Handicabs in Milwaukee find the service comfortable, convenient, easy to use, safe, and reliable.

On an average day approximately 63 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 80 percent of the institutionalized persons do not make trips. The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, climbing bus steps, and walking on uneven ground and slopes.

## Milwaukee Urbanized Area

Disabilities affecting mobility in the Milwaukee urbanized area and the approximate percent distribution classified in descending order of occurrence for the 45,000 transportation handicapped include: arthritis and related conditions. more than 21 percent; conditions which impair the trunk but leave the person ambulatory, more than 13 percent; conditions resulting from a stroke, also more than 13 percent; diseases and conditions associated with old age, more than 13 percent; heart and other circulatory conditions, less than 10 percent; diseases and conditions affecting vision, about 9 percent; developmental disabilities, about 8 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 8 percent; and a variety of other miscellaneous diseases and conditions affecting mobility, more than 4 percent.

About 87 percent of the transportation handicapped do not have an auto available to drive and about 45 percent of the 90,600 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 21 percent never have an auto available to ride in. In the able-bodied elderly classification, more than 13 percent of those who do not have an auto available to drive never have an auto available to ride in.

About 48 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 12 percent perceive that they can only board a bus directly in front of their house, and about 40 percent perceive that they are able to go one or more blocks to board a bus.

About 57 percent of the transportation handicapped and less than 79 percent of the ablebodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution or entering a vehicle about 42 percent of the 12,000 institutionalized persons need to be carried. Also, upon reaching their destination about 72 percent of all institutionalized persons need accompaniment.

Approximately 75 percent of the trips made by the noninstitutionalized transportation handicapped—exclusive of home—are for the purposes of social-recreation, personal business, and shopping. On an average day these persons make a total of approximately 30,100 trips. Of the total number of trips about 48 percent are made as an auto passenger and about 20 percent are made as an auto driver. Special transportation is utilized as a mode of travel in more than 10 percent of the trips and the bus is utilized in less than 7 percent of the trips.

The able-bodied elderly make a total of 151,100 trips during an average day. The three major trip purposes—excluding home—are socialrecreation, shopping, and personal business, accounting for approximately 88 percent of the trips. The majority, about 55 percent, of trips are made as an auto driver, while 27 percent are made as an auto passenger.

Institutionalized persons make a total of 13,300 trips during an average week. The most important trip purposes accounting for more than 81 percent of total tripmaking—excluding home are school, work, and social-recreation. The institutionalized travel primarily on special transportation services, about 51 percent of all trips, as bus passenger, about 23 percent of all trips, and as an auto passenger about 15 percent of all trips. As previously stated, the on-board vehicle inventories of Milwaukee Handicabs reveal that users of special transportation services, in general, find the service comfortable, convenient, easy to use, safe, and reliable.

On an average day about 64 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week more than 79 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped living in private households perceive that their severest barriers to use of a public bus are standing when a seat is not available, going out in bad weather, climbing bus steps, and walking on uneven ground and slopes.

#### Milwaukee Nonurbanized Area

In the Milwaukee nonurbanized area disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 5,200 transportation handicapped include: arthritis and related conditions, about 22 percent; diseases and conditions associated with old age, less than 19 percent; conditions which impair the trunk but leave the person ambulatory, about 12 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 11 percent: conditions resulting from a stroke, less than 9 percent; diseases and conditions affecting vision, about 8 percent; other diseases and conditions affecting mobility, about 8 percent; heart and other circulatory conditions, more than 7 percent; and developmental disabilities, about 4 percent.

Less than 76 percent of the transportation handicapped do not have an automobile available to drive and less than 32 percent of the 9,800 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 9 percent never have an auto available to ride in. Of those persons classed as able-bodied elderly, about 4 percent of those persons who do not have an auto available to drive never have an auto available to ride in.

About 49 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 35 percent perceive that they can board a bus directly in front of their house; and about 17 percent perceive that they are able to go one or more blocks to board a bus. About 48 percent of the transportation handicapped and about 66 percent of the ablebodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution about 41 percent of the 1,200 institutionalized persons need to be carried. Upon entering a vehicle, about 36 percent of the institutionalized persons need to be carried. Upon reaching their destination, about 57 percent of all institutionalized persons need accompaniment.

Approximately two-thirds of the trips made by the noninstitutionalized transportation handicapped—excluding trip purpose home—are for the purposes of social-recreation, shopping, and personal business. On an average day these persons make approximately 3,600 trips. Of these trips about 48 percent are made as an auto passenger and about 24 percent are made as an auto driver. Special transportation is utilized as a mode of travel in less than 12 percent of the trips and the bus is utilized in less than 5 percent of the trips.

The able-bodied elderly make a total of 15,500 trips during an average day. The three largest tripmaking purposes—excluding home—are social-recreation, shopping, and work, accounting for about 82 percent of the trips. The majority of trips made are as an auto driver, about 61 percent, while about 36 percent are made as an auto passenger.

Institutionalized persons make a total of 450 trips during an average week. The major trip purpose—exclusive of home—is socialrecreation. Approximately two-thirds of the trips are made as an auto passenger.

On an average day less than 57 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 87 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped living in private households perceive that their severest barriers to use of a public bus are climbing the bus steps, going out in bad weather, standing when a seat is unavailable, and walking on uneven ground and slopes.

## Milwaukee County

Disabilities affecting mobility and the approximate percent distribution classified according to descending order of occurrence for the 39,700 transportation handicapped in Milwaukee County include: arthritis and related conditions, less than 23 percent; conditions which impair the trunk but leave the person ambulatory, more than 13 percent; conditions resulting from a stroke, about 13 percent; diseases and conditions associated with old age, more than 12 percent; heart and other circulatory conditions. more than 10 percent; diseases and conditions affecting vision, less than 9 percent; developmental disabilities, less than 8 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, less than 8 percent; and a variety of other miscellaneous diseases and conditions affecting mobility, about 4 percent.

About 87 percent of the transportation handicapped do not have an auto available to drive and less than 46 percent of the 83,200 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 21 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, less than 14 percent never have an auto available to ride in.

About 46 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 12 percent perceive that they can only board a bus directly in front of their house; and about 42 percent perceive that they are able to go one or more blocks to board a bus. About 57 percent of the transportation handicapped and more than 79 percent of the able bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution about 40 percent of the 10,300 institutionalized persons need to be carried. Upon entering a vehicle, about 41 percent of the institutionalized need to be carried. Also, upon reaching their destination about 68 percent of all the institutionalized need accompaniment.

Approximately 78 percent of the trips made by the noninstitutionalized transportation handicapped, exclusive of trip purpose home, are for the purposes of social-recreation, personal business, and shopping. On an average day the noninstitutionalized transportation handicapped make a total of approximately 26,400 trips. Of these trips about 49 percent made are as an auto passenger and about 19 percent are made as an auto driver. Special transportation is utilized as a mode of travel in less than 10 percent of the trips and the bus is utilized in less than 8 percent of the trips.

The able-bodied elderly make a total of 137,700 trips during an average day. Exclusive of home, the three largest trip making purposes, accounting for more than 87 percent of the trips, are shopping, social-recreation, and personal business. The majority, about 55 percent, of trips made are as an auto driver, while about 26 percent are made as an auto passenger. Bus is utilized as a mode of travel in slightly less than 9 percent of the trips.

Institutionalized persons make 12,800 trips during an average week. The three most important trip purposes accounting for about 81 percent of total tripmaking are school, work, and social-recreation. Institutionalized persons travel primarily on special transportation services about 51 percent of all trips, as a bus passenger about 24 percent of all trips, and as an auto passenger somewhat less than 14 percent. The on-board user inventories reveal that users of special transportation services, specifically Milwaukee Handicabs, find the service convenient, easy to use, safe, and reliable.

On an average day approximately 64 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 77 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, climbing bus steps, and waiting for a bus.

## Ozaukee County

In Ozaukee County disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 1,400 transportation handicapped include: diseases and conditions associated with old age, more than 30 percent; conditions resulting from a stroke, about 15 percent; arthritis and related conditions, about 12 percent; diseases and conditions affecting vision, about 11 percent; other diseases and conditions affecting mobility, about 8 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, less than 8 percent; conditions and diseases which impair the trunk but leave the person ambulatory, about 7 percent; developmental disabilities, less than 6 percent; heart and other circulatory conditions, more than 3 percent.

About 85 percent of the transportation handicapped do not have an auto available to drive and about 30 percent of the 2,400 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 12 percent never have an auto available to ride in. Of the able-bodied elderly about 6 percent of those who do not have an auto available to drive never have an auto available to ride in.

Approximately 68 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 19 percent perceive that they can only board a bus directly in front of their house; and about 13 percent perceive that they are able to go one or more blocks to board a bus. About 58 percent of the transportation handicapped and about 56 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution about 57 percent of the 400 institutionalized persons need to be carried. Upon entering a vehicle about 55 percent of the institutionalized persons need to be carried. Also, upon reaching their destination about 88 percent of all institutionalized persons need accompaniment.

Approximately 84 percent of the trips madeexclusive of trip purpose home-by the noninstitutionalized transportation handicapped are for the purposes of work, social-recreation, and personal business. On an average day these persons make approximately 800 trips. Of these trips about 75 percent are made as an auto passenger and about 18 percent are made on special transportation services. Less than 8 percent of the trips made are as an auto driver.

Able-bodied elderly persons make a total of approximately 3,800 trips during an average day. The three largest tripmaking purposes excluding home—are social-recreation, personal business, and work, accounting for about 76 percent of the trips. The majority, about 71 percent, of trips by the able-bodied elderly are made as an auto driver, while about 26 percent are made as an auto passenger.

Institutionalized persons make a total of 50 trips during an average week. Other than for trip purpose home, trip purposes are for social-recreation and medical. In Ozaukee County institutionalized persons travel as an auto passenger.

On an average day approximately 64 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 94 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are waiting for a bus to come, standing at a bus stop, standing whene? a seat is unavailable, and climbing bus steps.

## Washington County

In Washington County disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 2,600 transportation handicapped include: arthritis and related conditions, about 24 percent; diseases and conditions associated with old age, about 23 percent; conditions resulting from a stroke, about 10 percent; miscellaneous diseases and conditions classified as "other", less than 10 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, also less than 10 percent; heart and other circulatory conditions, about 9 percent; conditions which impair the trunk but leave the person ambulatory, about 6 percent; diseases and conditions affecting vision, more than 5 percent; and developmental disabilities, more than 3 percent.

Approximately 73 percent of the transportation handicapped do not have an auto available to drive and about 35 percent of the 3,300 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 12 percent never have an auto available to ride in. In Washington County none of the able-bodied elderly reported never having an auto available to ride in.

About 48 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 34 percent perceive that they can only board a bus directly in front of their house; and less than 18 percent perceive that they are able to go one or more blocks to board a bus. About 48 percent of the transportation handicapped and about 50 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon reaching their destination about 60 percent of the 700 institutionalized persons in Washington County need accompaniment. Approximately 84 percent of the trips made by the noninstitutionalized transportation handicapped—exclusive of trip purpose home—are for school, personal business, and social-recreation. On an average day these persons make a total of approximately 1,400 trips. Of these trips, about 47 percent are made as an auto passenger and about 19 percent are made as an auto driver. Special transportation is utilized as a mode of travel less than 15 percent of the trips and the bus is utilized in less than 13 percent of the trips.

The able-bodied elderly make a total of more than 4,800 trips on an average day. Exclusive of home, the three largest tripmaking purposes are social-recreation, shopping, and personal business, accounting for about 85 percent of the trips. The majority of all trips made, about 62 percent, are as an auto driver, while about 38 percent are made as an auto passenger.

Institutionalized persons make a total of about 200 trips during an average week. Exclusive of home, the more important trip purposes are social-recreation, personal business, and medical. In Washington County institutionalized persons reported trips only as an auto passenger.

On an average day approximately 61 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 88 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are climbing bus steps, going out in bad weather, standing when a seat is unavailable, and standing at a bus stop.

## Waukesha County

Disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 6,500 transportation handicapped include: conditions which impair the trunk but leave the person ambulatory, about 17 percent; diseases and conditions associated with old age, about 16 percent; arthritis and related conditions, less than 14 percent; conditions resulting from a stroke, about 12 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, less than 10 percent; developmental disabilities, less than 10 percent; heart and other circulatory conditions, less than 9 percent; diseases and conditions affecting vision, about 8 percent;

and a variety of other miscellaneous diseases and conditions affecting mobility, about 6 percent.

Approximately 84 percent of the transportation handicapped do not have an auto available to drive and about 36 percent of the 11,500 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, more than 15 percent never have an auto available to ride in. Of the able-bodied elderly, about 7 percent of those who do not have an auto available to drive never have an auto available to ride in.

Approximately 55 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 25 percent perceive that they can only board a bus directly in front of their house; and about 21 percent perceive that they are able to go one or more blocks to board a bus. About 52 percent of the transportation handicapped and less than 76 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution about 43 percent of the 1,800 institutionalized persons need to be carried. Upon entering a vehicle, about 40 percent of the institutionalized persons need to be carried. Upon reaching their destination about 86 percent of the institutionalized persons need accompaniment.

Approximately 68 percent of the trips made by the noninstitutionalized transportation handicapped—excluding home—are for the purposes of social-recreation, school, and shopping. On an average day these persons make a total of approximately 5,200 trips. Of these trips about 40 percent are made as an auto passenger and about 35 percent are made as an auto driver. Special transportation services are utilized in about 12 percent of the trips.

The able-bodied elderly make a total of 20,300 trips during an average day. Exclusive of trip purpose home, trips made are primarily for social-recreation, shopping, and personal business, accounting for about 88 percent of the trips. The majority of trips, about 58 percent, made are primarily as an auto driver, while 34 percent are made as an auto passenger. Institutionalized persons make a total of about 800 trips during an average week. The most important trip purposes, accounting for about 76 percent of total tripmaking are school and social-recreation. Institutionalized persons travel primarily on special transportation services—about 47 percent of all trips—and as an auto passenger about 41 percent of all trips.

On an average day approximately 56 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 90 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus, are going out in bad weather, walking on uneven ground and slopes, standing when a seat is unavailable, and climbing bus steps.

## Milwaukee Transit Service Area

In the Milwaukee transit service area disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 35,200 transportation handicapped include: arthritis and related conditions, about 23 percent; conditions which impair the trunk but leave the person ambulatory, about 13 percent; conditions resulting from a stroke, about 13 percent; diseases and conditions associated with old age, more than 12 percent; heart and other circulatory conditions, about 10 percent; diseases and conditions affecting vision, more than 9 percent; developmental disabilities, about 8 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, less than 8 percent; and a variety of other miscellaneous diseases and conditions affecting mobility, about 3 percent.

Approximately 88 percent of the transportation handicapped do not have an auto available to drive, and about 46 percent of the 78,500 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 19 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, about 14 percent never have an auto available to ride in.

About 46 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 10 percent perceive that they can only board a bus directly in front of their house; and about 44 percent perceive that they are able to go one or more blocks to board a bus. About 60 percent of the transportation handicapped and about 80 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution, about 35 percent of the 8,300 institutionalized persons need to be carried. Upon entering a vehicle, about 36 percent of the institutionalized persons need to be carried. Also, upon reaching their destination, about 64 percent of the institutionalized persons need accompaniment.

Approximately 77 percent of the trips made by the noninstitutionalized transportation handicapped, exclusive of the trip purpose home, are for the purposes of social-recreation, personal business, and shopping. On an average day these persons make a total of approximately 22,900 trips. About 49 percent of trips made are as an auto passenger and somewhat less than 16 percent of the trips are as an auto driver. Special transportation is utilized as a mode of travel in about 10 percent of the trips and the bus is utilized in less than 9 percent of the trips.

Able-bodied elderly persons make 128,800 trips during an average day. Excluding home, the three largest tripmaking purposes are socialrecreation, shopping, and personal business, accounting for somewhat more than 87 percent of the trips. The majority, about 54 percent, of trips made are as an auto driver, while about 26 percent are made as an auto passenger.

Institutionalized persons make 12,300 trips during an average week. The three most important trip purposes—excluding home—are school, work, and social-recreation, accounting for about 83 percent of the trips. Institutionalized persons travel primarily on special transportation services about 51 percent of all trips, as a bus passenger about 25 percent, and as an auto passenger about 13 percent of all trips.

The on-board vehicle inventories of Milwaukee Handicabs reveal that users of special transportation service, in general, find the service comfortable, convenient, easy to use, safe, and reliable. On an average day approximately 66 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 74 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to the use of a public bus are standing when a seat is unavailable, going out in bad weather, climbing bus steps, and walking on uneven ground and slopes.

## Milwaukee Nontransit Area

In the Milwaukee nontransit area disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 4,500 transportation handicapped include: arthritis and related conditions, less than 23 percent; conditions resulting from a stroke, about 14 percent; conditions which impair the trunk but leave the person ambulatory, more than 13 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, more than 10 percent; developmental disabilities, about 10 percent; heart and other circulatory conditions, about 9 percent; a variety of other conditions and diseases affecting mobility, about 8 percent; and diseases and conditions affecting vision, about 3 percent.

About 83 percent of the transportation handicapped do not have an auto available to drive, and about 43 percent of the 4,700 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 36 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, about 9 percent never have an auto available to ride in.

Approximately 49 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; less than 21 percent perceive that they can only board a bus directly in front of their house; and about 31 percent perceive that they are able to go one or more blocks to board a bus. Approximately 38 percent of the transportation handicapped and about 73 percent of the able-bodied elderly perceive that special transportation services are not available to them. Upon leaving an institution, about 63 percent of the 2,000 institutionalized persons need to be carried. Upon entering a vehicle, about 60 percent of all institutionalized persons need to be carried. Also, upon reaching their destination about 83 percent of all institutionalized persons need accompaniment.

Approximately 86 percent of the trips made by the noninstitutionalized transportation handicapped are for the purpose of social-recreation, personal business, and shopping. On an average day these persons make a total of approximately 3,500 trips. Of these trips, about 53 percent made are as an auto passenger and about 38 percent are as an auto driver. Special transportation is utilized in about 9 percent of the trips.

The able-bodied elderly make a total of about 8,900 trips during an average day. Excluding home, the main trip purposes are shopping, personal business, and social-recreation, accounting for about 89 percent of the trips. About 67 percent of the trips made by the ablebodied elderly are made as an auto driver, while about 31 percent are made as an auto passenger.

Institutionalized persons make a total of about 500 trips during an average week. Excluding home, the trip purposes are shopping, socialrecreation, personal business, and medical, accounting for all of the trips. Institutionalized persons travel primarily on special transportation services about 50 percent of all trips, and as an auto passenger about 25 percent of all trips.

On an average day approximately 47 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 89 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, climbing bus steps, waiting for a bus to come, and standing at a bus stop.

#### **Racine** County

In Racine County disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 5,800 transportation handicapped include: diseases and conditions associated with old age, less than 21 percent; conditions which impair the trunk but leave the person ambulatory, more than 17 percent; arthritis and related conditions, less than 15 percent; conditions resulting from a stroke, less than 14 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 12 percent; developmental disabilities, about 7 percent; diseases and conditions affecting vision, less than 6 percent; other miscellaneous diseases and conditions affecting mobility, about 5 percent; and heart and other circulatory conditions, about 4 percent.

Approximately 87 percent of the transportation handicapped do not have an auto available to drive and about 30 percent of the 11,900 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 13 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, slightly less than 6 percent never have an auto available to ride in.

About 39 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 42 percent perceive that they can only board a bus directly in front of their house; and less than 20 percent perceive that they are able to go one or more blocks to board a bus.

About 52 percent of the transportation handicapped and about 59 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution or entering a vehicle about 27 percent of the 1,200 institutionalized persons need to be carried. Upon reaching their destination about 71 percent of the institutionalized persons need accompaniment.

Approximately 84 percent of the trips made by the noninstitutionalized transportation handicapped—excluding home—are for the purpose of personal business, social-recreation, and shopping. On an average day these persons make a total of approximately 5,900 trips. About 52 percent of these trips are made primarily as an auto passenger and about 34 percent are made as an auto driver. Special transportation was used on about 7 percent of the trips and the bus was used on more than 2 percent of the trips.

Able-bodied elderly persons make about 20,200 trips during an average day. The three largest trip purpose classifications, accounting for 88 percent of the trips, are social-recreation, shopping, and personal business, exclusive of trip purpose home. The majority of trips made, about 58 percent, are as an auto driver, while about 35 percent are made as an auto passenger.

Institutionalized persons made a total of 1,300 trips during an average week. Excluding home, the major trip purposes are for socialrecreation, medical, and work, accounting for about 84 percent of the trips. Institutionalized persons travel primarily as an auto passenger about 42 percent, on special transportation about 30 percent, and on the bus about 11 percent. The on-board vehicle inventories revealed that users of special transportation services, specifically Lincoln Lutheran, find the service comfortable, convenient, easy to use, safe, and reliable.

On an average day approximately 55 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 70 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, standing at a bus stop, and waiting for a bus.

## Racine Urbanized Area

In the Racine urbanized area difficulties affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 4,500 transportation handicapped include: diseases and conditions associated with old age, about 23 percent; arthritis and related conditions, about 14 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 14 percent; conditions resulting from a stroke, less than 13 percent; developmental disabilities, less than 7 percent; a variety of miscellaneous diseases classified as "other" affecting mobility, less than 7 percent; diseases and conditions affecting vision, about 6 percent; and heart and other circulatory conditions, about 5 percent.

Approximately 86 percent of the transportation handicapped do not have an auto available to drive and less than 30 percent of the 8,300 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 17 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, about 9 percent never have an auto available to ride in.

Approximately 43 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 38 percent perceive that they can board a bus directly in front of their house; and somewhat less than 20 percent perceive that they are able to go one or more blocks to board a bus.

About 42 percent of the transportation handicapped and about 55 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution or entering a vehicle about 28 percent of the 1,000 institutionalized persons need to be carried. Also, upon reaching their destination about 73 percent of all institutionalized persons need accompaniment.

About 87 percent of the trips made by the noninstitutionalized transportation handicapped excluding trip purpose home, are for the purposes of personal business, shopping, and social-recreation. On an average day these persons make a total of approximately 4,700 trips. Of this number, about 47 percent are made as an auto passenger and about 39 percent are made as an auto driver. Special transportation accounts for about 5 percent of the trips and the bus about 3 percent.

The able-bodied elderly make 16,200 trips during an average day. Excluding home as a trip purpose, the three largest tripmaking purposes, accounting for about 91 percent of the trips, are social-recreation, shopping, and personal business. The majority, 56 percent, of trips made are as an auto driver, while about 35 percent are made as an auto passenger. Institutionalized persons make a total of 1,200 trips during an average week. Excluding home, the most important trip purposes are socialrecreation and medical, accounting for about three-fourths of the trips. Institutionalized persons travel primarily as an auto passenger 47 percent; on special transportation less than 34 percent, and on regular bus more than 12 percent of all trips. As previously mentioned, the on-board vehicle inventories of Lincoln Lutheran Specialized Transportation reveal that users of special transportation services, in general, find the service comfortable, convenient, easy to use, safe, and reliable.

On an average day more than 53 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 70 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, standing at a bus stop, and waiting for a bus to come.

## Racine Nonurbanized Area

In the Racine nonurbanized area disabilities affecting mobility and the approximate distribution classified in descending order of occurrence for the 1,300 transportation handicapped include: conditions which impair the trunk but leave the person ambulatory, about 32 percent; conditions resulting from a stroke, about 17 percent; arthritis and related conditions, less than 17 percent; diseases and conditions associated with old age, about 13 percent; and conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 7 percent.

Approximately 90 percent of the transportation handicapped do not have an auto available to drive and about 32 percent of the 3,600 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 2 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, no one responded that he never had an auto available to ride in. About 24 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop, about 56 percent perceive that they can only board a bus directly in front of their house; and about 20 percent perceive that they are able to go one or more blocks to board a bus. About 84 percent of the transportation handicapped and more than 68 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution or entering a vehicle about 25 percent of the 200 institutionalized persons need to be carried. Also, upon reaching their destination about 57 percent of all institutionalized persons need accompaniment.

About 73 percent of the trips made by the noninstitutionalized transportation handicapped are, except for trip purpose home, for the purposes of personal business, social-recreation, and medical. On an average day these persons make approximately 1,100 trips. Of this number, about 74 percent are made as an auto passenger, by special transportation about 16 percent, and as an auto driver about 10 percent.

Able-bodied elderly make 3,900 trips during an average day. Except for trip purpose home, the main trip purposes are for shopping, socialrecreation, and work, accounting for 80 percent of the trips. Able-bodied elderly persons travel as an auto driver about 66 percent and as an auto passenger about 34 percent.

Institutionalized persons make a total of more than 100 trips during an average week. The purposes of travel, excluding trip purpose home, are shopping, personal business, and social-recreation. In the Racine nonurbanized area institutionalized persons travel only as an auto driver.

On an average day approximately 60 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 88 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, standing at a bus stop, and waiting for a bus.

## Racine Transit Service Area

Disabilities affecting mobility and the approximate percent distribution classified in the descending order of occurrence for the 4,700 transportation handicapped include: diseases and conditions associated with old age, about 24 percent; conditions which impair the trunk but leave the person ambulatory, about 14 percent; arthritis and related conditions. more than 13 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 13 percent; conditions resulting from a stroke, about 12 percent; developmental disabilities, about 6 percent; a variety of other miscellaneous diseases and conditions affecting mobility, about 6 percent; diseases and conditions affecting vision, also about 6 percent; and heart and other circulatory problems, about 5 percent.

Approximately 86 percent of the transportation handicapped do not have an auto available to drive, and about 31 percent of the 3,100 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, more than 16 percent never have an auto available to ride in. Of the able-bodied elderly persons who do not have an auto available to drive, about 9 percent never have an auto available to ride in.

About 43 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 36 percent perceive that they can only board a bus directly in front of their house, and about 21 percent perceive that they are able to go one or more blocks to board a bus. Approximately 45 percent of the transportation handicapped and about 53 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution or entering a vehicle about 28 percent of the 1,000 institutionalized persons need to be carried. Upon reaching their destination about 73 percent of all institutionalized persons need accompaniment.

Approximately 86 percent of the trips made by the noninstitutionalized transportation handicapped—excluding trip purpose home—are for the purposes of personal business, shopping, and social-recreation. On an average day these persons make a total of approximately 5,200 trips. Of these trips about 51 percent made are as an auto passenger, and about 36 percent made are as an auto driver. Special transportation accounts for less than 5 percent of total trips and the bus accounts for less than 3 percent of total trips.

The able-bodied elderly make about 15,800 trips during an average day. With the exception of trip purpose home, the main trip purposes are social-recreation, shopping, and personal business, accounting for about 91 percent of the trips. The majority, about 55 percent, of trips made are as an auto driver, while about 35 percent are as an auto passenger.

Institutionalized persons make a total of 1,200 trips during an average week. The three most important trip purposes accounting for about 90 percent of total trips—excluding trip purpose home—are social-recreation, medical, and work. Institutionalized persons travel primarily as an auto passenger about 47 percent, special transportation about 34 percent, and by bus more than 12 percent of all trips.

As previously noted, the on-board vehicle inventories of Lincoln Lutheran Specialized Transportation reveal that users of special transportation services, in general, find the service comfortable, convenient, easy to use, safe, and reliable.

On an average day about 52 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 70 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, going out in bad weather, waiting for a bus to come, and standing at a bus stop.

## Kenosha County

In Kenosha County the disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 4,300 transportation handicapped include: conditions which impair the trunk but leave the person ambulatory, about 24 percent; heart and other circulatory conditions, about 16 percent; diseases and conditions associated with old age, about 16 percent; a variety of other miscellaneous diseases and conditions affecting mobility, about 12 percent; arthritis and related conditions, about 8 percent; developmental disabilities, about 8 percent; conditions resulting from a stroke, about 7 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 7 percent; and diseases and conditions affecting vision, about 2 percent.

Approximately 76 percent of the transportation handicapped do not have an auto available to drive, and about 25 percent of the 7,500 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 13 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, about 24 percent never have an auto available to ride in.

Approximately 44 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 26 percent perceive that they can only board a bus directly in front of their house; and about 30 percent perceive that they are able to go one or more blocks to board a bus. Approximately 73 percent of the transportation handicapped and more than 88 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution more than 41 percent of the 1,000 transportation handicapped persons need to be carried. Upon entering a vehicle about 39 percent of the institutionalized persons need to be carried. Also, upon reaching their destination about 64 percent of all institutionalized persons need accompaniment.

Approximately 69 percent of the trips made by the noninstitutionalized transportation handicapped are for the purposes of shopping, socialrecreation, and personal business. On an average day these persons make a total of about 4,100 trips. Of these trips, about 52 percent made are as an auto passenger and about 21 percent are made as an auto driver. The bus is used in about 7 percent of the trips.

The able-bodied elderly make a total of about 16,200 trips during an average day. The major trip purposes—excluding home—are shopping,

social-recreation, and personal business, accounting for about 85 percent of the trips. The majority, about 76 percent, of trips are made as an auto driver, while slightly more than 14 percent are as an auto passenger.

Institutionalized persons make a total of about 1,600 trips during an average week. Excluding trip purpose home, the main trip purpose, accounting for about 73 percent of total tripmaking is social-recreation. Excluding bike or walk trips, institutionalized persons travel primarily on special transportation services about 52 percent of all trips—as an auto passenger, about 29 percent of all trips, or by bus, about 13 percent of all trips.

On an average day about 54 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 68 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are going out in bad weather, standing when a seat is unavailable, standing at a bus stop, and waiting for a bus.

## Kenosha Urbanized Area

In the Kenosha urbanized area disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 2,400 transportation handicapped include: conditions which impair the trunk but leave the person ambulatory, about 33 percent; a variety of other miscellaneous diseases and conditions affecting mobility, more than 15 percent; heart and other circulatory conditions, about 12 percent; arthritis and related conditions, less than 11 percent; conditions resulting from a stroke, less than 7 percent; diseases and conditions associated with old age, also less than 7 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 6 percent; developmental disabilities, about 6 percent; and diseases and conditions affecting vision, about 3 percent.

About 71 percent of the transportation handicapped do not have an auto available to drive and about 27 percent of the 5,700 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 10 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, about 30 percent never have an auto available to ride in.

About 41 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; less than 24 percent perceive that they can only board a bus directly in front of their house; and about 35 percent perceive that they are able to go one or more blocks to board a bus. About 82 percent of the transportation handicapped and about 85 percent of the able-bodied elderly perceive that special transportation services are not available to them. In the Kenosha urbanized area the 150 institutionalized persons reported that they did not need to be carried when leaving the institution or entering a vehicle. Upon reaching their destination, about 30 percent of the institutionalized persons need accompaniment.

Approximately 72 percent of the trips made by the noninstitutionalized transportation handicapped—excluding trip purpose home—are for the purposes of shopping, social-recreation, and personal business. On an average day these persons make a total of approximately 3,100 trips. Of this number, about 58 percent are made as an auto passenger, and about 11 percent as an auto driver. The bus is utilized on about 5 percent of the trips.

The able-bodied elderly make a total of 14,400 trips during an average day. The main trip purposes—excluding trip purpose home—are social-recreation, shopping, and personal business, accounting for about 85 percent of all trips. The majority of trips made are primarily as an auto driver, about 76 percent, while about 13 percent are made as an auto passenger.

Institutionalized persons make a total of less than 1,000 trips during an average week. Excluding home, the major trip purpose is social-recreation. In the Kenosha urbanized area trips by institutionalized persons are made primarily by bicycle or walking—approximately 94 percent.

On an average day, about 49 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week less than 14 percent of the institutionalized persons do not make trips. The noninstitutionalized transportation handicapped perceive that their severest barriers to the use of a public bus are going out in bad weather, standing when a seat is unavailable, standing at a bus stop, and waiting for a bus.

# Kenosha Nonurbanized Area

In the Kenosha nonurbanized area disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 1,800 transportation handicapped include: diseases and conditions associated with old age, about 29 percent; heart and other circulatory conditions, less than 22 percent; conditions which impair the trunk but leave the person ambulatory, less than 11 percent; developmental disabilities, about 10 percent; conditions resulting from a stroke, about 8 percent; conditions and diseases which impair the trunk which result in a nonambulatory state of being, less than 8 percent; a variety of other miscellaneous diseases and conditions affecting mobility, about 7 percent; arthritis and related conditions, more than 5 percent; and diseases and conditions affecting vision, about 1 percent.

Approximately 82 percent of the transportation handicapped do not have an auto available to drive, and about 20 percent of the 1,800 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, about 17 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, no one reported never having an auto available to ride in.

About 48 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; more than 30 percent perceive that they can only board a bus directly in front of their house; and about 22 percent perceive that they are able to go one or more blocks to board a bus. Approximately 60 percent of the transportation handicapped and all of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution about 49 percent of the nearly 900 institutionalized persons need to be carried. Upon entering a vehicle more than 46 percent of institutionalized persons need to be carried. Also, upon reaching their destination about 70 percent of all institutionalized persons need accompaniment. About 63 percent of the trips made by the noninstitutionalized transportation handicapped excluding trip purpose home—are for the purposes of personal business, shopping, and medical. On an average day these persons make about 1,000 trips. Of this number, about 53 percent are made as an auto driver; about 35 percent are made as an auto passenger; and about 12 percent are made by bus.

The able-bodied elderly make more than 1,800 trips during an average day. Excluding home, the major trip purpose is shopping, accounting for about 76 percent of the trips. The majority, about 76 percent, of trips made are as an auto driver, while about 24 percent are made as an auto passenger.

Institutionalized persons make about 600 trips during an average week. Excluding home, the major trip purposes are social-recreation, work, and school, accounting for 80 percent of the nonhome trips. Institutionalized persons travel primarily on special transportation services, about 47 percent of all trips, as an auto passenger less than 27 percent of all trips, and by the bus about 13 percent of all trips.

On an average day, about 65 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 78 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are going out in bad weather, standing when a seat is unavailable, standing at a bus stop, and climbing bus steps.

## Kenosha Transit Service Area

In the Kenosha transit service area disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 3,300 transportation handicapped include: conditions which impair the trunk but leave the person ambulatory, less than 28 percent; a variety of other miscellaneous diseases and conditions affecting mobility, about 13 percent; heart and other circulatory conditions, about 12 percent; diseases and conditions associated with old age, more than 11 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 9 percent; conditions resulting from a stroke, about 8 percent; developmental disabilities, about 7 percent; and diseases and conditions affecting vision, about 3 percent.

About 75 percent of the transportation handicapped do not have an auto available to drive and about 26 percent of the 5,900 able-bodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, 16 percent never have an auto available to ride in. Of the able-bodied elderly who do not have an auto available to drive, slightly less than 30 percent never have an auto available to ride in.

About 43 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 25 percent perceive that they can only board a bus directly in front of their house; and about 32 percent perceive that they are able to go one or more blocks to board a bus. Approximately 70 percent of the transportation handicapped and about 85 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution about 41 percent of the 800 institutionalized persons need to be carried. Upon entering a vehicle, about 38 percent of the institutionalized persons need to be carried. Also, upon reaching their destination, more than 58 percent of all institutionalized persons need accompaniment.

About 68 percent of the trips made by noninstitutionalized transportation handicapped persons—excluding trip purpose home—are for the purposes of social-recreation, shopping, and personal business. On an average day these persons make more than 3,400 trips. Of this number more than 51 percent are made as an auto passenger and about 17 percent are made as an auto driver. The bus is utilized in about 8 percent of the trips.

The able-bodied elderly make a total of about 14,700 trips during an average day. Trip purposes—excluding trip purpose home—of social-recreation, shopping, and personal business account for more than 85 percent of these trips. The majority—about 77 percent—of trips made are primarily as an auto driver, while about 13 percent are made as an auto passenger.

Institutionalized persons make about 1,600 trips during an average week. Excluding home, the major trip purpose is social-recreation, accounting for about 72 percent of the trips. Institutionalized persons travel primarily by walking or by bicycle—about 61 percent of all trips—on special transportation—somewhat less than 22 percent of all trips—as an auto passenger—less than 10 percent of all trips, and by bus—about 5 percent of all trips. Taxis were utilized in about 3 percent of the trips.

On an average day about 49 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 64 percent of the institutionalized persons do not make trips.

The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are going out in bad weather, standing when a seat is unavailable, standing at a bus stop, and walking on uneven ground and slopes.

# Walworth County

Disabilities affecting mobility and the approximate percent distribution classified in descending order of occurrence for the 2,100 transportation handicapped include: conditions which impair the trunk but leave the person ambulatory, less than 25 percent; conditions and diseases which impair the trunk resulting in a nonambulatory state of being, about 21 percent; diseases and conditions associated with old age, about 19 percent; arthritis and related conditions, about 15 percent; heart and other circulatory conditions, about 6 percent; diseases and conditions affecting vision, more than 5 percent; conditions resulting from a stroke, about 5 percent; developmental disabilities, about 2 percent; and a variety of other miscellaneous diseases and conditions affecting mobility, also about 2 percent.

Approximately 84 percent of the transportation handicapped do not have an auto available to drive and about 30 percent of the 5,400 ablebodied elderly do not have an auto available to drive. Of the transportation handicapped who do not have an auto available to drive, less than 21 percent never have an auto available to ride in. In Walworth County no able-bodied elderly person who does not have an auto available to drive reported never having had an auto available to ride in.

Approximately 49 percent of the transportation handicapped perceive that it is impossible for them to reach a bus stop; about 23 percent perceive that they can only board a bus directly in front of their house; and less than 29 percent perceive that they are able to go one or more blocks to board a bus. Approximately 51 percent of the transportation handicapped and more than 54 percent of the able-bodied elderly perceive that special transportation services are not available to them.

Upon leaving an institution more than 29 percent of the 900 institutionalized persons need to be carried. Upon entering a vehicle, more than 30 percent of the institutionalized persons need to be carried. Also, upon reaching their destination about 48 percent of all institutionalized persons need accompaniment.

About 70 percent of the trips made by the noninstitutionalized transportation handicapped, excluding trip purpose home, are for the purposes of social-recreation, school, and medical. On an average day, these persons make about 1,100 trips. Of this number, about 58 percent are made as an auto passenger, about 29 percent on special transportation, and about 13 percent are made as an auto driver.

The able-bodied elderly make less than 8,400 trips during an average day. The three most important tripmaking purposes—excluding trip purpose home—are shopping, social-recreation, and personal business, accounting for more than 81 percent of the trips. The majority, about 54 percent, of trips made are as an auto driver, while about 39 percent are made as an auto passenger.

Institutionalized persons make about 1,700 trips during an average week. Excluding home, the major trip purposes are personal business and social-recreation, accounting for about 84 percent of the trips. Institutionalized persons travel primarily as an auto passenger, about 51 percent of all trips, on special transportation less than 22 percent of all trips, and as an auto driver less than 16 percent of all trips. On an average day approximately 62 percent of the noninstitutionalized transportation handicapped do not make trips. During an average week about 59 percent of the institutionalized persons do not make trips. The noninstitutionalized transportation handicapped perceive that their severest barriers to use of a public bus are standing when a seat is unavailable, climbing bus steps, walking on uneven ground and slopes, waiting for a bus, and standing at a bus stop. (This page intentionally left blank)

# INVENTORY OF ELDERLY AND HANDICAPPED TRANSPORTATION SERVICE PROVIDERS

#### INTRODUCTION

This chapter presents the findings of an inventory of existing local transportation agencies which provide transportation services to the elderly and the handicapped. Included in the inventory were local public transit agencies, social service agencies, taxicab and chair-car carrier¹ companies, and nursing homes that provide transportation service. The information presented in this chapter was obtained through in-person and telephone interviews with selected transportation providers, from past surveys of Wisconsin taxicab firms and social service agency transportation providers conducted by the Wisconsin Department of Transportation in 1976² and from a SEWRPC survey of social service agency transportation providers conducted as part of this study.

Although not considered a primary provider of service to the elderly and handicapped, school bus operators have also been considered in the inventory because some transportation services are provided to handicapped students by school bus operators. According to the Wisconsin School Bus Association, 36 school bus contractors currently provide transportation services in the Region. Preliminary results of a survey conducted by the Wisconsin School Bus Association indicate, however, that very few school buses operating in the Region are lift equipped for use by wheelchair bound handicapped persons. Nevertheless, school bus operators represent a potential provider for a broader range of specialized elderly and handicapped services. A governmental unit desiring to

provide transportation services to the handicapped could take advantage of the transportation expertise and facilities of school bus operators by contracting with them for such services. Because school bus operators do not necessarily limit their services to a single county, and school bus operators outside the seven-county region also provide services within the Region, school bus transportation services are not discussed herein on a countyby-county basis.

There are other transportation providers which are not considered primary suppliers of personal or special services for the elderly and transportation handicapped. In this latter category are churches that own or lease vehicles which are primarily used to transport people to and from religious services, and ambulance services which are primarily used for emergency transportation. Also not included in the inventory were intercity bus and rail services.

In the seven-county Region, the five primary types of transportation service providers to the elderly and handicapped include:

- 1. Three urban public transit systems and one rural public transit system.
- 2. Fifty-three quasipublic or private agency providers.
- 3. Twenty-four taxicab operators.
- 4. Six licensed and three operating private chair car carriers.
- 5. Seventy-six long term care facilities (nursing homes).

In addition, as already mentioned, 36 school bus contractors operate within the Region.

This inventory is not to be considered exhaustive, but is intended to represent the best information available through February 1977. It is recognized that since February 1977 certain providers may have ceased providing transportation services and

¹Chair car companies are privately owned taxi-like transportation services for wheelchair users and the more severely mentally or physically handicapped persons which usually require advance reservation.

²<u>Wisconsin Taxicabs</u>: Vols. 1-5, August 1976, Wisconsin Department of Transportation, Division of Planning, <u>Transportation for the Elderly and the Handicapped in Wisconsin</u>, Reports 1-7, November 1976: Wisconsin Department of Transportation, Division of Planning.

other agencies may have begun such services. The major findings are presented separately for each of the seven counties of the Region.

#### MILWAUKEE COUNTY

In Milwaukee County the following transportation agencies or companies provide transportation services to the elderly and the handicapped:

- 1. The Milwaukee County Transit System (MCTS).
- 2. Eighteen social service agency transportation services.
- 3. Ten taxicab companies.
- 4. Six licensed and three operating chair car carrier companies.
- 5. Forty-five nursing homes.

#### Milwaukee County Transit System

The Milwaukee County Transit System (MCTS) is the major provider of public transportation in Milwaukee County. The MCTS is owned by Milwaukee County and operated by a private management firm under contract with the County. The MCTS owns 523 buses and operates 480 buses during the daily peak period. The accessibility features of these buses are as indicated in Table 133. As indicated on the table, no bus is currently accessible to persons requiring lift or ramp assistance. It should be noted, however, that at the time the previous private owner of the local bus system purchased these buses, there were no UMTA required vehicle design specifications for the elderly and the handicapped.

Within the past four years the MCTS, with the assistance of federal and state transit funds, have taken a number of noteworthy steps to make the public bus system more accessible to the elderly and the handicapped. In May 1973 a "half-fare" program for elderly and handicapped persons was begun. This program allowed any elderly and/or handicapped person eligible for either a medicare card or a Help Aged Lower Fares (HALF) card issued by Project Involve, a local social service agency, to use the bus system for one-half the regular adult fare (except during peak periods) upon presentation of the card to the bus driver. In September 1976 a procedure of issuing picture identification (ID) cards to handicapped persons was initiated. This was an expansion of the halffare program to include any handicapped person who met the U. S. Urban Mass Transportation Administration's (UMTA) definition³ of elderly and handicapped published at that time.

At the same time, a policy decision was made by the Milwaukee County Transit Board to allow a person accompanying and assisting a handicapped bus rider to ride on the bus free of charge. The half-fare (\$0.25) program is currently in effect weekdays (except between the peak hours of 6-9 a.m. and 3-6 p.m.) and all day Saturdays and Sundays. On March 16, 1977, the Milwaukee County Transit Board made an additional policy decision to exclude elderly and handicapped persons from those persons paying transit system zone fares at any time while riding the bus. Each of these fare policy changes has been instituted for the purpose of reducing the economic difficulties elderly and handicapped persons may experience when using the public bus system, to the point where all existing and any latent travel demand could be satisfied by public bus for any trip purpose if the person is able to board and ride the bus.

In order to maximize the number of elderly and handicapped persons who find it physically possible to use the public bus system, certain changes have been made to the existing bus fleet and other changes will become standard on any new buses purchased after September 1979. Milwaukee County has installed special assist grab rails on the entrance doors of all existing buses to aid the elderly and handicapped and, to make seating available while on the bus, priority seating signs have been placed over the front seats on each bus. While these improvements are being made to the existing bus fleet, the County is in the process of purchasing 100 new buses which are to be wheelchair liftequipped, making the bus system more accessible to wheelchair users.

³Elderly and handicapped are those individuals who, by reason of illness, injury, age, congenital malfunction, or other permanent or temporary incapacity of disability, including those who are nonambulatory wheelchair-bound and those with semi-ambulatory capabilities, are unable without special facilities or special planning or design to utilize mass transportation facilities and services as effectively as persons who are not so affected.

#### Table 133

Accessibility Features	UMTA Regulations ^a	Milwaukee County Transit System Buses
Wheelchair Accessibility Dimensions	b	No
a) First Step Height	14''	14.75"
b) Second Step Height	8''	13.75″
c) Third Step Height	8"	13.75″
d) First Tread Depth	12"	12″
e) Second Tread Depth	12"	12"
f) Front Door Width	c	30''
g) Rear Door Width	C	24,50''
h) Minimum Aisle Width	c	26.25''
Air Conditioning	c	No
Nonslip Floor/Step Covering	Yes	Yes
Step-Edge Color Band	Yes	No
Priority Seating Signs	Yes	Yes
Illumination		
a) Stairwell	Yes	Yes
b) Ground Outside Stairwell	Yes	Yes
Illuminated Route/Destination Signs	Yes	Yes
Audible Door Warning	No	No
Floor Space Adequate for Wheelchair	No	No
"Kneeler" Feature	No	No
Handrails/Stanchions	_	
a) Front Door Back	Yes	Yes
b) Seat Back	_d	Yes
c) Vertical	d	Yes
d) Overhead	Yes	Yes
e) Front of Vehicle/Farebox	Yes	Yes
f) Inside Stairwell	_d	Yes
International Accessibility Symbol	No	No

#### ACCESSIBILITY FEATURES OF MILWAUKEE COUNTY TRANSIT SYSTEM BUSES AS COMPARED TO UMTA REGULATIONS: JULY 1977

^a It should be noted that at the time the previous private owner of the local bus system purchased these buses there were no UMTA required vehicle design specifications for the elderly and the handicapped.

^bOptional.

^C No requirement.

 d  Requires ''safe on-board circulation, seating and standing assistance and unboarding . . . ''

Source: Applied Resource Integration, Ltd.

#### Social Service Agencies

Table 134 lists the 18 agencies that provide, purchase, or arrange transportation for the elderly and/or the handicapped in Milwaukee County. A total of 44 agency-owned vehicles are operated in Milwaukee County with more than 50 additional vehicles provided through contracts with private operators. Transportation services during a typical month are provided to 6,500 elderly and/or handicapped persons who make over 43,000 trips per month or over 516,000 each year. Further, the total annual expenditure for transportation services by these agencies is estimated to exceed one million dollars. All but two agencies, the Coopera-

tive Education Service Agency (CESA) No. 19 and YMCA-Vel Phillips Center, serve the entire City of Milwaukee. One-half of the agencies provide service throughout Milwaukee County and four agencies have service areas encompassing parts of adjacent counties.

The majority of social service agency transportation services provided can be classified as a combination of fixed route, fixed schedule, and door-to-door service. The fixed routes and schedules, however, may vary each day depending upon the location and travel needs of clients being served. As also indicated in Table 134, the services are generally provided eight to 10 hours per weekday beginning between 7:00 A.M. and 9:00 A.M. and terminating between 3:00 P.M. and 5:00 P.M.

Fifteen of the agencies use paid drivers or a combination of paid and volunteer drivers. Only three agencies, American Cancer Society, American Red Cross, and FISH of Milwaukee, rely solely on volunteer drivers. Each agency has established restricted eligibility requirements. The services of FISH of Milwaukee, which are generally available to anyone, restrict clientele by emphasizing the provision of transportation for emergency needs. Only Dunbar House Foundation and Project Involve do not limit trip purpose. Further, six agencies restrict trips to a single purpose which, depending on the agency, might be for school, work, medical, or shopping trips only.

The "percent handicapped" and "percent elderly" data shown in Table 134 are extracted from the Wisconsin Department of Transportation inventory survey of transportation for the elderly and handicapped in Wisconsin (November 1976) whereas all other information was obtained from a Commission survey of elderly and handicapped transportation providers conducted in April 1977. These percentages do not necessarily represent current clientele composition but they do provide a general indication of how agencies have served elderly and handicapped populations in the past.

Table 134 also summarizes operational effectiveness and financial statistics. As shown, for example, vehicle utilization ranges from a low of 20 percent to a high of 100 percent of vehicle operationing time.⁴ Of those agencies indicating their average vehicle utilization, less than half utilize their vehicles more than 70 percent of the time during the time they are available for service each day. Productivity (passenger trips per vehicle hour) range from a low of 0.83 to a high of 15.62 with many agencies having a vehicle productivity of between 2.00 and 4.00. The vehicle operating cost per hour and vehicle operating cost per passenger trip vary greatly and partially reflect the different conditions under which each agency operates.

#### Taxicab Companies

Milwaukee County is served by 10 taxicab operators, seven headquartered in the City of Milwaukee and one each in the Cities of Oak Creek and Wauwatosa and one serving the Village of West Milwaukee. The 10 operators are:

- 1. Airport Cab (Oak Creek).
- 2. Apex Cab.
- 3. Boynton Cab.
- 4. Checker-Union Cab.
- 5. City Veteran Taxicab Cooperative.
- 6. City Veteran Taxi of Wauwatosa.
- 7. Southside Veteran Cab.
- 8. Community Cab.
- 9. GI Taxi, Inc.
- 10. West Milwaukee Veteran Cab.

There are about 370 taxicabs distributed among the seven companies in the City of Milwaukee. The largest operator is Boynton Cab with 175 vehicles. The City Veteran Taxicab Cooperative, City Veteran Taxi of Wauwatosa, and Southside Veteran Cab are cooperative associations using centralized dispatching for 100 individually owned taxicabs. The seven firms headquartered in Milwaukee also provide service beyond the City of Milwaukee boundaries. Operators are licensed in several communities and provide service throughout the Milwaukee urbanized area. West Milwaukee Veteran Cab has six vehicles serving West Milwaukee and surrounding areas, while Airport Cab has two taxis serving Oak Creek and adjacent communities.

⁴Vehicle utilization is a measure of the time a vehicle is operated compared to the scheduled hours during which a vehicle is available for service. For example, if service hours are 9:00 a.m. to 5:00 p.m. and a vehicle operates four hours, the vehicle utilization is 50 percent.

#### Table 134

# MILWAUKEE COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

						· · · · · · · · · · · · · · · · · · ·
			Type of	Number and	Daily	Volunteers
	Service	Type of	Passenger	Type of	Operating	or Paid
Agency	Area	ServiceD	Pick-Up ^C	Vehicles	Hours	Drivers
American Cancer Society	Milwaukee County	DR	As needed	2 Station Wagons	9:00 A.M3:30 P.M.	Volunteers-15
					Monday-Friday	
American Red Cross	Milwaukee County	FS	DtD,DthD	10 Station Wagons	9:00 A.M4:00 P.M.	Volunteers-150
]	1				Monday, Wednesday,	
					Thursday, Friday	
	Menomonee Falls			1 Van	9:00 A.M10:00 P.M.	
					Tuesday	
Cooperative Educational	Cudahy, St. Francis,	FR, FS, Rd	DtD	25 Contracted Vehicles	7:00 A.M3:30 P.M.	Paid Drivers
Service Agency No. 19	Oak Creek, South			(23 Vans, 2 Buses)	Monday-Friday	
	Milwaukee, Greenfield					
	School Districts					
Curative Workshop of	Milwaukee, Cudahy,	FR, FS, RD	DtD	5 Contracted Vehicles	8:00 A.M4:30 P.M.	Paid Drivers-10
Miliwaukee, Inc.	Oak Creek, South		1	(Care Cabs)	Monday-Friday	Volunteers-2
	Milwaukee, New Berlin,					
	Waukesha, Menomonee					
	Falls, Pewaukee,					
	Brookfield, Thiensville,	1	Ì			
	Mequon, Franklin,			1		
	Shorewood, Hales					
	Whitefish Ray					
Dunbar House	N/A					
Eoundation Inc	N/A	FR, FS, RD		1 Van	9:00 A.M11:00 P.M.	Paid Driver-1
r oundation, me				Public Fransit		Outreach
Easter Seal Society of	Milwaukee County	Bouting for	DthD	12 Contropted Vehicles	7.00 4 54 0.20 5 54	Workers-6
Milwaukee County		leach program	Duid	(Handicaba)	Monday Eriday	Paid Drivers
		each program		(Handicabs)	1:00 P M 4:20 P M	
					Tuesday, Wednesday	
Elder Care Line, Inc.	Milwaukee, West Allis.	FR. FS. DR	DtD DtbD	5 Vans	8.00 A M 4.30 P M	Paid Drivers 8
	West Milwaukee	,,	515, 5110	1 Station Wagon	Monday-Friday	Volupteers 5
	South Milwaukee,			1 Auto	8:00 A M -12:00 P M	Volunteers-5
	Cudahy, Oak Creek				Saturday	
FISH of Milwaukee	Milwaukee	As needed	As needed	Personal Vehicles	When Volunteer	Volunteers-100
					is Available	(approximately)
Friendship Village	Milwaukee	FR	DtD, DthD	1 Minibus	8:00 A.M4:30 P.M.	Paid Drivers
					Monday-Friday	
Goodwill Industries	Milwaukee County	FR, FS, RD	DtD, DthD, CtC	8 Buses	5:30 A.M5:00 P.M.	Paid Drivers
of Milwaukee	Waukesha County			3 Vans	Monday, Wednesday,	Volunteers
	Ozaukee County	1		]	Thursday, Friday	
}	Washington County				5:30 A.M11:00 P.M.	
					Tuesday	
	)				11:00 A.M. 5:00 P.M.	
Housing Authority	Milwaukee Housing	ED EC	D+D	1.0	Saturday and Sunday	<b>D</b> · 1 D ·
City of Milwaukee	Authority Residents			1 0 03	Tuesday Estates	Faid Drivers
Jewish Vocational Service	Milwaukee Area	FR	C+C	3 Vans	7-30 A M R-20 A M	Paid Drivers
				5 4813	7.30 P.M. 4.30 P.M.	Falu Drivers
					Monday-Eriday	
Penfield Children's Center	Milwaukee	FR. FS	CtC	5 Contracted Vehicles	8.00 A M .9.00 A M	Paid Drivers
		· -			3:00 P.M -4:00 P.M	
					Monday-Friday	
Project Involve, Inc. and	Milwaukee County	FR, RD	CtC, DtD	5 Vans	8:00 A M -5:00 P M	Paid Drivers-7
Project Involve				1 Minibus	Monday-Friday	Volunteers-18
Protective Services						
Red Bus Corporation	Milwaukee County	FS	DtD	1 Minibus	8:00 A.M5:00 P.M.	Paid Drivers-2
	Waukesha County				Monday-Friday	
	Ozaukee County					
Sertomia Workshop	Milwaukee	FR, FS	CtC	1 Contracted Bus	7:00 A.M9:00 A.M.	Paid Drivers
					2:30 P.M4:30 P.M.	ł
					Monday-Friday	
Inner City Council	Milwaukee	FR	CtC	2 Contracted Vehicles	24 Hours a Day	Paid Drivers
on Alcoholism					7 Days a Week	
YMCA Vel Phillips Center	North Side	FR	CtC	2 Contracted Vehicles	12:00 P.M3:00 P.M.	Paid Drivers
	of Milwaukee				1st and 3rd Thursdays	

#### Table 134 (continued)

	Total Clients									Descent	Deveend
Agency ^a	Eligibility Requirements	Monthly Individuals	Work	Personal Business	School	Shopping	Medical	Social	Recreation	Handicapped Clientele	Elderly Clientele
American Cancer Society	Cancer patient with no other means of	18-20					x			51.8	66.3
American Red Cross	Unable to use public transportation	503			×	x	x	х	×	N/A	62.2
Cooperative Educational Service Agency No. 19	Handicapped school children 3-21 years old	270			x					100.0	0.0
Curative Workshop of Milwaukee, Inc.	Must be handicapped	312					×	х	х	54.3	33.3
Dunbar House Foundation, Inc.	Residents in rehabilitation program	60	×	×	×	×	x	x	х	100.0	13.6
Easter Seal Society of Milwaukee County	Handicapped persons in Easter Seal programs	392						x	x	89.9	13.4
Elder Care Line, Inc.	60 and over, ambulatory primarily low income residents of Milwaukee	900		×		×	x	×	x	67.5 /	100.0
FISH of Milwaukee	Anyone may use service	100-200			_ EM					NI/A	50.0
Friendship Village	Retirement Center	20		I I		X	X I	<b>v</b>	l v	N/A	100.0
Goodwill Industries of Milwaukee	Disabled, at least 16 years, feed self, toilet trained	290	x		×	~	x	x	x	100.0	13.3
Housing Authority, City of Milwaukee	Elderly Hi-Rise Residents	1,000				х				N/A	100.0
Jewish Vocational Service Penfield Children's Center	Handicap - Age Child enrolled in program and lives in a specific area	20 47	x		x					100.0 100.0	15.0 0.0
Project Involve, Inc. and Project Involve Protective Services	Over 60	563	×	×	×	x	x	x	x	75.6	88.9
Red Bus Corporation	Handicapped from nursing homes	1,400									100.0
Sertomia Workshop Inner City Council on Alcoholism	Handicapped Client must be intoxicated or referred from other center	40-50 350	×		x		×			N/A N/A	8.3 25.0
YMCA Vel Phillips Center	Elderly and handicapped	40			x				×	N/A	N/A

Five of the 10 taxi firms—Airport Cab, Boynton Cab, Community Cab, GI Taxi, Inc., and West Milwaukee Veteran—responded to the Wisconsin Department of Transportation taxicab inventory. From these responses, the following general information was collected:

- 1. Taxicabs serve elderly and handicapped individuals on a regular basis.
- 2. No special discounts are in effect for the elderly and handicapped.
- 3. Taxicab drivers do provide assistance to elderly and handicapped but this is primarily an individual effort and not usually a corporate policy.

4. Taxicab operators would be willing to provide special services for the elderly and handicapped if they were reimbursed for such services.

#### Private Chair Car Carriers

Six private chair car carriers are licensed by the City of Milwaukee including—Handicabs, Care Cabs, Quality Care, Inc., Emergency Care Service, Ray Transit, and Limited Care. Of these, the first three are presently operating. The fourth (Emergency Care Service) has ceased operations due to a recent state decision concerning funding under Title XIX of the Federal Older Americans Act, and the fifth and sixth had not yet begun operations at the time of the inventory.

#### Table 134 (continued)

					,	,		· · · · · · · · · · · · · · · · · · ·
		Average						[
	Monthly	Vehicle	Productivity		Cost Per	Cost Per	Estimated	
A	Une-way	Utilization	(trips per	Monthly	Vehicle	Passenger	Annual	Funding
Agency	Trips	(in percent)	vehicle hour)	Cost	Hour	Trip	Budget	Sources
American Cancer Society	65-70	29	1.0	N/A	N/A	N/A	N/A	N/A
American Red Cross	1,500	78	0.83	\$ 2,329.00	\$ 1.29	\$ 1.55	\$ 27,958	United Way
Cooperative Educational	10,400	78	N/A	15,000.00	4.76	N/A	230,000	School Districts
Service Agency No. 19								State Aid
Milwaukee, Inc.	4,210	74	2.98	17,600.00	12.45	4.18	102,216	Donations, Title XIX, Other
Dunbar House	400	13	2.72	1,000.00	6.80	2.50	12,260	Wisconsin State Statute 1,42
Foundation, Inc.								(State)
Easter Seal Society of	N/A	N/A	N/A	480.00	5.00	N/A	4,800	Donations
Milwaukee County								
Elder Care Line, Inc.	5,000	100	3.65	14,000.00	10.23	2.80	139,943	Donations, Title XX,
				ļ		1		Title III, Private
								Contributions, CETA
FISH of Milwaukee	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Friendship Village	300	70	2.50	800.00	6.67	2.67	960	Endowment Payments
Goodwill Industries	9,745	28	5.15	17,263.00	9.11	1.77	193,272	Purchase of Care Division
of Milwaukee								of Vocational Rehabilitation,
								Tours of Nursing Homes
Housing Authority,	1,800	100	15.62	1,600.00	12.50	0.80	19,000	Housing Authority,
City of Milwaukee								City of Milwaukee
Jewish Vocational Service	800	50	N/A	1,250.00	5.21	N/A	15,000	State Funding
Penfield Children's Center	200	N/A	N/A	4,000.00	N/A	N/A	N/A	N/A
Project Involve, Inc. and	5,074	75	7.00	7,310.00	10.15	1.45	87,729	Milwaukee County Department
Project Involve								of Public Welfare, Title XXI,
Protective Services								and Milwaukee County Office
Rod Rus Corporation	0.000							of Aging, Title III
Sertemin Workshop	2,800	N/A 100	N/A	3,011.49	N/A	N/A	10,932	Fares, Donations
Japar City Caugait	80-100	100	2.50	1,000.00	25.00	10.00	12,000	Government Funding
on Alcoholism	700	N/A	N/A	12,446.00	N/A	N/A	137,880	51.42 Combined Community
YMCA Vel Phillips Center	140	20	NI / A	70.00	10.00			Service Board
Thick ver thinps center	140	20	N/A	78,00	13.00	N/A	N/A	N/A

NOTE: N/A indicates data not available.

^a The operating characteristics were obtained from a representative of each agency and represent approximations of each agency's transportation service operations.

^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule

^C Type of Passenger Pick-Up Dtd-door to door DthD-door through door CtC-curb to curb O-other

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

Late in 1976, the Wisconsin Department of Health and Social Services issued a decision that Title XIX funding (Medicaid) should no longer be used to support transportation of most mentally handicapped persons. Moreover, the provision was made retroactive to September 1976. Up to that time, Emergency Care Service was transporting mentally handicapped persons almost exclusively. The ruling effectively forced the company to terminate

service. The ruling also had an adverse impact on the other providers with Handicabs appearing to be the most affected. The data presented in this report for the three operating firms is based on pre-Title XIX changes. The actual effects of the change could not be determined at the time of this inventory; however, in general, the changes are expected to reduce service and ridership below levels presented in this report. Additionally, concomitant changes may occur in estimated costs and revenues. Such changes, however, are not believed to be significant, and the reported statistics representing operations during 1976 can still be used as a basis for planning. Furthermore, a reduction in ridership would result in excess capacity in the existing systems that could be utilized if expanded demand responsive services are found to be a recommended alternative. Following is a description of each private chair car carrier service in Milwaukee County:

Handicabs: Handicabs has an 18-year history of providing transportation to the handicapped and is recognized nationwide as a pioneer in the field. Handicabs has expanded over the years and now has two operations, school busing and demand responsive service for the handicapped.⁵ This discussion focuses on the demand responsive or "cab" services only.

The operating procedures and policies described in this report represent how Handicabs has operated historically and how it continues to operate. The data presented is based on an analysis of a "typical" month (September 1976) prior to the Title XIX changes, supplemented where possible with annualized data for 1976. The use of one month of data was necessary since the information maintained by Handicabs for management purposes and the information needed for planning purposes differed slightly.

<u>Type of Service</u>: Handicabs operates a 24-hour advance notice, demand responsive, door-throughdoor system. The 24-hour advance notice is standard policy for the first trip of the day for a passenger, although requests with less than 24-hour notice are served where operationally feasible. For the return trip of a passenger, approximately 75 percent are not prescheduled. Therefore, the system operates in a true demand responsive mode with passengers "demanding" service via telephone and Handicabs "responding" by radio dispatching a vehicle. Standard policy for this operation is to pick up a passenger within 30 minutes from the time of their request for service.

The door-through-door aspect of the service is important. Handicabs does not just meet or leave a passenger at the curb, but will assist the passenger through the door from ultimate origin to ultimate destination. This procedure may involve dispatching two vehicles to a single location in order that one driver can help the other driver with a passenger. Or it may mean that the driver will accompany the passenger into a hospital or doctor's office to ensure that an appointment is kept. This specialized service helps the handicapped person to overcome more than just the transportation barriers found in vehicles. An added feature of Handicabs' doorthrough-door service is a person-to-person escort responsibility. A driver ensures that clients are not only delivered between locations but, when necessary, between persons that clients desire to see.

Handicabs also has repetitive trips that are served as subscription service. Approximately one-fifth of the daily patronage is transported on a regular prescheduled basis for both the initial and the return trip.

<u>Service Area</u>: Handicabs serves all of Milwaukee County and adjacent areas of Waukesha, Washington, and Ozaukee Counties. In the past, attempts have been made to expand the geographic area served, but to date these attempts have not proved profitable.

Hours of Operation: Service is currently provided from approximately 6:00 A.M. to 6:00 P.M. Monday through Friday and 6:00 A.M. to 2:00 P.M. on Saturday. No Sunday or holiday service is scheduled although charter services may be obtained. This schedule represents existing service. In September 1976, Handicabs was also operating limited Sunday service.

<u>Vehicles</u>: Handicabs has a fleet of 39 vans purchased during the period 1971-1974. All vehicles are equipped with a wheelchair ramp. Capacity of the vans is eight, nine, 10, or 11, depending upon the seating/wheelchair spacing. The various seating arrangements include six seats/two wheelchairs, six seats/three wheelchairs, seven seats/three wheelchairs, and nine seats/two wheelchairs. Of the 38 vehicles operational in September 1976, as many as 32 were dispatched daily. If demand warrants, Handicabs can expand to 38 operating vehicles and more. This can be accomplished because vans equipped with ramps are also used in the school bus service and these vehicles provide a back-up to the existing "cab" fleet.

⁵ Handicabs has indefinitely suspended operation of its chair car carrier demand responsive transportation service for the handicapped effective November 1, 1977.

<u>Personnel</u>: Handicabs has 35 drivers, 15 support personnel, and eight administrative personnel who share time between the cab and school bus operations. The drivers are not unionized and are paid a base wage starting at \$2.30 per hour plus \$0.70 per "unit." A "unit" encompasses various work tasks including passenger pick-up, no-show, assisting another driver with a passenger, and a scheduled trip outside the basic service area. The use of "units" is to provide an incentive for drivers to perform efficiently.

<u>Marketing</u>: Because of its long history in Milwaukee, Handicabs relies on word-of-mouth as its main marketing tool to attract individual riders. Handicabs does not advertise on television, on radio, or in the newspapers. To encourage contract business, Handicab representatives meet with selected agencies. As with individual transportation, however, Handicabs relies on word-of-mouth and individual agency contact.

Operating Statistics: Handicabs estimates mileage based on the gallons of fuel consumed. Estimated mileage for September 1976 is 70,792 miles, and for the total year (1976) was 854,192 miles.

Based on drivers' pay hours, Handicabs provided a total of 5,828 hours of service in September with 5,614 provided on weekdays, 120 on Saturdays, and 114 on Sundays and Labor Day. Daily averages are: 267 weekday hours, 30 Saturday hours, and 23 Sunday and holiday hours.

For September 1976 the average speed was 12.1 miles per hour. Using this figure and annual mileage, it is estimated that Handicabs operated approximately 70,594 hours in 1976.

<u>Ridership</u>: In September 1976, 13,050 passenger units were recorded: 12,764 weekdays, 141 Saturdays, and 145 Sundays and Labor Day. Based on passenger no-show, and assist information, approximately 95 percent of the units represent actual trips. Estimated patronage for September was computed to be 12,398 including: 12,126 during weekdays, 134 during Saturdays, and 138 during Sundays and Labor Day.

Productivity for September 1976 was 2.14 passengers per hour. Using this productivity and estimated annual vehicle hours, a figure for annual patronage was derived. Additionally, September patronage was expanded to reflect a total year. The use of these two methods resulted in an estimated annual patronage of about 150,000 passengers.

*Financial Statistics:* Most of the financial data were considered proprietary and confidential by the firms especially with respect to revenues. The information presented are estimates based on the limited financial and operating data provided.

The fare structure of Handicabs is regulated by the City. The maximum current trip rates are as follows:

#### **ONE-WAY MAXIMUM TRIP RATES**

Schedule "A" 6:00 A.M. - 6:00 P.M. Monday through Friday; 6:00 A.M. - 2:00 P.M. Saturday.

Schedule "B" - OTHER HOURS, SUNDAYS & HOLIDAYS (space time available)

#### MAXIMUM ONE-WAY TRIP RATES WITHIN MILWAUKEE COUNTY

	Schedule		
	"A"	"В"	
General	\$12.00	\$17.00	
airport or depot	17.00	24.50	
Services of second operator . Hourly waiting time, or	7.50	11.25	
\$0.25 per minute	15.00	22.50	
Service charge - "No Show" . Additional mobility or	7.50	11.25	
security equipment	1.00	1.00	

MAXIMUM ONE-WAY TRIP RATES BETWEEN MILWAUKEE COUNTY AND THOSE AREAS OF OZAUKEE, WASHINGTON, WAUKESHA, AND RACINE COUNTIES IN THE METROPOLITAN TELEPHONE ZONE.

General	17.00	24.50
Admissions or discharges/		
airport or depot	22.00	32.00
Services of second operator	11.25	16.88

This rate structure was implemented by Handicabs on May 1, 1977, as an emergency rate increase and remained in effect until September 1977 at which time it was to be reviewed. Prior to this "flat" rate structure, Handicabs utilized a progressive rate structure based on miles traveled. Subscription rate and volume discounts are also available and under such optional programs, the "flat" rate can be reduced by as much as 50 percent as shown in Table 135.

Based on these existing rate structures, revenue per hour is estimated to range between \$12.00 and \$15.00. Cost of service is largely determined by labor wage rates, since such transportation service is very labor-intensive. Based on the Handicab driver pay scale and supplemental financial information, it is estimated that labor costs range between \$8.00 and \$9.00 per hour. Considering fixed costs, including depreciation, hourly operating costs are estimated to range between \$11.00 and \$14.50.

Quality Care Cab: This private operator began service in November 1976. At the time of the interviews, therefore, system performance data were unavailable. Quality Care Cabs operates a 24-hour advance notice, door-through-door, demand responsive system similar to Handicabs. Service is provided from 7:00 A.M. to 8:30 P.M. The system currently uses "beepers" and available telephones to contact drivers but radio equipment is scheduled to be installed in the vehicles in the near future.

The Company has five vans of which three are accessible to the handicapped in wheelchairs. Immediate plans call for the purchase of two more vehicles with the company having the capacity to license up to 15 vehicles. The primary business to date has been contract services with nursing homes; however, the company expects to expand to increase individual service. The fare system is the same as established by Handicabs.

<u>Care Cabs</u>: This is the second largest chair car carrier in Milwaukee County. Its growth over the past two years has been substantial. Care Cabs operates in two other Wisconsin cities, Madison and Green Bay, with the headquarters office being in Milwaukee.

The service began in 1975, primarily oriented toward serving nursing homes; however, as its ridership has increased, it has also expanded its market to include individual users. The operating policies described herein reflect current conditions, with operating statistics reflecting service in late 1976 and early 1977.

<u>Type of Service</u>: Care Cabs provides 24-hour, advance notice, demand responsive door-throughdoor transportation. Almost all patrons schedule their first trip at least 24 hours in advance. The vehicles are not radio equipped and demand responsive service is dispatched through a system of "beepers" and available telephone service. Drivers carry electronic beepers that alert them to telephone the dispatcher. The importance to a handicapped individual of door-through-door service has been emphasized previously and Care Cabs provides such service. Care Cabs also operates subscription type services for regularly scheduled trips. Approximately 20 percent of the daily patronage is transported on a regular prescheduled basis.

<b>REGULAR AND DISCOUNT RATES UNDER</b>	HANDICABS OPTIONAL PROGRAMS
-----------------------------------------	-----------------------------

	Rate S	chedule Withi	n Milwaukee	County	Rate Schedule Between Milwaukee County and Metropolitan Are				
Single One-Way Rides Per Week ^a	Regular Rate	Percent Discount	Discount Rate	Savings	Regular Rate	Percent Discount	Discount Rate	Savings	
2	\$12.00	17	\$10.00	\$2.00	\$17.00	18	\$14.00	\$3.00	
4	12.00	25	9.00	3.00	17.00	24	13.00	4.00	
6	12.00	33	8.00	4.00	17.00	29	12.00	5.00	
8	12.00	42	7.00	5.00	17.00	35	11.00	6.00	
10 or more	12.00	50	6.00	6.00	17.00	41	10.00	7.00	

^a6:00 A.M. - 6:00 P.M. Monday through Friday—until 2:00 P.M. Saturday.

Source: Handicabs, Inc.

<u>Service Area</u>: Care Cabs primary service area is Milwaukee County, although service is provided to eastern Waukesha and northern Racine Counties. Occasionally, service is also provided to Ozaukee and Washington Counties. Within Milwaukee County, the areas of intensive demand are the northeastern, central, and southeastern sections of the County.

Hours of Operation: Primary service is provided between 7:00 A.M. and 7:00 P.M. on weekdays. Service is also provided on Saturdays and on certain holidays.

<u>Vehicles</u>: Care Cabs' has 15 vehicles in demand responsive operation with two additional vehicles operated on a charter basis. All vehicles were purchased since 1975; and all are equipped with ramps. The capacity of the vans varies from seven seats/three wheelchairs to 15 seats.

<u>Personnel:</u> Care Cabs employs 10 full-time and seven part-time drivers supplemented by a support staff of two and an administrative staff of three. Drivers work a nine-hour day, with some starting their shift around 7:00 A.M. and terminating at 4:00 P.M.; and others starting at 11:00 A.M. and ending at 7:00 P.M. Drivers are paid a straight hourly wage determined by length of service and performance.

Marketing: Care Cabs maintains a low marketing budget, depending primarily upon word-of-mouth advertisement. The management does utilize slide presentations, personal visits, brochures, and other related materials to seek new clients. To the extent possible, the Company tries to use transportation studies of the Wisconsin Department of Transportation, the Southeastern Wisconsin Regional Planning Commission, the U.S. Bureau of Census, and National Health Data to determine areas of potential demand for their service. Data from these studies, together with Care Cabs' surveys and experience, provide the basic information needed for marketing. Care Cabs' administrators indicate that referrals from agencies and individuals already using the service are the most effective marketing tool.

<u>Operating Statistics</u>: Care Cabs estimates driverpaid hours for a six-month period to be 17,900. Based on their increased services since this 1976 estimate, it is calculated that Care Cabs presently operates between 37,000 and 40,000 hours annually. Using an assumed average speed of 12.5 miles per hour, estimated annual mileage ranged between 462,500 and 500,000 miles.

<u>*Ridership:*</u> Care Cabs averages 530 passenger trips per day for an estimated 11,660 trips per month and 139,900 trips per year. Unduplicated users are estimated at 940 per month which means an average client rides 12.4 times per month. Care Cabs indicated that they had an estimated productivity of about three passengers per hour and, based on estimated hours of service and patronage, actual productivity appears to be 3.5 passengers per hour.

<u>Financial Statistics</u>: The fare structure of Care Cabs is regulated by the City. The current rates are as follows:

- \$5.00 Passenger management/service, at departure and arrival points includes first 30 blocks of travel.
- \$0.60 Each additional 10 blocks, or fraction thereof.
- \$5.00 Services of second operator, if needed, for assistance.
- \$9.00 Minimum for nursing home or hospital admissions and discharges.
- \$9.00 Minimum to and from airports or depots.
- \$9.00 Hourly waiting time, pro-rated at \$0.15 per minute.

Based on this fare structure, revenue per hour has been estimated as being between \$11.00 and \$14.00 per hour. Cost of service was estimated to be within the range of \$10.50 and \$13.00 per hour. This estimated cost range is considered reasonable since Care Cabs charter rates are \$10.50 per hour.

Nursing Homes Providing Transportation Services Seventy-two nursing homes are located in Milwaukee County, and 45 of them provide transportation services to their clients. Unfortunately, in compiling the data, the Wisconsin Department of Transportation found the information on one questionnaire unusable; therefore, the data reported below is for 44 providers.

The nursing homes estimate they serve 2,273 individuals on a monthly basis. Of these, 1,598, or 70 percent, are elderly and 1,605, or 71 percent, are handicapped, with 1,121, or 70 percent, of the handicapped also elderly.

The total number of nursing home clients transported by mode is as follows:

Trip Mode	Number of Clients	Percent
Nursing home vehicles Contracted services Volunteer services Bus or taxi reimbursement Other	685 1,047 121 70 393	30 45 5 3 17
Total	$2,316^{6}$	100

Of importance is the fact that 45 percent of the nursing home clients are provided transportation under contract. These contracts are for the most part with private operators or agencies discussed previously.

## OZAUKEE COUNTY

Except for limited commuter bus service Ozaukee County has no local public transit system and no private chair car carriers located in the County. The major providers of transportation in Ozaukee County are:

- 1. Four agency providers.
- 2. Two taxicab operators.
- 3. Two nursing homes.

#### Social Service Agencies

Table 136 lists the four agencies that provide transportation services to the elderly and/or the handicapped in Ozaukee County. All of these services are provided with a total of four vans and one station wagon, and in the case of Catholic Social Services Elderly Project by personal vehicles. Over 400 clients are served making a total of 800 trips per month. On an annual basis, over \$13,000 is spent on transportation. Three of the four agencies serve all of Ozaukee County; the one exception being Port Washington Senior Citizens, which serves only the City of Port Washington. Two of the operators offer a demand responsive service and two offer fixed schedule services. The fixed schedule services, however, have an element of demand responsive service because the schedule may vary each day based on client travel needs and location. Portal Programs, Inc. operates only during short morning and afternoon periods, while the American Red Cross operates in the mornings and evenings. The remaining two agencies operate during the day. Two of the agency transportation services use paid drivers, while two rely solely on volunteer drivers.

Each agency restricts clientele. Portal Programs, Inc., transports clients over 16 years old who are involved in vocational rehabilitation programs. Port Washington Senior Services and Catholic Social Services Elderly Project serve only the elderly. Port Washington Senior Services defines elderly as persons 55 years or older, while the Catholic Social Services Elderly Project defines elderly as persons 60 years or older. The American Red Cross restricts clients to being ambulatory and unable to use other available public transportation.

The information on percent handicapped and percent elderly shown in Table 136, has been extracted from the Wisconsin Department of Transportation inventory survey of transportation for the elderly and handicapped in Wisconsin (November 1976) data, whereas all other information is taken from the Commission Survey of Elderly and Handicapped Transportation Service Providers (April 1977). These percentages provide a general idea of how agencies have served elderly and handicapped populations in the past.

The remainder of Table 136 summarizes operation effectiveness and financial statistics. Vehicles are being used from a low of 11 percent to a high of 49 percent of the time they are available to provide service each day. Productivity (passenger trips per vehicle hour) was reported by two agencies as being 1.14 and 4.49, respectively. Only one agency provided data to compute the vehicle operating cost per hour (\$14.29), and vehicle operating cost per passenger (\$12.99).

## Taxicab Services

Two taxi operators provide service in Ozaukee County. Grafton-Cedarburg Taxi operates with one vehicle as does the City Cab Company of Port Washington. City Cab has noted a decrease in ridership due to the institution of the transportation service at the Port Washington Senior

⁶Although it is estimated that 2,273 elderly and handicapped individuals are served by nursing homes each month, the fact that 2,316 persons use the various transportation modes listed in the table would indicate that some persons use several of these modes to satisfy their travel demands.

#### Table 136

## OZAUKEE COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

Agency ^a	Service A <i>rea</i>	Type of Service ^b	Type of Passenger Pick-Up ^C	Number and Type of Vehicles	Daily Operating Hours	Volunteers or Paid Drivers	Total Clients	
							Eligibility Requirements	Monthly Individuals
Portal Programs, Inc.	Ozaukee County	FS RD	DtD	3 Vans	7:00 A.M8:30 A.M. 3:30 P.M5:30 P.M. Monday-Friday Additional hours, nights, weekends	Paid Drivers	Vocational referral program, over 16	40
Port Washington Senior Citizens	City of Port Washington	DR	DthD	1 Van	10:00 A.M. 4:00 P.M. Monday, Wednesday, Friday Special Events	Paid Drivers-3	Over 55, City of Port Washington guests of senior citizens over 55	200
American Red Cross	Ozaukee County	FS	DtD, DthD	1 Station Wagon	8:00 A.M9:00 A.M. 5:00 P.M9:00 P.M. Monday-Friday Saturday and Sunday as Needed	Volunteers	Unable to use transportation, ambulatory	136
Catholic Social Services Elderly Project	Ozaukee County	DR	DthD	Personal Vehicles	9:00 A.M6:00 P.M. Monday-Friday	Paid Drivers	Over 60	57

	Number of Clients by Trip Purpose					Porcont	Baraant	Monthly	Average		
Agency	Work	Personal Business	School	Shopping	Medical	Social	Recreation	Handicapped Clientele ^d	Elderly Clientele ^d	One-Way Trips	Utilization (in percent)
Portal Programs, Inc. Port Washington Senior Citizens	×	×	×	×	x x	x x	×	97.2 100.0	2.8 100.0	80 350	36 49
American Red Cross Catholic Social Services Elderly Project		×	×	X X	x x	×	x x	3.4 15.7	94.7 100.0	260 110	N/A 11

Agency	Productivity (trips per logged vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip	Estimated Annual Budget	F unding Sources
Portal Programs, Inc.	1.14	\$1,000	\$14.29	\$12.99	\$12,000	Division of Mental Health Division of Vocational Rehabilitation
Port Washington Senior Citizens	4.49	N/A	N/A	N/A	N/A	Fares and City
American Red Cross	N/A	\$ 150	N/A	N/A	\$ 1,800	United Way
Catholic Social Services Elderly Project	N/A	N/A	N/A	N/A	N/A	Catholic Social Services

NOTE: N/A indicates data not available.

^a The operating characteristics were obtained from a representative of each agency and represent approximations of each agency's transportation service operations.

^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule

^C Type of Passenger Pick-Up DtD-door to door DthD-door through door CtC-curb to curb O-Other

^d Double counting occurs.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning. Citizen Center. The state and municipal funding of the senior citizen van program was seen as unfair competition by City Cab, which has expressed an interest and a willingness to provide special service to the elderly and handicapped.

Nursing Homes Providing Transportation Services Ozaukee County has two nursing homes which provide transportation services. Service is provided to a total of only eight persons. Seven of the eight persons served are both elderly and handicapped. Four clients are served by a nursing home vehicle, one by contracted service, and three by volunteer drivers.

# WASHINGTON COUNTY

As in Ozaukee County, there are no local public transit or private chair car carriers headquartered in Washington County. The major providers of transportation services in Washington County are:

- 1. Three agency providers.
- 2. One taxicab operator.
- 3. Four nursing homes.

## Social Service Agencies

The three agencies serving Washington County are listed in Table 137. Service by these three agencies is provided with three buses, six vans, one station wagon, and four personal vehicles that are occasionally used. Almost 350 clients utilize transportation services on a monthly basis, and they make over 5,700 trips per month. On an annual basis, the expenditure to provide these transportation services is approximately \$78,800.

The Threshold and the Washington County Older Adult Transportation (OAT) Program both serve the entire county. The American Red Cross provides service primarily in the City of Hartford, Village of Germantown, and the Towns of Richfield, Polk, Hartford, and Erin. The American Red Cross operates demand responsive services. The other two agencies provide fixed route and fixed schedule services; however, even the fixed schedule services have an element of demand responsive service because the routes and schedules may vary each day based on client travel needs and location. The American Red Cross operates on an "as needed" basis. The OAT service operates throughout the day; and the Threshold operates during three periods of the day-early morning, noontime, and afternoon. The American Red Cross

uses volunteers, while the other two programs operate with paid drivers. Each agency restricts its clientele. The American Red Cross transports persons who are ambulatory but unable to use public transportation. The OAT Program serves persons 60 years or older, and the Threshold serves handicapped persons.

The percent handicapped and percent elderly data included in Table 137 has been extracted from the Wisconsin Department of Transportation inventory survey of transportation for the elderly and handicapped in Wisconsin (November 1976) whereas all other information was obtained from the Commission Survey of Elderly and Handicapped Transportation Service Providers conducted in April 1977 for purposes of this study. These percentages provide a general description of how agencies have served elderly and handicapped populations in the past.

Operational effectiveness and financial statistics are also summarized in Table 137. Vehicles are reportedly being used very well-75 percent, 82 percent, and 95 percent of the time, respectively. Productively (passenger trips per vehicle hour) was not available. All agencies provided data from which vehicle operating cost per hour could be derived. As shown, the operating costs per hour for the three agencies are \$1.43, \$8.78, and \$6.79, respectively.

## Taxicab Services

Washington County has only one taxi service— City Cab—headquartered in West Bend. The company operates in the City of West Bend and adjacent Town areas with a fleet of six cabs.

## Nursing Homes Providing Transportation

All four nursing homes in the County provide transportation services. An estimated 305 clients are served monthly. Of these 252, or 82 percent, are elderly and 176, or 57 percent are handicapped, with 173, or 69 percent, of the elderly also handicapped.

The total number of nursing home clients transported by mode is as follows:

Trip Mode	Number	Percent
Nursing home vehicles Contracted services Volunteer services Bus or taxi reimbursement Other	$179 \\ 43 \\ 63 \\ 0 \\ 20$	$58 \\ 15 \\ 21 \\ 0 \\ 6$
Total	305	100
# WASHINGTON COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

	Туре	Type of	Number and	Daily	Volunteers	Total Clients		
Agency ^a	Service Area	Type of Service ^b	Passenger Pick-Up ^C	Type of Vehicles	Operating Hours	or Paid Drivers	Eligibility Requirements	Monthly Individuals
American Red Cross	Allenton, Richfield, Polk, Hartford, Erin, Germantown	DR	DtD, DthD	1 Station Wagon 4 Occasional Personal Vehicles	As Needed	Volunteers	Individuals Unable to Use Public Transportation Must be Ambulatory	33
Washington County Older Adult Transportation	Washington County and Immediate Area	FR, FS, RD	DthD	1 Bus	8:00 A.M5:00 P.M. Monday-Friday	Paid Drivers-1	Over 60	185
The Threshold	Washington County	FR, FS	DtD	2 Buses 6 Vans	6:30 A.M8:30 A.M. 12:00 P.M1:00 P.M. 3:00 P.M5:00 P.M. Monday-Friday Plus Field Trips and Special Events	Paid Drivers-8	Handicapped	130

	Number of Clients by Trip Purpose									Monthly	Average
Agency	Work	Personal Business	School	Shopping	Medical	Social	Recreation	Handicapped Clientele ^d	Percent Percent andicapped Elderly Clientele ^d Clientele ^d	One-Way Trips	Utilization (in percent)
American Red Cross Washington County Older Adult Transportation	×	x	X ^e	××	x x	××	x x	16.4 69.5	93.2 87.5	33 400	75 ^f 95
The Threshold	×		x			×	×	91.5	8.5	5,300	82

Agency	Productivity (trips per logged vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip	Estimated Annual Budget	Funding Sources
American Red Cross Washington County Older Adult Transportation The Threshold	N/A N/A N/A	\$ 172 \$13,000 \$ 5,000	1.43 8.78 6.79	N/A N/A N/A	\$ 2,067 \$16,800 \$60,000	United Way Title III, Donations, In-Kind Services Washington County Board, Division of Vocational Rehabilitation, Donations, Special Fares

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule

^C Type of Passenger Pick-Up DtD-door to door DthD-door through door CtC-curb to curb O-Other

^d Double counting occurs.

^e Indicates transportation is provided for a particular purpose.

^f Vehicle utilization includes deliveries of blood.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning. Of note is the fact that no nursing home clients in the county are transported aboard taxicab services and over 20 percent are transported by volunteers.

# WAUKESHA COUNTY

As in the case with Ozaukee and Washington Counties, there is no local public transit (except for limited intercity commuter oriented service) or private chair car carrier headquartered in Waukesha County. The primary providers of transportation in Waukesha County are:

- 1. Nine agency providers.
- 2. Four taxicab operators.
- 3. Eight nursing homes.

In addition, Wisconsin Coach Lines, a private bus operator, does provide a local fixed route bus service for students who live too close to school to be eligible for school supported transportation. These special routes are operated at the initiative of the private operator. The general public is eligible to use the service, but the school destinations, time of service, and routes are all oriented to student travel and the service more closely approximates a school bus service than local public bus service. This service is a remnant of a local transit service operated in the City of Waukesha which was terminated by Wisconsin Coach Lines in May 1976.

# Social Service Agencies

Table 138 lists the nine agencies identified as social service agency providers of transportation service to the elderly and the handicapped. Five of the nine agencies are FISH organizations, which are private, church related groups of volunteers. Service is provided through the operation of personal vehicles, contracted vehicles, two station wagons, and two small buses. An estimated 500 clients who make approximately 6,400 trips per month are served monthly. Total annual budgeted expenditures to provide these transportation services exceed \$78,000.

Three agencies serve all of Waukesha County. Menomonee Falls Center operates in the Villages of Menomonee Falls and Sussex; the City of Brookfield in Waukesha County; and the Village of Germantown in Washington County. Each FISH organization serves a separate list of communities in Waukesha County.

The FISH organizations plus the Waukesha County Program on Aging provide demand responsive services. Two agencies provide fixed schedule service, while one provides fixed route service. The fixed route and fixed schedule service is somewhat demand responsive because routes and schedules can vary each day depending upon the location and travel needs of the clients. Four of the FISH organizations have service available 24 hours per day, seven days per week. The remaining FISH organization has service available 12 hours per day, seven days per week. The American Red Cross and the Waukesha County Program on Aging operate throughout the day, five days per week. Waukesha Training Center provides transportation service in the early morning and late afternoon, and the Menomonee Falls Center operates in the mornings on Tuesday, Thursday, and Friday. Seven of the agencies use volunteer drivers. The Waukesha Training Center contracts for service, while the Waukesha County Program on Aging has three paid drivers.

FISH transportation is provided to anyone for any purpose, but two of these organizations indicate that they will provide service only in the case of extreme need or emergency. The American Red Cross serves only ambulatory persons. Menomonee Falls Center provides transportation for certain children to and from school, and the Waukesha County Program on Aging restricts its services to only the elderly persons at least 60 years of age.

The percent handicapped and percent elderly data included in Table 138 has been extracted from the Wisconsin Department of Transportation inventory survey of transportation for the elderly and the handicapped in Wisconsin (November 1976); whereas all other information was obtained from the Commission's Survey of Elderly and Handicapped Transportation Providers conducted as a part of this planning study. These data provide a general description of how agencies have served elderly and handicapped populations in the past.

Operational effectiveness and financial statistics are also summarized in Table 138. Vehicle utilization, a measure of how much a vehicle is used with respect to the amount of time it is available to be used, was reported for two agencies. The American Red Cross reported a low 18.75 percent utilization rate, but the vehicles are also used for other purposes when not being used to transport elderly and/or handicapped clients. The Waukesha County Program on Aging reported a high (75 percent) utilization rate. Productivity (passengers served per vehicle operating hour) was reported for two agencies and ranged from a low of 3.0 to a high of 3.78 passengers served per hour. The operating cost per vehicle hour ranged from a low of \$1.37 to a high of \$11.58 while the vehicle operating cost per passenger ranged between \$0.45 and \$3.06.

# Taxicab Services

Waukesha County is served by four taxicab companies operating 16 taxis. The largest operator, the Yellow Cab Company of Waukesha, operates eight taxis. Checker Cab Company of Waukesha is the next largest with four taxis. The remaining two firms, D. H. Enterprises of the City of Oconomowoc and Falls Taxi Services in Menomonee Falls, provide service with two vehicles each.

Nursing Homes Providing Transportation Services The results of the statewide inventory of the transportation services provided for the elderly and handicapped by nursing homes indicate that eight nursing homes provide transportation in Waukesha County. The information obtained from one of the inventories was unusable and had to be discounted. The seven remaining providers served a total of 505 persons. Almost 70 percent of the clients were transported in vehicles owned by the facility, and 20 percent of the clients were transported with contracted vehicles. The remaining clients rely on transportation services provided by volunteers, a bus or taxi at the facility's expense, or by some other arrangement. Almost 85 percent of the clients are 60 years of age or older. In addition, about 75 percent of the persons transported are handicapped.

# **RACINE COUNTY**

The major providers of transportation service in Racine County are:

- 1. One public transit system.
- 2. Nine agency providers.
- 3. Two taxicab operators.
- 4. Three nursing homes.

There are no private chair car carriers headquartered in Racine County.

## City of Racine Transit System

The City of Racine owns and operates a 25-bus transit system within the Racine urbanized area. All buses have a 41-passenger capacity. Twenty-one buses are needed daily to serve regular route, peak period ridership. The accessibility features of these buses are shown in Table 139. None of the regular route buses are currently accessible to persons requiring lift or ramp assistance.

The City not only provides a reduced fare program for the elderly who are at least 65 years of age and the handicapped, but it also subsidizes free specialized transportation services for the elderly and the handicapped operated by Lincoln Lutheran specialized transportation of Racine. In terms of the reduced fare program, the Racine Bus System charges a \$0.10 fare for elderly and handicapped riders who ride between the hours of 9:00 A.M. and 3:00 P.M., after 6:00 P.M., and on Saturdays. To be eligible, a person secures a half-fare card by showing proof of age or by having an agency or doctor certification of handicap. The City estimates that approximately 35 percent of its ridership is elderly or handicapped.

Social Service Agencies: Table 140 lists the nine agencies that provide transportation to the elderly and/or the handicapped. Special mention must be made of the Lincoln Lutheran Specialized Transportation Services, which represent over two years of experience in providing coordinated agency transportation services. Through efforts of the City of Racine, the Area Agency on Aging, the Racine Community Development Disabilities Services Board, and Lincoln Lutheran of Racine, coordinated transportation services are being operated. The data on this service represents a period when vehicles owned by the City were leased to Lincoln Lutheran Specialized Transportation. In July 1977, these vehicles were retired from service and contracts with private bus operators were negotiated by Lincoln Lutheran Specialized Transportation. Through contract, private operators now provide service with three buses.

In addition to the contracted vehicles operated by Lincoln Lutheran Specialized Transportation, the other agency transportation service providers in Racine County use combinations of personal vehicles, seven station wagons, two ambulances, a number of other contracted vehicles, and one passenger automobile to provide transportation

# WAUKESHA COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

			Type of	Number and	Daily	Volunteers	Total Clie	ents
Agency ^a	Service Area	Type of Service ^b	Passenger Pick-up ^C	Type of Vehicles	Operating Hours	or Paid Drivers	Eligibility Requirements	Monthly Individuals
American Red Cross Greater Milwaukee Chapter	Waukesha County	FS	DtD	2 Station Wagons	9:00 A.M7:00 P.M. Monday-Friday	Volunteers-15	Ambulatory	45
FISH - Menomonee Falls	Germantown Menomonee Falls Richfield Sussex Lannon Colgate	DR	DtD	Personal Vehicles	24 Hours, 7 Days a Week	Volunteers-30	Anyone	30
Menomonee Falls Center	Menomonee Falls Sussex Brookfield Germantown	FS	DtD	N/A	9:00 A.M1:00 P.M. Tuesday, Thursday, Friday	Volunteers-3	Any child without parent supplied transportation	4
FISH - Elmbrook	Brookfield Elm Grove	DR	DtD, DthD, CtC as Needed	Personal Vehicles	24 Hours, 7 Days a Week	Volunteers-30	Anyone	15-20
Waukesha Training Center	Waukesha County	FR	Pick-Up Points	Contracted Vehicles-6	6:00 A.M7:30 A.M. 3:30 P.M5:00 P.M. Monday-Friday	Paid Drivers	Individuals funded through Division of Vocational Rehabilitation or Division of Mental Health	100-120
Waukesha County Program on Aging	Waukesha County	DR	DtD	2 Small Buses	8:30 A.M4:00 P.M. Monday-Friday	Paid Drivers-3	Age 60 and Over	231
FISH - Waukesha	City of Waukesha	DR	DthD	Personal Vehicles	24 Hours, 7 Days a Week	Volunteers-8	Extreme Need	15
FISH - Pewaukee	Pewaukee	DR	DtD, DthD, CtC	Personal Vehicles	24 Hours, 7 Days a Week When Volunteer Available	Volunteers-27	Anyone	20
FISH - Oconomowoc	Oconomowoc Dousman Hartland	DR	DthD	Personal Vehicles	7:00 A.M7:00 P.M. 7 Days a Week	Volunteers-25	Emergency	15

			Number	of Clients by	Percent	Percent	Monthly	Average			
Agency	Work	Personal Business	School	Shopping	Medicał	Social	Recreation	Handicapped Clientele ^d	Elderly Clientele ^d	One-Way Trips	Utilization (in percent)
American Red Cross Greater Milwaukee Chapter			4		31		10	5.4	72.5	180	18.75
FISH - Menomonee Fails		x	1	×	×	х	×	37,1	8.6	60	N/A
Menomonee Falls Center			x					N/A	N/A	106	N/A
FISH - Elmbrook		×		х	х		x x	20.0	10.0	30-40	N/A
Waukesha Training Center	x									5,000	N/A
Waukesha County	No Re	estrictions-P	riority								
Program on Aging	4	3	4	2	1	3	4	100 0		903	75
FISH - Waukesha		X		х	х	-		N/A	N/A	33	N/A
FISH - Pewaukee		x	x	х	х				100.0	40	N/A
FISH - Oconomowoc					15			100.0		15	N/A

## Table 138 (continued)

Agency	Productivity (trips per logged vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip	Estimated Annual Budget	Funding Sources
American Red Cross Greater Milwaukee Chapter	3.0	\$ 171	\$ 1.37	\$0.45	\$ 2,053	United Way
FISH - Menomonee Falls	N/A	\$ 50	N/A	\$0.83	\$ 750	Church-Community Organizations
Menomonee Falls Center	N/A	N/A	N/A	N/A	N/A	N/A
FISH - Elmbrook	N/A	N/A	N/A	N/A	\$ 100	Church Donations
Waukesha Training Center	N/A	\$5,121	\$ 8.03	N/A	\$49,780	Division of Vocational Rehabilitation Division of Mental Health
Waukesha County Program on Aging	3.78	\$2,778	\$11.58	\$3.06	\$24,585	User Donations Title III Waukesha County
FISH - Waukesha	N/A	N/A	N/A	N/A	\$ 830	Donations, United Way
FISH - Pewaukee	N/A	N/A	N/A	N/A	N/A	N/A
FISH - Oconomowoc	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations of each agency's transportation service operations.

^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule

^C Type of Passenger Pick-Up

DtD-door to door DthD-door through door CtC-curb to curb O-Other

^d Double counting occurs.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

to their elderly and/or handicapped clients. During an average month, these vehicles transport almost 2,000 clients who make a total of over 43,200 trips. The total annual budget for provision of these transportation services exceeds \$200,000.

Four agencies operate only in Racine County. Two agencies serve Racine and Kenosha Counties, and three agencies serve only portions of Racine County. Society's Asset and Southern Wisconsin Colony operate demand responsive service. Six agencies operate fixed route and/or fixed schedule service; however, these services are somewhat demand responsive because the routes and schedules are subject to change each day based on the needs of the clientele. The Racine County Department of Social Services directly reimburses its clients who are allowed to choose their own mode of travel. All agencies provide at least doorto-door services and some provide door-through-

door transportation service. Of those agencies who indicated that they used agency drivers, two use volunteer drivers, two use paid drivers, and one uses agency outreach workers. All agencies restrict either the clientele or the purposes of a trip. The percent handicapped and percent elderly data included in Table 140 has been extracted from the Wisconsin Department of Transportation survey of transportation for the elderly and the handicapped in Wisconsin (November 1976); whereas, all other information was obtained from the Commission's Agency Transportation Service Providers inventory conducted as a part of this study. These percentages provide a general description of how agencies have served elderly and handicapped populations in the past.

Operational effectiveness and financial statistics are also summarized in Table 140. Vehicles are being used between a low of 58 percent and a high

Accessibility Features	UMTA Regulations ^a	City of Racine Transit System Buses
Wheelchair Accessibility Dimensions	b	No
a) First Step Height	14"	14"
b) Second Step Height	8"	10″
c) Third Step Height	12"	10"
d) First Tread Depth	12''	12"
e) Second Tread Depth	12"	12"
f) Front Door Width	c	30"
g) Rear Door Width	c	26.5"
h) Minimum Aisle Width	c	20"
Air Conditioning	c	No
Nonslip Floor/Step Covering	Yes	Yes
Step-Edge Color Band	Yes	Yes
Priority Seating Signs	Yes	No
Illumination		
a) Stairwell	Yes	Yes
b) Ground Outside Stairwell	Yes	No
Illuminated Route/Destination Signs	Yes	Yes
Audible Door Warning	No	No
Floor Space Adequate for Wheelchair	No	No
"Kneeler" Feature	No	No
Handrails/Stanchions		
a) Front Door Back	Yes	Yes
b) Seat Back	d	Yes
c) Vertical	d	Yes
d) Overhead	Yes	Yes
e) Front of Vehicle/Farebox	Yes	Yes
f) Inside Stairwell	d	Yes
International Accessibility Symbol	No	No

# ACCESSIBILITY FEATURES OF CITY OF RACINE TRANSIT SYSTEM BUSES AS COMPARED TO UMTA REGULATIONS: JULY 1977

^a It should be noted that at the time the previous private owner of the local bus system purchased these buses there were no UMTA required vehicle design specifications for the elderly and the handicapped.

^b Optional.

^C No requirement.

 d  Requires ''safe on-board circulation, seating and standing assistance and unboarding . . . ''

Source: Applied Resource Integration, Ltd.

of 84 percent of the time they are available for service each day. The range of productivity for agencies is typically between 1.25 and 9.00 trips per vehicle operating hour. The vehicle operating cost per hour to provide their transportation services ranges between \$5.12 and \$12.00, and the vehicle operating costs per trip are between \$0.90 and \$7.11.

# Taxicab Services

Taxicab service in Racine County consists of two operators—Burlington Cab Company serving the City of Burlington with three cabs and a new operator Cardinal Cab now serving the City of Racine with two cabs. During the study, the City of Racine was without taxi service for a few months after the sole operator who had been operating eight cabs ceased operations.

Nursing Homes Providing Transportation Services Three nursing homes that provide transportation to their residents have been identified in Racine County. Of the three, only one serves persons who do not reside at the facility. These nursing homes are: Lincoln Lutheran of Racine; Oak Ridge Health Care Center, Franksville; and High Ridge Health Center, Racine County.

# **KENOSHA COUNTY**

The major providers of transportation services in Kenosha County are:

- 1. One public transit system.
- 2. Three social service agencies.
- 3. Three taxicab operators.
- 4. Eight nursing homes.

There are no private chair car carriers headquartered in Kenosha County.

# Kenosha Transit Commission

The Kenosha Transit Commission (KTC) is the administrative body of the City of Kenosha responsible for overseeing transit operations. Since 1971 the system has been owned and operated by the City. In that time, KTC has expanded its operations by more than double the annual mileage operated in 1971 while also quadrupling patronage. The accessibility features of these buses are shown in Table 141. As shown, no bus is currently accessible to persons requiring lift or ramp assistance. KTC owns twenty-four 1975 45-passenger buses and six older buses. The peak period requires 24 buses for service so all new buses are committed to operations with the older buses serving as spares.

KTC has a regular fare of \$0.25 but charges elderly and handicapped persons only \$0.10 except between the peak hours of 6:00 A.M. to 8:00 A.M. and 2:20 P.M. to 5:00 P.M. on weekdays when full fare is levied. To be eligible for the half-fare, a person must be at least 65 years of age or have medical verification of a handicap. Upon proper certification, an eligible participant is issued a picture pass card that is shown to the driver when boarding. Current estimates place elderly and handicapped patronage at about 11 percent of total ridership.

Future plans include acquiring one accessible bus in 1978. This vehicle would be operated in a demand responsive mode to serve the handicapped. KTC is also hopeful of coordinating service with the Kenosha Achievement Center, especially in the dispatching of vehicles.

## Social Service Agencies

Table 142 lists the three agencies identified as providers, purchasers, or arrangers of transportation for the elderly and handicapped. Nine buses, one van, and a number of personal vehicles are operated in Kenosha County by these agencies. On a monthly basis, these vehicles serve approximately 400 clients making a total of 8,200 trips. The Kenosha Achievement Center is the largest operator providing service for a total of 6,500 trips. For the two agencies reporting their estimated annual budget, over \$71,000 is spent on client transportation.

The Kenosha Department of Social Services operates throughout Kenosha County. The Kenosha Achievement Center serves Kenosha County and the northern part of Lake County, Illinois. CESA No. 18 operates school bus services in the school districts in western Kenosha County. The Kenosha Department of Social Services operates demand responsive services, and CESA No. 18 operates route deviation service. The Kenosha Achievement Center operates several different types of transportation service-demand responsive, fixed route, fixed schedule, and route deviation-based on the various needs of its clientele. All three systems provide service throughout the day, with the Kenosha Achievement Center operating early morning and late afternoon service to its centers

# RACINE COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

			Type of	Number and	Daily	Volunteers	Total Clie	nts
Agency ^a	Service Area	Type of Service ^D	Passenger Pick-Up ^C	Type of Vehicles	Operating Hours	or Paid Drivers	Eligibility Requirements	Monthly Individuals
American Red Cross	Racine County Kenosha County	FS	DthD	4 Station Wagons	8:00 A.M5:00 P.M. Monday-Friday	Volunteers-26	Service based on need; no age requirement; must be ambulatory	138
Racine County School	Racine County West of IH 94	FR, FS	DtD, Ctc	Contracted Vehicles Vehicles-N/A	7:00 A.M9:00 A.M 2:30 P.M4:30 P.M. Monday-Friday	N/A	Special Education	125
Goodwill Industries of Southeastern Wisconsin	Racine County	FR, FS, RD	DtD, CtC nearest corner	Contracted Vehicles-2	6:30 A.M6:00 P.M. Monday-Friday	Paid Drivers-2	Physical, mental handicaps; live within transit routes; founded by one of Goodwill Industries' funding sources	54
Careers for Retarded Adults, Inc.	Union Grove Franksville Racine	FR, FS	DtD	Contracted Vehicle-1	8:00 A.M5:30 P.M. Monday-Friday	N/A	Developmentally disabled adults	400
Racine County Department of Social Services	Racine County	User-side reimburse- ment, passenger chooses mode	Depends upon mode selected	Personal Vehicles-65	8:00 A.M5:00 P.M. Monday-Friday	Volunteers-65	AFDC clients who require medical transportation and other activities	120
Racine Unified School District	Racine Caledonia Mt, Pleasant Wind Point North Bay Sturtevant Elmwood Park	FR, FS	DtD	Contracted Vehicles-53	6:30 A.M4:00 P.M. Monday-Friday	Paid Drivers	Special Education students; mental, physical, emotional handicaps	780
Society's Assets, Inc.	Racine County Kenosha County	DR existing transit when possible	DthD	Contracted Vehicle-1	6:30 A.M.4:30 P.M. Monday-Friday	N/A	Under CETA funding, transport physically disabled for work and educational purposes	53
Southern Wisconsin Colony	Racine County	DR	DthD	3 Station Wagons 1 Passenger Auto 2 Ambulances	7:45 A.M4:30 P.M. Monday-Friday	Agency out- reach workers	Client of Southern Wisconsin Colony	N/A
Lincoln Lutheran Specialized Transportation	Racine County	FS	DtD	3 Contracted Vehicles	7:00 A.M5:30 P.M. Monday-Friday	N/A	Over 60 years or handicapped	321

Table 140 (continued)

			Number	r of Clients by	Trip Purpos	e		Percent	Percent	Monthly	Average Vehicle
Agency ^a	Work	Personal Business	School	Shopping	Medical	Social	Recreation	Handicapped Clientele ^d	Elderly Clientele ^d	One-Way Trips	Utilization (in percent)
American Red Cross				x	X (Priority)	×	×	73.8	50.0	414	58
Racine County School			×					100.0		5,000	N/A
Goodwill Industries of Southeastern Wisconsin	x					×	×	100.0		2,160	75
Careers for Retarded Adults, Inc.	×						×	100.0	5,0	1,600	N/A
Racine County Department of Social Services	×	×	x	×	×	×		27.2	27.2	355	N/A
Racine Unified School District			×					N/A	0.0	31,200	60
Society's Assets, Inc.	x		х					100.0	N/A	247	84
Southern Wisconsin Colony		x		x	×	×	×	100.0	0.0	N/A	N/A
Lincoln Lutheran Specialized Transportation		x		×	X	×	×	1.1	100.0	2,268	76

Agency ^a	Productivity (trips per logged vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost per Passenger Trip	Estimated Annual Budget	F unding Sources
American Red Cross Racine County School	1.25 N/A	\$ 250 ^e \$ 9.000	N/A N/A	N/A	N/A	N/A Bacine County
Goodwill Industries of Southeastern Wisconsin	9.00	\$ 1,950	\$ 8.12	\$0.90	\$21,373	Division of Vocational Rehabilitation; 51.42 Combined Community Services Board
Careers for Retarded Adults, Inc.	4.00	\$ 1,200	\$12.00	\$3.00	N/A	N/A
Racine County Department of Social Services	N/A	\$1,800-2,500	N/A	N/A	\$30,000	State of Wisconsin
Racine Unified School District	4.99	\$32,000	\$ 5.12	\$1.03	N/A	State share 73 percent Local taxes 27 percent
Society's Assets, Inc.	1.47	\$ 1,757	\$10.45	\$7.11	\$10,542	Tri-County Comprehensive Employment Training Act Consortium and 51.437 10/1/76-3/31/77
Southern Wisconsin Colony	N/A	N/A	N/A	N/A	N/A	N/A
Lincoln Lutheran Specialized Transportation	4.73	\$ 5,226	\$ 8.30	\$2,30	\$61,763	Title III, 51.437 Board, City of Racine Lincoln Lutheran

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations of each agency's transportation service operations.

^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule

^C Type of Passenger Pick-Up DtD-door to door DthD-door through door CtC-curb to curb O-Other

^d Double counting occurs.

^e Operational costs only.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

Accessibility	UMTA	Kenosha Transit
		Commission Buses
Wheelchair Accessibility Dimensions	b	No
a) First Step Height	14''	13.5″
b) Second Step Height	8"	10"
c) Third Step Height	8''	10"
d) First Tread Depth	12''	12"
e) Second Tread Depth	12"	12"
f) Front Door Width	C	30"
g) Rear Door Width	c	26.5"
h) Minimum Aisle Width	c	20"
Air Conditioning	c	Yes
Nonslip Floor/Step Covering	Yes	Yes
Step-Edge Color Band	Yes	Yes
Priority Seating Signs	Yes	No
Illumination		
a) Stairwell	Yes	Yes
b) Ground Outside Stairwell	Yes	No
Illuminated Route/Destination Signs	Yes	Yes
Audible Door Warning	No	No
Floor Space Adequate for Wheelchair	No	No
"Kneeler" Feature	No	No
Handrails/Stanchions		
a) Front Door Back	Yes	No
b) Seat Back	d	Yes
c) Vertical	d	Yes
d) Overhead	Yes	Yes
e) Front of Vehicle/Farebox	Yes	Yes
f) Inside Stairwell	d	Yes
International Accessibility Symbol	No	No

# ACCESSIBILITY FEATURES OF KENOSHA TRANSIT COMMISSION BUSES AS COMPARED TO UMTA REGULATIONS: JULY 1977

^a It should be noted that at the time the previous private owner of the local bus system purchased these buses there were no UMTA required vehicle design specifications for the elderly and the handicapped.

^b Optional.

^C No requirement.

 d  Requires "safe on-board circulation, seating and standing assistance and unboarding . . . "

Source: Applied Resource Integration, Ltd.

and also providing transportation for its programs during the day. Two of the agencies use paid drivers. The Kenosha County Department of Social Services relies on volunteer drivers. All three agencies have restrictions on their clientele and trip purposes as indicated in Table 142.

The percent handicapped and percent elderly data included in Table 142 have been extracted from the Wisconsin Department of Transportation inventory survey of transportation for the elderly and the handicapped in Wisconsin (November 1976) whereas all other information was obtained from the Commission's Survey of Elderly and Handicapped Transportation Service Providers. These percentages provide a general description of how agencies have served elderly and handicapped populations in the past.

Operational effectiveness and financial statistics are also summarized in Table 142. Vehicles are being used 42 percent and 50 percent, respectively, of the time they are available for service each day as indicated by the two reporting agencies. High productivity (passenger trips per vehicle hour)— 10.86—was also reported by one agency. The vehicle operating costs per hour for these agencies are \$16.56 and \$9.97, respectively, while the vehicle operating cost per passenger trip reported by the Kenosha Achievement Center is \$0.92.

# Taxicab Services

Three taxicab companies operate within Kenosha County. They are: Black and White Veteran Cab/Keno Cab; Courtesy Veteran's Cab/Peppie's Cab; and Kenosha Checker/Yellow Cab. The three taxicab companies operate primarily and are headquartered in the City of Kenosha. These three firms operate a total of 26 taxis.

Nursing Homes Providing Transportation Services Eight nursing homes responded to the statewide survey of nursing homes. Data on one of the forms were unusable; consequently, the results from only seven inventories are included in the following brief description.

In an average month, 545 individuals are provided transportation by the seven nursing homes. Of these, about 60 percent have a handicap that appears to cause a transportation problem, and almost 80 percent are 60 years of age or older. The majority of these persons are transported on agency-owned vehicles, although 47 percent travel on vehicles that are contracted by the agency. Twenty-one percent are transported by a means other than with agency-owned vehicles. These other modes include volunteer provided transportation, taxi service, and regular transit service. Only one nursing home provides transportation to nonresidents or nonusers of its facilities.

# WALWORTH COUNTY

The primary providers of transportation services in Walworth County are:

- 1. One public transit system.
- 2. Seven agency providers.
- 3. Two taxicab operators.
- 4. Six nursing homes.

There are no private chair car carriers headquartered in Walworth County.

# Geneva Lake Area Joint Transit

## Commission (GLAJTC)

The GLAJTC is a publicly owned and operated transit service; however, the primary function of its transit services is feeder service to the local commuter rail stations. Additionally, the GLAJTC operates service from Walworth County to Chicago O'Hare Airport. GLAJTC has two 50-passenger buses, three 18-passenger shuttle buses, one limousine, and a van. None of these vehicles is equipped with lifts or ramps.

Due to the nature of these services, local transit is provided only as an adjunct to its commuter trips, which are made in the early morning and afternoon. The fare structure for this service is a zone system ranging from \$0.50 to \$1.75. Elderly and handicapped ride for half-fare. The half-fare program is an honor system with passengers stating whether they are elderly or handicapped. Although local service is limited, GLAJTC estimates relatively high elderly ridership due to many trips by the elderly to Chicago.

# Social Service Agency Transportation

Table 143 lists the seven agencies contacted and identified as providers of agency transportation in Walworth County. Service in the county is provided via 11 vans, one bus, and personal vehicles. An estimated 1,740 clients are served monthly, and for those agencies reporting, an estimated 2,500

# KENOSHA COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

			Type of	Number and	Daily	Volunteers	Total Clie	nts
Agency ^a	Service A rea	Type of Service ^b	Passenger Pick-Up ^C	Type of Vehicles	Operating Hours	or Paid Drivers	Eligibility Requirements	Monthly Individuals
Cooperative Educational Service Agency No. 18	All school districts western Kenosha County	RD	As Needed	1 Van 1 Minibus	9:00 A.M2:45 P.M. Monday-Friday	Paid Drivers	Special education students under 21	25
Kenosha Achievement Center	Kenosha County and northern part of Lake County, Illinois	DR, FR, RD, FS	DtD, CtC	6 Buses 3 Vans	7:00 A.M5:30 P.M. Monday-Friday As Needed	Paid Drivers	Handicapped adults enrolled in Center day service, sheltered employment, or rehabilitation programs	250
Kenosha County Department of Social Services	Kenosha County	DR	DtD	Personal Vehicles	8:00 A.M5:00 P.M. Monday-Friday	Volunteers	Social Security support, insurance income, or medical assistance	120

		Number of Clients by Trip Purpose					Percent	Percent Monthly	Monthly	Average Vehicle	
Agency	Work	Personal Business	School	Shopping	Medical	Social	Recreation	Handicapped Clientele ^d	Elderly Clientele ^d	One-Way Trips	Utilization (in percent)
Cooperative Educational Service Agency No. 18 Kenosha Achievement Center Kenosha County Department of Social Services	x		x	×	x x		x	N/A 100.0 40.0	N/A 12.5 32.0	1,100 6,500 600	50 42 N/A

Agency	Productivity (trips per logged vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost per Passenger Trip	Estimated Annual Budget	Funding Sources
Cooperative Educational Service Agency No. 18	N/A	\$1,888	\$16.56	N/A	\$16,000	Local school district's state reimbursement
Kenosha Achievement Center	10.86	\$6,979	\$ 9.97	\$0.92	.\$55,300	Donations, Kenosha County Comprehensive Board, Wisconsin Division of Vocational Rehabilitation, Illinois Division of Vocational Rehabilitation, Tri-County CETA
Kenosha County Department of Social Services	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations of each agency's transportation service operations.

^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule

^C Type of Passenger Pick-Up DtD-door to door DthD-door through door CtC-curb to curb O-Other

^d Double counting occurs.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

trips are made monthly. The cost of providing these transportation services on an annual basis is over \$85,700.

Five of the seven agencies serve the entire county, while the University of Wisconsin-Whitewater serves the campus and vicinity, and the Fairhaven Corporation serves the City of Whitewater. Three agencies provide strictly demand responsive service. The remaining agencies provide fixed route, fixed schedule, or a combination of services. These services have an element of demand responsive service since routes and schedules change each day as necessary according to client needs and locations. Most agencies provide service throughout the day, but Vocational Industries concentrates service in short morning and afternoon periods. Only one agency operates with all paid drivers. The remainder operate with a combination of paid and volunteer drivers or just volunteer drivers. Each agency restricts its clientele. These restrictions are generally age, handicap, or income limits. Of interest is the fact that most agencies do not restrict trip purpose.

The percent handicapped and percent elderly data included in Table 143 has been extracted from the Wisconsin Department of Transportation inventory survey of transportation for the elderly and handicapped in Wisconsin (November 1976) whereas all other information was obtained from the Commission's Survey of Elderly and Handicapped Transportation Service Providers. These percentages provide a general description of how agencies have served elderly and handicapped populations in the past.

Operational effectiveness and financial statistics are summarized in Table 143. Vehicles are reportedly being used between 20 percent and 94 percent, respectively, of the time they are available for service each day. Productivity (passenger trips per hour) was 8.59 and 3.11, respectively, for the two agencies reporting. For the three agencies providing information from which to compute vehicle operating costs per hour, such costs were \$3.00, \$13.52, and \$1.13, respectively. Vehicle operating costs per trip for those reporting were \$1.57 and \$0.36, respectively.

# Taxicab Services

Walworth County has taxi services in two cities, the Cities of Delavan and Lake Geneva. The Blue Bird Cab Company serves Delavan with one taxicab, and in Lake Geneva, City Cab Company provides service with four taxicabs.

Nursing Homes Providing Transportation Services All six nursing homes in Walworth County provide transportation services for their clients On

transportation services for their clients. On a monthly basis, an estimated 159 clients are provided transportation. Of this group, 130 (82 percent) are elderly and 59 (37 percent) are handicapped. Of the elderly, 48 (37 percent) are also handicapped. In Walworth County, all clients are transported by nursing home vehicles or volunteer drivers. Nursing homes directly transport 84 (53 percent) of the clients, while volunteers serve 75 (41 percent).

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# WALWORTH COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

			Type of	Number and	Daily	Volunteers	Total Clients	
Agency ^a	Service Area	Type of Service ^b	Passenger Pick-Up ^C	Type of Vehicles	Operating Hours	or Paid Drivers	Eligibility Requirements	Monthly Individuals
Lakeland Counseling Center	Walworth County	FR, FS	DtD	1 Van	8:30 A.M3:30 P.M. Monday-Wednesday 8:30 A.M6:30 P.M. Thursday 8:30 A.M1:30 P.M. Friday	Paid and Volunteer Drivers	Clients of Counseling Center	250
University of Wisconsin– Whitewater	Campus and Vicinity	DR, FR, FS, RD	DtD	2 Vans	7:00 A.M11:00 P.M. Monday, Tuesday, Wednesday, Sunday 7:00 A.M12:00 A.M. Thursday 7:00 A.M2:00 P.M. Friday, Saturday	Paid Drivers	Mobility Handicap	30
Walworth County Senior Citizens Services	Walworth County	DR	DtD	2 Vans	8:00 A.M5:00 P.M. Monday-Friday	Paid and Volunteer Drivers	Over 60	863
Christian League for the Handicapped	Walworth County	FS	As Needed	4 Vans	Everyday as Needed	Paid and Volunteer Drivers	Residents, Division of Vocational Rehabilitation Clients Work Adjustment Clients	240
Vocational Industries, Inc.	Walworth County	FS	DtD	1 Bus 1 Van	7:30 A.M3:30 P.M. Monday-Friday	N/A	Handicapped over 18	75
Fairhaven Corporation	City of Whitewater	DR	DtD, CtC	1 Van	9:00 A.M.4:30 P.M. Wednesday-Sunday Evenings by Appointment	Volunteer Drivers	Handicapped Over 59	250
Walworth County Department of Social Services	Wałworth County	DR	DtD	Personal Vehicles	8:00 A.M5:00 P.M. Monday-Friday	Volunteer Drivers	Persons Receiving Supplemental Security Income, Food Stamps, Medical Assistance, and Aid for Dependent Children	34

			Number	r of Clients by	Trip Purpos	se		Parasat	Banaant	Manakhi	Average
Agency	Work	Personal Business	School	Shopping	Medical	Social	Recreation	Handicapped Clientele ^d	Elderly Clientele ^d	One-Way Trips	Utilization (in percent)
Lakeland Counseling Center	×	×	x	×	x	×	×	100.0	8.5	500	94
University of Wisconsin-	x	x	x	×	x	×	×	100.0		N/A	53
Whitewater Walworth County Senior Citizens Services	x	x	x	x	x	×	×	100.0	100.0	1,375	78
Christian League for the Handicapped	×	×	x	×	x	x	x	100.0	33.3	N/A	20
Vocational Industries, Inc.	x					×	x	100.0	3.3	150	N/A
Fairhaven Corporation	x	x	×	x	x	x	x	100.0	100.0	465	45
Walworth County Department of Social Services	x	×	x	x	x	×		100.0	100.0	N/A	N/A

Agency	Productivity (trips per logged vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost per Passenger Trip	Estimated Annual Budget	F unding Sources
Lakeland Counseling Center	N/A	N/A	N/A	N/A	\$11,350	Walworth County 51 42 Board
University of Wisconsin- Whitewater	N/A	\$1,500	\$ 3.00	N/A	\$18,230	Fares
Walworth County Senior Citizens Services	8.59	\$2,164	\$13.52	\$1.57	\$31,663	Title III, County Donations
Christian League for the Handicapped	N/A	\$ 700	N/A	N/A	\$ 7,460	Donations, Federal Nutrition Program
Vocational Industries, Inc.	N/A	\$2,700	N/A	N/A	N/A	State, County
Fairhaven Corporation	3.11	\$ 170	\$1.13	\$0.36	N/A	User Donations
Walworth County Department of Social Services	N/A	\$1,420	N/A	N/A	\$17,000	Title XX

## Table 143 (continued)

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations of each agency's transportation service operations.

 ^b Type of Service DR-demand responsive FR-fixed route RD-route deviation FS-fixed schedule
^c Type of Passenger Pick-Up

DtD-door to door DthD-door through door CtC-curb to curb O-Other

^d Double counting occurs.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

# SUMMARY

This chapter which reports the findings of the local transportation provider inventory, identifies various types of public, private, and private non-profit transportation services which can and are being used to provide transportation for elderly and handicapped persons in each of the seven counties in southeastern Wisconsin. The data included in the inventory were obtained through in-person and telephone interviews with selected major transportation providers, from past surveys of Wisconsin taxicab firms and social service agency transportation providers conducted by the Wisconsin Department of Transportation, and from a SEWRPC survey of social service agency transportation providers conducted as part of this study. The inventory is not to be considered exhaustive but it represents the best information available through February 1977.

The inventory data are presented separately for each of the seven counties in the Region. The transportation providers inventoried include:

- 1. Local public transit operators.
- 2. Social service agency providers.
- 3. Taxicab firms.
- 4. Private chair car carriers.
- 5. Nursing homes.

In addition school bus operators were contacted and information on school bus operations collected.

The inventory found that all seven counties have at least three of the five basic types of transportation services listed above available to and used by some of the elderly and the handicapped persons in the Region for at least a portion of their tripmaking needs. Table 144 summarizes by county and transportation service type, the level of transportation resources potentially available to serve elderly and handicapped persons in the Region.

# TRANSPORTATION RESOURCES AVAILABLE TO SERVE ELDERLY AND HANDICAPPED IN THE REGION

Agency or Company		County							
Providers	Milwaukee	Ozaukee	Washington	Waukesha	Racine	Kenosha	Walworth	Total	
Local Public Transit	1				1	1	1	4	
Social Service Agencies	18	4	3	9	9	3	7	53	
Taxicab Companies	10	2	1	4	2	3	2	24	
Private Chair Car Carriers	6							6	
Nursing Homes	45	2	4	8	3	8	6	76	
School Bus Contractors	8	3	4	9	5	1	6	36	

Source: SEWRPC.

The principal findings of county inventories include the following information, as available:

- 1. Identification of transportation service or agency provider.
- 2. Area served.
- 3. Type of service provided (fixed route, fixed schedule, demand responsive, route deviation, door-to-door, door-through-door, curb-to-curb).
- 4. Number of vehicles.
- 5. Days and hours of operation.
- 6. Driver type-paid or volunteer.
- 7. User eligibility requirements.
- 8. Estimated number of individuals served per month.
- 9. Types of trip purposes served.
- 10. Percent elderly vs. handicapped served.
- 11. Estimated number of monthly one-way trips.
- 12. Vehicle utilization and productivity rates.
- 13. Types of vehicles used.

- 14. Cost of transportation service—monthly, per hour, and per trip.
- 15. Estimated annual budget, and
- 16. Funding source.

Four local public bus transit systems operate within the Region. Three of these bus systems are designed to serve major portions of the Milwaukee, Racine, and Kenosha urbanized areas in which they are respectively located. The fourth local bus system, the Geneva Lake Area Joint Transit Commission, provides essentially commuter feeder service between the Geneva Lake area and rail transfer stations to Chicago, Illinois. The bus systems operate on a fixed route-fixed schedule basis and serve the general public. Elderly and handicapped persons who can and do use these public bus systems ride for one-half the regular fare during weekday, non-peak periods and all day on weekends. The Milwaukee County Transit System also allows a person assisting a handicapped bus rider to ride free.

To date, little has been done to make these public bus systems accessible to wheelchair users and the semi-ambulatory. The Racine Transit Commission does, however, assist in funding an alternative, more personalized transportation service for those elderly and handicapped persons who qualify for the bus system's half-fare program but find it difficult or impossible to use the public bus because of their physical or mental disability. This service is provided through a contract with Lincoln Lutheran Specialized Transportation of Racine. It is free and may be used for any trip purpose. Some of the vehicles are equipped with lifts to accommodate persons in wheelchairs.

Fifty-three social service agencies in the Region provide transportation as one of their services to the elderly and the handicapped. The manner in which this service is provided varies from agency to agency. Generally, the service is provided by means of agency owned vehicles, contract vehicles, user fare subsidies for use of existing conveyances, or private automobiles. Both paid and volunteer drivers are used. The transportation services provided by social service agencies can be flexible in their routing and scheduling, more personalized in serving the needs of the elderly and the handicapped, and, therefore, more responsive to their changes in demand. Depending on the agency, the service could be fixed route-fixed schedule, demand responsive, route-deviating, or a combination of these service constraints. Users of these services are normally transported without the need to transfer on a door-to-door, door-through-door, or curb-to-curb basis, depending on the severity of the individual's handicap. Generally, these services are free to the user with donations accepted.

The majority of these social service agency transportation services receive limited public funding and were created to serve only agency related clientele or a limited and specifically defined subgroup of the elderly or handicapped populations. Some are able to provide transportation only for agency related trips while others can transport the elderly and handicapped for only such essential purposes as medical, food shopping, or nutrition needs.

Because of the nature of the transportation services these agencies provide to a restricted user market for only limited trip purposes, it is common to find that many of these agencies are not able to operate as effectively or efficiently as they would desire. At peak demand times, prospective users often cannot be served, while during other periods of the day the vehicles stand idle. Vehicle productivities are generally in the range of two to four passengers served per hour and the cost per trip is several times the cost of a local bus ride.

Included among the 53 social service agency transportation providers are seven separate county programs on aging agencies. These agencies, using direct county funds or Title III funds received through the area agencies on aging, supply free fare general transportation services to their residents who are 60 years of age or older for travel within the county. Many of the vehicles used to provide these services including buses, vans, station wagons, and private automobiles are not, however, accessible to wheelchair users or the semiambulatory. In addition, while the elderly presumably may use these transportation services for any trip purpose, funding limitations and travel demands that exceed vehicle supplies typically necessitate the limiting of trip purposes, which ultimately results in serving only the most essential trips. With the exception of Lincoln Lutheran Specialized Transportation in Racine County and the Kenosha Achievement Center in Kenosha County, similar services for handicapped persons under the age of 60 do not exist.

The inventory also found that 24 privately owned taxicab firms exist in the Region. In total, they operate a fleet of 429 taxicabs. A significant amount of their present ridership is elderly and/or handicapped. A general willingness and expressed desire exists among these firms to actively participate in any program to improve transportation services for the elderly and the handicapped. These firms represent a potentially valuable and efficient existing resource for accommodating the elderly and the handicapped.

Six licensed chair car carrier firms located in Milwaukee County are the only privately owned transportation services in the Region, exclusively designed to serve the handicapped, particularly wheelchair users and the semi-ambulatory. Only two firms are operating at the present time. These firms provide individual, contract, and subscription transportation services. Ordinarily they require 24-hour advance trip reservations. Chair car service is available Mondays through Saturdays from approximately 6:00 A.M. to 7:00 P.M. Very limited, if any, Sunday or holiday service is offered by these firms. Typical one-way user fares are in the range of \$12 per ride. At these rates, few handicapped persons are able to afford to use these private chair car carrier transportation services for their general trip making needs. Consequently, these firms primarily transport

persons for 1) medical trip purposes when the cost of the trip is an eligible expense for reimbursement under Title 19 (Medicaid) or 2) for contracted trips with social service agencies and nursing homes which lack wheelchair-accessible vehicles of their own and therefore could not otherwise provide for their clients. Because of the substantial existing investment in facilities and wheelchair lift equipped vehicles, and the availability of experienced "sensitivity" trained drivers and management staff, these private chair car carrier firms are especially suited to serving the semi-ambulatory and persons confined to wheelchairs.

Seventy-six nursing homes in the Region provide transportation services to the elderly and/or the handicapped. These services are provided with vehicles (buses, vans, station wagons) owned by the nursing home itself, with contract vehicles supplied by a private chair car carrier or a social service agency and by volunteer drivers using their own private automobiles. Transportation service is generally limited to residents of the nursing home.

Lastly, the inventory also found that 36 private school bus contractors are located in the Region. Their primary business is transporting students 18 years of age and younger between their homes and the school they attend. Some firms provide transportation services for handicapped students as well. Very few school bus contractors have wheelchair accessible vehicles at the present time.

A second important source of revenue to the private school bus contractor is group charters which can be scheduled during nonpeak school use periods. It is common for elderly and handicapped group charters to be served by these private school bus contractors using their regular vellow school bus vehicle fleets. Like the existing private taxicab firms, the private school bus contractors demonstrate a general willingness and desire not only to maintain their present level of group charter service to the elderly and handicapped but also to encourage an expanded use of their transportation services by these two population subgroups to the greatest extent possible without conflicting with their student school busing services. Graf's Bus Service in Waterford, Wisconsin, and Racine Bus Company of Racine, Wisconsin currently provide contract vehicles for Lincoln Lutheran Specialized Transportation of Racine. With a one-week advance reservation through Lincoln Lutheran, these vehicles, some of which are wheelchair lift equipped, are available to any eligible elderly or handicapped person in the County for any trip purpose, free of charge to the user. Excluding handicapped student transportation services, these are the only two school bus companies in the Region known to be providing general transportation services to individual elderly and/or handicapped persons. The existence of this service demonstrates that a latent potential exists to take maximum advantage of a significant investment in existing vehicle fleets, maintenance and garage facilities. and the transportation expertise available through the Region's 36 private school bus contractors.

## Chapter VI

## **OBJECTIVES, PRINCIPLES, AND STANDARDS**

# INTRODUCTION

Since planning is a rational process for formulating and meeting objectives, the formulation of objectives is an essential task which must be undertaken before plans can be prepared. The objectives chosen guide the preparation of alternative plans and, when converted to standards, provide the criteria for evaluating and selecting from among the alternatives. Objectives provide the logical basis for plan synthesis; therefore, the formulation of sound objectives is a crucial step in the planning process. In order to be useful in plan design, the objectives must not only be stated clearly and be sound logically, but must be related in a demonstrable way to alternative physical/operational systems. Only if the objectives are clearly related to physical/operational systems and subject to objective test can a meaningful choice be made from among alternative plans in order to select that plan which best meets the agreedupon objectives.

It is important to recognize that because the formulation of objectives involves a formal definition of a desirable physical/operational system by listing, in effect, the broad needs which the system aims to satisfy, the objectives explicitly reflect an underlying value system. Thus, every physical/ operational system plan is accompanied by its own unique value system. The diverse and often conflicting nature of value systems in a complex urban society complicates this process of goal formulation and makes it one of the most difficult tasks in the planning process. This difficulty relates in part to the lack of a clear-cut basis of choice between value systems and in part to the reluctance of public officials to make an explicit choice of ultimate goals. Although, because of the differing value system involved, there may be no single argument to support a given choice of objectives, it is possible to state certain planning principles which provide at least some support for the choice.

Objectives cannot be intelligently chosen without the knowledge of the causal relationships existing between objectives and means. It must be recognized that the objectives may change as a selection is attempted from among alternative means or plans. In the process of evaluating alternative plans, the various alternatives are ranked according to ability to meet the agreed-upon objectives. If the best plan identified nevertheless falls short of the chosen objectives, either a better plan must be designed or the objectives must be compromised. The plan evaluation provides the basis for deciding which objectives to compromise. The compromises may take three forms: certain objectives may be dropped because their satisfaction has been proven unrealistic, new objectives may be suggested, or conflicts between inconsistent objectives may be balanced out. Thus, the formulation of objectives must proceed with plan design and implementation as part of a continuing planning process.

#### BASIC CONCEPTS AND DEFINITIONS

Definitions of the term "objective," as well as of the terms "principle," "standard," "plan," "policy," and "program," have been established for use as a common frame of reference. The process of definition was needed because the term "objective" is subject to a wide range of interpretation and application and was closely linked to other terms often used in planning work which were equally subject to a wide range of interpretation and application.

- 1. Objective: A goal or end toward the attainment of which plans and policies are directed.
- 2. Principle: A fundamental, primary, or generally accepted tenet used to support objectives and prepare standards and plans.
- 3. Standard: A criterion used as a basis of comparison to determine the adequacy of plan proposals to attain objectives.
- 4. Plan: A design which seeks to achieve agreed-upon objectives.
- 5. Policy: A rule or course of action used to ensure plan implementation.
- 6. Program: A coordinated series of policies and actions to carry out a plan.

Although this chapter deals with only the first three of these terms, an understanding of the interrelationship between the foregoing definitions and the basic concepts which they represent is essential to the following discussion of objectives, principles, and standards.

# **OBJECTIVES**

In formulating the objectives to be met in developing a transportation system for the Region's elderly and handicapped population, the Technical Coordinating and Citizens Advisory Committees determined that addressing the transportation needs of the transportation handicapped population as defined on page 9 of Chapter II of this report should be the primary consideration in the system design. As a result, the public transportation needs of the able-bodied elderly, like those of the Region's able-bodied population in general, will not be explicitly considered even though the ablebodied elderly, or the general public, may as a result of a local decision also use all or a portion of these services.

The Regional Planning Commission has formulated a series of broad regional development objectives and specific transportation system development objectives under the regional land use-transportation study begun in 1963. These objectives are documented in SEWRPC Planning Report No. 25. A Regional Land Use Plan and a Regional Transportation Plan for Southeastern Wisconsin-2000, Volume Two, Alternative and Recommended Plans, and are incorporated by reference herein. In addition, after careful review and recommendation by the Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped, the following three specific transportation handicapped transportation system development objectives have been adopted by the Commission:

- 1. To assist in the integration of transportation handicapped people as fully as possible as functioning, participating, and contributing members of urban and rural society through improved transportation facilities and services.
- 2. Conformance to the national policy enunciated in the Urban Mass Transportation Act of 1964 (as amended) and to similar State policies enunciating that transportation handicapped people have the same

right as other people to utilize mass transportation facilities and services.

3. A transportation system for transportation handicapped people which is economical and efficient, satisfying the other objectives at the lowest possible cost.

# PRINCIPLES AND STANDARDS

Complementing each of the foregoing objectives are a planning principle and a set of planning standards. These are set forth in Table 145, Each set of standards is directly relatable to the planning principle, as well as to the objective, and serves to facilitate application of the objectives in plan design, test, and evaluation. The planning principle, moreover, supports each specific objective by asserting its validity. The planning standards herein adopted fall into two groups: comparative and absolute. Because of their very nature, the comparative standards can be applied only through a comparison of alternative plan proposals. An example of such a standard is maximizing satisfaction of latent travel demand by the transportation handicapped. No maximum, minimum or even desirable value can be realistically assigned to this standard. Its application, therefore, must be a comparative one in which the alternative plan resulting in the highest satisfaction of latent travel demand is deemed to best meet this standard. Absolute standards can be applied individually to each alternate plan proposal since they are expressed in terms of maximum, minimum, or desirable values. An example of such a standard is that new public transportation vehicles and facilities shall conform to all applicable federal requirements regarding special design and operational provisions for the transportation handicapped.

# OVERRIDING CONSIDERATIONS

In application of the planning standards and in preparation of the alternative transportation plans for the transportation handicapped, several overriding considerations must be recognized.

First, it must be recognized that each proposed transportation plan for the transportation handicapped must constitute an integral part of the regional transportation system. It is not possible from an application of the standards alone, however, to assure such a system since they cannot be used to determine the effect of individual services or facilities on each other or on the transportation system as a whole. This requires the application of travel demand models to quantitively test the proposed system, thereby permitting adjustment of various plan components to current and latent transportation handicapped travel demand.

Second, it must be recognized that an overall evaluation of each transportation plan for the transportation handicapped must be made on the basis of cost. Such an analysis may show that the attainment of one or more of the standards is beyond the economic capability of the Region and, therefore, that the standards cannot be met practically and must be reduced or eliminated.

Third, it must be recognized as unlikely that any one plan proposal will meet all the standards completely; and the extent to which each standard is met, exceeded, or violated must serve as a measure of the ability of each alternative plan proposal to achieve the specific objectives.

Fourth, it must be recognized that certain objectives and standards may be in conflict, requiring resolution through compromise, and that meaningful plan evaluation can only take place through a comprehensive assessment of each of the alternative plans against all of the standards.

Fifth, it must be recognized that each of the urbanized areas of the Region—and portions of the rural areas—represent distinct economic, social, and cultural sub-units of the larger regional unit. At least for the urbanized areas, alternate plans prepared and transportation systems designed on a basis other than for the urbanized area as a whole cannot be expected to allow for full integration of transportation handicapped people into society. Thus, the urbanized areas should be used as one of the basic planning units for design of alternative plan proposals. The other basic unit should be the remaining rural portions of the Region.

Sixth, it must be recognized that plan recommendations, because of political jurisdictions, may have to be implemented on a level other than the urbanized area, perhaps by county or local units of government. Careful consideration should be given in designing the implementation program to refine and detail areawide plan recommendations to a level suitable for implementation.

Seventh, the quality and level of transit service available to and experienced by the general public should not be diminished as a result of implementing plan recommendations.

Eighth, where, as a byproduct of plan recommendations for transportation facilities and services targeted to transportation handicapped people outside of existing public transit service areas, an opportunity exists to provide transportation service to the general public at little or no additional cost, that opportunity should be seized.

Finally, in the design of alternative plans, thorough consideration shall be given to utilizing the private sector to manage subsystems and provide services, and in no case shall the plan recommendations result in unfair competition to private transportation operators.

#### Table 145

## TRANSPORTATION HANDICAPPED TRANSPORTATION SYSTEM DEVELOPMENT OBJECTIVES, PRINCIPLES, AND STANDARDS

#### **OBJECTIVE NO. 1**

To assist in the integration of transportation handicapped people as fully as possible as functioning, participating, and contributing members of urban and rural society through improved transportation facilities and services.

#### PRINCIPLE

Transportation is an essential means of integrating transportation handicapped people into urban and rural society by providing them with the opportunity for access to the same variety of places and activities as the general public.

#### Table 145 (continued)

#### **STANDARDS**

1. Public transportation services shall be provided in such a way as to most nearly meet existing and latent travel demand by transportation handicapped people.

2. Public transportation vehicles and facilities shall to the extent possible be configured, equipped, and operated so as to maximize the comfort, convenience, and security of transportation handicapped passengers.

3. Information about public transportation services shall be made available in such a manner as to maximize transportation handicapped people's knowledge of, and familiarity with, the services being offered.

4. The transportation system available to transportation handicapped people shall serve all trip purposes, even though subsystems of the systems may discriminate by trip purpose.

5. Flexibility shall be maintained in the design and operation of the system to permit ready adaptation to changing demand, and technology and policy.

6. In the provision of public transportation services for the transportation handicapped, existing public mass transit systems should be utilized to the greatest possible extent.

7. To the extent that existing public transit systems are not of practical use in the provision of public transportation services for the transportation handicapped, maximum use should be made of other existing public, private for-profit, and nonprofit transportation providers, consistent with provision of an economic, cost-effective system and respecting the unique characteristics of each provider's operation and program.

8. Transportation handicapped public transportation services, selected for implementation, shall be designed to provide the following levels of service:

- a. For Scheduled Fixed Route and/or Route Deviation Accessible Transit Systems
  - (1) Peak hour service A minimum of one-third of the buses in operation shall be lift equipped.^a
  - (2) Non-peak hour service A minimum of one-half of the buses in operation shall be lift equipped.
- b. For Advanced Reservation (A-R) Specialized Transportation Services
  - (1) A 24-hour minimum notice for first part of round trip
  - (2) The maximum waiting time for the return trip shall be:
    - (a) Urban area served by public mass transit: 30 minutes
    - (b) Urban area not served by public mass transit: 45 minutes
    - (c) Rural areas: 60 minutes
  - (3) The maximum travel^b time shall be:
    - (a) Urban area served by public mass transit: 60 minutes
    - (b) Urban areas not served by public mass transit: 75 minutes
    - (c) Rural areas: 100 minutes
  - (4) The minimum number of days of available service per seven-day week shall be:

- (a) Urban area served by public mass transit: seven (7) days
- (b) Urban areas not served by public mass transit: four (4) days
- (c) Rural areas: two (2) days
- c. For Demand Responsive (D-R) Specialized Transportation Services
  - (1) The maximum waiting time shall be:
    - (a) Urban area served by public mass transit: 30 minutes
    - (b) Urban areas not served by public mass transit: 45 minutes
    - (c) Rural areas: 60 minutes
  - (2) The maximum travel time shall be:
    - (a) Urban area served by public mass transit: 60 minutes
    - (b) Urban areas not served by public mass transit: 75 minutes
    - (c) Rural areas: 100 minutes
  - (3) The minimum number of days of available service per seven-day week shall be:
    - (a) Urban area served by public mass transit: seven (7) days
    - (b) Urban areas not served by public mass transit: four (4) days
    - (c) Rural areas: two (2) days

#### **OBJECTIVE NO. 2**

Conformance to the national policy enunciated in the Urban Mass Transportation Act of 1964 (as amended) and to similar state policies that transportation handicapped people have the same right as other people to utilize mass transportation facilities and services.

#### PRINCIPLE

National and state policy mandates a public mass transportation system that can be effectively used by transportation handicapped people.

#### **STANDARDS**

1. New public transportation vehicles and facilities shall conform to the following federal requirements regarding special design and operational provisions for transportation handicapped people:

- a. Vehicles shall be designed to include:
  - (1) Adaptability for wheelchair accessibility
  - (2) A maximum step height of 8 inches A minimum tread depth of 12 inches
  - (3) Priority front seating signs

# Table 145 (continued)

(4) Interior handrails and stanchions

(5) Slip resistant floor and step surfaces and contrasting color step edges

(6) Sufficient interior lighting to illuminate step wells and doorways at a minimum of two foot-candles on each step tread, and exterior lighting sufficient to illuminate the vehicle boarding area for a distance of three feet from the vehicle

- (7) Fareboxes located as far forward as practicable
- (8) Illuminated destination and route signs on front and boarding side of vehicle

b. Fixed facilities shall be designed, constructed, or altered to meet the minimum standards in the most recent edition of the <u>American Standard Specifications for Making Buildings and Facilities Accessible to and Usable by the Physically</u> Handicapped, published by the American National Standards Institute (ANSI).

## **OBJECTIVE NO. 3**

A transportation system for transportation handicapped people which is economical and efficient, satisfying the other objectives at the lowest possible cost.

## PRINCIPLE

The total fiscal resources of the Region are limited and total transportation costs should, therefore, be minimized for the desired level of service.

# **STANDARDS**

1. The public subsidy required per transit ride by a transportation handicapped person should be minimized.

2. The sum of transportation system operating and capital investment costs should be minimized.

3. Fares for specialized services shall be based on a cost recovery rate^C of 50 percent of operating costs but shall not exceed \$2.50 per one-way fare in an urbanized area.

4. In those areas of the Region where no regular public mass transportation services are available, fares shall be established at a maximum of 50 percent of the hourly operating costs per person trip but should not exceed \$2.50 for one-way fare for trips within the limits of a single county.

^a It is understood that all new buses purchased after September 30, 1979, with U. S. Urban Mass Transportation Administration Funds must be lift or ramp equipped.

^bTime spent by each passenger in a vehicle while traveling between trip origin and destination.

^cThe current (1977) cost recovery rates for the Milwaukee, Racine, and Kenosha public transit systems are about 65 percent, 26 percent, and 38 percent, respectively.

Source: SEWRPC.

# **Chapter VII**

# LATENT TRAVEL DEMAND ESTIMATES

# INTRODUCTION

Latent travel demand is defined as "those new trips that would be made if an increased level of transportation service were provided." This definition implies that latent travel demand estimates are directly dependent upon the degree and type of increased service that is provided and, as a result, latent travel demand estimates may vary significantly between given modes of travel, as well as within a specific mode when analyzed in terms of variable criteria such as fare levels or hours of service. Latent travel demand estimates should, therefore, reflect the impact of mode shift on the new or improved service ridership since trips resulting from mode shift, although representing existing travel, constitute "new" tripmaking on the improved service. The estimates of latent travel demand presented in this chapter are intended to reflect the impact of mode shift. No distinction is made, however, between those new trips which have never been made before and those new trips which are the product of mode shift since an estimate of the degree of mode shift is, at best, a hypothesis for which no observed data exist in this Region.

The role of value systems in the planning process has been discussed previously in this volume. In estimating latent travel demand of the transportation handicapped population, a sense of where it is appropriate to apply the concepts embodied in these value systems is important. From the development of the principles governing the estimating methodologies, through application of various estimating techniques, and in the final selection of the most realistic estimates, judgmental decisions are made which will shape the analysis of the alternatives, the recommended plan, and the proposed implementation procedures. To apply the wrong value system to the estimating methodology can produce an artificially inflated ridership estimate, which would result in overcapacity system planning and consequent waste of public monies. On the other hand, a severely understated estimate may result in insufficient service to meet the

needs of the transportation handicapped and severe underbudgeting of the implemented program. The values and assumptions underlying each estimating technique must therefore be thoroughly examined for their limitations and biases. The positive attributes of each technique must be weighed against those limitations so that, at the end of the process, the latent travel demand ridership estimate reflects an accurate, realistic assessment of a potential system use.

The first judgmental decision involves the validity of an "ideal system" and its relationship to the functional planning process. Under the concept of an ideal system, transportation handicapped persons would travel with as much frequency, ease, and comfort as does the nontransportation handicapped population, thus virtually eliminating the concept of a transportation handicap in society. Such a system, however, requires an unrealistic assessment of either ill health or disability associated fatigue. Consequently, an absolute upper limit does not provide a relevant frame of reference for determining effectiveness of a given mode. Therefore, in deriving estimates of latent travel demand on specific modes of improved service, it is understood that latent travel demand will be affected by the mobility limitation of the transportation handicapped person. The most realistic estimates of latent travel demand are believed to be best obtained by analyzing the tripmaking of the members of the peer group, the transportation handicapped, who have the most accessibility to the modefor example, an existing specialized transportation system.

As established in the definition, latent travel demand is affected by system design. Application in the estimating methodologies results in a series of judgmental decisions. Either those attributes which represent barriers to effective use of existing systems by the transportation handicapped must be eliminated through the function of the estimating technique in such a manner that the latent travel demand for a barrier-free system can be obtained or estimates of existing tripmaking among transportation handicapped persons on equivalent barrier-free services must be obtained and applied to the relevant local population subgroups. The selection of the specific attributes which are most applicable to the demand situation of each mode requires that the characteristics of existing and improved service by the given mode be subjectively reviewed in light of both existing travel barriers and operating experiences on improved services prior to formulation of the estimating techniques.

It is important to note that this Chapter presents latent travel demand estimates as opposed to ridership estimates. Although the demand estimates reflect ranges of potential ridership on specific improved services, these estimates do not reflect the influence of numerous operating system constraints such as limitations in service area, operating hours, and subsidy levels. As such, the latent travel demand estimates simply provide the base data from which the ridership estimates are derived in the alternative systems analyses in Chapter VIII of this report.

# FORMAT OF PRESENTATION

This chapter presents the methodologies utilized to obtain estimates of latent travel demand of the transportation handicapped population in each study area in the Region. The resultant latent travel demand estimates obtained for each study area are then examined and compared in terms of total weekday person travel occurring in the Region. The latent travel demand estimates for each mode type are presented for each of the four study areas.

# ESTIMATING METHODOLOGIES¹

It is important to note that the methodologies described below produce estimates of latent travel demand based on data pertaining to 1977

special transportation services, 1977 travel habits and patterns, and 1977 life styles of the transportation handicapped. As such, these estimates represent present day latent travel demand of the transportation handicapped as is in keeping with the short range, five-year plan concept. It is expected, however, that increasing accessibility of transportation services combined with the continuing recent trends toward the construction of barrierfree buildings and walkways for the transportation handicapped will produce long-term, continuing improvements in the quality of life of the transportation handicapped persons. One result of this improved quality of life may be a continuing increase in travel demand by the transportation handicapped as travel opportunities are increased by additions of accessible vehicles and accessible structures. Although it is recognized that such changes in life style and consequent increases in travel demand could occur, the time and degree of such changes cannot presently be predicted through either a theoretical, mathematical process or a rational, comparative analysis. Accordingly, the estimates of latent travel demand and the alternative analyses derived from these estimates represent only part of an evolving process. As conditions change, the Transportation Systems Management (TSM) plan and the annual element of the Transportation Improvement Program (TIP) must be adjusted to reflect changes in demand.

# Accessible Transit

An accessible transit system is described for the purposes of this study as a fixed-route, public bus service which is equipped with wheelchair lifts or ramps, wheelchair tie downs, lower front steps, wider doors, grab rails, and special seating for the transportation handicapped. Although passenger bus accessibility may improve the general quality and comfort of tripmaking among all transportation handicapped, it is expected that the installation of wheelchair lifts on mass transit vehicles will only generate predominant increases in transit tripmaking among wheelchair users. Consequently, at this time, it is assumed that the degree of increased transit tripmaking by the more mobile transportation handicapped. which may also occur with the implementation of accessible transit, is so relatively small that a system designed on the basis of the latent transit trip demand of wheelchair users can incorporate without undue stress any increased ridership among other more mobile transpor-

¹It should be noted that differences of opinion on the validity of the high and low latent travel demand estimates as developed by the consultant, existed among advisory committee members. Some committee members were of the opinion that the latent travel demand for an accessible bus system by wheelchair users was negligible and that the latent travel demand for a demand responsive service or a user-side subsidy program was several times higher than estimated by the consultant.

tation handicapped groups. This conclusion is particularly applicable to the local transit systems which presently are operating at undercapacity levels.

Accessible Transit Estimates: No public transit system has to date operated a fully accessible bus system. In San Francisco, the Bay Area Rapid Transit (BART) is an accessible rapid rail system, and in the cities of San Diego and St. Louis accessible transit services are operating on selected routes; however, no complete system exists. Consequently, no comprehensive behavioral data exist for estimating latent travel demand for accessible fixed route transit services. To derive latent travel demand for accessible transit services, several sets of assumptions were made about increases in the transit trip rate of the transportation handicapped and that portion of the transportation handicapped population most likely to benefit from an accessible transit system. Several methods were examined-all providing estimates of the latent travel demand-but are not included in this report. Among methods considered and not included were: 1) use of trip rates based on the BART system applied to the wheelchair population; 2) use of trip rates of differing more mobile transportation handicapped groups applied to wheelchair users; and 3) use of trip rates based on different more mobile transportation handicapped groups applied to all transportation handicapped persons.

A person's transit trip rate is a function of many characteristics of the individual, of the area, and of the service available. One such characteristic is the nearness of the bus stop to the individual. Generally speaking, persons close to a bus stop will travel more frequently on a bus than will someone living farther away.

The procedure for estimating latent travel demand for accessible transit service is to increase the transit trip rate for selected classes of the transportation handicapped. The underlying assumptions for all methods are: 1) chosen groups will increase their use of transit to the level of a more mobile group; and 2) accessibility features may benefit only

Transit System	Type of Handicapped User	Origin in Urbanized Area	Origin in Rural Area	Total
Milwaukee County				
	Noninstitutionalized Institutionalized	136,875 123,735	18,615 2,190	155,490 125,925
	Total	260,610	20,805	281,415
City of Racine				
	Noninstitutionalized Institutionalized	12,775 9,125	1,825 365	14,600 9,490
	Total	21,900	2,190	24,090
City of Kenosha				
	Noninstitutionalized Institutionalized	10,950 5,475	1,460 365	12,410 5,840
	Total	16,425	1,825	18,250
Region				
-	Noninstitutionalized Institutionalized	160,600 138,335	21,900 2,920	182,500 141,255
	Total	298,935	24,820	323,755

HIGH ESTIMATE OF CURRENT ANNUAL LATENT TRAVEL DEMAND ON FULLY ACCESSIBLE TRANSIT FACILITIES FOR THE TRANSPORTATION HANDICAPPED WHO ARE ABLE TO USE A WHEELCHAIR LIFT

Table 146

Source: Applied Resource Integration, Ltd.

# LOW ESTIMATE OF CURRENT ANNUAL LATENT TRAVEL DEMAND ON FULLY ACCESSIBLE TRANSIT FACILITIES FOR THE TRANSPORTATION HANDICAPPED WHO ARE ABLE TO USE A WHEELCHAIR LIFT

Transit System	Type of Handicapped User	Origin in Urbanized Area	Origin in Rural Area	Total
Milwaukee County				
	Noninstitutionalized Institutionalized	60,955 65,700	8,395 2,190	69,350 67,890
	Total	126,655	10,585	137,240
City of Racine				
	Noninstitutionalized Institutionalized	5,475 7,300	730 365	6,205 7,665
	Total	12,775	1,095	13,870
City of Kenosha				
	Noninstitutionalized Institutionalized	4,380 5,475	730 365	5,110 5,840
	Total	9,855	1,095	10,950
Region				
-	Noninstitutionalized Institutionalized	70,810 78,475	9,855 2,920	80,665 81,395
	Total	149,285	12,775	162,060

Source: Applied Resource Integration, Ltd.

certain subgroups of the transportation handicapped, but not others.

Tables 146 and 147 present the estimated high and low latent travel demand on fully accessible transit systems for both the noninstitutionalized and institutionalized transportation handicapped who are able to use a wheelchair lift. In determining the upper limits, several factors were considered. The transportation handicapped have characteristics of those that are transit dependent-that is, lower income levels and lower automobile ownership rates than the general public, which could mean higher transit trip rates than the general public. On the other hand, approximately one-half of the transportation handicapped are elderly and have lower trip rates than the general population. Again, with no historical data to use as a guide, the significance of these factors cannot be estimated. The differences in the high and low estimates are attributable to the assumption

#### Table 148

# EXPECTED ANNUAL LATENT TRAVEL DEMAND BY NONINSTITUTIONALIZED WHEELCHAIR TRANSIT USERS ON FULLY ACCESSIBLE TRANSIT SYSTEMS IF ALL WHEELCHAIR USERS CAN REACH THE BUS STOP-URBANIZED AREAS ONLY

		Trips Per	
Urbanized Area	Day	Week (6.5 day)	Year (52 weeks)
Milwaukee	185	1,204	62,615
Racine	16	102	5,324
Kenosha	13	82	4,259
Total	214	1,388	72,197

Source: SEWRPC

transportation handicapped not requiring lift assistance will benefit from accessible buses. inherent in the high estimate that a number of Independent Estimate: Since, as stated earlier, the state of the art is based on assumptions in developing reasonable estimates of latent travel demand on accessible transit systems, an independent estimate of the noninstitutionalized latent travel demand was developed by the Commission in order to measure the previously stated methods (see Table 148). The basic principle used to establish this estimate is that the transit trip rate of all wheelchair users, regardless of ability to reach a bus stop, is elevated to the combined transit trip rates found among more "transit mobile" transportation handicapped persons in the urbanized areas. As shown in Table 148, these estimates indicate that, for the total urbanized areas, the maximum increase in ridership through implementation of a 100 percent accessible system would serve about 72,200 trips per year, about 1,400 trips per week, or 214 trips per day.

Weekly and annual estimates were obtained on the basis of a 6.5 day week and a 52-week year. A 6.5 day week was utilized, rather than a full 7-day week, to reflect the impact of service reductions which occur on the weekend. The estimate presented for accessible transit is made on the basis of urbanized area population only, since fixed route mass transit is not presently available or likely to be instituted in rural areas. If this increase in transit tripmaking occurs, it would represent a 0.1 percent increase in the average weekday transit ridership as determined in the 1972 SEWRPC inventory of travel.

Although the assumptions used in deriving the independent estimate are considerably different than those used in deriving the estimates shown in Tables 146 and 147, the difference between the independent estimate and the low estimate of latent travel demand in the urbanized areas. as shown in Table 147, is only about 2.0 percent. Since the methodologies used are considerably different, the differences of approximately 3.0 percent in the Milwaukee and Racine urbanized areas are not unexpected. The high and low estimates developed by the consultant will be utilized throughout this report. The independent estimate was made to satisfy the Commission staff that the range of latent travel demand estimates made by the consultant is reasonable.

<u>Wheelchair Users</u>—Ability to Reach a Bus Stop: An important criterion which may affect the estimates of latent transit demand is the ability of the wheelchair user to reach the bus stop. A transportation handicapped person is considered to be locationally disadvantaged only if that person's residence is farther than two blocks from the bus stop. Under some plan alternatives it is conceivable that a user-side subsidy or a demand responsive service may not be provided for those transportation handicapped who live within two blocks of a bus stop. It follows, then, that an intended user of the improved service should be able to travel two blocks to the bus stop. It should be noted that only 7.3 percent of the noninstitutionalized wheelchair users and 1.5 percent of the institutionalized wheelchair users surveyed in the urbanized areas indicated that they could travel this distance without assistance. This situation could, therefore, dramatically reduce the wheelchair users' latent travel demand estimate for accessible transit.

# **Demand Responsive System**

The demand responsive system provides an door-to-door, or on-call, door-through-door. non-fixed route, shared ride transportation service. Generally, the vehicles are specifically equipped and designed to accommodate the transportation handicapped so as to provide for ease of entry and comfort of ride. All transportation handicapped are considered to derive increased mobility from such a service to varying degrees within their mobility limitations. In obtaining the latent travel demand trip rate estimates for a demand responsive system, the effects of mobility limitations on travel demand, the effects of fare on travel demand, and the necessary accounting for existing travel by this mode were incorporated.

The methodology employed in determining latent travel demand for given fare levels consists of the following primary steps:

- 1. Determination of a price elasticity curve for the transportation handicapped population.
- 2. Determination of a calibration point—that is, a known trip rate, at a given fare.
- 3. Application of the curve developed in step one to the calibration point established in step two to yield trip rate estimates at given fare levels.
- 4. Application of these trip rates (product of step three) at given fare levels to the relevant population subgroups to determine latent travel demand ridership.

Two methodologies, one for the noninstitutionalized population and another for the institutionalized population are used in the estimating procedure. The results of the methodologies are then summed for each of the three urbanized areas and for the nonurbanized area.

<u>Noninstitutionalized Estimate</u>: It is logical to assume that transportation handicapped persons will be sensitive to fare levels in much the same manner as nontransportation handicapped persons are sensitive to fare levels on existing transit systems. The study by James I. Scheiner² provides a basis for estimating elasticity in the fare range of from free fare to \$1.00. The assumption is made that the trip rate will approach zero when price increases above \$1.00 to about \$2.50 on the low estimate and to about \$4.50 on the high estimate. (see Figure 5).

Fully accessible demand responsive services for the transportation handicapped currently do not serve entire large metropolitan areas. Therefore, data on which to construct latent travel demand estimates must be obtained from systems which serve less than the large geographic areas addressed in this study. In applying the estimating techniques two calibration points were chosen instead of one, so that a range could be determined as opposed to a single estimate. The higher calibration point is based on operating statistics from Project Mobility-a demand responsive system serving the transportation handicapped in a subarea of Minneapolis, Minnesota. This high point is 0.28 trips per week per person at a fare of 35 cents, which represents an annual rate of 14.56 trips per person. The second, or low, point selected is actually a composite which has been derived from several demand responsive systems serving the elderly and handicapped in various locations throughout the U.S. This point is indicative of a capacity constrained system where the number of users is limited. This low estimate of 0.076 trips per week is derived from systems serving the elderly and transportation handicapped in Buffalo, N.Y.; Dover, Delaware; Lakewood, N.J.; Naugatuck Valley, Mass.; and St. Petersburg, Florida. The trip rate assumed an average fare of 10 cents and represents an annual trip rate of 3.95 trips per person.

²James I. Scheiner, "The Patronage Effects of Free-Fare Transit", <u>Traffic Quarterly</u>, January 1975, pp. 19-27.

Trip rates developed by plotting curves through the two calibration points are applied to the noninstitutionalized population in each of the study areas. Bedridden transportation handicapped persons are subtracted from the population since they cannot travel on a demand responsive system. In order to use the best estimate of bedridden persons, the SEWRPC transportation handicapped and elderly (STHE) survey findings of bedridden were used since, as noted in Chapter III, the survey procedures defined bedridden as "confined to house".

<u>Institutionalized Estimate</u>: A demand responsive service that would offer a personalized transportation service to persons in nursing homes and residential care facilities can be

#### Figure 5

# ESTIMATES OF CURRENT ANNUAL LATENT TRAVEL DEMAND BY INSTITUTIONALIZED AND NONINSTITUTIONALIZED PERSONS ON A DEMAND RESPONSIVE SYSTEM IN THE SOUTHEASTERN WISCONSIN REGION



Source: Applied Resource Integration, Ltd.

expected to increase their frequency of travel. This expected increase in travel frequency the latent travel demand—has been estimated for the institutionalized population using the results of the SEWRPC Transportation Handicapped and Elderly (STHE) survey of randomly selected individuals living in institutions within the seven-county Region.

The method used to project the ridership for a demand responsive system was to assume that persons now without access to specialized transportation service would travel on the demand responsive system as much as those persons having such access. These estimates are presented in Table 149 for each of the three urbanized areas and for the nonurbanized area for each type of mobility limitation and assuming a free service will be provided. Because persons interviewed in the Racine urbanized area indicated that they had a specialized service available, no latent travel demand was estimated for institutionalized persons in Racine County. The specialized transportation services now in use will not be replaced with the addition of a demand responsive system. Furthermore, persons using an existing specialized service are assumed to have little use for a limited service demand responsive alternative.

Only one estimate is made for the institutional ridership on a demand responsive service. This estimate is combined with the high and low estimates for the noninstitutionalized transportation handicapped to determine total demand for a demand responsive service. The sensitivity of ridership to various fare policies however, has been determined by using the noncommitment responses of the respondents taken from the institution survey (see Figure 5). In this case, the noncommitment responses produce an exponential curve. This curve is then plotted through the estimated demand points at free fare to derive the latent travel demand estimates shown in Table 150.

Demand Responsive—Combined Annual Estimates: Tables 147 and 148 present the high and

## Table 149

# ESTIMATED ANNUAL LATENT TRAVEL DEMAND FOR INSTITUTIONALIZED PERSONS AT SELECTED FARES

		Planning /	Areas		Total
Fare	Milwaukee	Racine ^a	Kenosha	Rural	
Free	125,216		5,304	6,448	136,968
\$.50	64,074		2,714	3,299	70,087
1.00	32,787		1,389	1,688	35,864
2.00	8,585		364	442	9,391
3.00	2,248		95	116	2,459
4.00	589		25	30	644

^aNo latent demand is expected in Racine.

Source: Applied Resource Integration, Ltd.

#### Table 150

		Planning Areas						
Mobility Limitation	Milwaukee	Racine ^a	Kenosha	Rural				
Not Transportation Handicapped Homebound Wheelchair Needs Help Mechanical Aid Difficulty	2,132  7,384 111,488  4,212	   	3,276  676  1,352	4,004  520 1,924 	9,412  8,060 112,008 1,924 5,564			
Total	125,216		5,304	6,448	136,968			

ESTIMATED ANNUAL LATENT TRAVEL DEMAND FOR INSTITUTIONALIZED PERSONS ON A FREE FARE DEMAND RESPONSIVE SYSTEM BY TYPE OF MOBILITY LIMITATION

^aNo latent demand is expected in Racine.

Source: Applied Resources Integration, Ltd.

# ANNUAL HIGH LATENT TRAVEL DEMAND ESTIMATES FOR THE NONINSTITUTIONALIZED AND INSTITUTIONALIZED AT SELECTED FARE LEVELS ON A DEMAND RESPONSIVE SYSTEM

	Type of Handicapped User	1977 Transportation Handicapped Population (Excluding	Fares							
Area		Bedridden)	Free	\$ .50	\$1.00	\$2.00	\$3.00	\$4.00		
Milwaukee Urbanized Area										
	Noninstitutional	34,997	677,892	428,013	285,226	160,636	71,394	17,848		
	Total	12,393	125,216	64,074	32,787	8,585	2,248	18 437		
			000,100	402,007	010,010	100,221	73,042	10,437		
Racine Urbanized Area										
	Noninstitutional	2,950	57,142	36,079	24,043	13,541	6,018	1,505		
	Total	4,045	57,142	36,079	24,043	 13,541	6,018	1,505		
Kenosha Urbanized Area										
	Noninstitutional	2,265	43,873	27,701	18,460	10,396	4,621	1,155		
	Institutional	492	5,304	2,714	1,389	364	95	25		
Nonurbanized Area		2,707	43,177	30,413	13,843	10,700	4,710	1,180		
	Noninstitutional	8,119	157,265	99,295	66,170	37,266	16,563	4,141		
	Institutional Total	3,355 11,474	6,448 163,713	3,299 102,594	1,688 67,858	442 37,708	116 16,679	30 4,171		
Region										
	Noninstitutional Institutional Total	48,331 17,335 65,666	936,172 136,968 1,073,140	591,088 70,087 661,175	393,899 35,864 429,763	221,839 9,391 231,230	98,596 2,459 101,055	24,649 644 25,293		

^aNo latent demand is expected in Racine.

Source: Applied Resource Integration, Ltd.

low estimates of latent travel demand at selected fare levels for the noninstitutionalized and institutionalized populations in each of the three urbanized areas, the nonurbanized area, and the Region. Shown graphically in Figures 6, 7, 8, 9, and 10 and the high and low estimates of latent travel demand for the urbanized areas of Milwaukee, Racine and Kenosha; the nonurbanized area; and the Region, respectively.

# User-Side Subsidy

A user-side subsidy is basically an economic measure which, rather than initiating specific changes to the existing transportation system, provides for monetary assistance to the transportation handicapped individual so that travel by the most accessible, existing mode can be readily purchased. The implication of any plan design based on such a program is that the

# ANNUAL LOW LATENT TRAVEL DEMAND ESTIMATES FOR THE NONINSTITUTIONALIZED AND INSTITUTIONALIZED AT SELECTED FARE LEVELS ON A DEMAND RESPONSIVE SYSTEM

	Type of Handicapped User	1977 Transportation Handicapped Population (Excluding Bedridden)	Fares					
Area			Free	\$ .50	\$1.00	\$2.00	\$3.00	\$4.00
Milwaukee Urbanized Area	Noninctitutional	24 007	160.626	99.242	52 545	9 740		
	Institutional Total	12,393 47,390	125,216 285,852	64,074 153,316	32,787 86,332	8,585 17,334	2,248 2,248	589 589
Racine Urbanized Area								
	Noninstitutional	2,950	13,541	7,523	4,514	738		
	Institutional Total	1,095 4,045	13,541	 7,523	4,514	 738		
Kenosha Urbanized Area								
	Noninstitutional Institutional	2,265 492 2,757	10,396 5,304	5,776 2,714	3,465 1,389	566 364 930	 95	 25 25
		2,757	15,700	8,490	4,854	930	95	25
Nonurbanized Area								
	Noninstitutional Institutional Total	8,119 3,335 11,474	37,266 6,448 43,714	20,704 3,299 24,003	12,422 1,688 14,110	2,030 442 2,472	 116 116	 30 30
Region	Noninstitutional Institutional Total	48,331 17,335 65,666	221,839 136,968 358,807	123,245 70,087 193,332	73,946 35,864 109,810	12,083 9,391 21,474	2,459 2,459 2,459	 644 644

^aNo latent demand is expected in Racine.

Source: Applied Resource Integration, Ltd.

economic assistance would allow transportation handicapped persons more freedom in attempting to meet their latent travel demands and, as the impact of these demands is felt by the existing service providers, supply will rise to meet the demand.

It is assumed that latent travel demand on a user-side subsidy program is identical to that on a demand responsive system. For the user, the service provided would be similar to that provided by a demand responsive system—that is, calling in advance to order the service and waiting for the vehicle to arrive. Therefore, separate estimates for a user-side subsidy will not be presented in this chapter, and, in Chapter VIII dealing with alternatives, the curves or estimates previously presented under demand responsive service will be used.



Source: Applied Resource Integration, Ltd.

# SUMMARY

Latent travel demand is defined as "those new trips that would be made if an increased level of transportation service were provided." The estimates of latent travel demand presented in this chapter are intended to reflect the impact of mode shift. No distinction is made, however, between those new trips which have never been made before and those new trips which are the product of mode shift.

The role of value systems in the planning process has been discussed previously in this volume. In estimating latent travel demand of the transportation handicapped population, a sense of where it is appropriate to apply the

#### Figure 7

# CURRENT ESTIMATE OF ANNUAL HIGH AND LOW LATENT TRAVEL DEMAND ON A DEMAND RESPONSIVE SYSTEM IN THE RACINE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

#### Figure 8

# CURRENT ESTIMATE OF ANNUAL HIGH AND LOW LATENT TRAVEL DEMAND ON A DEMAND RESPONSIVE SYSTEM IN THE KENOSHA URBANIZED AREA



Source: Applied Resource Integration, Ltd.



Source: Applied Resource Integration, Ltd.

concepts embodied in these value systems is important. Therefore, the values and assumptions entering into each estimating technique must be thoroughly examined for their limitations and biases. The positive attributes of each technique must be weighed against those limitations so that, at the finish of the process. one can be assured that the latent travel demand ridership estimate reflects an accurate. realistic assessment of potential system use. The most realistic estimates of latent travel demand are believed to be best obtained by analyzing the tripmaking of the members of the peer group, the transportation handicapped, who have the most accessibility to the modesuch as, for example, an existing specialized transportation system.

## CURRENT ESTIMATE OF ANNUAL HIGH AND LOW LATENT TRAVEL DEMAND ON A DEMAND RESPONSIVE SYSTEM IN THE REGION



Source: Applied Resource Integration, Ltd.

It is important to note that this chapter presents latent travel estimates as opposed to ridership estimates. Although the demand estimates reflect ranges of potential ridership on specific improved services, these estimates do not reflect the influence of numerous operating system constraints, such as limitations in service area, operating hours, and subsidy levels. As such, the latent travel demand estimates simply provide base data from which the ridership estimates are derived in the alternative systems analyses in Chapter VIII.

#### **Estimating Methodologies**

It is important to note that the methodologies described are based on data pertaining to existing special transportation services, existing travel habits and patterns, and existing life styles of the transportation handicapped. Accordingly, the estimates of latent travel demand and the alternative analyses stemming from these estimates represent only part of an evolving process. As conditions change, the Transportation Systems Management (TSM) plan and the annual element of the Transportation Improvement Program (TIP) may have to be adjusted to reflect changes in demand as they become evident.

Accessible Transit: An accessible transit system is described for the purposes of this study as a fixed route, public bus service which is equipped with wheelchair lifts or ramps, lower front steps, wider doors, grab rails, and special seating for the transportation handicapped. It is assumed that the degree of increased transit tripmaking by the more mobile transportation handicapped is so relatively small that a system designed on the basis of the latent transit trip demand can incorporate, without undue stress, any increased ridership among other more mobile transportation handicapped groups. This conclusion is particularly applicable to the local transit systems which presently are operating at under capacity levels.

The methodology for estimating latent travel demand for accessible transit service is to increase the transit trip rate for selected classes of the transportation handicapped. The underlying assumptions for all methods are: 1) chosen groups will increase their use of transit to the level of a more mobile group and 2) accessibility features may benefit only certain groups of the transportation handicapped, but not others.

<u>Noninstitutionalized and Institutionalized Combined Latent Travel Demand Estimate on</u> <u>Accessible Transit</u>: On the high estimate of annual latent travel demand about 281,400 trips are expected in the Milwaukee urbanized area; about 24,100 trips are expected in the Racine urbanized area; and about 18,300 trips are expected in the Kenosha urbanized area. At the regional level, the high demand estimate is about 323,800 trips. On the low estimate of annual latent travel demand on accessible transit, about 137,200 trips are expected in the Milwaukee urbanized area; about 13,900 trips are expected in the Racine urbanized area; and about 11,000 trips are expected in the Kenosha urbanized area. In total on the low estimate of latent travel demand on accessible transit, about 162,100 trips would be made in the Region.

Independent Estimate: An independent estimate of the latent travel demand by noninstitutional wheelchair transit users in the urbanized areas was developed in order to measure the previously stated methodologies. In this method, the transit trip rate of all wheelchair users in the urbanized areas was raised to the combined transit trip rates found among more "transit mobile" transportation handicapped persons. Assumptions used in deriving this estimate were considerably different than those used in deriving the two previous estimates. This technique produced an estimate of about 62,600 trips in the Milwaukee urbanized area, about 5,300 trips in the Racine urbanized area, and about 4,300 trips in the Kenosha urbanized area for a total of about 72,200 trips in the three urbanized areas combined. When compared to the low estimate of latent travel demand for noninstitutionalized users, the estimate varied by about 3.0 percent in the Milwaukee and Racine urbanized areas; however, the estimate varied by only 2.0 percent when the three urbanized areas were summed. This estimate was developed to satisfy Commission staff that estimates developed by the consultant were reasonable.

<u>Wheelchair Users—Ability to Reach a Bus</u> <u>Stop:</u> The finding that only 7.3 percent of the noninstitutionalized wheelchair users and 1.5 percent of the institutionalized wheelchair users surveyed in the urbanized areas can travel two blocks to reach a bus stop indicates that wheelchair user's latent travel demand for accessible transit may be lower than the estimate indicates.

Demand Responsive System: A demand responsive system provides an on-call, door-to-door, or door-through-door, non-fixed route, shared ride transportation service. Generally, the vehicles are specifically equipped or designed to accommodate the transportation handicapped so as to provide for ease of entry and comfort of ride. All transportation handicapped are considered to derive increased mobility from such a service to varying degrees within their mobility limitations. In obtaining the latent travel demand trip rate estimate for a demand
responsive system, the effects of mobility limitation on travel demand, the effects of fare on travel demand, and the necessary accounting for existing travel by this mode were incorporated.

Noninstitutionalized Estimate: In both the high and low estimates of latent travel demand on a demand responsive system, it is assumed that a transportation handicapped person will be sensitive to fare levels in much the same manner as nontransportation handicapped persons are sensitive to fare levels on existing transit systems. The demand estimates are based on systems which serve less than entire large geographic areas since fully accessible demand responsive services for the transportation handicapped currently do not serve entire metropolitan areas. In applying the estimating techniques, two calibration points are chosen, so that a range can be determined, as opposed to a single estimate. The higher point of 0.28 trips per week, or 14.56 trips per year, is based on operating statistics from Project Mobility—a demand responsive system serving the transportation handicapped in a portion of Minneapolis, Minnesota. The lower point selected is actually a composite which has been derived from several demand responsive systems serving the elderly and handicapped in various locations throughout the U.S. This point is indicative of a capacity constrained system where the number of users is limited. The lower point of 0.076 trips per week, or an annualized trip rate of 3.95 trips per person per year, provides a low side of the range. Trip rates developed by plotting a curve through the calibration points are applied to the noninstitutionalized population in each of the study areas. Bedridden transportation handicapped persons as determined in the SEWRPC transportation handicapped and elderly survey are removed from the population.

On the high estimate at free fare, the noninstitutionalized transportation handicapped have a latent travel demand of approximately 677,900 annualized trips in the Milwaukee urbanized area; 57,100 trips in the Racine urbanized area; 43,900 trips in the Kenosha urbanized area; and 157,300 in the nonurbanized areas of the Region. In total, at free fare, the high estimate of latent travel demand for the noninstitutionalized transportation handicapped is 936,200. The low latent travel demand estimates for the noninstitutionalized at free fare are 160,600 in the Milwaukee urbanized area; 13,500 in the Racine urbanized area; 10,400 in the Kenosha urbanized area; 37,300 in the nonurbanized areas; and 221,800 for the Region. In both estimates, as the amount of fare increases, the number of trips decrease.

Institutionalized Estimate: Using the results of the SEWRPC transportation handicapped and elderly (STHE) survey of randomly selected individuals living in institutions within the seven-county Region, an exponential curve was developed and calibrated on the basis that persons now without specialized transportation would travel on a demand responsive system as much as those with specialized transportation do with that service. It should be noted that in the Racine urbanized area, persons interviewed indicated that they had a specialized service available to them and, therefore, no latent travel demand was projected. This estimate is combined with the high and low estimates for the noninstitutionalized transportation handicapped to determine total demand for a demand responsive service. At free fare, this technique produced approximate estimates of 125,200 trips in the Milwaukee urbanized area; 5,300 trips in the Kenosha urbanized area; and 6,400 trips in the nonurbanized areas for a total of 137,000 trips.

Combined Annual Estimate-Demand Responsive System: The approximate high latent demand estimate for both the noninstitutionalized and the institutionalized at free fare levels for the various study areas are: Milwaukee urbanized area, 803,100 trips per year; Racine urbanized area, 57,100 trips per year; Kenosha urbanized area, 49,200 trips per year; the nonurbanized areas, 163,700 trips per year; and for the Region, 1,073,100 trips per year. The approximate low latent travel demand estimates for the noninstitutionalized and the institutionalized at free fare for the various study areas are: Milwaukee urbanized area, 285,900 trips per year; Racine urbanized area, 13,500 trips per year; Kenosha urbanized area, 15,700 trips per year; the nonurbanized area, 43,700 trips per year; and for the Region, 358,800 trips per year. As noted previously, as fare increases, the amount of latent demand decreases.

<u>User-Side Subsidy</u>: It is assumed that latent travel demand on a user-side subsidy program is identical to that of a demand responsive system. For the user, the service provided would be similar to that provided by a demand responsive system—that is, calling in advance to order the service and waiting for the vehicle to arrive. Therefore, estimates for a userside subsidy are not presented in this chapter.

## **Chapter VIII**

# EVALUATION OF ALTERNATIVE TRANSPORTATION SYSTEMS FOR THE TRANSPORTATION HANDICAPPED

# INTRODUCTION

The planning process used in the elderly and handicapped transportation study consisted of several related steps. These included: the formulation of objectives and supporting standards to define the desirable types of improved transportation service; the conduct of inventories to provide the basic factual data required to quantitatively describe the demographic base, the existing transportation services, and the existing travel habits of the transportation handicapped; and the preparation of estimates of existing latent travel demand of the transportation handicapped on accessible transit and demand responsive transportation systems. All of these steps were preparatory to the analysis and evaluation of alternative transportation systems which satisfy the agreed-upon elderly and handicapped study objectives and supporting standards.

## Evolution of A Regional Transportation Plan for the Transportation Handicapped Through Analysis of Alternative Transportation Systems

Any functional planning process should result in the adoption of a plan that best meets the particular needs under consideration. The plan generally is selected through a systematic and logical process which allows public review and evaluation of alternative long-range plans and which provides a basis of selection of the best plan for adoption and implementation. In the case of the elderly and handicapped study, however, the approach to the alternative plan design process represents a departure from this generally established method of plan evaluation. Whereas normally a number of alternative long-range regional plans are developed, evaluated and then selected from these alternatives, in the short-range elderly and handicapped planning program the alternative transportation system improvements within each of the study subareas are analyzed and evaluated and the most effective system within each subarea is identified. Determination of the most effective alternative transportation system for each subarea of the region then becomes the recommended short-range regional transportation plan for the transportation handicapped.

For a variety of reasons this approach was considered to be more suitable to the purposes of this study. Primarily, a more complete analysis was believed to be obtained by a thorough analysis of each potential improved transportation system within each subarea. The most efficient method of achieving this complete analysis was to evaluate only those alternative elements applicable to each subarea. Therefore, in this chapter only the evaluation of each viable alternative transportation element in each subarea is exposed to public review. Although, generally, this degree of exposure is not necessary in regional plan development, the nature of this short-range planning effort coupled with the probable county-level coordination and administration of the recommended system and the nature of the disbursements of available funding sources all tend to create an emphasis on local control and implementation which requires that each subarea have the maximum amount of available information at hand.

# Format of Presentation

This chapter presents the analyses and evaluations of the alternative transportation systems for providing services to the transportation handicapped. First the alternative systems and the factors used to evaluate these systems are described. Then, each of the viable alternative transportation systems is analyzed and evaluated for the following subareas: Milwaukee urbanized area; Racine urbanized area; Kenosha urbanized area; and the total nonurbanized area in the Region. Finally, the recommended alternative systems are summarized to produce the overall recommended regional plan.

It should be noted that in earlier chapters, data were presented for a variety of geographic areas including: counties, urbanized areas, rural or nonurbanized areas, and transit service areas. Nevertheless, the most logical approach to the analysis of alternative systems is to use study areas composed of the urbanized areas of Milwaukee, Racine, and Kenosha, and the remaining rural or nonurbanized area. The single exception is the analysis of coordinated agency transportation which requires a county-by-county discussion in order to reflect the type of service being offered.

This approach to the analysis was selected because travel patterns are determined more by geographic environment than by political jurisdictions. If persons live in urbanized areas, they should be able to take advantage of the opportunities offered by urban lifestyles and should not be restricted by political boundaries. Similarly, persons living in rural communities may be oriented to communities or rural in-town areas within or outside their county, and should be able to travel to these sites. It must be noted, however, that the planning subareas do not necessarily reflect the level at which implementation must proceed. Currently, no operating authority exists that has a geographic jurisdiction equivalent to the study areas. Thus, the recommended plan and plan implementation are considered in the next chapters on a countyby-county basis to stress the roles that counties and other local governments should have in implementing the recommended plan.

# DESCRIPTION OF ALTERNATIVE SYSTEMS

# Alternative Transportation Systems for the Transportation Handicapped

In order to assist in identifying the best transportation plan for the transportation handicapped, four basic alternative transportation systems were identified and evaluated. These were: 1) make the existing publicly owned transit systems in the Region accessible to wheelchair users and semiambulatory persons; 2) provide a separate demand responsive transportation system for such persons; 3) develop a user-side subsidy program; and 4) improve the efficiency of existing social service agency transportation providers through better coordination of their transportation services. In addition, feasible combinations of these alternatives also were evaluated. A "do nothing" alternative also was considered and evaluated. Following is a description of each of the alternatives evaluated in this chapter.

Alternative 1—Do Nothing: The do nothing alternative consists of simply maintaining the status quo for the transportation services currently available to transportation handicapped persons in the Region. If this alternative were chosen, no changes would be made to existing services and no new services would be instituted. Section 16(a) of the Urban Mass Transportation Act of 1964, as amended (49 U. S. C. 1612) establishes a national policy that elderly and handicapped persons have the same right as other persons to utilize mass transportation facilities and services; directs that special efforts be made in the planning and design of mass transportation facilities and services so that the availability of mass transportation accessible to elderly and handicapped persons—particularly wheelchair users and semiambulatory persons—will be assured; and directs that all federal programs offering assistance in the field of mass transportation contain provisions implementing this policy.

This study has determined that a latent travel demand among transportation handicapped persons exists throughout the Region. This study has also determined that this demand is not being effectively served by the existing local bus systems in the Kenosha, Milwaukee, and Racine urbanized areas because transportation handicapped persons find these public bus systems physically difficult or impossible to use. If these public transit systems are to continue to maintain their eligibility for federal funds to subsidize up to 50 percent of the operating deficits and up to 80 percent of the capital costs of these systems, special efforts must be made to provide public transportation services and facilities within the Kenosha, Milwaukee, and Racine urbanized areas. These services must offer fares and levels of service comparable to those on the local bus systems so that transportation handicapped persons can enjoy the same mobility as physically able persons in the Region. Existing social service agency transportation services are capacity-constrained and unable to provide sufficient levels of service at existing funding levels. Private chair car and taxi services are too costly. Therefore, the mere continuation of the status quo under a do nothing alternative is not considered a viable alternative in the urbanized areas of the Region.

Similarly, in the nonurbanized areas of the Region, a latent demand for travel among the transportation handicapped has been found to exist. This demand is not being fully met by existing social service agencies or other private providers of public transportation services such as taxis, chair car carriers, or school bus operators. In addition, no public bus service is available. Although local units of government in the nonurbanized areas of the Region are not required to meet the same federal guidelines for the transportation handicapped as are such governments in urbanized areas, these governments in the past have perceived the need to provide rural public transportation services for the elderly and handicapped. They have taken steps to provide these services through existing social service agencies. This study has determined, however, that the present level of effort has not been sufficient. Therefore, the do nothing alternative also was considered to be an unacceptable alternative in the nonurbanized areas of the Region.

<u>Alternative 2—Accessible Transit Service</u>: An accessible transit service is defined here as a transit system that has accessible buses comprising all or a major portion of its fleet. An accessible bus has the following characteristics:

- 1. Floor height or no more than 22 inches with an effective floor height or 18 inches available through a mechanical "kneeling" mechanism.
- 2. Wheelchair access device installed in the front door.
- 3. Entryways of sufficent width to accommodate wheelchairs.
- 4. Tiedowns for at least two wheelchairs.
- 5. Reserved seats for elderly and handicapped.
- 6. More handrails and stanchions than are currently found on standard transit vehicles.

The above specifications are consistent with the mandate issued May 19, 1977, by the Secretary of the U. S. Department of Transportation for new buses manufactured after September 30, 1979. With the exception of the floor height, however, existing buses may be modified to meet these specifications.

As defined, an accessible transit system is determined by the accessibility of buses, not by the routes operated. An accessible transit system can be achieved by replacing current operating vehicles with accessible vehicles while operating on existing routes and schedules. The possibilities of route and schedule modifications to better serve passengers (both able-bodied and transportation handicapped) are not excluded; however, extensive route and schedule revisions will not be assumed for the purposes of this study to accompany the operation of accessible buses.

In examining the positive and negative aspects of accessible transit, one first must consider the nature of service provided by existing transit systems. Existing urban transit systems are primarily designed to serve corridor movement especially to and from the central business district (CBD) of each urban area. The systems are designed to serve work trips and, according to the results of an on-board survey in 1972, are accomplishing this function; after excluding trips to home, workrelated trips accounted for the largest percentage of trips in each urban area. In addition to the CBD, existing transit systems also serve the large commercial areas, government offices, and other major trip generators found in metropolitan areas, thereby also offering opportunities for shopping, personal business, recreation, or other trip purposes. During nonpeak periods, fares are reduced for the elderly and handicapped.

The advantages of instituting an accessible transit system include provision for regular, reliable service; relatively easy integration into existing operating patterns; fare policies that offer reduced rates during off-peak periods; and a system that facilitates better use of the buses by the transportation handicapped. The existing transit systems, however, do not generally provide direct crosstown or neighborhood-oriented services except as an adjunct to the line-haul corridor service directed to and from the CBD. An accessible transit system would provide some of the transportation handicapped the same opportunity to use transit as the general public; accessible transit will not meet all the mobility needs of the transportation handicapped since existing transit does not meet all the needs of the general public. More importantly, there are additional travel barriers such as crowds, getting to and from a bus stop, and inclement weather confronting the transportation handicapped which will not be removed simply by providing an accessible bus. Thus, a fundamental question concerns the ability of accessible transit to provide sufficient mobility opportunities for the transportation handicapped. Since virtually no data presently exist on ridership increases due to accessibility features on public buses, a conclusive answer to this question cannot be obtained until sufficient experience with accessible fleets is achieved. An overall review of these positive and negative aspects indicates that accessible transit should be considered a viable alternative for providing improved transit services for the transportation handicapped. This alternative has been cited by UMTA as one of the examples of "special efforts" to meet federal regulations for handicapped and elderly transportation.

Alternative 3-Demand Responsive Systems: A demand responsive system consists of accessible vehicles that transport passengers upon request to and from any point within a defined service area. Unlike traditional taxi services that perform a similar function, demand responsive service allows shared riding—passengers with different origins and destinations in the vehicle at the same time. Service request usually is by telephone; thus, the term "dial-a-ride" is often used as synonymous with this type of operation.

Demand responsive systems can assume various operating characteristics within the general concept. For example, service can be immediate response or advance notice; trip purposes and service area can be unrestricted or restricted; and driver assistance can provide door-through-door service or a more limited service. In this analysis, a demand responsive system is assumed to have the following characteristics:

- 1. Small buses or vans equipped with lifts or ramps as required.
- 2. Immediate response service (no advance reservation).
- 3. Response and ride time goals as stated previously in Chapter VI.
- 4. Vehicles confined to certain specific service areas and serving intracommunity trips.
- 5. No restrictions on trip purpose.
- 6. Door-through-door transportation.

Small buses or vans are more manuverable than larger vehicles and are better suited for the neighborhood operations involved. Advance notice service may be recommended as initially preferable in the early stages of implementation without affecting this analysis. The response and ride times previously set forth determine the level of service and in turn the number of vehicles required in a given area. No restrictions are placed on travel within the service area since no predominant trip purpose for the transportation handicapped was indicated in the survey data. Transportation handicapped persons encounter many barriers to travel outside of vehicle access; therefore, the analysis is of a door-through-door service although implicit in such service is increased travel time per passenger and lower productivity or passenger trips per vehicle hour.

The advantages of a demand responsive system include a maximum coverage of the service area,

door-through-door transportation which overcomes a variety of origin/destination barriers, elimination of negotiation of crowds as a barrier, greater mobility than traditional fixed-route transit, and flexibility in meeting demand. The disadvantages include less reliability of service than usually found in fixed-route systems and increased costs as demand increases because little excess capacity exists. In total, review of these positive and negative aspects indicates that demand responsive systems should be considered as a viable alternative for providing improved service for the transportation handicapped.

Alternative 4-User-Side Subsidy: When viewed from a transportation standpoint, user-side subsidy programs and demand responsive systems are almost the same; both offer on-call transportation to and from any point within a defined service area. The conceptual difference between the userside subsidy program and the previously discussed demand responsive alternative is based on a different approach to financial resource allocation. Instead of directly subsidizing a provider of transportation, the eligible users are provided a subsidy for their transportation. They can then purchase service from any available provider. This is a rather innovative concept and is presently being tried in West Virginia (the TRIP program); in Danville, Illinois; and in Oklahoma City, Oklahoma.

The user-side subsidy program can operate with either script "money," percentage fares, or flat fares. In the first instance, those eligible for the program could purchase script that would be the same as money for paying a fare. The script would be purchased at a discount but be redeemable at full price by a provider. For example, a user could purchase \$10.00 worth of script for \$4.00-a a 60 percent discount, or 40 percent fare recovery rate. The script would be given to a provider for services rendered. The provider would then redeem the script at full face value. The second approach would be for the user to pay a percentage of the fare ordinarily charged to a regular passenger. For example, if a taxi trip cost \$4.00 and the fare recovery rate was 50 percent, the user might pay \$2.00, or 50 percent of the metered fare. The taxi system would report such trips and receive reimbursement for that portion of the fare not paid by the user. The third approach is to establish a flat fare for the service, with the difference between the fare and the actual trip cost paid by the program.

There are numerous advantages of a user-side subsidy program. Users can allocate their own resources in terms of when, where, and how they wish to travel. The private sector is utilized since most services presumably would be operated by the private sector. Competition can be spurred within the private sector, based on the users' perceptions of the service they receive thus theoretically creating more efficient and low-cost services. Existing resources such as vehicle fleets and dispatching facilities can be used. Those who can travel in taxicabs-estimated to be 80 percent of the transportation handicapped-can enjoy immediate response service and the flexibility of taxi operations. By placing funds directly in the marketplace, rather than creating new operating entities, the private sector presumably will respond with new or modified services in response to consumer pressures. Private sector operations in many cases have lower per hour costs than do public operations.

The user-side subsidy concept also has certain disadvantages, limitations, or problems. A public entity would have to be designated or created to administer the system. This includes monitoring the system, administering funds, and maintaining credibility with all parties. System capacity is limited by the capability of private operators. For example, a user might have trouble obtaining taxi rides during peak hours when taxis are scarce. UMTA funding is unavailable unless the taxi system operates on a shared ride basis. Very few taxi operators in southeastern Wisconsin currently have shared ride operations. Sufficient service may not exist in some areas. In addition, the amount of personal assistance needed by some of the transportation handicapped may not be provided by all taxi drivers. Thus, a program of driver sensitivity training would be necessary. Analyses of these positive and negative aspects of user-side subsidy programs indicate that user-side subsidy systems should be considered to be viable alternatives for providing improved service for the transportation handicapped.

Alternative 5—Accessible Transit and Demand Responsive Service: The basic assumption in this alternative is that a demand responsive system would operate in those areas not conveniently served by transit—generally defined as greater than two blocks from a transit route. The demand responsive system would provide local service in outlying communities and provide local service to the line-haul fixed-route accessible transit system where necessary. This combination provides service to more areas than an accessible bus system alone. Concurrently, the number of accessible buses could possibly be reduced with efforts focused on increasing the productivity of both the demand responsive system and the accessible buses. Wherever possible, passengers would be transferred to accessible buses. Accessible transit demand can then be channeled to certain buses that are lift-equipped, thus reducing the number of needed accessible buses but increasing the expected number of transportation handicapped per bus. This in turn could require additional wheelchair tie-down locations. The major disadvantage to this system is that it could impose apparently superfluous transfers for certain trips, transfers which are more difficult for transportation handicapped than for able-bodied persons. Review of the positive and negative aspects of this combination of accessible transit and demand responsive systems indicates that such a combination should be considered a viable alternative for providing improved service for the transportation handicapped.

Alternative 6-Accessible Transit and User-Side Subsidy: The basic assumption in this alternative is that a user-side subsidy would be provided for travel in those areas not conveniently served by transit-generally defined as greater than two blocks from a transit route. The subsidy-the characteristics of which are described in alternative 4-would be provided for local trips outside the transit service areas and for feeder service to the line-haul, fixed-route, accessible transit system. Where accessible transit service could not be used by a passenger, the entire trip would be made in a taxi or chair-car vehicle. Therefore, in terms of the type of service provided and the interrelationship of the subsidy program with the accessible transit system, this combination would function in the same manner as the combination of systems presented in alternative 5 above.

All the positive and negative aspects of the userside subsidy program alone also apply to the combination of user-side subsidy and accessible transit. An additional positive aspect of this combination consists of the complementary, rather than competitive, functioning of bus service and taxi or chair-car service. Review of the overall positive and negative aspects of the combination of an accessible transit system and user-side subsidy program indicates that this combination is a viable alternative for providing improved service for the transportation handicapped.

Alternative 7-Demand Responsive System and User-Side Subsidy Program: Conceptually, from a transportation standpoint both a demand responsive system and a user-side subsidy program are intended to provide demand responsive service. For one system the operator is subsidized, while for the other, the user is subsidized. Since both alternative systems provide essentially the same type of service they are considered to be mutually exclusive and should not be jointly implemented. The only exceptions would be where user-side subsidy is to be implemented and, a) an accessible demand responsive system is operated where no chair-car service is available, b) a publicly operated (nonsubsidized) accessible demand responsive system is less expensive than private chair-car service, or c) private enterprise cannot respond to the demand and publicly operated systems must be supplemented. For each of these three exceptions, the resulting program is essentially a user-side subsidy system with perhaps, minimally different costs than those projected.

The alternatives generated by these exceptions can therefore be considered equal to a user-side subsidy alternative. Due to the minimal effects of combining the demand responsive and user-side subsidy programs, this combination is not analyzed or evaluated further in this chapter as a separate, or unique, alternative transportation system. This exclusion from further analysis in this chapter is solely intended to reflect the fact that any implementation of one of the exceptions listed above would result in ridership and costs which are very similar to those found in the analysis of a user-side subsidy program alone. In some study areas it is conceivable that one of the exceptions listed above under the combination demand responsive service and user-side subsidy could be applicable, could best meet the needs of the transportation handicapped, and could become incorporated in the implementation procedures of the recommended plan if such plan included the element of a userside subsidy program.

Alternative 8—Accessible Transit, Demand Responsive, and User-Side Subsidy: The basic assumption in this alternative, the combination of accessible transit demand responsive and user-side subsidy programs, is that a user-side subsidy would be provided in those areas not conveniently served by transit—generally defined as greater than two blocks from a transit route. The user-side subsidy/ demand responsive system could provide local service in outlying communities and provide feeder service to the line-haul fixed route accessible transit system where necessary. The demand responsive system could only be considered effective if operating under one of the three exceptions listed above under alternative 7.

A system which incorporated accessible transit, demand responsive, and user-side subsidy programs would be subject to the same positive and negative aspects found in the combination of accessible transit and user-side subsidy. Furthermore, the demand responsive service element of this system combination can only be considered nonduplicating if one of the three exceptions discussed above were to apply to a study area. The resulting program would be essentially equal to a system of combined accessible transit and user-side subsidy, alternative 6. Therefore, this combination is not analyzed or evaluated further in this chapter as a separate, or unique, alternative transportation system. This exclusion from further analysis in this chapter is solely intended to reflect the fact that any implementation of this combination of systems would result in ridership and costs which are very similar to those found in the analysis of a combination of accessible transit and user-side subsidy. In some study areas served by transit, it is conceivable that one of the exceptions listed under the combination demand responsive service and user-side subsidy could apply. In such an event, this combination of the three transportation system plan elements may best meet the needs of the transportation handicapped, and could become incorporated in the implementation procedures of the recommended plan if such plan included the elements of user-side subsidy and accessible transit.

# Coordinated Agency Transportation:

# A Complementary System

Comprehensive data were presented in Chapter V on the existing operations of a number of agencies that are presently providing a variety of transportation services for their clients. These existing agency transportation systems function independently of one another and frequently provide overlapping services for various clientele. Coordination of these services may significantly improve the efficiency of the existing operations with no increase in costs.

Coordination of agency services can assume various forms, from informal agreements concerning helping another agency when needed, to a formalized authority operating vehicles and contracting for service. Agencies with high vehicle utilization—use of vehicle during normal operating hours—and high productivities may benefit little if at all from coordination. Agencies that depend on volunteers or use agency outreach workers as drivers may find little cost savings in coordination. Therefore, the degree of agency participation and the exact type of coordination will depend upon conditions unique to the area under study. The various feasible types of coordination include:

- 1. Outreach coordination—agencies jointly provide information about the transportation services available for agency programs.
- 2. Volunteer driver pool-agencies combine their volunteer drivers into one large pool to allow greater dependability for securing needed drivers.
- 3. Time-sharing—agencies with the need for transportation services at different times during a day share the use of vehicles to achieve maximum vehicle utilization.
- 4. Ride-sharing—agencies allow clients from other agencies to ride on their vehicles when such scheduling is convenient.
- 5. Clearinghouse of vehicle operations—agencies provide information on their expected vehicle activity for a day; then, if additional transportation is needed, they attempt to assign the clients to the available services for the day.
- 6. Centralized dispatching—the vehicles of different agencies are dispatched through one operations center.
- 7. Total consolidation—all agency transportation activities are handled by an agency whose primary function is the provision of transportation service.

The above coordination options primarily concern the operation and dispatching of vehicles. Other coordination methods, such as coordinated maintenance, centralized billing and accounting, and joint purchasing also are possibilities.

In addressing the operating alternatives, however, only a general decision on merits of coordination can be made within the scope of this study which is basically directed at the issue of improved public transportation services to the transportation handicapped. Coordinated agency services which would result in improved agency transportation cannot be equated with improved public transportation services for the transportation handicapped. Furthermore, implementation of a system for coordinated agency transportation would not appear to comply with UMTA requirements for "special efforts" for elderly and handicapped transportation. Consequently, the option of coordinated agency transportation is discussed primarily in terms of the effect and interrelationship of this option on the alternative public transportation systems under consideration in this study. In this discussion for each area. an initial examination is made of coordinated agency services alone and of the effects of combining the alternative transportation systems with these coordinated services.

# Combinations of Service

The effectiveness of coordinated agency transportation can be influenced by the operation of an accessible transit system, demand responsive system, user-side subsidy program, or combinations thereof. Each alternative transportation system is analyzed in combination with coordinated agency transportation to determine the degree of this influence.

Coordinated Agency Transportation and Accessible Transit Service: These two options when combined would have little effect on one another. Although an accessible bus system may result in agencies encouraging clients to use such services, the overall effect is expected to be minimal. Thus, the combination of these two services reflects simply a process of implementing both options as described, and a detailed analysis of the combination is not necessary. The advantages and disadvantages of the system are the joint advantages and disadvantages of the two separate alternatives.

Coordinated Agency Transportation and Demand Responsive Service: The implementation of public demand responsive services would influence the feasibility of coordinated agency transportation since the agency or the agency clientele which utilized a public service would have less need for coordinated agency transportation. Ultimately, the demand responsive system could become a proxy for coordinated agency transportation if a number of agencies chose to use the service. For those areas where coordinated agency transportation is feasible, the effects of implementation of a demand responsive system will be discussed. Coordinated Agency Services and User-Side Subsidy: Whereas the implementation of a user-side subsidy program would affect the feasibility of coordinated agency services in a similar manner as found with demand responsive systems, the user-side subsidy program itself would be basically unaffected by the coordination of agency transportation. Therefore, the effects of a user-side subsidy program will be evaluated vis-a-vis coordinated agency transportation.

Coordinated Agency Services, Accessible Transit System, and Demand Responsive Service: An accessible fixed-route system would have little effect on coordinated agency transportation. Thus, this combination is similar to the combination of coordinated agency transportation and demand responsive systems. The analyses of this option are obtained by adding the respective options of accessible transit alone and the coordinated agency transportation combined with a demand responsive system option.

Coordinated Agency Services, Accessible Transit System, and User-Side Subsidy Program: The analysis of this combination is similar to the combination of coordinated agency services and a userside subsidy program since accessible transit should have little effect on coordinated agency transportation. The advantages and disadvantages of the system are the joint advantages and disadvantages of the two separate options.

## Summary of Alternative Transportation Systems by Study Area

Table 153 summarizes the disposition of the alternative transportation system elements discussed above. For the urbanized areas, a total of five alternative systems are to be analyzed and evaluated in depth in this chapter; to be evaluated are accessible transit systems, demand responsive systems, user-side subsidy programs, accessible transit combined with demand responsive systems, and accessible transit combined with user-side subsidy programs. Due to the absence of any extensive local transit systems in the nonurbanized areas of the Region, only two alternative rural systems are to be analyzed and evaluated; to be evaluated are demand responsive systems and user-side subsidy programs. In addition, the effect of coordinated agency transportation on each of the alternative systems evaluated for the urban and rural areas will be considered in this chapter.

# TECHNIQUES OF ANALYSIS AND EVALUATION OF ALTERNATIVE TRANSPORTATION SYSTEMS

Each of the alternative transportation systems varies significantly in the type and degree of service provided for the transportation handicapped. A consistent means of analyzing and evaluating each alternative system is essential in order to assist public officials in selecting the best plan for the Region. Ideally, the evaluation process would express all factors in terms of common quantitative measures, such as dollar values. Because of the difficulties inherent in expressing certain factors in monetary terms, however, both quantitative and qualitative factors were considered in the analyses and evaluations of the alternative systems. Following is a description of the analysis approach and evaluation techniques utilized in this study.

# Analysis Approach

The analysis approach to each alternative transportation system is composed of consideration of certain critical factors, namely: ridership, costs, revenue, and management and operating characteristics. The above factors do not, however, readily apply to an analysis of the element of coordinated agency transportation. Consequently, the approach taken for coordinated agency transportation is to assess the feasibility of the system in light of the combined alternatives, the types of service currrently being offered, and existing vehicle utilization and productivities as well as other information unique to the study area under consideration.

Accessible Transit System Analysis Approach: The analysis of the accessible transit system alternative focuses on determining ridership, costs, and revenue. Since an accessible transit system is achieved by converting all or a major portion of the existing fleet to accessible buses, management and operating characteristics (except for additional driver sensitivity training) are considered to remain consistent with current established practices.

<u>Ridership</u>: An accessible transit system will benefit the transportation handicapped; however, whether just those in wheelchairs will benefit or whether the overall transportation handicapped population will benefit remains an open question. Passenger bus accessibility features probably will improve to some degree the general quality and comfort of tripmaking among all transportation handicapped. In this study, however, it is assumed that the

		Appl Study	icable ⁄ Area
Number	Alternative Elements to be Evaluated in this Chapter	Urban	Ru
1	Accessible Transit System	x	
2	Demand Responsive System	x	>
3	User-Side Subsidy Program	x	>
4	Accessible Transit with Demand Responsive System	X	
5	Accessible Transit with User-Side Subsidy Program	X	
	Other Alternative Elements to be Considered		
1	Coordinated Agency Transportation	x	>
2	Coordinated Agency Transportation and Accessible Transit System	X	
3	Coordinated Agency Transportation and Demand Responsive System	X	>
4	Coordinated Agency Transportation and User-Side Subsidy Program	X	>
5	Coordinated Agency Transportation and Accessible Transit System with Demand Responsive System	X	
6	Coordinated Agency Transportation and Accessible Transit with User-Side Subsidy Program	×	
	Alternative Elements Not Considered or Evaluated in this Chapter		
1	Do Nothing		
2	Demand Responsive System with User-Side Subsidy Program		
3	Accessible Transit System, Demand Responsive System, and User-Side Subsidy Program		
4	Coordinated Agency Transportation and Demand Responsive System with User-Side Subsidy Program		
5	Coordinated Agency Transportation and Accessible Transit System, Demand Responsive System, and User-Side Subsidy Program		

#### SUMMARY OF DISPOSITION OF ALTERNATIVE TRANSPORTATION SYSTEM ELEMENTS BY STUDY AREA

Source: Applied Resource Integration, Ltd.

installation of wheelchair lifts on mass transit vehicles will only generate predominant increases in transit tripmaking among wheelchair users. Therefore, the ridership estimates used in this analysis concern only that ridership expected to use a lift-equipped bus. Consequently, the high and low estimates of latent travel demand for accessible transit among wheelchair users, as presented in Chapter VII, are utilized in this analysis to determine patronage for this service.

<u>Costs</u>: Both operating and capital costs are considered in the cost analysis. Operating costs are derived 1) by estimating increased boarding and alighting times encountered by the system and then applying system hourly operating costs to estimate cost impacts and 2) by estimating increased maintenance costs. Capital costs include the additional costs of making a bus accessible. An expected additional cost was the cost of any new buses needed to compensate for additional operating times on the routes but, as shown, the additional operating times resulting from accessible bus operations do not result in a need for additional operating vehicles.

Initial limited operating experience in San Diego indicates that one minute and 20 seconds are required for operating a lift and waiting for a passenger to be seated or a wheelchair secured.¹ When disembarking, another one minute and 20 seconds are required. Thus, each one-way trip involves two minutes and 40 seconds of boarding and alighting time. Since an able-bodied passenger requires time to board and alight (assumed to be a total of 10 seconds) the net time of a liftassisted boarding and alighting is two minutes and 30 seconds. This additional time per trip is multiplied by the number of lift-assisted trips projected on an accessible trip system and the system hourly operating cost to determine the first element in the operating cost analysis.

To determine the second principal operating cost element, the analysis approach reflects the generally accepted assumption that maintenance costs associated with a lift are between \$500 and \$1,000 per year per lift; no experience yet exists to verify these costs. In terms of estimating operating costs, it is assumed that lift maintenance costs \$500 per year for the lowest ridership estimates, and \$1,000 per year at the highest patronage estimates because of the difference in lift usage.

To determine capital costs, the additional costs of making a bus accessible are estimated to be approximately \$9,000. Since UMTA regulations concerning new purchases mandate an effective floor height and since reserved seats for the elderly and handicapped plus other features also are mandated, the additional costs of an accessible bus include only a wheelchair lift, wide doors, wheelchair tiedowns, and more handrails and stanchions. Available information indicates that a wheelchair lift and wider doors cost approximately \$8,500, while the other improvements are estimated to cost \$500. The average life of a lift and the other equipment is assumed to be 12 years, the same as for the basic bus.

Several other factors are examined in the analysis to show the sensitivity of the cost estimates. One such factor is the effect of increased ridership. As patronage increases, time delays increase, and costs increase. Cost for both high and low ridership estimates are determined to show the potential impact of the patronage increases. Further, an examination is made of whether or not the entire fleet needs to be equipped with lifts. The effects of equipping only the base period fleet and equipping either one-half of the base period or one-third of the peak period fleet also are discussed.

Revenue: To estimate revenue resulting from increased ridership due to accessible buses, peak and off-peak ridership estimates are utilized to reflect the impact of off-peak fare reductions available for elderly and handicapped persons. In an average transit system, peak period ridership among the entire user population usually is onehalf of the daily ridership. However, since the household survey data indicate that the transportation handicapped make proportionately fewer work trips than the general population because crowds during peak periods are a travel barrier and because fares are reduced during off-peak periods, an estimate is made that only one-quarter of the transit trips made by the transportation handicapped will be made during the peak periods. Revenue then is estimated by summing the product of the projected patronage and appropriate fare for peak and off-peak periods including Saturday and Sunday.

Demand Responsive System Analysis Approach: As with the other alternative systems, ridership, costs, and revenues are estimated. Unlike the other alternative systems, however, another major consideration is the management and operation of the demand responsive system. Currently, such systems are provided by chair car carriers in Milwaukee. Furthermore, many communities have taxicab services that provide the equivalent of exclusive ride demand responsive services and, as such, this private sector expertise represents a potential alternative to publicly managed and operated services. In addition, school bus firms with a long history of providing special transit service have expressed an interest in a demand responsive program. The use of private operators such as taxis, chair car carriers, and perhaps school bus operators can have a substantial impact on the costs of a demand responsive system; in some instances of subcontracting for services could result in costs significantly below those of publicly provided services. Thus, the impact of utilizing this capability is a major consideration included in the analysis of this alternative.

¹These data were obtained during the early phases of the San Diego program. It is believed that the boarding time of one minute and 20 seconds represents the boarding time of persons who are unaccustomed to use of a lift. Such time may be substantially reduced after wheelchair users have become familiar with lift usage. This estimate, derived from the San Diego data is used in the analysis to allow for the effects of this learning curve.

*Ridership*: As shown in Chapter VII, latent travel demand is considered in this study to be a function of the fare. Implicit in the latent travel demand estimates is an assumption of an operating schedule of approximately 12 hours per day seven days per week. However, a system operating more hours per day is expected to have a minimal increase in terms of increased demand, and a system operating more hours per day on fewer days per week but maintaining approximately 84 service hours a week can be expected to have approximately the same latent travel demand levels. The objectives and standards set forth in Chapter VI state minimum levels of service of four days for suburban and rural in-town areas and two days per week in rural areas. In the analysis of such levels of service, proportionate decreases in latent travel demand and consequent ridership estimates are assumed. For example, a system operating 12 hours per day four days per week has an estimated latent travel demand equal to four-sevenths of the total estimated latent travel demand on the system.

To determine ridership on a demand responsive system at a given subsidy level, a supply curve which is representative of the subsidy has been developed and applied over the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. It is important to note that, although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of the alternative transportation systems the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand.

<u>Costs</u>: Operating costs on a demand responsive system are determined from an estimated hourly cost times the expected vehicle hours of service. In the urbanized areas these costs are based on those of the public transit system. For the rural areas an hourly cost of \$12.00 is assumed, the lowest cost in the three urbanized areas.

The determination of vehicle hours of service requires an estimate of productivity or the number of passenger trips made per vehicle per hour. Productivity is a function of several factors, including boarding and alighting times, the number of vehicles assigned to a given area, the degree of prescheduled or group rides, passenger demand in a given area, and the resulting trip lengths. A demand responsive service for the transportation handicapped could theoretically achieve a productivity greater than four. Actual experience, however, shows that a productivity of three is very good, and two is not uncommon, with door-through-door service. Furthermore, the study objectives for demand responsive service as described in Chapter VI also influence the potential level of productivity. Considering all of the factors, a productivity of 2.5 passenger trips per hour is considered reasonable and is used as the basis for the analysis. In addition, the sensitivity of the costs to different levels of productivity also is examined.

The determination of vehicle hours of service also requires an estimate of the number of hours per day during which service will be provided. Some demand would be met by operating 24 hours per day, seven days per week, but, based on experience, it has been assumed that providing 84 hours of service per week in the urban areas will suffice. Eighty-four hours is equivalent to 12 to 14 hours per day seven or six days per week, respectively. As will be shown, however, the number of service hours per week depends partly on the funding level for the service. Given the productivity, the vehicle hours, and the fares, the amount of service that can be supplied for a given subsidy level can be estimated since the subsidy must match the difference between revenue and operating costs. Thus, the supply curves based on operating costs are developed.

Capital costs are derived by determining vehicle needs based on the number of vehicles required to serve expected patronage (where the annual capacity of a vehicle is productivity multiplied by the assumed annual hours of service). For example, if expected annual patronage is 88,000 trips, productivity is 2.0 persons per hour, and annual hours of service are 4,400 per vehicle; then the projected number of required vehicles is 10. A 15 percent to 20 percent allowance for spare vehicles also is included in the costs. Thus, in the above example, a total fleet of 12 vehicles would be required. The capital cost or purchase price of new vehicles for demand responsive service is estimated at \$20,000 with an average vehicle life of five years. These estimates reflect the variation that can be encountered in these vehicles depending on such constraints as capacity, equipment specification, and durability.

<u>Revenue</u>: Several fare levels, including a fare based on the recommended recovery-ratio fare policy and a fare determined by the supply and demand curves, are considered. For each appropriate fare, the corresponding revenue estimates are obtained through calculation of the product of the ridership and the average fare.

User-Side Subsidy Program Analysis Approach: It is assumed for the purposes of the analysis that all user subsidized trips would be made on either taxicab or chair car carriers. This does not rule out other private carriers entering the market, an example of which might be special work or shopping-oriented subscription services operated by school bus operators, but such services are expected to be priced near the cost of taxicab or chair car service and consequently would have little, if any, effect on the analysis of this program. Since existing transit systems already have half-fare programs for the handicapped and elderly, the user-side subsidy program would not apply to these services.

In the following analyses, the users of the subsidy program are assigned proportionately to taxicab and chair car services. Previous studies² have shown that approximately 80 percent of the transportation handicapped can use taxi services, with the remaining 20 percent using chair car services. It is assumed that these percentages apply in the Southeastern Wisconsin Region and, further, that a user-side subsidy program will be designed to match persons with the appropriate mode. Thus, although all transportation handicapped could use the more convenient chair car services if they had complete freedom of choice, the program will be designed to limit chair car use to those who need or must use such services. The operating characteristics are as described with either a ticket or percentage fare system in effect. The management structure is assumed to consist of a public agency responsible for the program with the private sector providing the needed service.

*Ridership*: The approach adopted for the analysis of the user-side subsidy program is to consider the latent travel demand for user-side subsidy services to be the same as for demand responsive services. From a user's point of view, the two systems are similar-transportation is provided on demand at a certain rate of fare. Of course, these are factors that make the services different. Taxicabs are more prevalent and offer more opportunity for on-the-street hailing than most specialized demand responsive systems. Conversely, the drivers of specialized demand responsive systems may be more prone than taxicab drivers to assist passengers in entering and leaving the vehicle. Nevertheless, user-side subsidy latent travel demand is equated with the latent travel demand calculated for the demand responsive alternative since no empirical data exist to delineate the impact on ridership of the above differences in services.

To determine ridership on a user-side subsidy program at a given subsidy level, a supply curve representative of the subsidy has been developed and applied over the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. In the analysis of the user-side subsidy program, the changes in fare levels actually represent changes in the proportion of the metered fare which the user will have to pay. Consequently, for this analysis it was also necessary to derive from observed taxi and chair car carrier travel habits and patterns an average taxi and chair car carrier trip length and resultant average taxi and chair car carrier trip fare in order to calculate an overall average metered fare. It is important to note that, although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of alternative transportation systems, the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand.

<u>Costs</u>: The analysis of the costs of a user-side subsidy program are based on an average per trip subsidy cost times expected patronage and per trip administrative costs. The per trip subsidy cost is based on the difference between what the user

²The following studies explore taxi and chair car service usage among the transportation handicapped: Crain & Associates, "Portland Handicapped and Elderly Survey: Draft of Final Report," prepared for the Transportation Systems Center, September 1976; Michaels and Weiler, "Transportation Needs of the Mobility Limited," Transportation Center at Northwestern University, September 1974; Daniel Starch & Staff, Inc., "Travel Characteristics of the Physically Disabled in the Washington Metropolitan Area," prepared for WMATA, December 1971; and Falcocchio, et al, "Mobility of the Handicapped and Elderly," Report No. DOT-TST-75-114, prepared for U. S. Department of Transportation, January 1975.

pays and what the actual trip costs. Fares are calcuated for various levels of subsidy and the actual subsidized trip costs are computed for the various fare levels.

To determine actual cost per trip, an average one-way trip length of four miles for Milwaukee, three miles in Racine and Kenosha, and five miles in the rural area is assumed. These trip lengths agree roughly with data from a demand responsive service for the transportation handicapped in Minneapolis³ and with the Michaels survey in Chicago.⁴ The differing trip lengths are based on the geographic distances to be covered in each study area.

Administrative costs in the Danville demonstration project are about 13 percent of total subsidy costs, which translates to 18 cents per trip. Based on this single example of a community user-side subsidy program, administrative costs are assumed to be 20 cents per trip. This additional increment is added in all cost calculations.

Revenue: Total revenue is the product of the average user cost (fare) and anticipated patronage. Although establishing the level of the fare is a policy question, this fare level has an influence on patronage. It is generally accepted that the fare should be set at a point between existing transit and taxi fares. A fare higher than existing transit is justifiable because more convenient service would be available through the user-side subsidy program, and a price incentive would then exist for transitmobile persons to use the public bus. A fare lower than taxi service is considered to be appropriate because most of the transportation handicapped cannot afford the cost of existing taxi service, especially for frequent trips. Various fares are considered in the analysis. Fare levels of 15, 25, and 40 percent of the metered fare are analyzed in all areas with an additional analysis at a fare level of 70 percent of the metered fare for the Milwaukee urbanized area. Provision also is made to account for the effect on total fare of tips to the drivers. For example, a fare policy of 25 percent would mean that the user would pay 25 percent of the total of a metered fare plus a 20 percent allowance for a tip, (i.e., 25 percent of 120 percent of the metered fare or 30 percent of the metered fare).

Established chair car rates presently are more expensive than taxi rates. To charge the user an equal percentage of the fare, whether on a taxi or on a chair car vehicle, would mean that wheelchair users or other seriously disabled persons needing chair car service would pay considerably more than the less severely disabled transportation handicapped. This policy would not be equitable, and a different fare policy therefore has been assumed for the chair car trips. In the analysis approach for a user-side subsidy program, the chair car user's share of the trip cost is set equal to the average taxi trip cost for users. For example, assume with a 25 percent policy the taxi user cost for a threemile trip is \$1.00, and the taxi subsidy is over \$3.00. For an average trip on a chair car service, the user cost would still be \$1.00, but the subsidy would be \$11.00. In other words, trips made via chair car carriers are assumed in the analysis to require a higher subsidy.

<u>Combination Systems Analysis Approach</u>: In the analysis of the alternative transportation systems for each of the study areas, a thorough examination is made of the three basic alternative systems. For the combinations of these systems, the same methodologies are applied to each appropriate element of the alternative combination system for estimating ridership, costs, and revenues. Therefore, in the analysis of combination systems the emphasis is on highlighting changes in these criteria when systems are combined and discussing the feasibility of each combination.

Therefore, cost and revenue estimates are developed in the same way as for the individual systems. Discussed are the costs resulting from additional boarding and alighting times, maintenance, the accessibility hardware required, and service operating and capital costs. Revenues are the sum of the component riderships and respective fares. It should be noted that in the analysis of the combination accessible transit and user-side subsidy program the average trip length in the Milwaukee urbanized area is assumed to be shorter than applied under the user-side subsidy program alone since transfers can be made to the accessible transit system and the service area is smaller.

Coordinated Agency Transportation Analysis Approach: Beyond the institutional willingness to cooperate and coordinate in providing transportation, there must exist a substantive potential for

³This data was collected by the Consultant, Applied Resources Integration, Ltd, as part of research conducted by that firm on Project Mobility in Minneapolis.

⁴ Michaels and Weiler.

coordinated agency transportation based on operational and economic factors. Since the magnitude and priority of these factors will change from community to community and since current organizational and funding mechanisms are primarily county-oriented, the analysis of the feasibility of coordinated agency transportation is conducted on a county-by-county basis. The six major operational or economic factors considered in this analysis are clientele, service area, service type, size, utilization, and cost.

The overall methodology has been to rank the reported agencies⁵ by size in terms of the number of trips provided. The spare ride capacity was then assessed on the basis of reported vehicle hourly utilizations to determine whether significant spare capability was available. Since 100 percent utilization is unlikely to be achieved in any practical system which allows for such constraints as overloads and random demands, an overall 80 percent capacity goal was set. Further allowance or consideration was then made for service factors such as hours and operational areas in assessing likelihood or incentives for coordination. A brief discussion of the six major factors utilized in this analysis is presented as follows:

<u>Clientele</u>: Most agencies tend to deal with a specific clientele, e.g., handicapped or elderly. In certain cases, client confidentiality may restrict or inhibit cooperation. Examples of this confidentiality involve certain medical treatments, drugs, and alcholism.

Service Area: The service areas must be broadly compatible, either through coincidence, overlap, or containment of subareas.

⁵ It should be noted that, in these initial considerations, the public schools' special education programs were excluded. These are intensively operated, usually with contracted services, and utilization is or at least is perceived to be high. Experience shows that such operations pose a number of problems in respect to clientele, size of the operation in relation to other agencies, and accountability for school funds when vehicles are given multipurpose assignments. This would not, of course, exclude them from consideration in a more detailed evaluation. Service Type: Agencies in general offer a broad spectrum of fixed route, route deviation, and demand responsive services. Generally, these are prescheduled with an established clientele, but random demands do occur. Difference in service type does not necessarily indicate incompatibility since the time distribution of trip demands may well be significantly different and allow effective scheduling of both modes.

Service Hours: Most trips are provided during normal business hours of the weekday, but not necessarily every day. The major consideration is the specific hours that vehicles are in service.

<u>Utilization</u>: Intensity of use of vehicles and facilities is a major factor in program costs and efficiency. Low utilization indicates a potential to provide transportation for others to absorb the spare capacity. High utilization can also indicate a potential for cooperation, either to provide for reserve capacity or to expand service to fulfill the indicated demand.

<u>Size</u>: The total contribution possible can only be assessed by considering the size of the agency considered. Utilization by itself only indicates the potential and is meaningless without reference to actual size of the system.

<u>Cost</u>: Pure economics is a strong incentive for cooperation, and maintenance of existing per ride costs is a necessary first step in coordination. In assessing costs, however, it is necessary to know any special factors involved. One major item is the use of volunteer drivers which appreciably lowers costs; however, for agencies with special client needs, this may not always constitute an acceptable system.

# **Evaluation Techniques**

Both quantitative and qualitative factors are considered in the evaluations of the alternative transportation systems. The evaluation technique employs comparison of these alternative transportation systems against three sets of criteria: the agreed-upon objectives and standards of the elderly and handicapped study, the UMTA-suggested guidelines for providing service to the transportation handicapped in terms of accessible fleet size or proportion of transit operating deficits, and comparison in terms of allocation of total transportation subsidies to specialized programs proportionately to the percentage of the transportation handicapped in the general population. Following analysis of the alternative systems within each study area, a comparative evaluation is conducted on the basis of the agreed-upon elderly and handicapped transportation study objectives and standards as presented in Chapter VI. The three objectives and supporting standards form qualitative and quantitative measures which provide for an established method of evaluation. Table 154 summarizes these objectives and standards. For each alternative system, a determination is made of the extent to which each standard is satisfied.

To measure the performance of an alternative system in terms of the first standard of the first

#### Table 154

# SUMMARY OF OBJECTIVES AND STANDARDS USED FOR EVALUATING ALTERNATIVE TRANSPORTATION SYSTEMS PRIOR TO FORMULATION OF ALTERNATIVE REGIONAL PLANS

#### **Objective No.1**

To assist in the integration of elderly and handicapped people as fully as possible as functioning, participating, and contributing members of an urban and rural society through improved transportation facilities and services.

#### Standards

1. Most nearly meet existing and latent travel demand.

2. Maximize comfort, convenience, and security.

- 3. Maximize knowledge of the services being offered.
- 4. Serve all trip purposes.
- 5. Maintain flexibility in design and operation.

6. Utilize existing public mass transit services.

- 7. Utilize other public and private providers where practical.
- 8. Provide recommended levels of service.

## Objective No. 2

Conformance to the national policy enunciated in the Urban Mass Transportation Act of 1964 (as amended) and to similar state policies that transportation handicapped people have the same right as other people to utilize mass transportation facilities and services.

#### Standard

1. Conform to federal requirements for vehicle design and operation and fixed facilities design and construction.

#### **Objective No. 3**

A transportation system for transportation handicapped people which is economical and efficient, satisfying the other objectives at the lowest possible cost.

Standards

- 1. Minimize subsidy per ride.
- 2. Minimize total operating and capital costs.
- 3. Base fare on transit cost recovery rate in the urbanized areas but do not exceed \$2.50.
- 4. Fares in areas where no regular public mass transportation services are available are to be no more than 50 percent of average cost per person trip in the rural areas.

Source: Applied Resource Integration, Ltd.

objective, latent travel demand must be known. As shown, however, large ranges in the estimates are inherent in any currently acceptable method of estimating latent travel demand; the state of the art does not allow more accurate predictions. Therefore, in evaluating a system against this standard, instead of measuring the percentage of some maximum latent travel demand being served, the alternative system is compared in terms of ability to serve the low estimate of latent travel demand within mode type. In contrast to this first standard, which is a quantitative measure, the remaining standards under the first objective and the single standard under the second objective are primarily qualitative measures. In the analysis each alternative system is evaluated in terms of the ability of that system to meet each of these standards. Comparable to the first standard, the standards under the third objective are quantitative. In the analysis of this objective, a quantitative cost evaluation is made since the principle stated "that an overall evaluation of each transportation plan for the elderly and handicapped must be made on the basis of cost." This evaluation indicates to what degree the standards are being met and presents additional cost data that facilitate the analysis.

In order to assess the quantitative aspects of the alternative systems, some common framework must be constructed. Two frameworks appear to be particularly appropriate for this purpose given the variety in alternative systems and combinations of those systems under evaluation.⁶ The first framework is to compare the systems on the basis of two suggested UMTA guidelines; either one-half the transit fleet must be accessible, or services equivalent to 5 percent of federal operating assistance must be provided. The first guideline applies to fixed-route transit modes and the latter to demand responsive systems and user-side subsidy programs. Combination systems are evaluated in terms of a mix of these guidelines. The second framework, which reflects a higher level of service, requires allocation of total transportation subsidies to a special program on the same proportion as the transportation handicapped are of the general population within the community.

 $^{6}A$  third framework suggested by UMTA involves operating a service that can provide 10 round trips per week to the transportation handicapped. This "special effort" is not directly applicable in light of the alternatives which can be more easily ranked in terms of the frameworks suggested here. With the variety of alternatives to be considered, it is inevitable that there will be variations in the resulting ridership and cost levels. With finite resources and a presently indeterminate ridership potential, it is appropriate to conduct the initial evaluation in terms of per unit measures or a ridesper-dollar or, conversely, dollars-per-ride basis. Such a comparison may then be accomplished at two levels—total costs and unit costs. In selecting a system (or systems) for implementation, these primary evaluations are then tempered with other considerations such as ease and practicability for early implementation.

# ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE MILWAUKEE URBANIZED AREA

The five alternative transportation systems which could be instituted in the Milwaukee urbanized area are accessible transit, demand responsive system, user-side subsidy program, accessible transit combined with demand responsive system, and accessible transit combined with user-side subsidy program. In accordance with the analysis approach previously described, these systems are examined in terms of ridership, cost, operations or administration, and revenue. In addition, the supplemental service which could be provided by coordinated agency transportation is analyzed in combination with each of these five alternative systems. It should be noted that the discussion of coordinated agency transportation applies to Milwaukee County only, rather than to the entire Milwaukee urbanized area; the analyses of coordinated agency transportation in Ozaukee, Washington, and Waukesha Counties are presented as portions of the analysis of the rural transportation system options.

# Accessible Transit

The existing transit service in Milwaukee County would provide the base system for implementation of an accessible transit service in this urbanized area. It is assumed in this analysis of accessible transit that current operations in terms of route structure and fare systems will remain in effect. As shown in Table 155, which summarizes some of the characteristics of the Milwaukee County Transit System, there are a total of 523 buses in the entire fleet which provide about 4,850 scheduled vehicle hours of service on an average weekday with an average hourly operating cost of \$17.25.

CHARACTERISTICS OF EXISTING TRANSITSTUCTION IN MICHACICE COUNTET. 1977
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FI	eet Size
	523 buses in entire fleet.
	471 buses operate in peak periods (approximately 30 buses are used primarily for student transportation).
	243 buses operate in base or midday period.
	221 buses operate on Saturday (maximum).
	163 buses operate on Sunday (maximum).
-	4,850 scheduled vehicle hours of service on an average weekday.
	3,270 scheduled vehicle hours of service on an average Saturday.
	2,270 scheduled vehicle hours of service on an average Sunday.
Cc	ost

Source: Applied Resource Integration, Ltd.

<u>Ridership</u>: The preferred estimates of latent travel demand for accessible transit, as presented in Chapter VII, indicate a range between 137,240 annual trips for the low ridership estimate to 281,410 annual trips for the high ridership estimate. These estimates assume that the significant changes in bus usage as a result of accessibility features will predominantly occur among wheelchair users and, also, that current transit operations will remain in effect.

To determine ridership by peak and off-peak periods, it is assumed, as described in the analysis approach, that 25 percent of the estimated ridership will occur during the peak period with the remaining 75 percent occurring in the off-peak or base period. Applications of these ratios to the high and low estimates of latent travel demand yield the ranges of expected ridership within each period. In the peak period between 34,310 and 70,350 trips per year are expected; in the off-peak, or base period, between 102,930 and 211,060 trips per year are expected.

The impact on ridership of equipping all or a portion of the fleet with accessible buses must also be considered. The latent travel demand estimates are based on equipping all the fleet. If only a portion of the fleet is equipped, however, a reduction in ridership can be expected. For the alternative of equipping all the base period fleet, which also results in a portion of the peak period fleet being equipped, ridership is expected to be 10 percent less than the latent travel demand for the system, or between 123,510 trips and 253,270 trips annually. This proportion was derived by assuming no loss in base period ridership, about 75 percent of total, and retaining three-fifths of the peak period ridership, or about 15 percent of the total ridership. For the option of equipping one-third of the peak period fleet, or one-half of the base period fleet, whichever is greater, two-thirds of the base period and one-half of the peak period ridership are assumed to be retained. This approach results in a ridership estimate that is 62.5 percent of the total latent travel demand estimates, or between 85,770 trips and 175,880 trips annually. A proportional ridership loss equal to the reduction in the number of accessible buses is not assumed since persons could alter their travel patterns to accommodate a less than fully accessible fleet.

<u>Costs:</u> Assuming an additional operating time of two minutes and 30 seconds per lift-assisted trip, the additional time resulting on a daily basis from accessible transit operations would range between 15.7 hours for the low ridership estimate and 32.1 hours for the high ridership estimate. As shown earlier on an average weekday, about 4,850 hours of service are provided. Adding 15.7 hours a day or 32.1 hours a day would have minimal impact on the system and no additional vehicles would need to be purchased to accommodate the additional time. Given time allowances already in the schedules, this small amount of additional time may not even be apparent. However, if schedules must be adjusted to account for this additional time and a current spare bus is needed in operation, the additional annual costs are estimated to range between \$98,850 for the low ridership estimate and \$202,110 for the high ridership estimate.

As previously noted, the estimated costs of maintaining a lift range from \$500 to \$1,000 per year. Thus, the maintenance costs associated with equipping the entire fleet of 523 buses are assumed to range between \$261,500 for the low estimate and \$523,000 for the high estimate. A base period fleet of 243 accessible buses plus 15 percent spares would result in a total fleet of 280 accessible buses and costs which would range between \$140,000 for the low estimate and \$280,000 for the high estimate. Equipping one-third of the peak period fleet would result in 157 accessible buses plus 15 percent accessible spares, or a total of 180 accessible buses. In contrast, equipping one-half of the base period fleet would result in 121 accessible buses and 15 percent accessible spares for a total of 140 accessible buses. Therefore, using the higher number of 180 accessible buses-in accordance with the definition of the option-the range of maintenance costs would be between \$90,000 for the low cost estimate and \$180,000 for the high maintenance cost estimate.

Because maintenance costs are a function of the number of times a lift is used, the low annual maintenance cost of \$500 per lift is applied in the forthcoming analyses to the low ridership estimate while the high maintenance cost of \$1,000 per year is applied to the high ridership estimate. It is recognized that this technique would appear on the surface to be diametrically opposed to the traditional concepts of economies of scale. However, no data currently exist on the economics of lift usage. Furthermore, the relatively low levels of latent travel demand for accessible transit may indicate insufficient ridership volumes to achieve even at highest ridership levels—a point where the maintenance cost per trip begins to decline.

As earlier noted, the total capital cost of equipping a bus with a wheelchair lift, wide doors, wheelchair tie downs, and increased numbers of handrails and stanchions is approximately \$9,000. Therefore, the capital costs for making all or part of the fleet accessible for wheelchairs are about \$4,707,000 for a 100 percent accessible fleet; about \$2,520,000 for a 100 percent accessible base period fleet plus accessible spares; and about \$1,620,000 for a onethird peak period accessible fleet plus accessible spares. It is assumed that these accessibility features would have the same average life as that of an average bus, approximately 12 years.

Revenue: The transit fare in Milwaukee is 50 cents with a reduced fare of 25 cents for elderly and handicapped persons riding in nonpeak periods. Revenue on an accessible transit fleet is the product of the appropriate fare and the number of rides estimated to occur on the system during the period. For a fully accessible fleet, the estimated revenues would be between \$42,880 for the low ridership estimate and \$87,940 for the high ridership estimate; for a base period fleet plus 15 percent accessible spares, revenue is estimated to be between \$38,600 at low ridership and about \$79,150 at high ridership; for a one-third peak period accessible fleet, revenue is estimated to be between \$26,800 at low ridership and \$54,960 at high ridership.

It should be stressed that the revenue estimates utilize broad assumptions concerning ridership distributions; for example, to calculate revenue for a fully accessible system, a 25 percent peak and 75 percent off-peak ridership distribution are assumed. The sensitivity of this assumption is demonstrated if revenue is calculated on the basis of a distribution similar to that of the general public, namely, 50 percent peak and 50 percent off-peak. The results of this calculation are a revenue range of \$51,460 for the low ridership estimate and \$105,330 for the high ridership estimate.

Summary of Accessible Transit System Analysis: In Tables 156, 157, and 158 the annual operating costs, operating revenues, and capital  $\cos t^7$  for the accessible transit options are presented in summary form. A fully accessible fleet would cost between \$317,000 and \$637,000 a year to operate.

⁷Although capital costs would be incurred as lump sums in certain years, such costs have been annualized over the life of the vehicle to provide a reasonable basis for comparison.

# COST AND REVENUE ESTIMATES FOR A FULLY ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN THE MILWAUKEE URBANIZED AREA

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	137,240	281,410
Operating Cost Additional Time	\$ 98,850 \$261,500	\$ 202,110 \$ 523,000
Total	\$360,350	\$ 725,110
Operating Revenue	\$ 42,890	\$ 87,940
Net Operating Cost	\$317,460	\$ 637,170
Capital Cost	\$392,250	\$ 392,250
Total Annual Cost	\$709,710	\$1,029,420
Net Operating Cost Per Passenger	\$2.31 \$2.86	\$2.26 \$1.39
Total Cost Per Passenger	\$5.17	\$3.66

^aOption: Fully accessible fleet = 523 accessible buses.

Source: Applied Resource Integration, Ltd.

# Table 157

# COST AND REVENUE ESTIMATES FOR A BASE PERIOD ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN THE MILWAUKEE URBANIZED AREA

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	123,510	253,270
Operating Cost Additional Time Maintenance	\$ 88,960 \$140,000	\$181,900 \$280,000
Total	\$228,960	\$461,900
Operating Revenue	\$ 38,600	\$ 79,150
Net Operating Cost	\$190,360	\$382,750
Capital Cost	\$210,000	\$210,000
Total Annual Cost	\$400,360	\$592,750
Net Operating Cost Per Passenger	\$1.54 \$1.70	\$1.51 \$0.83
Total Cost Per Passenger	\$3.24	\$2.34

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	85,770	175,880
Operating Cost Additional Time	\$ 61,780 \$ 90,000	\$126,320 \$180,000
Total	\$151,780	\$306,320
Operating Revenue	\$ 26,800	\$ 54,960
Net Operating Cost	\$124,980	\$251,360
Capital Cost	\$135,000	\$135,000
Total Annual Cost	\$259,980	\$386,360
Net Operating Cost Per Passenger	\$1.46 \$1.57	\$1.43 \$0.77
Total Cost Per Passenger	\$3.03	\$2.20

# COST AND REVENUE ESTIMATES FOR A ONE-THIRD PEAK PERIOD ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN THE MILWAUKEE URBANIZED AREA

^aOption: One-third peak period accessible fleet = 180 accessible buses.

Source: Applied Resource Integration, Ltd.

Total capital costs would be about \$4,707,000, or the equivalent of \$392,250 annually. The operating cost per passenger ranges between \$2.26 and \$2.31, while total cost per passenger is between \$3.66 and \$5.17. The major factor affecting the cost per passenger calculations is capital cost; at the low ridership estimates, the capital cost per passenger is \$2.86, while at the high ridership estimates, the capital cost per passenger is only \$1.39.

Equipping less than the complete fleet reduces total costs on an annual basis. Equipping the base period fleet reduces net operating costs by approximately 40 percent and capital costs 46 percent below that of a totally lift-equipped fleet, while equipping only one-third of the fleet reduces operating and capital costs 61 percent and 66 percent, respectively. Additionally, on both of the partially accessible systems, the costs per passenger are lower than on the fully accessible system.

The analysis of accessible transit services is sensitive to three areas. In the following discussion the assumptions involved in each of these areas and the impacts of changes to these assumptions are examined utilizing the example of a fully accessible transit system.

The first area of sensitivity involves the additional time of delays realized by passengers. If actual delays encountered in a fully accessible system are only half of what is projected, the annual operating cost savings would be between \$49,000 and \$101,000, resulting in annual operating costs of approximately \$268,000 for the low ridership estimate and \$536,000 for the high ridership estimate. The difference in the cost per passenger numbers would be approximately 35 cents.

The second area of sensitivity concerns the division of ridership between peak and off-peak periods. If the ridership splits equally between the two periods, the effects on net operating costs would be small. For the fully accessible option, revenues would increase over current estimates by only \$8,600 at the low ridership estimate to \$17,600 at the high ridership estimate with resulting decreases in net operating costs. The effect on costs per passenger would be approximately six cents.

The third area involves ridership decreases due to a reduced number of accessible buses. This factor which is affected by the division of ridership between peak and off-peak periods also affects the revenue side of the analysis. Using the case of a directly proportional reduction in ridership for this base period fleet, revenue would only change by \$1,700 for the low ridership estimate and \$3,500 for the high ridership estimate. The resulting net operating costs per passenger would increase by only three cents.

## **Demand Responsive System**

As with the analysis of accessible transit, the ridership, costs, and revenues on demand responsive systems operating at differing funding levels are estimated and compared. Unlike accessible transit, however, another major consideration discussed below is the effect on service levels of the system management in terms of public versus private operation.

<u>Ridership</u>: Figure 11 shows the expected high and low range of latent travel demand for various fare levels, based on the latent travel demand of the chronic and institutionalized transportation handicapped as presented in Chapter VII. Implicit in the latent travel demand estimates is an assumption of an operating schedule of approximately 12 hours per day seven days per week. These latent travel demand estimates provide the basic data for the estimation of ridership provided by demand responsive systems which are funded at various subsidy levels.

To determine ridership on a demand responsive system at a given subsidy level, a supply curve which represents the subsidy is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. Two factors determine the supply curve-productivity and hourly operating costs. For example, if productivity is decreased to 2.0 passengers per hour, per trip costs increase to \$8.62 resulting in 20 percent less service at each level of subsidy. Conversely, if productivity is increased from 2.5 to 3.0 passengers per hour, the operating cost per passenger drops from \$6.90 to \$5.75 per trip resulting in approximately 20 percent more service provided at each fare for any of the subsidy levels. Changes in hourly operating costs similarly affect the ridership estimates. Both of these factors—productivity and operating costs are discussed more fully in the cost analysis.

Figure 12 shows that on a publicly operated demand responsive system, about 47,950 rides per year are expected at a subsidy level equivalent to 5 percent of the federal transit operating assistance (\$246,950); about 77,020 rides per year, at a proportional (based on transportation handicapped population) share of the transit operating deficit (\$415,900); about 87,410 rides per year, at 10 percent of the federal transit operating assistance (\$493,900); and about 160,620 rides per year, at 20 percent of the federal transit operating assistance (\$987,800). Figure 13 shows that, on a privately operated demand responsive system which can be expected to experience

## Figure 11

# HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A DEMAND RESPONSIVE SYSTEM IN THE MILWAUKEE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

SUPPLY AND DEMAND CURVES FOR A PUBLICLY

**OPERATED DEMAND RESPONSIVE SYSTEM** 



Source: Applied Resource Integration, Ltd.

lower operating costs, about 74,830 rides per year are expected at a subsidy level equivalent to 5 percent of the federal transit operating assistance (\$246,950); about 117,150 rides per year, at a proportional (based on transportation handicapped population) share of the transit operating deficit (\$415,900); about 129,970 rides per year, at 10 percent of the federal transit operating assistance (\$493,900); and about 229,720 rides per year, at 20 percent of the federal transit operating assistance (\$987,800). It is important to note that, although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of this alternative transportation system the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand (see Figures 12 and 13).

## SUPPLY AND DEMAND CURVES FOR A PRIVATELY **OPERATED DEMAND RESPONSIVE SYSTEM** FOR THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE URBANIZED AREA

Figure 13



Source: Applied Resource Integration, Ltd.

Costs: The basis for estimating operating costs is to use an hourly cost equal to that of the hourly cost of the existing public transit system which is \$17.25. Given this hourly operating cost, as well as a productivity of 2.5 passengers per hour, supply curves were developed, as shown in Figure 12, to represent the number of trips that could be provided at different subsidy levels: 5 percent, 10 percent, and 20 percent of the federal operating assistance expected in FY 1977; and 4.21 percent of the anticipated FY 1977 total transit operating deficit, a percentage which is comparable to the percentage of the urbanized area population that is estimated to be transportation handicapped. The FY 1977 anticipated federal operating assistance is about \$4,939,000. The anticipated total operating deficit is about \$9,878,000. Thus, the subsidy levels are:

- \$246,950 or 5 percent of federal operating assistance
- \$493,900 or 10 percent of federal operating assistance
- \$987,800 or 20 percent of federal operating assistance
- \$415,900 or 4.21 percent of transit operating assistance

Capital costs are then derived from the curves since the number of vehicles is based on the amount of service to be provided plus an allowance of 20 percent for spare vehicles. To meet the estimated lower ridership level for a publicly operated system six vehicles are estimated to be needed at the 5 percent level of federal operating subsidy; ten vehicles, at the 10 percent level; 18 vehicles, at the 20 percent level; and, nine vehicles at the 4.21 percent of the transit deficit level of subsidy. To calculate capital costs, then, an average vehicle cost of \$20,000 and a five year vehicle life are assumed.

The service hours which are implemented can have a significant effect upon the productivity of the system and, thereby, affect costs. It has been assumed that each system operates 84 hours per week, or 12 hours on seven days per week. This assumption does not imply that service will be provided 84 hours per week by each vehicle. For example, at a subsidy level that only allowed 420 hours of service, five vehicles could be operated seven days per week at 12 hours per day. However, from an implementation point of view it may be preferable to operate six vehicles, 12 hours per day for five days per week (Monday through Friday), and two vehicles for six hours each on Saturday and Sunday (again a total of 420 hours of service). Appropriate service hours must be selected in accordance with the minimum productivity of 2.5 trips per hour. In terms of the supply curve, no distinction need be made as long as this productivity level is maintained.

System Management, Public vs. Private: The hourly operating cost assumed in the base case is that of the public transit system, or \$17.25 per hour. As shown in Chapter V, private chair car carriers in Milwaukee have a lower hourly operating cost of between \$10.50 and \$13.00 per hour. Therefore, supply curves based on an average hourly operating cost of \$12.00 have also been developed as shown in Figure 13. Comparison of supply and demand curves in Figure 13 with these in Figure 12 indicates that at each subsidy level the intersections of the supply and demand curves of the privately operated system allow more passengers to be served at a lower fare. Private operation of demand responsive services appears to result in lower costs per hour and subsequently more service provided at various subsidy levels. Due to the effect that private operation can have on demand responsive service costs, it is recommended that a public demand responsive system be considered on the basis of subcontracting for private operation and/or management.

<u>Revenue:</u> The revenue at any given level is the fare times the estimated ridership. Again referring to Figure 13, and using the subsidy based on population percentage allocation (\$415,900), the fare should be set between \$0.90 and \$2.05 to match the demand curves. These fare levels would yield between \$90,000 and \$309,550 in revenue.

For Milwaukee the fare policy established a fare that will recover 70 percent of costs but which will not exceed \$2.50. Seventy percent of the projected cost per passenger is \$4.83; therefore, the \$2.50 fare would be established. With this fare level, however, little ridership is projected at the lower estimate of demand. Implementation of a demand responsive service at this fare level may not be feasible unless the demand is close to the high esimate.

At a \$246,950 subsidy level, a fare between \$1.17 and \$2.50 should be charged in order to maximize service within the demand range. Again it must be noted that, with a fare of \$2.50, annual patronage is expected to be very small if the low demand estimates are correct. Thus, for any subsidy level, a fare must be established that allows ample level of service but which does not stifle demand. With a \$0.50 fare, a system operating at either a \$246,950 or \$493,900 subsidy would be capacity constrained (not able to meet demand). Conversely, any fare above \$1.95 for the \$493,900 subsidized system would result in more service than is necessary.

Considering both the need to maximize service at a given subsidy level, and the need to minimize the risk of oversupplying service and thereby setting a fare so high that demand becomes insignificant, the following fares are recommended at the various subsidy levels:

Recommended Fare
\$1.50
\$1.25
\$1.00
\$0.50

These fares are all below the recommended policy level of a maximum \$2.50 fare charge.

The supply and demand curves developed for this analysis are based on expected demand by individuals. Another source of patronage, however, is agency sponsored trips. Agency sponsored trips would be paid for by the agencies with no cost incurred by the passenger; however, the demand would also be determined by the agency. Experience in Delaware with a publicly operated, demand responsive system that provides service only to agency clients indicates an estimated one-third of all agency trips made in the state are made aboard this service. In Milwaukee County an estimated 466,320 agency trips are made annually. Based on the Delaware experience, about 155,440 trips might be made on a public demand responsive transportation system. This would be a significant level of additional ridership. The extent to which it would be realized would depend on many factors including fare levels. In Chapter V the survey of agency operations reported average agency trip costs of just over \$2.00 with a range from less than \$1.00 to over \$10.00 per trip. It would appear, therefore, that many agency costs are in the range of the proposed fares which would make the demand responsive system a feasible alternative to their present operation. However, if agency trips are served, a system operated at the lower two subsidy levels could serve only agency trips and still not be capable of meeting the estimated agency demand of 155,440 trips.

Therefore, a policy issue arises concerning the use of the demand responsive services. For purposes of this analysis only individual trips at the stated fare levels are considered. In the later analysis of the combination of coordinated agency transportation and demand responsive services, agency clients aboard demand responsive services will again be discussed and the reasons for separating the two services will be explained.

Summary of Demand Responsive System Analysis: Table 159 summarizes the cost of a publicly operated demand responsive system. Similarly, Table 160 summarizes the cost of a privately operated demand responsive system. Operating revenue is the product of the recommended fare and the number of persons that could be served as determined by the supply curve. (It is assumed that demand will meet the available supply at the recommended fare levels.) The number of vehicles represents the minimum number required to operate a system 12 hours per day seven days per week at the expected ridership levels.

A publicly operated demand responsive system funded by 5 percent of the federal transit operating assistance, or \$246,950, could provide for about 47,950 rides per year at a fare cost to the transportation handicapped of about \$1.75 per one-way trip; such a system funded by 20 percent of the operating assistance, or \$987,800, could provide about 160,620 rides per year at a fare cost of about \$0.75 per one-way trip. Dependent upon the subsidy level, the total cost of a publicly operated demand responsive system in Milwaukee could range from \$5.65 per trip to \$6.60 per trip. In contrast, a privately operated demand responsive system funded by 5 percent of the federal transit operating assistance, or \$246,950, could provide for about 74,830 rides per year at a fare cost to the transportation handicapped of about \$1.50 per one-way trip; such a system funded by 20 percent of the operating assistance, or \$987,800, could provide about 229,720 rides per year at a fare cost of about \$0.50 per one-way trip. Dependent upon the subsidy level, the total cost of a privately operated demand responsive system in Milwaukee could range from \$3.78 per trip to \$4.75 per trip.

In summary, a demand responsive system under private ownership can be expected to provide for between 43 percent and 56 percent more ridership than a similar service operated by a public agency at the same level of subsidy. The total per trip cost is expected to be between \$1.85 and \$1.87 higher under a publicly operated system than with a privately operated system. Thus, the advantages of a privately operated service include both lower cost of operation and provision for a higher level of ridership.

# User-Side Subsidy

Both the user-side subsidy program and the demand responsive system, as discussed above, provide a type of demand responsive service. The primary difference between the two systems is in terms of resource allocations. Instead of directly sub-

		Subsi	dy Level	
Annual Data	5 Percent of Federal Transit Operating Assistance (\$246,950)	Proportional Share of Operating Deficit (\$415,900)	10 Percent of Federal Transit Operating Assistance (\$493,900)	20 Percent of Federal Transit Operating Assistance (\$987,800)
Ridership Number of Vehicles ^a	47,950 6	77,020 9	87,410 10	160,620 18
Operating Cost	\$330,860 \$ 83,910	\$531,420 \$115,520	\$603,170 \$109,270	\$1,108,260 \$ 120,460
Net Operating Cost	\$246,950	\$415,900	\$493,900	\$ 987,800
Capital Cost ^b	\$ 24,000	\$ 36,000	\$ 40,000	\$ 72,000
Total Cost	\$270,950	\$451,900	\$533,900	\$1,059,800
Per Trip Measures Fare	\$1.75	\$1.50	\$1.25	\$0.75
Net Operating Cost	\$5.15 \$0.50	\$5.40 \$0.47	\$5.65 \$0.46	\$6.15 \$0.45
Total Cost	\$5.65	\$5.87	\$6.11	\$6.60

# OPERATING DATA FOR A PUBLICLY OPERATED DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE URBANIZED AREA

^aIncludes a 20 percent allowance for spares.

^bAssumes vehicle cost of \$20,000 and a five-year vehicle life.

Source: Applied Resource Integration, Ltd.

sidizing a particular provider of transportation, the eligible users are provided a subsidy for their transportation under the user-side subsidy program. Although a public entity would have to be designated to administer the user-side subsidy program, the actual services would be operated by the private sector which would presumably respond to increased consumer pressures with new or modified services. It is assumed in the analysis that 80 percent of the trips made under a user-side subsidy program would be made by taxicab and 20 percent would be made in chair car carriers. Following are the ridership, cost, and revenue estimates for a user-side subsidy program in the Milwaukee urbanized area. <u>Ridership</u>: The latent travel demand for a user-side subsidy program and a demand responsive system are considered the same for this analysis. Figure 14 shows the latent travel demand curves developed from data for demand responsive systems as presented in Chapter VII. These latent travel demand estimates provide the basic data for estimating ridership by user-side subsidy programs which are funded at various subsidy levels. Although user-side subsidy and demand responsive systems utilize the same base data in these latent travel demand estimates, substantial differences between the systems in average per trip costs result in significantly different estimates of ridership on the two systems at identical funding levels.

	Subsidy Level						
Annual Data	5 Percent of Federal Transit Operating Assistance (\$246,950)	Proportional Share of Operating Deficit (\$415,900)	10 Percent of Federal Transit Operating Assistance (\$493,900)	20 Percent of Federal Transit Operating Assistance (\$987,800)			
Ridership Number of Vehicles ^a	74,830 9	117,150 13	129,970 15	229,720 26			
Operating Cost	\$359,190 \$112,250	\$562,340 \$146,440	\$623,870 \$129,970	\$1,102,660 \$ 114,860			
Net Operating Cost	\$246,940	\$415,900	\$493,900	\$ 987,800			
Capital Cost ^b	\$ 36,000	\$ 52,000	\$ 60,000	\$ 104,000			
Total Cost	\$282,940	\$467,900	\$553,900	\$1,091,800			
Per Trip Measures Fare	\$1.50	\$1.25	\$1.00	\$0.50			
Net Operating Cost	\$3.30 \$0.48	\$3.55 \$0.44	\$3.80 \$0.46	\$4.30 \$0.45			
Total Cost	\$3.78	\$3.99	\$4.26	\$4.75			

## OPERATING DATA FOR A PRIVATELY OPERATED DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE URBANIZED AREA

^aIncludes a 20 percent allowance for spares.

^bAssumes vehicle cost of \$20,000 and a five-year vehicle life.

Source: Applied Resource Integration, Ltd.

To determine ridership on a user-side subsidy program at a given subsidy level, a supply curve which represents the subsidy level is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. In the analysis of the user-side subsidy program, the changes in fare levels actually represent changes in the proportion of the average metered fare which the user will have to pay per trip. Through a user-side subsidy program, about 100,800 rides per year are expected to be provided with a \$246,950 subsidy; about 138,700 rides with a \$415,900 subsidy; about 164,600 rides with a \$493,900 subsidy; and about 291,400 rides with a \$987,800 subsidy. It is important to note that although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of the alternative systems the ridership estimates are assumed to be relatively close to the lower estimates of latent travel demand.

<u>Costs</u>: The total cost of a user-side subsidy program consists of the subsidy per trip times the number of trips plus administrative costs of \$0.20 per trip. Cost per trip data were determined on the basis of existing taxi rates in Milwaukee—\$0.95 for

# HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

## SUPPLY AND DEMAND CURVES FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

the first two-fifths of a mile and \$0.20 for each two-fifths thereafter—and on existing chair car trip fares—\$5.00 for the first 30 blocks and \$0.60 each additional mile. The supply curves which represent the amount of service that could be provided at a given subsidy level are presented in Figure 15 together with an indication of the percentage fare levels discussed later.

The major factor affecting the cost estimates is the average trip length, especially in this study where the fare policy imposes a \$2.50 upper limit regardless of trip length. For Milwaukee, an average trip length of four miles is used resulting in average costs of \$3.50 (fare \$2.75 plus \$0.55 tip plus \$0.20 administrative) for taxi and \$5.80 for chair car services. The analysis is quite sensitive to

average trip length. For instance, for an average trip length of five miles instead of four, the average cost per trip increases approximately 27 percent while the amount of service that can be supplied drops by 22 percent. Should this occur, the curves would all be shifted down and to the right a proportional amount.

<u>Revenue:</u> The fare level in a user-side subsidy program is usually based on a percent of the metered fare. In Figure 15 the vertical lines represent 15, 25, 40, and 70 percent of total program costs recovered by the user's payment of a portion of the actual fare. It can be seen that, in terms of maximizing demand, a 15 percent recovery rate is too low for the lower subsidy levels; may be low for the \$493,000 subsidy level; and is appropriate for the higher subsidy level. On the other hand, the recovery rate of 70 percent is too high for all subsidy levels.

The more appropriate fare policies appear to be 25 percent or 40 percent of metered fare depending upon the subsidy level. For a subsidy level below \$350,000, a 40 percent recovery rate is recommended, and for subsidy levels between \$350,000 and \$900,000 a 25 percent recovery rate is recommended. For subsidy levels greater than \$900,000, a 15 percent recovery rate is assumed.

Summary of User-Side Subsidy Program Analysis: Table 161 summarizes the operating data for a user-side subsidy program. At the \$246,950 subsidy level, about 100,800 trips would be made annually with a recovery rate of 38 percent. The average fare at this subsidy level would be \$1.50 for the trip consisting of the four-mile average trip length. At the \$415,900 and \$493,900 subsidy levels, annual trips would consist of about 138,700 and 164,600 trips per year, respectively. Programs at these subsidy levels would have 25 percent recovery rates with average fares of \$0.95 and average costs per trip of \$3.00 in both instances. Thus, the higher of these two subsidy levels simply produces more ridership. At the highest subsidy level, the program would cost \$1.15 million a year with \$163,000 of revenue generated by a 14 percent recovery rate.

Accessible Transit and Demand Responsive System This alternative consists of a combination of two of the operating concepts discussed above. The two systems are to operate in a complementary fashion. Those persons living within two blocks of transit who can use accessible transit are expected to do so, while those who live farther than two blocks from transit or who live within two blocks but cannot use accessible transit would have demand

## Table 161

	Subsidy Level					
Annual Data	5 Percent of Federal Transit Operating Assistance (\$246,950)	Proportional Share of Operating Deficit (\$415,900)	10 Percent of Federal Transit Operating Assistance (\$493,900)	20 Percent of Federal Transit Operating Assistance (\$987,800)		
Fare Policy	38 percent	25 percent	25 percent	14 percent		
Ridership Taxi Trips	80,640 20,160	110,960 27,740	131,680 32,920	233,120 58,280		
Total Ridership	100,800	138,700	164,600	291,400		
Operating Cost	\$398,140 \$151,190	\$547,700 \$131,800	\$650,300 \$156,400	\$1,151,000 \$ 163,200		
Net Operating Cost	\$246,950	\$415,900	\$493,900	\$ 987,800		
Operating Cost Per Trip Operating Revenue Per Trip	\$3.95	\$3.95	\$3.95	\$3.95		
(average fare)	1.50	\$0.95	\$0.95	\$0.56		
Net Operating Cost Per Trip	\$2.45	\$3.00	\$3.00	\$3.39		

# OPERATING DATA FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE MILWAUKEE URBANIZED AREA

Source: Applied Resource Integration, Ltd.

responsive services available. Presented below are ridership, cost, and revenue estimates for this combination of alternative transportation systems.

<u>Ridership</u>: Under this option an increased latent travel demand for accessible transit service is assumed to be attributable to the demand responsive service feeding the accessible transit services. As has been shown in the discussion of accessible transit, the major consideration concerns persons who require level change assistance. The incremental increase in accessible transit latent travel demand for this combination is estimated to be between 15,300 trips and 34,670 trips per year.

In the prior consideration of accessible transit services, it was observed that patronage may be expected to be decreased when only a portion of the fleet is lift equipped. However, for this combination of services, the demand responsive service would be feeding the accessible transit services and would intercept an accessible bus. Therefore, no reduction of this incremental demand is assumed when options other than a fully accessible fleet are considered.

For persons living a distance greater than two blocks from a transit system or persons who cannot use accessible transit, the latent travel demand curves for a demand responsive system and the supply curves for the system are shown in Figure 16. The latent travel demand curves for the transportation handicapped living more than two blocks from transit are derived in the same way as the latent travel demand curves for the total transportation handicapped population.

The supply curves are similarly constructed as under the demand responsive alternative system to represent the subsidy level and are utilized to estimate potential ridership on the system.

<u>Costs</u>: The increased demand for accessible transit services will only increase the costs associated with additional operating time. Maintenance and capital costs will not increase over what is already assumed for the accessible transit alternative alone. The additional operating costs for the low and high patronage estimates are about \$11,000 and about \$25,000, respectively.

The supply curves for demand responsive services shown in Figure 16 are for a system which utilizes private operations, maintains a productivity of 2.5 passengers per hour, and provides 84 hours of service per week per vehicle. Two subsidy levels are shown in this case, 2.5 percent and 5.0 percent of federal operating assistance. These two lower subsidy levels have been chosen since only a portion of the transportation handicapped would be served by the demand responsive system and since the accessible transit system would be providing concurrent operations.

For the fare levels recommended in the next section, total annual operating costs on the demand responsive system for these low subsidy levels are projected to be between \$194,370 and \$310,950. These levels would require five and eight vehicles, respectively. Thus, the total capital costs on the demand responsive portions of this alternative system would be \$100,000 or \$160,000, respectively.

## Figure 16

# SUPPLY AND DEMAND CURVES FOR DEMAND RESPONSIVE ELEMENT OF A COMBINATION ACCESSIBLE TRANSIT AND DEMAND RESPONSIVE SYSTEM IN THE MILWAUKEE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

Revenue: The supply and demand curves indicate that a fare in the range from 0.75 to 2.20 for the lower subsidy level and 0.20 to 1.20 for the higher could be used to obtain the maximum ridership for a given subsidy level. For the lower figure, a fare of 1.75 is recommended and for the higher subsidy a fare of 1.00 is recommended. Combination trips using both modes of accessible service would pay a fare appropriate to the demand responsive service. Thus, the additional revenue expected from the demand responsive segment of the joint operation is 70,900 for the low subsidy level and 64,000 for the high subsidy level.

Summary of Accessible Transit and

Demand Responsive System Analysis

Shown in Tables 162, 163, and 164 are operating data for demand responsive systems at two dif-

ferent fare subsidies for three alternative accessible transit options. A fully accessible transit system and demand responsive system would have an annual operating cost between \$451,930 and \$909,020 with total costs between \$864,180 and \$1,333,270. The system would provide an estimated 193,070 to 380,090 passenger trips.

As the number of accessible buses decrease, so do the operating costs of the options. Interestingly, for combinations of services with either the base period fleet or one-third of the peak period fleet equipped with accessible buses, the net operating costs per passenger are approximately the same.

Accessible Transit and User-Side Subsidy Program This alternative system represents another combination of two operating concepts which also

## Table 162

OPERATING DATA FOR FULLY ACCESSIBLE TRANSIT AND DEMAND RESPONSIVE SYSTEM COMBINATION FOR THE MILWAUKEE URBANIZED AREA

	Fi Acci Tr	ully essible ansit	Demand Responsive System with \$246,950 Subsidy ^a	Fully A Trar Demand Syster \$246,95	Accessible hsit and Responsive m with a 60 Subsidy	Demand Responsive System with \$123,470 Subsidy ^b	Fully A Tran Demand Syster \$123,47	Accessible sit and Responsive n with a 0 Subsidy
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate
Ridership	152,570	316,090	64,000	216,570	380,090	40,500	193,070	356,590
Operating Cost	\$371,350 \$ 42,890	\$   750,010 \$    87,940	\$310,950 \$64,000	\$682,300 \$106,890	\$1,060,960 \$151,940	\$194,370 \$70,900	\$565,720 \$113,790	\$ 944,380 \$ 158,840
Net Operating Cost	\$328,460	\$ 662,070	\$246,950	\$575,410	\$ 909,020	\$123,470	\$451,930	\$ 785,540
Capital Cost	\$392,250	\$ 392,250	\$32,000	\$424,250	\$ 424,250	\$20,000	\$412,250	\$ 412,250
Total Annual Cost	\$720,710	\$1,054,320	\$278,950	\$999,660	\$1,333,270	\$143,470	\$864,180	\$1,197,790
Net Operating Cost Per Passenger Capital Cost Per Passenger	\$2.15 \$2.57	\$2.10 \$1.24	\$3.86 \$0,50	\$2.66 \$1.96	\$2.39 \$1.12	\$3.05 \$0.49	\$2.34 \$2.14	\$2.20 \$1.16
Total Cost Per Passenger	\$4.72	\$3.34	\$4.36	\$4.62	\$3.51	\$3.54	\$4.48	\$3.36

^a Subsidy level of \$246,950 equals 5 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^C All revenues from trips on accessible transit which utilize the demand responsive system to travel to and from the bus are assigned to the demand responsive system.

Source: Applied Resource Integration, Ltd.

assumes complementary services. The user-side subsidy program would be used by persons living more than two blocks from a transit route or persons living within two blocks of a transit route who physically cannot use accessible transit services. Presented below are ridership, cost, and revenue data for this combination of alternative transportation systems.

<u>Ridership</u>: The latent travel demand for accessible transit service under this alternative is the same as that demand estimated for accessible transit in combination with a demand responsive system. Thus, the incremental increase in latent travel demand for accessible transit is estimated to be between 15,330 trips and 34,670 trips per year. The latent travel demand curves presented in the preceeding accessible transit/demand responsive discussion are reproduced in Figure 17. These latent travel demand estimates provide the basic data for estimating ridership by user-side subsidy programs in combination with accessible transit when such programs are funded at various subsidy levels. Although user-side subsidy and demand responsive systems in combination with accessible transit utilize the same base data in terms of these latent travel demand estimates, differences between the system in average per trip costs result in different estimates of ridership on the two systems at identical funding levels. Therefore, the supply curves shown in Figure 17 are markedly different than the supply curves shown for the combination demand responsive and accessible transit system. These supply curves are similarly constructed as under the user-side subsidy alternative system analysis to represent the subsidy level and are

## Table 163

OPERATING DATA FOR BASE PERIOD ACCESSIBLE TRANSIT AND DEMAND RESPONSIVE SYSTEM COMBINATION FOR THE MILWAUKEE URBANIZED AREA

	Base Daviert		Demand Responsive System with	Base Period Accessible Fleet and Demand Responsive		Demand Responsive System with	Base   Accessibl Demand	Period e Fleet and Responsive
	Access	Accessible Fleet		\$246,95	0 Subsidy	Subsidy ^b	\$123,47	0 Subsidy
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate
Ridership	138,840	287,950	64,000	202,540	351,950	40,500	179,340	328,450
Operating Cost	\$239,960 \$ 38,600	\$486,800 \$ 79,150	\$310,950 \$64,000	\$550,910 \$102,600	\$797,750 \$143,150	\$194,380 \$ 70,900	\$434,340 \$109,500	\$681,180 \$150,050
Net Operating Cost	\$201,360	\$407,650	\$246,950	\$448,310	\$654,600	\$123,480	\$324,840	\$531,130
Capital Cost	\$210,000	\$210,000	\$ 32,000	\$242,000	\$242,000	\$20,000	\$230,000	\$230,000
Total Annual Cost	\$411,360	\$617,650	\$278,950	\$690,310	\$896,600	\$143,480	\$554,840	\$761,130
Net Operating Cost Per Passenger Capital Cost	\$1.45	\$1.42	\$3.86	\$2.21	\$1.86	\$3.05	\$1.81	\$1.62
Per Passenger	\$1.51	\$0.73	\$0.50	\$1.19	\$0.68	\$0.49	\$1.28	\$0.70
Total Cost Per Passenger	\$2.96	\$2.15	\$4.36	\$3.40	\$2.54	\$3.54	\$3. <b>09</b>	\$2.32

^a Subsidy level of \$246,950 equals 5 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^c All revenues from trips on accessible transit which utilize the demand responsive system to travel to and from the bus are assigned to the demand responsive system.

Source: Applied Resource Integration, Ltd.

## OPERATING DATA FOR ONE-THIRD PEAK PERIOD ACCESSIBLE TRANSIT AND DEMAND RESPONSIVE SYSTEM COMBINATION FOR THE MILWAUKEE URBANIZED AREA

	One-Third Peak Period Accessible Fleet		Demand Responsive System with \$246,950 Subsidy ^a	One-Third Peak Period Accessible Fleet and Demand Responsive System with \$246,950 Subsidy		Demand Responsive System with \$123,470 Subsidy ^b	One-Third Peak Period Accessible Fleet and Demand Responsive System with \$123,470 Subsidy	
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate
Ridership	101,100	210,560	64,000	165,100	274,560	40,500	141,600	251,060
Operating Cost Operating Revenue ^C	\$162,780 \$ 26,800	\$331,220 \$54,960	\$310,950 \$64,000	\$473,730 \$ 90,800	\$642,170 \$118,960	\$194,370 \$ 70,900	\$357,150 \$ 97,700	\$525,590 \$125,860
Net Operating Costs	\$135,980	\$276,260	\$246,950	\$382,930	\$523,210	\$123,470	\$259,450	\$399,730
Capital Cost	\$135,000	\$135,000	\$32,000	\$167,000	\$167,000	\$20,000	\$155,000	\$155,000
Total Annual Cost	\$270,980	\$411,260	\$278,950	\$549,930	\$690,210	\$143,470	\$414,450	\$554,730
Net Operating Cost Per Passenger Capital Cost	\$1.35	\$1.31	\$3.86	\$2.32	\$1.90	\$3.05	\$1.83	\$1.59
Per Passenger	\$1.34	\$0.64	\$0.50	\$1.01	\$0.61	\$0.49	\$1.09	\$0.62
Total Cost Per Passenger	\$2.68	\$1.95	\$4.36	\$3.33	\$2.51	\$3.54	\$2.92	\$2.20

^a Subsidy level of \$246,950 equals 5 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^C All revenues from trips on accessible transit which utilize the demand responsive system to travel to and from the bus are assigned to the demand responsive system.

Source: Applied Resource Integration, Ltd.

utilized to estimate potential ridership on the system. As before, ridership is assumed to be divided between taxi and chair car services in an 80 percent/20 percent ratio, respectively.

<u>Costs</u>: The increased demand for accessible transit services only increases the costs associated with the additional boarding and alighting times that result from using the lift. The additional operating costs for the low and high patronage estimates are \$11,000 and \$24,900, respectively.

The service area of the user-side subsidy program is that portion of the urbanized area greater than two blocks from a transit route. Since a smaller area is served, an average trip length of three miles (one mile less than that used in the earlier analysis of the user-side subsidy program) is assumed. The average taxi fare and chair car charge for this trip length is \$2.35 and \$5.00, respectively. Increasing taxi costs to allow for a tip and adding administrative costs results in total per trip costs of about \$3.20 and \$5.20 for an average total trip cost of \$3.60 per trip. From these cost estimates, the three supply curves as shown in Figure 17 were developed to represent subsidy levels of 1.25 percent, 2.5 percent, and 5 percent of the federal operating assistance expected by the transit system in 1977.

<u>Revenue</u>: The vertical lines in Figure 17 represent the various recovery rates considered for the Milwaukee urbanized area. As shown, the 70 percent recovery rate appears to be too high a rate for the given subsidy levels. For a subsidy level of \$123,470 per year the 40 percent recovery rate is appropriate, while for the \$246,950 annual

## Figure 17

# SUPPLY AND DEMAND CURVES FOR A USER-SIDE SUBSIDY PROGRAM ELEMENT OF AN ACCESSIBLE TRANSIT AND USER-SIDE SUBSIDY PROGRAM COMBINATION IN THE MILWAUKEE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

subsidy a 15 percent recovery rate is preferred. For the lowest subsidy level, the recovery rate should be between the 40 percent and 70 percent levels with a recovery rate of slightly less than 50 percent considered to be the best for this subsidy level.

Using these three recovery rates, the expected revenue for each subsidy level is:

Subsidy	Recovery Rate	Revenue			
\$ 61,730	47 percent	\$54,000			
\$123,470	40 percent	\$77,000			
\$246,950	15 percent	\$41,000			

The above revenue estimates reflect an assumption that a person making a trip which uses both the accessible transit service and the user-side subsidy program will pay only the fare for the user-side subsidy portion of the trip.

## Summary of Accessible Transit and User-Side Subsidy Program

Tables 165, 166, and 167 show the operating data for the various feasible combinations of user-side subsidy programs and accessible transit systems. The overall costs of the combination services fall in a range between \$332,710 and \$1,315,300. The least expensive combination both in costs and in cost per passenger is equipping one-third of the peak period fleet and providing a subsidy equal to 1.25 percent of the designated federal transit operating assistance.

The difference in per passenger costs of programs involving equipping either the base period or one-third of the peak period fleet is small, although programs involving an accessible base period fleet generally have \$100,000 to \$200,000 higher annual costs.

# Coordinated Agency Transportation

Since current organizational and funding mechanisms for agency transportation services are primarily county-oriented, the following discussion concerns only the feasibility of coordinated agency transportation within Milwaukee County. The data utilized in this analysis are primarily the product of the inventory of service providers. The findings of this inventory are reported in greater detail in Chapter V.

In Milwaukee County 19 agencies reported providing transportation services with a total activity level of approximately 43,000 one way trips per month (see Table 168). Of these agencies the Cooperative Educational Service Agency and the Inner City Council on Alcoholism were excluded from further consideration in this analysis because of the special nature of their programs and clients. This reduced the data under consideration to 31,000 trips provided by 17 agencies of which the eight largest contributed over 90 percent of the trips.

The type of service provided was generally fixed route or fixed schedule with only three agencies reporting demand responsive services. This set of circumstances combined with the generally similar operating hours indicates a high degree of basic compatibility of service type.

# OPERATING DATA FOR FULLY ACCESSIBLE TRANSIT AND USER-SIDE SUBSIDY PROGRAM COMBINATION FOR THE MILWAUKEE URBANIZED AREA

	Fully Accessible Transit		User-Side Subsidy Program with \$246,950 ^a Subsidy	de Fully Accessible y Transit and with User-Side Subsidy 50 ^a Program with ly \$246,950 Subsidy		User-Side Subsidy Program with \$123,470 ^b Subsidy	Fully Accessible Transit and User-Side Subsidy Program with \$123,470 Subsidy		User-Side Subsidy Program with \$61,730 ^C Subsidy	Fully Accessible Transit and User-Side Subsidy Program with \$61,730 Subsidy	
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate
Ridership	152,570	316,900	83,000	235,570	399,900	59,000	211,570	375,900	33,000	185,570	349,900
Operating Cost	\$371,350 \$ 42,890	\$   750,010 \$    87,940	\$287,950 \$ 41,000	\$659,300 \$83,890	\$1,037,960 \$128,940	\$200,470 \$  77,000	\$571,820 \$119,890	\$   950,480 \$   164,940	\$115,730 \$54,000	\$487,080 \$ 96,890	\$ 865,740 \$ 141,940
Net Operating Cost	\$328,460	\$ 662,070	\$246,950	\$575,410	\$ 909,020	\$123,470	\$451,930	\$ 785,540	\$ 61,730	\$390,190	\$ 723,800
Capital Cost	\$392,250	\$ 392,250		\$392,250	\$ 392,250	**	\$392,250	\$ 392,250		\$392,250	\$ 392,250
Total Cost	\$720,710	\$1,054,320	\$246,950	\$967,660	\$1,301,270	\$123,470	\$844,180	\$1,177,790	\$ 61,730	\$782,440	\$1,116,050
Net Operating Cost Per Passenger Capital Cost Per Passenger	\$2.15 \$2.57	\$2.10 \$1.24	\$2.98 	\$2.44 \$1.67	\$2.27 \$0.98	\$2.09	\$2.14 \$1.85	\$2.09 \$1.04	\$1.87	\$2.10 \$2.11	\$2.07 \$1.12
Total Cost Per Passenger	\$4.72	\$3.34	\$2.98	\$4.11	\$3.25	\$2.09	\$3.99	\$3.13	\$1.87	\$4.21	\$3.19

^a Subsidy level of \$246,950 equals 5.0 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^c Subsidy level of \$61,730 equals 1.25 percent of the federal operating assistance.

^d All revenues from trips on accessible transit which utilize the user-side subsidy program to travel to and from the bus are assigned to the user-side subsidy program.

Source: Applied Resource Integration, Ltd.
# OPERATING DATA FOR BASE PERIOD ACCESSIBLE TRANSIT AND USER-SIDE SUBSIDY PROGRAM COMBINATION FOR THE MILWAUKEE URBANIZED AREA

	Ba Per Acce Fie	ase iod ssible set	User-Side Subsidy Program with \$246,950 ⁸ Subsidy	Base A Accessik and User-S Progra \$246,950	Period ble Fleet ide Subsidy m with 0 Subsidy	User-Side Subsidy Program with \$123,470 ^b Subsidy	Base Accessit and User-Si Progra \$123,470	Period ble Fleet de Subsidy m with ) Subsidy	User-Side Subsidy Program with \$61,730 ^C Subsidy	Base F Accessik and User-Si Prograi \$61,730	Period ble Fleet de Subsidy m with Subsidy
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate
Ridership	138,840	287,950	83,000	221,840	370,950	59,000	197,840	346,950	33,000	171,840	320,950
Operating Cost	\$239,960 \$ 38,600	\$486,800 \$ 79,150	\$287,950 \$41,000	\$527,910 \$79,600	\$774,750 \$120,150	\$200,470 \$  77,000	\$440,440 \$115,600	\$687,270 \$156,150	\$115,740 \$54,000	\$355,700 \$92,600	\$602,540 \$133,150
Net Operating Cost	\$201,360	\$407,650	\$246,950	\$448,310	\$654,600	\$123,470	\$324,840	\$531,120	\$ 61,730	\$263,100	\$469,390
Capital Cost	\$210,000	\$210,000		\$210,000	\$210,000		\$210,000	\$210,000		\$210,000	\$210,000
Total Cost	\$411,360	\$617,650	\$246,950	\$658,310	\$864,600	\$123,470	\$534,840	\$741,120	\$ 61,730	\$473,100	\$679,390
Net Operating Cost Per Passenger Capital Cost Per Passenger	\$1.45 \$1.51	\$1.42 \$0.73	\$2.98	\$2.02 \$0.95	\$1.76 \$0.57	\$2.09	\$1.64 \$1.06	\$1.53 \$0.61	\$1.87	\$1.53 \$1.22	\$1.46 \$0.65
Total Cost Per Passenger	\$2.96	\$2.15	\$2.98	\$2.97	\$2.33	\$2.09	\$2.07	\$2.14	\$1.87	\$2.75	\$2.11

^a Subsidy level of \$246,950 equals 5.0 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^c Subsidy level of \$61,730 equals 1.25 percent of the federal operating assistance.

^d All revenues from trips on accessible transit which utilize the user-side subsidy program to travel to and from the bus are assigned to the user-side subsidy program.

## OPERATING DATA FOR ONE-THIRD PEAK PERIOD ACCESSIBLE TRANSIT AND USER-SIDE SUBSIDY PROGRAM COMBINATION FOR THE MILWAUKEE URBANIZED AREA

	One- Peak F Accessib	Third Period Ile Fleet	User-Side Subsidy Program with \$246,950 ^a Subsidy	One-Third I Accessible User-Side Progran \$246,950	Peak Period Fleet and Subsidy n with Subsidy	User-Side Subsidy Program with \$123,470 ^b Subsidy	One-Third F Accessible User-Side Progran \$123,470	Peak Period Fleet and Subsidy a with Subsidy	User-Side Subsidy Program with \$61,730 ^C Subsidy	One-Third F Accessible User-Side Prograr \$61,730	eak Period Fleet and Subsidy n with Subsidy
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate
Ridership	101,100	210,560	83,000	184,100	293,560	59,000	160,100	269,560	33,000	134,100	243,560
Operating Cost	\$162,780 \$ 26,800	\$331,210 \$54,960	\$287,950 \$41,000	\$450,730 \$67,800	\$619,170 \$95,960	\$200,470 \$  77,000	\$363,250 \$103,800	\$531,690 \$131,960	\$115,730 \$54,000	\$278,510 \$80,800	\$446,950 \$108,960
Net Operating Cost	\$135,980	\$276,260	\$246,950	\$382,930	\$523,210	\$123,470	\$259,450	\$399,730	\$ 61,730	\$197,710	\$337,990
Capital Cost	\$135,000	\$135,000		\$135,000	\$135,000		\$135,000	\$135,000		\$135,000	\$135,000
Total Cost	\$270,980	\$411,260	\$246,950	\$517,930	\$658,210	\$123,470	\$394,450	\$534,730	\$ 61,730	\$332,710	\$472,990
Net Operating Cost Per Passenger Capital Cost Per Passenger	\$1.35 \$1.34	\$1.31 \$0.64	\$2.98 	\$2.08 \$0.74	\$1.78 \$0.46	\$2.09	\$1.62 \$0.84	\$1.48 \$0.50	\$1.87 	\$1.47 \$1.01	\$1.39 \$0.55
Total Cost Per Passenger	\$2.69	\$1.95	\$2.98	\$2.81	\$2.24	\$2.09	\$2.46	\$1.98	\$1.87	\$2.48	\$1.94

^a Subsidy level of \$246,950 equals 5.0 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^C Subsidy level of \$61,730 equals 1.25 percent of the federal operating assistance.

^d All revenues from trips on accessible transit which utilize the user-side subsidy program to travel to and from the bus are assigned to the user-side subsidy program.

### MILWAUKEE COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

Agency ^a	Service Area	Type of S <del>e</del> rvice ^b	Volunteer or Paid Drivers	Monthly One-Way Trips	Number and Type of Vehicles	Daily Operating Hours	Average Vehicle Utilization {in percent)	Productivity (trips per vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip
American	Milwaukee County	DR	Volunteers-15	65-70	2 Station	9:00 A.M 3:30 P.M.	29	1.0	N/A	N/A	N/A
Cancer Society American Red Cross	Milwaukee County Menomonee Fails	FS	Volunteers-150	1,500	Wagons 10 Station Wagons 1 Van	Monday-Friday 9:00 A.M 4:00 P.M. Monday, Wednesday-Friday 9:00 A.M 10:00 P.M.	78	0.83 ⁸	\$ 2,329.00	\$ 1.29	\$ 1.55
Cooperative Educational Service Agency No. 19	Cudahy, St. Francis, Oak Creek, South Milwaukee, and Greenfield	FR, FS-RD	Paid Drivers	10,400	25 Contracted Vehicles (23 Vans, 2 Buses)	Tuesday 7:00 A.M 3:30 P.M. Monday-Friday	78	N/A	\$15,000.00	\$ 4.76	N/A
Inner City Council	Milwaukee	FR	Paid Drivers	700	2 Contracted	24 hours a day,	N/A	N/A	\$12,446.00	N/A	N/A
Workshops of Milwaukee, Inc.	Milwaukee, Cudahy, Oak Creek, South Milwaukee, New Berlin, Waukesha, Menomonee Falls, Pewaukee, Brookfield Thiensville, Mequon, Franklin, Shorewood, Hales Corners, Muskego, and	FR, FS, RD	Paid Drivers-10 Volunteers-2	4,210	Venicies 5 Contracted Vehicles (Care Cabs)	8:00 A.M. 4:30 P.M. Monday-Friday	74	2.98	\$17,600.00	\$12.45	\$ 4.18
Dunbar House Foundation, Inc.	Whiterish Bay N/A	FR, FS, RD	Paid Driver-1 Agency Outreach Workers-6	400	1 Van Public Transit	9:00 A.M 11:00 P.M.	13	2.72	\$ 1,000.00	\$ 0.89	\$ 2.50
Easter Seal Society of Milwaukee County	Milwaukee County	Routing for each program	Paid Drivers	N/A	12 Contracted Vehicles (Handicabs)	7:00 A.M 9:30 P.M. Monday-Friday 1:00 P.M 4:30 P.M. Tuesday and Wednesday	N/A	N/A	\$ 480.00	\$ 5.00	N/A
Elder Care Line, Inc.	Milwaukee, West Allis, West Milwaukee, South Milwaukee, Cudahy, and Oak Creek	FR, FS, DR	Paid Drivers-8 Volunteers-5	5,000	5 Vans 1 Auto 1 Station Wagon	8:00 A.M 4:30 P.M. Monday-Friday 8:00 A.M 12:00 P.M. Saturday	100	3.65	\$14,000.00	\$10.23	\$ 2.80
FISH of Milwaukee	Milwaukee	As Needed	Volunteers-100 (approximately)	N/A	Personal Vehicles	When Volunteer is Available	N/A	N/A	N/A	N/A	N/A
Friendship	Milwaukee	FR	Paid Drivers	300	1 Minibus	8:00 A.M 4:30 P.M. Monday-Eriday	70	2.50	\$ 800.00	\$ 6.67	\$ 2.67
Goodwill Industries of Milwaukee	Milwaukee County Waukesha County Ozaukee County Washington County	FR, FS, RD	Paid Drivers Volunteers	9,745	8 Buses 3 Vans	5:30 A.M 5:00 P.M. Monday, Wednesday-Friday 5:30 A.M 11:00 P.M. Tuesday 11:00 A.M 5:00 P.M. Saturday and Sunday	28	5.15	\$17,263.00	\$ 9.11	\$ 1.77
Housing Authority City of Milwaukee	Milwaukee Housing Authority Residents	FR, FS	Paid Drivers	1,800	1 Bus	8:00 A.M 5:00 P.M. Tuesday-Friday	100	15.62	\$ 1,600.00	\$12.50	\$ 0.80
Jewish Vocational	Milwaukee	FR	Paid Drivers	800	3 Vans	7:30 A.M 8:30 A.M. 3:30 P.M 4:30 P.M.	50	N/A	\$ 1,250.00	\$ 5.21	N/A
Service Penfield, Childrens Center	Area Milwaukee	FR, FS	Paid Drivers	200	5 Contracted Vehicles	8:00 A.M 9:00 A.M. 3:00 P.M 4:00 P.M. Monday-Friday	N/A	N/A	\$ 4,000.00	N/A	N/A
Project Involve, Inc., and Project Involve Protective Services	Milwaukee County	FR, RD	Paid Drivers-7 Volunteers-18	5,074	5 Vans 1 Minibus	8:00 A.M 5:00 P.M. Monday-Friday	75	7.00	\$ 7,310.00	\$10.15	\$ 1.45
Sertomia Workshop	City of Milwaukee	FR, FS	Contracted	80-100	1 Bus	7:00 A.M 8:00 A.M. 3:00 P.M 4:00 P.M. Monday-Friday	100	2.5	\$ 1,000.00	\$25.00	\$10.00
The Red Bus Corporation	Milwaukee County Waukesha County Ozaukee County	FR, FS	Paid Drivers-2	2,800	1 Bus	8:00 A.M 5:00 P.M.	N/A	N/A	\$ 3,011.00	N/A	N/A
YWCA Vel Phillips	North Side of Milwaukee	FR	Paid Drivers	140	1 Bus 1 Van	12:00 P.M 3:00 P.M. (First and Third Thursday)	20	23.30	\$ 78.00	\$ 0.24	\$ 0.56

NOTE: N/A indicates data not available.

^a Agency indicated this number unable to compute because many assignments are combined with blood pickups; however, estimated to be 0.83 passengers per hour.

^b Type of service: DR - demand responsive. FR - fixed route. RD - route deviation. FS - fixed schedule.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

Agencies dealing primarily with the elderly reported high vehicle utilizations—generally 100 percent stemming from avoidance of the work or school trip morning and evening peaks. This should not, however, obscure the fact that economies of scale might still be possible through coordination of elderly transportation needs and use of larger capacity vehicles. The potential for coordination to increase utilization appears largest in the 10 agencies primarily servicing handicapped persons.

By factoring the percentage contribution of each agency to the total rides provided with the agency's reported unused capacity (utilization) and summing for all agencies, a potential for 40 percent increase in utilization is shown theoretically possible. In practice, however, this increase would be severely curtailed by operational considerations such as the need to limit journey time for many of the handicapped and the coincidence of work hours at many of the agency centers, resulting in peak travel periods for the clientele. Any economies resulting from coordination would then largely be the product of general economies of scale and the use of nonwork (medical, recreational) and midday trips to fill in vehicle utilization during the off-peak periods.

Fourteen of the 17 agencies under consideration reported the costs of providing agency transportation. The average costs of service for these agencies varied with type of clientele being served. Agencies serving the elderly reported an average cost of \$2.30 per trip. Other agencies were shown to have an average cost of \$2.20 per trip; however, the variation in trip costs was much larger for the handicapped services with a high figure of \$10.00 per trip. The low overall trip cost of \$2.20 per trip reflects the influence of large numbers of riders for various workshops and institutions. Group riding can be provided at a relatively lower cost per trip than individual ride services. Over 80 percent of the agencies use paid, or a proportion of paid, drivers either directly or through contracted services.

The transportation services provided by the eight largest agencies appear to form a good basis for initial efforts toward consolidation or coordination of agency transportation in Milwaukee County. These eight agencies provide nearly 90 percent of the rides—approximately 85 percent of the agency handicapped tripmaking and 95 percent of the agency elderly tripmaking. Based on the availability criteria outlined earlier, a potential exists for a 40 percent increase in overall productivity. It is expected, however, that no more than 50 percent of this gain could be realized. Nevertheless, this would represent a savings of approximately \$4,000 for the same service level or approximately 2,000 to 4,000 extra passenger trips.

The eight agencies which should be considered in any initial consolidation effort are Goodwill Industries, Elder Care Lines, Project Involve, Inc., Curative Workshops, Red Bus Corporation, Housing Authority (City of Milwaukee), American Red Cross, and Jewish Vocational Service. It should be emphasized that there is no intention here to exclude other smaller agencies that would be willing to participate. Nor should it be implied that any of the above-named agencies has been directly approached about its willingness to cooperate in such a program.

Combinations of Coordinated Agency Transportation With Other Alternative Transportation System <u>Modes</u>: Coordinated agency transportation can be developed in concert with an accessible transit system, demand responsive system, user-side subsidy program, or any combination of these three basic systems. Each basic system alternative is briefly analyzed in combination with coordinated agency transportation as discussed below.

Coordinated Agency Transportation and Accessible Transit Service: This is a viable alternative in the Milwaukee area. An accessible transit system could operate in combination with coordinated agency transportation. Since the two systems should operate separately, however, little interaction is expected. The ridership, costs, and revenues of the operation would be the sum of the two individual alternatives.

<u>Coordinated Agency Transportation and Demand</u> <u>Responsive Service:</u> Coordinated agency transportation is feasible in Milwaukee although the magnitude of cost savings or increased service appears small. Demand responsive service also is feasible, and in combination these two services could operate either as separate entities or as integrated services.

As discussed earlier, many trips now being provided by agencies could be made on a demand responsive service. This is also true of trips made in a coordinated agency program. In fact, a demand responsive system charging a fare lower than the per trip costs of agencies would be encouraging coordinated transportation because use of a demand responsive system would not be limited to one agency at a time. Since vehicle schedules would be determined by demand, clients of different agencies could easily find themselves aboard the same vehicle and, agency coordination is accomplished.

The result of this integration of services would be improved agency transportation services, more trips made on demand responsive services, and the concurrent lower cost per trip. However, the increased number of trips being made on the demand responsive services are due to a shift by agency sponsored trips from agency vehicles to demand responsive vehicles. In other words, fewer individual trips are being made on integrated services than if the two systems operated separately. The reason for this situation is the limited capacity on demand responsive services. With unlimited resources, a demand responsive service would be able to serve both agency clients and individuals. With limited resources, the two services should remain separate, at least initially. A coordinated agency transportation program would provide a means to serve agency transportation needs better, and a demand responsive service would provide increased transportation opportunities for the transportation handicapped. This general policy applies only to a demand responsive system that is capacity constrained. If excess capacity exists, the demand responsive service could lower its fares to the transportation handicapped or the general public or encourage agency sponsored trips in order to provide service to as many as possible.

In terms of implementation, a caveat is in order. Many agency trips are required during a short peak period of service, as persons make trips to and from workshops, classes, and similar destinations each morning and evening. This peak of agency trips can cause underutilization of vehicles during the off-peak periods unless care is taken to prevent purchasing too many vehicles merely to meet a peak period demand.

Coordinated Agency Transportation and User-Side  $\overline{Subsidy \ Program}$ : As with the above alternative, if agencies pay higher fares, this combination of services could result in increased tripmaking and lower per trip costs. However, the program would result in fewer trips being made by the general public and more by agency clients. These two programs also should be operated separately. Coordinated Agency Transportation, Accessible Transit System, and Demand Responsive Service: This alternative involves coordinated agency transportation combined with an integrated accessible transit and demand responsive service. For the area within two blocks of transit, this alternative would be the same as accessible transit and coordinated agency transportation, while in the area outside two blocks of transit, the option would be the same as demand responsive and coordinated agency services. Since coordinated transportation is to operate separately from either demand responsive or accessible transit, it would also operate separately from a combined accessible transit and demand responsive service. Thus, the combination would have the joint characteristics of a coordinated agency transportation system and a combined accessible transit and demand responsive system.

<u>Coordinated Agency Transportation, Accessible</u> <u>Transit System, and User-Side Subsidy Program:</u> In the same way that the accessible transit, demand responsive transit, and coordinated agency transportation alternative results in separate consideration of the coordinated agency transportation and the combination of the other two services, this alternative would have the joint characteristics of a coordinated agency transportation system and a combined user-side subsidy program and accessible transit system.

## EVALUATION OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE MILWAUKEE URBANIZED AREA

In the preceding discussion, five alternative transportation systems are analyzed along with coordinated agency transportation services operating alone or in combination with the alternative systems. Although each of the alternative systems may be combined with coordinated agency services, it has been shown that coordinated agency transportation in combination with these alternatives should be implemented separately and therefore should not be integrated with the other operating alternatives. This component does not affect the evaluation of the five primary alternative transportation systems. Moreover, since coordinated agency transportation involves no increased costs but only more efficient operations, it is recommended regardless of which of the remaining systems is finally selected for implementation. Thus, any other alternative under consideration, if implemented, should be accompanied by a complementary coordinated agency transportation service.

For each of the alternatives a variety of options has been analyzed in terms of various ridership estimates and differing subsidy levels. In order to compare the alternatives a common basis has been established through the use of two scenarios. The first scenario utilizes levels of service comparable with those suggested by UMTA as a frame of reference. The second scenario measures the alternative systems against a higher level of service based on subsidy levels that are the same proportion of the total transportation subsidy as the transportation handicapped are of the general population. (This subsidy level represents a parity position but not necessarily a maximum level.)

Other scenarios could have been considered including those that would provide maximum service. For example, the high latent demand estimate for demand responsive service or a user-side subsidy program at zero fare is approximately 800,000 trips. To serve this volume of ridership would annually cost between \$3.2 million and \$3.8 million. The analysis of alternatives was not conside subsidy program at zero fare is approximately 54,000 trips. To serve this volume of ridership would annually cost between \$239,000 and \$360,000. The analysis of alternatives was not

# Scenario 1: UMTA Suggested Guidelines

The UMTA suggested guideline for accessible transit service is one-half of the operating fleet. This is comparable to an accessible base period fleet. Another suggested guideline is the expenditure of funds for specialized services equal to 5 percent of the federal operating assistance. This guideline is used for the demand responsive and user-side subsidy programs.

In this analysis the low level of ridership is used for the accessible transit option because this is the level considered to best reflect what may actually occur. For demand responsive and userside subsidy programs an operating deficit equal to 5 percent of federal operating deficit is assumed. For the accessible transit/demand responsive combination of services one-third of the peak period fleet is assumed accessible, and funding levels of 2.5 percent of federal operating assistance for demand responsive service are assumed. For the combination of a user-side subsidy program and accessible transit one-third of the peak period fleet is assumed to be accessible, but operating subsidies for the user-side subsidy program are 1.25 percent and 2.5 percent of federal operating assistance.

Table 169 shows the extent to which each of the alternatives meets the objectives and standards set forth in Chapter VI. All the alternatives except a base period accessible fleet alone meet or exceed the minimum level of latent travel demand for the given mode type. The second, third, and fourth standards under the first objective are assumed to be met by all alternatives through actual operations. Flexibility is measured in terms of capital investment which could restrict future decisions. In these terms an accessible fleet is inflexible, while a user-side subsidy program is the most flexible. An accessible transit system or partially accessible transit system takes advantage of existing routes, schedules, and operating procedures of the transit service, but requires new equipment or a retrofit of existing equipment. All alternatives incorporate practical use of other providers in the design of services, even though an accessible transit system has no need for other providers. All alternatives are also assumed to provide the minimum levels of service. In terms of the standard for the second objective all alternatives are assumed to comply with federal regulations.

For the third objective the subsidy per ride and total cost are shown for each alternative. These are further discussed below. Although the objectives and standards do not specifically address fares aboard accessible transit, it should be noted that due to the higher per trip costs of a transportation handicapped person the transit fare will recover less of the operating cost than is recovered for a trip made by an able-bodied passenger.

Fares for demand responsive services and a userside subsidy program were determined by supply and demand curves, and all recommended fares are below the cost recovery rate of the Milwaukee County Transit System.

Table 170 presents a detailed quantitative cost analysis of the five basic alternatives being considered of which the combination user-side subsidy program has two different funding levels. In terms of total costs the accessible transit/demand responsive combination is most expensive followed closely by the base period accessible fleet. The least expensive alternative is the user-side subsidy alternative; however, from a perspective of the state and local subsidy required to support a service the user-side subsidy program is the most expensive.

## COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR UMTA-SUGGESTED LEVELS OF SERVICE FOR THE MILWAUKEE URBANIZED AREA

	Base Pariod	Demand	l Isar-Sida	Demand Responsive System in Combination with a One-Third	User-Side Sub in Combin a One-Th Period Acce	sidy Program ation with hird Peak essible Fleet
Objectives and Standards	Accessible Fleet	Responsive System	Subsidy Program	Peak Period Accessible Fleet	1.25 Percent Subsidy Level ^a	2.5 Percent Subsidy Level ^a
Objective No. 1						
Standards						
1. Most nearly meet existing and latent travel demand ^b	Services 90 percent	Met	Met	Met	Met	Met
2. Maximize comfort,						
convenience, and security" 3. Maximize knowledge of the	Met	Met	Met	Met	Met	Met
services being offered ^C	Met	Met	Met	Met	Met	Met
4. Serve all trip purposes	Met	Met	Met	Met	Met	Met
5. Maintain flexibility in design	d	Fairly	Very f	Fairly Clauible ^e	Fairly Elevible ^e	Fairly Elevible ^e
and operation	Inflexible	Flexible	Flexible	Partially	Partially	Partially
transit services	Met	Not Met	Not Met	Met	Met	Met
7. Utilize other public and private						
providers where practical	Met	Met	Met	Met	Met	Met
8. Provide recommended levels						•• ·
of service	Met	Met	Met	Met	Met	wet
Objective No. 2						
Standard						
<ol> <li>Conform to federal require- ments for vehicle design and operation and fixed facilities design and construction^C</li> </ol>	Met	Met	Met	Met	Met	Met
Objective No. 3						
Standards						
1. Minimize subsidy per ride	\$3.24	\$3,78	\$2.45	\$2.92	\$2.48	\$2.46
2. Minimize total operating	# 400 200	\$202.04C	\$246 OF0	\$414.450	\$222 710	\$304.450
and capital costs	\$400,360	\$282,940	\$246,950	<b>5414,45</b> 0	\$332,710	\$394,450
service area from transit cost						
recovery rate but do not	Lower	Lower	Lower	Lower	Lower	Lower
exceed \$2.50	Fare ^g	Fare ^g	Fare ^g	Fare ^g	Fare ⁹	Fare ^g
4. Determine fare in areas						
not served by transit on						
average per person trip				Low	1.0	Louise
costs but do not	Eare ^g	Eare ^g	Lower Eare ^g	Fare ⁹	Fare ^g	Fare ^g
exceed \$2.50	Laie-	rare-	raie		1010	1410

^a Subsidy levels of 1.25 percent and 2.5 percent of the federal operating assistance equal \$61,730 and \$123,470, respectively.

^b The ability to serve the low estimate of latent demand is measured by this standard.

^c Alternative design does not prohibit meeting this standard, and standard is assumed to be met during actual operation.

^d High capital investment limits future flexibility.

^e Capital investment limits flexibility but not to a large extent.

^f Low capital investment allows flexibility.

^g Fare levels result in cost recovery rates that are lower than those of existing transit service.

COST ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEM BY UMTA-SUGGESTED
LEVELS OF SERVICE FOR THE MILWAUKEE URBANIZED AREA

	Base Period	Demand	User-Side	Demand Responsive System in Combination with a One-Third	User-Side Subsidy Program in Combination with a One-Third Peak Period Accessible Fleet		
Annual Data	Accessible Fleet	Responsive System	Subsidy Program	Peak Period Accessible Fleet	1.25 Percent Subsidy Level ^a	2.5 Percent Subsidy Level ^b	
Ridership	123,510	74,830	100,800	141,600	134,100	160,100	
Operating Cost	\$228,960 \$38,600	\$359,190 \$112,250	\$398,140 \$151,190	\$357,150 \$ 97,700	\$278,510 \$ 80,800	\$363,250 \$103,800	
Net Operating Cost	\$190,360	\$246,940	\$246,950	\$259,450	\$197,710	\$259,450	
Capital Cost	\$210,000	\$ 36,000		\$155,000	\$135,000	\$135,000	
Total Cost	\$400,360	\$282,940	\$246,950	\$414,450	\$332,710	\$394,450	
Net Operating Cost Per Trip Capital Cost Per Trip	\$1.54 \$1.70	\$3.30 \$0.48	\$2.45 	\$1.83 \$1.09	\$1.47 \$1.01	\$1.62 \$0.84	
Total Cost Per Trip	\$3,24	\$3.78	\$2.45	\$2.92	\$2.48	\$2.46	
Potential Federal Funding Operating	\$ 95,180 \$168,000	\$123,470 \$28,800	c 	\$129,720 \$124,000	\$ 67,990 \$108,000	\$  67,990 \$108,000	
Required Local (state, county, and/or municipality) Funding Operating	\$ 95,180 \$ 42,000	\$123,470 \$   7,200	\$246 <i>,</i> 950 	\$129,720 \$ 31,000	\$129,720 \$ 27,000	\$191,460 \$ 27,000	
Total	\$137,180	\$130,670	\$246,950	\$160,720	\$156,720	\$218,460	
Local Funding Per Trip Operating	\$0.77 \$0.34	\$1.65 \$0.10	\$2.45 	\$0.92 \$0.22	\$0.97 \$0.20	\$1.20 \$0.17	
l otal	\$1.11	\$1.75	\$2.45	\$1.14	\$1.17	\$1.37	

^aSubsidy level of \$61,730 equals 1.25 percent of the federal operating assistance.

^b Subsidy level of \$123,470 equals 2.5 percent of the federal operating assistance.

^c The ability to secure federal operating assistance for a user-side subsidy program is uncertain.

Source: Applied Resource Integration, Ltd.

The reason for this is the fact that it is not clear whether or not a user-side subsidy program qualifies for federal operating assistance. From a local perspective a demand responsive service is the least expensive alternative; however, it also has the highest overall cost per trip. A base period accessible transit fleet is anticipated to require only \$6,500 more, or a 5 percent increase in local subsidy, and has a per trip cost that is 36 percent lower.

The demand responsive service in combination with accessible transit and a user-side subsidy program (operating with deficit equal to 1.25 percent of the federal operating assistance) and accessible transit combination are comparable in terms of local costs and costs per trip. The demand responsive combination would serve 6 percent more passengers but would have a total cost that was 32 percent higher.

# Scenario 2: Proportional Level of Subsidy

The alternative transportation systems considered against the framework of a proportional level of subsidy are a fully accessible transit fleet, demand responsive and user-side subsidy systems operating at a proportional subsidy level, a combination system of demand responsive service with an operating subsidy equal to 5 percent of the federal transit operating assistance and a base period accessible fleet, and a base period accessible fleet operating in combination with a user-side subsidy program subsidized at 2.5 percent and 5.0 percent of the federal transit operating assistance.

Table 171 presents these alternatives and shows how well each meets the objectives and standards. As shown, all alternatives meet the first four standards under the first objective, have different levels of flexibility, vary in terms of involving the private sector, and meet all remaining standards under the first and second objectives. Similarly to the previous evaluation, the subsidy per ride and total costs are shown for each alternative. The suggested fare levels are below those of the recommended standard.

Table 172 presents a detailed cost analysis of the alternative systems being evaluated in terms of this second scenario. As with the lower subsidy levels, an accessible transit and combination accessible transit system and demand responsive system have a higher annual cost than any other option while a demand responsive service and a user-side subsidy program again have the lowest total costs.

Also similarly to the previous scenario, demand responsive service requires the lowest level of local funding per year, while the fully accessible transit alternative and the combination base period fleet with a user-side subsidy program subsidized at 2.5 percent of federal transit operating assistance have approximately the same level of local funding. Note, however, that at this higher level of subsidy the per trip cost for demand responsive services is lower than the accessible transit option.

# Systems Comparison and Recommendation

With the emphasis on per rider costs, the total and local values for the six viable alternatives considered are shown in Table 173. Given the likely variability of the values obtained, it is evident that on the basis of total costs the user-side subsidy, alone or in combination, and the demand responsive plus accessible base fleet combination are candidate systems. If local funding considerations are paramount, then the user-side subsidy by itself is ruled out and accessible transit becomes a candidate.

In constructing a recommended alternative transportation system, the initial step in formulating the alternative is the recommendation that the base period fleet including reserve vehicles should be made accessible. This would result in a total of 280 accessible buses. For immediate implementation, this would require retrofitting and/or purchases of new buses modified before delivery. The choice beyond this point appears to be between

- 1) supplementing the fixed routes with demand responsive services;
- 2) supplementing the fixed routes with a userside subsidy service; and
- 3) making the whole fleet eventually accessible at significantly higher total per ride cost and somewhat higher local cost. This will depend largely on the ridership realized.

Since a new generation of more accessible transit buses can now be anticipated after September 30, 1979, assuming no technical delays in the program, it would appear that item 3 should not be considered at this time but preserved as a later option. In view of this potential capital outlay for a fully accessible fleet, the capital investment in vehicles and facilities for a supplemental demand responsive system (item 1) does not seem as meritorious an outlay of funds as support for a user-side subsidy program (item 2). Since both item 1 and item 2 generate comparable latent travel demand and involve the private sector, the choice between the user-side subsidy program and the demand responsive system is primarily influenced by the differences between these systems in operating and capital costs.

The second step in the formulation of the alternative is the recommendation that a user-side subsidy program should be implemented in conjunction with the base period accessible fleet. A subsidy level for this combination equivalent to 2.5 percent of federal operating assistance is suggested. Because of the innovative nature of this program, it is further recommended that immediate negotiations be started with the Urban Mass Transportation Administration to clarify the qualifications through which such a program can obtain matching support dollars at the federal level, and the possibilities of

## COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR IMPROVED LEVELS OF SERVICE FOR THE MILWAUKEE URBANIZED AREA

	Fully Accessible	Demand	User-Side	Demand Responsive System in Combination with	User-Side Sub in Combinatio Period Acce	osidy Program on with a Base ossible Fleet
Objectives and Standards	Transit System	Responsive System	Subsidy Program	a Base Period Accessible Fleet	2.5 Percent Subsidy Level ⁸	5.0 Percent Subsidy Level ^a
Objective No. 1						
Standards				_		
1. Most nearly meet existing and latent travel demand ^b	Met	Met	Met	Met	Met	Met
<ol> <li>Maximize connert, convenience, and security^C</li> <li>Maximize knowledge of the</li> </ol>	Met	Met	Met	Met	Met	Met
services being offered ^C	Met	Met	Met	Met	Met	Met
5. Maintain flexibility in design	iviet	Fairly	Met Very	Met Fairly	Met Fairlv	Met Fairly
and operation 6 Utilize existing public mass	Inflexible ^d	Flexible ^e	Flexible ^f	Flexible ^e	Flexible ^e	Flexible ^e
transit services	Met	Not Met	Not Met	Met	Met	Partially Met
7. Utilize other public and private providers where practical	Met	Met	Met	Met	Met	Met
8. Provide recommended levels	Mot	Maa				
	IVIEL	Wet	wiet	met	Met	Met
Objective No. 2						
Standard						
<ol> <li>Conform to federal require- ments for vehicle design and operation and fixed facilities design and construction^C</li> </ol>	Met	Met	Met	Met	Met	Met
Objective No. 3						
Standards						
<ol> <li>Minimize subsidy per ride</li> <li>Minimize total operating</li> </ol>	\$5.17	\$3.99	\$3.00	\$2.21	\$1.64	\$2.02
and capital costs	\$709,710	\$467,900	\$415,900	\$690,310	\$534,480	\$658,310
service area from recovery rate	Lower	Lower	Lower	Lower	Lower	Lower
but do not exceed \$2.50 4. Determine fare in areas not served by transit	Fare ^g	Fare ⁹	Fare ^g	Fare ^g	Fare ^g	Fare ^g
on average per person						
trip costs but do not exceed \$2.50	Lower Fare ⁹	Lower Fare ⁹	Lower Fare ⁹	Lower Fare ⁹	Lower Fare ⁹	Lower Fare ⁹

^a Subsidy levels of 2.5 percent and 5.0 percent of the federal operating assistance equal \$123,470 and \$246,950, respectively.

^b The ability to serve the low estimate of latent demand is measured by this standard.

^C Alternative design does not prohibit meeting this standard, and standard is assumed to be met during actual operation.

^d High capital investment limits future flexibility.

^e Capital investment limits flexibility but not to a large extent.

^f Low capital investment allows flexibility.

^g Fare levels result in cost recovery rates that are lower than those of existing transit service.

# COST ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS FOR FULLY ACCESSIBLE TRANSIT FLEET AND PROPORTIONATE SUBSIDY LEVELS FOR THE MILWAUKEE URBANIZED AREA

	Fully	Demand	Liser-Side	Demand Responsive System in Combination with	User-Side Sub in Combinatio Period Acce	sidy Program on with a Base essible Fleet
Annual Data	Transit Fleet	Responsive System	Subsidy Program	a Base Period Accessible Fleet	2.5 Percent Subsidy Level ^a	5.0 Percent Subsidy Level ^a
Ridership	137,240	117,150	138,700	202,540	197,840	221,840
Operating Cost	\$360,350 \$ 42,890	\$562,340 \$146,440	\$547,700 \$131,800	\$550,910 \$102,600	\$440,440 \$115,600	\$527,910 \$79,600
Net Operating Cost	\$317,460	\$415,900	\$415,900	\$448,310	\$324,840	\$448,310
Capital Cost	\$392,250	\$ 52,000		\$242,000	\$210,000	\$210,000
Total Cost	\$709,710	\$467,900	\$415,900	\$690,310	\$534,840	\$658,310
Net Operating Cost Per Trip Capital Cost Per Trip	\$2,31 \$2.86	\$3.55 \$0.44	\$3.00 	\$2.21 \$1.19	\$1.64 \$1.06	\$2.02 \$0.95
Total Cost Per Trip	\$5.17	\$3,99	\$3.00	\$3.40	\$2.70	\$2.97
Potential Federal Funding Operating	\$158,730 \$313,800	\$207,950 \$ 41,600	b 	\$275,000 \$193,600	\$100,680 \$168,000	\$100,680 \$168,000
Required Local (state, county, and/or municipality) Funding Operating	\$158,730 \$ 78,450	\$207,950 \$ 10,400	\$415,900 	\$275,000 \$ 48,400	\$224,160 \$ 42,000	\$347,630 \$ 42,000
Total	\$237,180	\$218,350	\$415,900	\$323,400	\$266,160	\$389,630
Local Funding Per Trip Operating	\$1.16 \$0.57	\$1.77 \$0.09	\$3.00	\$1.36 \$0.24	\$1.13 \$0.21	\$2.57 \$0.19
Total	\$1.73	\$1.86	\$3.00	\$1.60	\$1.34	\$1.76

^a Subsidy levels of 2.5 percent and 5.0 percent of the federal operating assistance equal \$123,470 and \$246,950, respectively.

^b The ability to secure federal operating assistance for a user-side subsidy program is uncertain.

Source: Applied Resource Integration, Ltd.

## Table 173

### COMPARISON OF PER RIDE COSTS FOR MILWAUKEE URBANIZED AREA

	Cost Per Ride (in dollars)					
	Total Local			ocal		
	Scenario	Scenario	Scenario	Scenario		
Alternative Transportation System	1	2	1	2		
Accessible Transit Fleet	3.24	5.17	1.11	1.73		
Demand Responsive Service	3.78	3.99	1.75	1.86		
User-Side Subsidy	2.45	3.00	2.45	3.00		
Demand Responsive plus Accessible Transit	2.92	3.40	1.14	1.60		
Accessible Transit plus User-Side Subsidy No. 1	2.48	2,70	1.17	1.34		
Accessible Transit plus User-Side Subsidy No. 2	2.46	2.97	1.37	1.76		

obtaining Service and Methods Demonstration (Section 6) monies for the initial implementation, support, and evaluation of the program.

The third step in the formulation of the alternative plan involves recognition that coordinated agency transportation is feasible in Milwaukee. Although the magnitude of cost savings or increased service appears small, a potential exists for a 40 percent increase in overall productivity. A coordinated agency transportation program will provide a means to better serve agency transportation needs, and it is recommended that a coordination effort be initiated immediately.

Therefore, the final alternative plan recommendations result in a comprehensive system for serving the transportation handicapped in the Milwaukee urbanized area. An accessible transit system would provide transit service for the transportation handicapped within two blocks of transit. For other areas within the urbanized area, a user-side subsidy program would serve the residents. Finally, coordinated agency transportation would improve the efficiency and effectiveness of existing agency services. In summary, the recommended alternative for the Milwaukee urbanized area consists of the combination of accessible transit, user-side subsidy, and coordinated agency transportation.

## ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE RACINE URBANIZED AREA

The five alternative transportation systems which could be instituted in the Racine urbanized area are accessible transit, demand responsive system, user-side subsidy program, accessible transit combined with a demand responsive system, and accessible transit combined with a user-side subsidy program. In accordance with the analysis approach described in the beginning of this chapter, these systems are examined in terms of ridership, cost, operations or administration, and revenue. In addition, the supplemental service which could be provided by coordinated agency transportation is analyzed in combination with each of these five alternative systems. It should be noted that the discussion of coordinated agency transportation applies to the whole of Racine County rather than to the urbanized area alone, an analysis approach deemed to be the most efficient since current organizational and funding mechanisms for agency providers are primarily county-oriented.

# Accessible Transit

The existing transit system in the City of Racine would provide the base system for the implementation of accessible transit service in this urbanized area. It is assumed in this analysis of accessible transit that current operations in terms of route structure and fare systems will remain in effect. As shown in Table 174, which summarizes some of the characteristics of the Racine Transit System, there is a total of 25 buses in the entire fleet which provide about 262 scheduled vehicle hours of service on an average weekday with an average hourly operating cost of \$12.00.

<u>Ridership</u>: The preferred estimates of latent travel demand for accessible transit, as presented in Chapter VII, indicate a range between 13,870 annual trips for the low ridership estimate to 24,090 annual trips for the high ridership estimate. These estimates assume that the significant changes in bus usage as a result of accessibility features will predominantly occur among wheelchair users and, also, that current transit operations will remain in effect.

To determine ridership by peak and off-peak periods, it is assumed as described in the analysis approach, that 25 percent of the estimated ridership will occur during the peak period with the remaining 75 percent occurring in the off-peak, or base period. Application of these ratios to the high and low estimates of latent travel demand yields the ranges of expected ridership within each period. In the peak period, between 3,470 and 6,020 trips per year are expected; in the off-peak, or base period, between 10,400 and 18,070 trips per year are expected. The impact on ridership of equipping all or a portion of the fleet with accessible buses must also be considered. Since the latent travel demand estimates are based on equipping all of the fleet, a reduction in ridership can be expected if only a portion of the fleet is equipped. However, for Racine the alternative of equipping all the base period fleet is the same as equipping all the peak period fleet, therefore creating no reduction in ridership since the number of accessible buses remains the same. The option of equipping one-third of the peak period fleet or one-half of the base period fleet, whichever is greater, dictates using one-half of the base period fleet which is equal to one-half of the peak period fleet; therefore, two-thirds of the base period and two-thirds of the peak period ridership are assumed to be retained. This approach in Racine results in

Table 1	74
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CHARACTERISTICS OF EXISTING TRANSIT SYSTEM IN THE RACINE URBANIZED AREA

Fleet	Size
2 2 2 2	25 buses are in entire fleet. 21 buses operate in peak periods (includes one bus operating to the Parkside Campus). 21 buses operate in base or midday period. 20 buses operate on Saturday (maximum).
N	lo Sunday Service
Opera	ating Hours
2	262 hours - scheduled vehicle hours of service on an average weekday. 251 hours - scheduled vehicle hours of service on an average Saturday.
Cost	
\$	12.00 per hour - average hourly operating cost.

Source: Applied Resource Integration, Ltd.

a ridership estimate that is 66.6 percent of the total latent travel demand estimates, or between 9,240 trips and 16,060 trips annually.

A proportionate ridership loss equal to the reduction in the number of accessible buses is not assumed since persons could alter their travel patterns to accommodate a less than fully accessible fleet.

Costs: Assuming an additional operating time of two minutes and 30 seconds per lift-assisted trip, the additional time resulting on a daily basis from accessible transit operations would range between 1.6 hours for the low ridership estimate and 2.75 hours for the high ridership estimate. As shown earlier on an average weekday, 262 hours of service are provided. Adding 1.6 to 2.75 hours would have minimal impact on the system. Although delays would be encountered. recovery time built into the schedules plus schedule allowance should offset the effects and no additional vehicles would be needed to accommodate the extra time. However, the effects of this time are fully considered, and the additional annual costs are estimated to range between \$7,000 for the low ridership estimate and \$12,050 for the high ridership estimate.

As previously noted, the estimated costs of maintaining a lift range from \$500 to \$1,000 per year. In Racine the peak and base period bus requirements are the same. Therefore, the two options are equipping the entire fleet or equipping one-third of the peak period or one-half of the base period fleet plus spares (whichever is higher). The costs of equipping the entire fleet of 25 buses are assumed to range between \$12,500 for the low cost estimate and \$25,000 for the high cost estimate. Equipping one-third of the peak period fleet would result in seven accessible buses plus 20 percent⁸ accessible spares, or a total of nine accessible buses. In contrast, equipping one-half of the base period fleet would result in 11 accessible buses plus 20 percent accessible spares, or a total of 13 accessible buses. Therefore, using the higher estimate of 13 accessible buses-as is in accordance with the definition of the option-the range of maintenance costs would be between \$6,500 for the low cost estimate and \$13,000 for the high cost estimate.

⁸Note that a 20 percent spare vehicle requirement is used because the smaller the number of buses, the higher proportion of spare vehicles required.

Because maintenance costs are a function of the number of times a lift is used, the low annual maintenance cost of \$500 per lift is applied in the forthcoming analysis to the low ridership estimates while the high maintenance cost of \$1,000 per year is applied to the high ridership estimate. It is recognized that this technique would appear on the surface to be diametrically opposed to the traditional concept of economies of scale. However, no data currently exist relative to the economics of lift usage. Furthermore, the relatively low levels of latent travel demand for accessible transit may indicate insufficient ridership volumes to achieve even at highest ridership levels—a point where the maintenance cost per trip begins to decline.

As noted earlier, the total capital cost of equipping a bus with a wheelchair lift, wide doors, wheelchair tie downs, and increased numbers of stanchions and handrails is approximately \$9,000. Therefore, the capital costs for making all or part of a fleet accessible for wheelchairs are about \$225,000 for a 100 percent accessible fleet or base period accessible fleet plus accessible spares and about \$117,000 for a one-half base period accessible fleet plus accessible spares. It is assumed that these accessibility features would have the same average life as that of an average bus, approximately 12 years.

<u>Revenue</u>: The transit fare in Racine is \$0.25 with a reduced fare of \$0.10 for elderly and handicapped persons riding in nonpeak periods. Revenue on an accessible transit fleet is the product of the appropriate fare and the number of rides estimated to occur on the system during the period. For a fully accessible fleet or accessible base period fleet the estimated revenues would be between \$1,900 for the low ridership estimate and \$3,310 for the high ridership estimate; for a one-half base period accessible fleet, revenue is estimated to be between \$1,270 at low ridership and \$2,890 at high ridership.

It should be stressed that the revenue estimates utilize broad assumptions concerning ridership distributions; for example, to calculate revenue for a fully accessible system, a 25 percent peak, and 75 percent off-peak ridership distribution is assumed. The sensitivity of this assumption is demonstrated if revenue is calculated on the basis of a distribution similar to that of the general public, namely, 50 percent peak and 50 percent offpeak. The results of this calculation are a revenue range of \$2,430 for the low ridership estimate and \$4,210 for the high ridership estimate. Summary of Accessible Transit System Analysis: Tables 175 and 176 summarize the operating costs, operating revenues, and capital costs for the accessible transit options. Since equipping the entire fleet is the same option as equipping the base period fleet, data pertaining to two options are presented: namely, a totally accessible fleet and a one-half base period accessible fleet.

A fully accessible fleet would cost between \$36,350 and \$52,490 a year in total annual costs. Total capital costs would be about \$225,000 or the equivalent of \$18,750 on an annual basis.⁹ The operating cost per passenger would range between \$1.27 and \$1.40 while total cost per passenger is between \$2.62 and \$2.18. The major factor affecting the cost per passenger calculations is capital cost; at the low ridership estimates the capital cost per passenger is \$1.35, while at the high ridership estimates the capital cost per passenger is only \$0.78.

Equipping less than the complete fleet reduces total costs on an annual basis. Equipping one-half of the base period fleet reduces net operating costs by approximately 42 percent and capital costs 48 percent below that of a totally lift-equipped fleet. For both ridership estimates on the partially accessible system, the costs per passenger are lower than on the fully accessible system.

The analysis of accessible transit services is sensitive to three areas. In the following discussion, the assumptions involved in each of these areas and the impact of changes to these assumptions is examined, utilizing the example of a fully accessible transit system.

The first area of sensitivity involves the additional time of delays realized by passengers. If actual delays encountered in a fully accessible system are only half of what is projected, the annual operating cost savings would be between \$3,500 and \$6,000 resulting in annual operating costs of approximately \$16,000 for the low ridership estimate and \$31,000 for the high ridership estimate. The difference in the total costs per passenger numbers would be approximately \$0.25.

⁹Although capital costs would be incurred as lump sums in certain years, such costs have annualized over the life of the vehicle to produce a reasonable basis for comparison.

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	13,870	24,090
Operating Cost Additional Time Maintenance	\$ 7,000 \$12,500	\$12,050 \$25,000
Total	\$19,500	\$37,050
Operating Revenue	\$ 1,900	\$ 3,310
Net Operating Cost	\$17,600	\$33,740
Capital Cost	\$18,750	\$18,750
Total Annual Cost	\$36,350	\$52,490
Net Operating Cost Per Passenger	\$1.27 \$1.35	\$1.40 \$0.78
Total Cost Per Passenger	\$2.62	\$2.18

# COST AND REVENUE ESTIMATES FOR A FULLY ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN RACINE

^aOption: Fully accessible fleet (same as base period fleet) = 25 buses.

Source: Applied Resource Integration, Ltd.

## Table 176

# COST AND REVENUE ESTIMATES FOR A ONE-HALF BASE PERIOD ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN RACINE

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	9,240	16,060
Operating Cost Additional Time	\$ 4,620 \$ 6,500	\$ 8,030 \$13,000
Total	\$11,120	\$21,030
Operating Revenue	\$ 1,270	\$ 2,890
Net Operating Cost	\$ 9,850	\$18,140
Capital Cost	\$ 9,750	\$ 9,750
Total Annual Cost	\$19,600	\$27,890
Net Operating Cost Per Passenger	\$1.07 \$1.05	\$1.13 \$0.61
Total Cost Per Passenger	\$2.12	\$1.74

^aOption: One-half base period accessible fleet = 13 buses.

The second area of sensitivity concerns the division of ridership between peak and off-peak periods. If the ridership is split equally between the two periods, the effects on net operating costs would be small. For the fully accessible option, revenues would increase over current estimates by only \$520 at the low ridership estimate to \$900 at the high ridership estimate with resulting decreases in net operating costs. The effect on costs per passenger would be approximately \$0.04.

The third area of sensitivity involves ridership decreases due to reduced numbers of accessible buses. This factor, which is affected by the division of ridership between peak and off-peak periods, also affects the revenue side of the analysis. Using the case of a directly proportional reduction in ridership for the one-half base period accessible fleet, revenue would only change by \$300 for the low ridership estimate and \$530 for the high ridership estimate. The resulting net operating costs per passenger would increase by only \$0.04.

## Demand Responsive System

As with the analysis of accessible transit, ridership, costs, and revenues on demand responsive systems operating at differing funding levels are estimated and compared. However, unlike accessible transit, another major consideration, discussed below, is the effect on service levels of the system management in terms of public versus private operation.

<u>Ridership</u>: The lines in Figure 18 show the expected high and low range of latent travel demand for various fare levels, based on the latent travel demand of the chronic and institutionalized transportation handicapped as presented in Chapter VII.

Implicit in the latent travel demand estimates is an assumption of an operating schedule of approximately 12 hours per day seven days per week. These latent travel demand estimates provide the basic data for the estimation of ridership provided by demand responsive systems which are funded at various subsidy levels.

To determine ridership on a demand responsive system at a given subsidy level, a supply curve which is representative of the subsidy is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. Two factors determine the supply curve—productivity and hourly operating costs. For example, if productivity is decreased to 2.0 passengers per hour, per trip costs increase to \$6.00, resulting in 20 percent less service at each level of subsidy. Conversely, if productivity is increased from 2.5 to 3.0 passengers per hour, the operating cost per passenger drops from \$4.80 to \$4.00 per trip, resulting in approximately 20 percent more service provided at each fare for any of the subsidy levels. Changes in hourly operating costs similarly affect the ridership estimates. Both of these factors—productivity and operating costs—are discussed more fully in the cost analysis.

On a publicly operated demand responsive system, about 4,760 rides per year are expected at a subsidy level equivalent to 5 percent of the federal transit operating assistance (\$16,920); about 7,130 rides per year, at a proportional (based on transportation handicapped population) share of the transit operating deficit (\$28,890); about 8,350 rides per year, at 10 percent of the federal transit operating assistance (\$33,830); and about 14,870 rides per year, at 20 percent of the federal transit operating assistance (\$67,670).

It is important to note that although these ridership estimates are actually subject to the full

### Figure 18

### HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE RACINE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

potential range established by the latent travel demand estimates at the given fare level, in the analysis of this alternative transportation system, the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand.

Costs: The basis for estimating operating costs is to use an hourly cost equal to that of the hourly cost of the existing public transit system in Racine which is \$12.00. Given this hourly operating cost, as well as a productivity of 2.5 passengers per hour, supply curves were developed, as shown in Figure 19, to represent the number of trips that could be provided at different subsidy levels: 5 percent, 10 percent, and 20 percent of the federal operating assistance expected in FY 1977; and 3.72 percent of the anticipated FY 1977 total transit operating deficit, a percentage which is comparable to the percentage of the urbanized area population that is estimated to be transportation handicapped. The FY 1977 anticipated federal operating assistance is about \$338,300. The anticipated total operating deficit is about \$776,700. Thus, the subsidy levels are:

- \$16,920 or 5.0 percent of federal operating assistance;
- \$33,830 or 10.0 percent of federal operating assistance;
- \$67,670 or 20.0 percent of federal operating assistance;
- \$28,890 or 3.72 percent of transit operating deficit.

Capital costs are then derived from the curves since the number of vehicles is based on the number of hours of service to be provided plus an allowance of 20 percent for spare vehicles. To meet the projected ridership levels no more than two vehicles need be provided for all subsidy levels (one vehicle would not be in service all the time but serve as a spare). The service hours which are implemented can have a significant effect upon the productivity of the system. A third factor affecting costs, therefore, is the number of hours during which service is being provided. It has been assumed that each vehicle operates on a schedule which can maintain a productivity level of 2.5 passenger trips per hour. Ideally, this type of service should be provided 12 hours each day of the week (a total of 84 hours a week). Unfortunately, this service schedule is not economically feasible in Racine. Each level of subsidy will permit a limited schedule of service delivery. For example, at a subsidy level of \$28,890, 55 vehicle hours could be pro-

#### Figure 19



Source: Applied Resource Integration, Ltd.

vided each week. This level of service could be provided quite adequately with only one vehicle. However, the hours of operation must be planned to allow the maximum amount of convenience to the potential user; the supply curves will remain appropriate only as long as the productivity of 2.5 passenger trips per hour can be maintained.

System Management, Public vs. Private: The hourly operating cost of a publicly operated demand responsive system in Racine is assumed to be the same as the hourly operating cost of the Racine transit system, about \$12.00 per hour. As shown in Chapter V, private chair car carriers have a similar operating cost of between \$10.50 and \$13.00 per hour. Although private operators may be able to lower the hourly operating cost of a demand responsive system slightly below the \$12.00 level used in the analysis, the resulting differences would not be significant. Therefore, for the purposes of the analysis of a demand responsive system in Racine, no difference between private and public operation of the system is assumed, and only one set of supply curves based upon a \$12.00 an hour operating cost has been developed as shown above in Figure 19.

Revenue: The revenue at any given level is the fare times the estimated ridership. Again referring to Figure 19 and using the subsidy based on population percentage allocation (\$28,890), the fare should be set somewhere between \$0.50 and \$2.20 (the intersection of the supply curve with the low and high demand estimates). These fare levels would yield between \$3,460 and \$24,200 annually in revenue.

For Racine the fare policy establishes a fare that will recover 25 percent of costs. Twenty-five percent of the projected cost per passenger is \$1.20. With this fare level, however, little ridership is projected at the lower estimate of demand. Accordingly, for low levels of subsidy, implementation of a demand responsive service at this fare level may not be feasible. At a \$16,920 subsidy level, a fare between \$0.80 and \$2.70 should be charged in order to maximize service within the demand range. Again, it must be noted that, with a fare of \$2.70, annual patronage is expected to be very small if the low demand estimates apply. Thus, for any subsidy level, a fare must be established that allows ample level of service but which does not stifle demand. With a \$0.25 fare a system operating at either a \$16,920 or \$33,830 subsidy would be capacity constrained-not able to meet demand. Conversely, any fare above \$2.05 for the \$33,830 subsidized system and \$1.25 for a \$67,670 subsidized system would result in more service than is necessary.

Considering both the need to maximize service at a given subsidy level and the need to minimize the risk of oversupplying service (setting a fare so high that demand becomes insignificant), the following fares are recommended at the various subsidy levels:

Subsidy	Recommended
Levels	Fare
\$16,920	\$1.25
\$28,890	\$0.75
\$33,830	\$0.75
\$67,670	\$0.25

It should be noted that these fares imply an expected ridership somewhat higher than that of the low latent travel demand estimate. It is believed that this assumption reflects the impact of limited service hours which will act to lower the actual levels of demand for the service. Also, by setting the fares at these levels initially (slightly above the low estimate of demand), the validity of the demand estimates can be assessed and errors can be corrected. For example, if after allowing a sufficient time for ridership to reach its projected level—approximately 3 months—and if demand is lower than anticipated, fares can be reduced to increase ridership to the capacity of the system. Conversely, if the system becomes capacity constrained, raising fares can increase operating revenues to enable more capacity to be added to the system through the addition of more service hours.

The demand curves developed for this analysis are based on expected demand by the transportation handicapped population and the institutionalized population. Another source of patronage, however, is agency sponsored trips. Agency sponsored trips would be paid for by the agencies with no cost incurred to the passenger; however, the demand would also be determined by the agency. Experience in Delaware with a publicly operated demand responsive service that provides service only to agency clients indicates that an estimated one-third of all agency trips made in the state are made aboard this service. In Racine County, an estimated 12,000 agency trips are made annually, not including the 31,000 school trips provided by the Racine Unified School District. On the above basis, about 4,000 agency trips might be expected on a comprehensive public demand responsive transportation system. This would be a significant level of additional ridership. The extent to which it would be realized would depend on many factors including fare levels. In Chapter V, the survey of agency operations reported average agency trip costs in Racine of just under \$2.00 and varying in magnitude from less than \$1.00 to over \$7.00. It would appear, then, that many agency costs are in the range of, or in excess of, the proposed fares which may make the demand responsive system a feasible alternative to their present operation. If agency trips are served, however, a system operated at the lower two subsidy levels could serve only agency trips and still not be capable of meeting the estimated agency demand of 4,000 trips.

Thus, a policy issue arises over use of the demand responsive services. For purposes of this analysis, only individuals making trips at the stated fare levels are considered. In the later analysis of the combination of coordinated agency transportation and demand responsive service, agency clients aboard demand responsive systems are again discussed and the reasons for separating the two systems are explored. Summary of Demand Responsive System Analysis: Table 177 summarizes the cost of a publicly operated demand responsive system in the Racine urbanized area. Operating costs are based on the supply curves discussed earlier. Operating revenue is the product of the recommended fare and the number of persons that could be served as determined by the supply curve. (It is assumed that demand will meet the available supply at the recommended fare levels.) The number of vehicles represents the minimum number required to operate a system with a reasonable level of productivity.

At the recommended fare levels, the total per trip costs of the demand responsive system range between \$5.01 and \$5.36, depending upon the amount of subsidy and estimated ridership between 4,765 trips at the low level of subsidy to nearly 15,000 trips at the highest level of subsidy. A publicly operated demand responsive system funded by 5 percent of the federal transit operating assistance, or \$16,920, could provide for about 4,760 rides per year at a fare cost to the transportation handicapped of about \$1.25 per one-way trip; such a system funded by 20 percent of the operating assistance, or \$67,670, could provide about 14,870 rides per year at a fare cost of about \$0.25 per one-way trip.

Funding at both the proportional level of subsidy, or \$28,890, and the 10 percent of operating assistance level, or \$33,830, results in very similar

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OPERATING DATA FOR A DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE RACINE URBANIZED AREA

	Subsidy Level						
Annual Data	5 Percent of Federal Transit Operating Assistance (\$16,920)	Proportional Share of Operating Deficit (\$28,890)	10 Percent of Federal Transit Operating Assistance (\$33,830)	20 Percent of Federal Transit Operating Assistance (\$67,670)			
Ridership Number of Vehicles ^a Vehicle Hours Per Week	4,760 2 37	7,130 2 55	8,350 2 65	14,870 3 115			
Operating Cost	\$22,870 \$ 5,950	\$34,240 \$ 5,350	\$40,090 \$ 6,260	\$71,380 \$  3,710			
Net Operating Cost	\$16,920	\$28,890	\$33,830	\$67,670			
Capital Cost ^b	\$ 8,000	\$ 8,000	\$ 8,000	\$12,000			
Total Cost	\$24,920	\$36,890	\$41,830	\$79,670			
Per Trip Measures Fare	\$1.25	\$0.75	\$0.75	\$0.25			
Net Operating Cost	\$3.55 \$1.68	\$4.05 \$1.12	\$4.05 \$0.96	\$4.55 \$0.81			
Total Cost	\$5.23	\$5.17	\$5.01	\$5.36			

^aIncludes one vehicle as a spare.

^bAssumes vehicle cost of \$20,000 and a five-year vehicle life.

operating characteristics; ridership would be 7,130 and 8,350 trips per year, respectively, and fare cost would be about \$0.75 in both instances.

## User-Side Subsidy

Both the user-side subsidy program and the demand responsive system, as discussed above, provide a type of demand responsive service. The primary difference between the two systems is in terms of resource allocation; instead of directly subsidizing a particular provider of transportation, the eligible users are provided a subsidy for their transportation. Although a public entity would have to be designated to administer the user-side subsidy program, the actual services would be operated by the private sector which would presumably respond to increased consumer pressures with new or modified services. The analysis assumes that 80 percent of the trips made under a user-side subsidy program would be made by taxicab and 20 percent would be made in chair car carriers. Presented below are the ridership, cost, and revenue estimates for a user-side subsidy program in the Racine urbanized area.

<u>Ridership</u>: The latent travel demand for a userside subsidy program and a demand responsive system are considered the same for this analysis. Therefore, Figure 20 shows the latent travel demand curves developed from data for demand responsive systems as presented in Chaper VII. These latent travel demand estimates provide the basic data for estimating ridership by user-side subsidy programs which are funded at various subsidy levels. Although user-side subsidy and demand responsive systems utilize the same base data in these latent travel demand estimates, differences between the systems in average per trip costs result in different estimates of ridership on the two systems at identical funding levels.

To determine ridership on a user-side subsidy program at a given subsidy level, a supply curve which represents the subsidy level is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. In the analysis of the user-side subsidy program, the changes in fare levels actually represent changes in the proportion of the average metered fare which the user will have to pay per trip.

Through a user-side subsidy program in Racine, about 5,030 rides per year are expected to be provided with a \$16,920 subsidy; about 8,070 rides with a \$28,890 subsidy; about 8,930 rides with a \$33,830 subsidy; and about 16,910 rides with a \$67,670 subsidy. It is important to note that, although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of the alternative systems, the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand.

Costs: The total cost of a user-side subsidy program is the subsidy per trip times the number of trips plus administrative costs of \$0.20 per trip. Costs per trip were determined on the basis of existing taxi rates in Racine-\$0.75 for the first two-fifths of a mile and \$0.20 for each fifth thereafter. No chair car service currently exists, and therefore Milwaukee rates-\$5.00 for the first 30 blocks and \$0.60 for each additional mile were used. For Racine, an average trip length of three miles is used, resulting in costs of \$4.22 (fare of \$3.35 plus \$0.67 tip plus \$0.20 administrative) for taxi and \$5.20 for chair car services. The supply curves which represent the amount of service that could be provided at a given subsidy level are presented in Figure 21, together with an indication of the percentage fare levels discussed later.

### Figure 20

## HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE RACINE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

### Figure 21

## SUPPLY AND DEMAND CURVES FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE RACINE URBANIZED AREA



Source: Applied Resource Integration, Ltd.

The major factor affecting the cost estimates is the average trip length, especially in this study where the fare policy imposes a \$2.50 upper limit regardless of trip length. The analysis is quite sensitive to change in average trip length. For example, for an average trip length of four miles instead of three, the average cost per trip increases approximately 24 percent, while the amount of service that can be supplied drops by 20 percent.

Revenue: The fare level in a user-side subsidy program usually is based on a percent of the metered fare. In Figure 21, the vertical lines represent 15, 25, and 40 percent of total program costs recovered by the user payment of a portion of the actual fare. It can be seen that, in terms of maximizing demand, a 15 percent recovery rate is too low at the lower subsidy levels and that 25 percent is appropriate. For the higher subsidy levels, a rate of 15 percent to 20 percent seems appropriate except for the highest subsidy level. The supply available with the highest subsidy is more than adequate to meet the expected lower level of demand at low fare levels. The recovery rate should, therefore, be set in anticipation of a demand level higher than the minimum. This is

achieved with a rate of 10 percent which matches the supply and demand curves at a mean level of estimated demands. Therefore, for a subsidy level of \$67,000, a 10 percent recovery rate is recommended. For subsidy levels around \$17,000, an approximate 25 percent recovery rate is recommended with correspondingly lower rates at higher subsidy levels.

Summary of User-Side Subsidy Program Analysis: Table 178 summarizes the operating data for a user-side subsidy program. At the \$16,920 subsidy level, about 5,030 trips would be made annually with a recovery rate of 24 percent. The average fare at this subsidy level would be about \$1.06 for a trip consisting of the three-mile average trip length. At the \$28,890 and \$33,830 subsidy levels, annual trips would consist of about 8,070 and 8,930 trips per year, respectively. At the highest subsidy level, the program would cost \$74,740 a year with \$7,070 of revenue generated by a 10 percent recovery rate from 16,910 trips.

Accessible Transit and Demand Responsive System This alternative system combines two of the operating concepts already discussed and assumes the two services operate in a complementary fashion. Those persons living within two blocks of transit who can physically use accessible transit are expected to do so while those who live farther than two blocks from transit or who live within two blocks of transit but cannot use accessible buses would have demand responsive services available. Presented below are ridership, cost, and revenue estimates for this combination of alternative transportation systems.

<u>Ridership</u>: As shown in Chapter III, the number of the transportation handicapped living more than two blocks from transit is 26 percent of the total population. The estimated latent travel demand for this group for a demand responsive system at a zero fare is between 13 and 51 trips per day. At a \$0.50 fare the demand is between 10 and 41 trips per day while at a fare of \$1.00 the demand is expected to be eight to 32 trips per day.

Due to the low levels of travel demand, no accurate projection can be made for the impact of cross enhancement between the two modes (the number of trips to be made on the complementary accessible bus system). It is assumed that the accessible transit service would operate within the ridership, cost, and revenue parameters already described, and a limited demand responsive service would be provided.

Annual Data	5 Percent of Federal Transit Operating Assistance (\$16,920)	Proportional Share of Operating Deficit (\$28,890)	10 Percent of Federal Transit Operating Assistance (\$33,830)	20 Percent of Federal Transit Operating Assistance (\$67,670)
Fare Policy	24 percent	19 percent	14 percent	10 percent
Ridership Taxi Trips	4,030 1,000	6,450 1,620	7,140 1,790	13,530 3,380
Total Ridership	5,030	8,070	8,930	16,910
Operating Cost	\$22,230 \$ 5,310	\$35,670 \$6,780	\$39,470 \$ 5,640	\$74,740 \$ 7,070
Net Operating Cost	\$16,920	\$28,890	\$33,830	\$67,670
Operating Cost Per Trip	\$4.42	\$4.42	\$4.42	\$4.42
(average fare)	\$1.06	\$0.84	\$0.63	\$0.42
Net Operating Cost Per Trip	\$3.36	\$3.58	\$3.79	\$4.00

# OPERATING DATA FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE RACINE URBANIZED AREA

Source: Applied Resource Integration, Ltd.

<u>Costs</u>: For this level of demand not more than two buses would be needed to provide this service. Since the demand is so small, the number of hours during which service would be required is expected to be less than 84 hours per week. Each vehicle is projected to operate only 40 hours per week. At the estimated hourly rate of \$12.00, annual costs are expected to be \$50,000. Due to these very low levels of demand, supply curves are not shown for this alternative system in this area.

<u>Revenue</u>: The low demand also influences the consideration of fare levels. At a fare of \$1.00, demand is so low that service probably should not be provided. At a \$0.50 fare, the maximum revenue would be \$7,500, if the high ridership projection were realized, and only \$1,800 if the low ridership estimate were correct. Since the transit service has a fare of \$0.25 this same fare is recommended for the complementary demand responsive service. The cross-enhancement annual ridership and revenue are expected to be:

	Ridership	Revenue
Low	4,400	\$1,100
High	16,800	\$4,200

Summary of Accessible Transit and Demand Responsive Analysis: This combination of services results in a supplementary demand responsive system being added to the aforementioned accessible transit system. The incremental increase in ridership is expected to be between 4,400 and 16,800 annual trips. The incremental net operating costs are between \$48,900 and \$45,800. Capital costs on an annual basis are estimated to be \$8,000; however, this cost could be reduced by purchasing smaller, less expensive vehicles than those assumed for this analysis.

## Accessible Transit and User-Side Subsidy

This alternative system combines two of the operating concepts already discussed and assumes the two services operate in a complementary fashion. Those persons living within two blocks of transit who can physically use accessible transit are expected to do so while those who live farther than two blocks from transit or who live within two blocks of transit but cannot use accessible buses would have demand responsive services available. Presented below are ridership, cost, and revenue estimates for this combination of alternative transportation systems.

Ridership: As shown in Chapter III, 26 percent of the transportation handicapped live more than two blocks from transit, representing a potential for a range of 4,700 to 18,600 trips annually. The average trip length in this complementary operation is assumed to remain at three miles since any further reduction in the trip length would offer too small a level of service. It should be noted that at these demand levels, only two to four trips per day would be required for chair cars. This level would not justify initiating a separate chair car operation, and it is assumed that equivalent service would be provided through agency or other vehicles. The ridership shown for accessible transit reflects a small cross-enhancement effect of two to eight trips per day, which results from the supplemental service feeding the accessible transit service. The revenues from cross-enhancement effect are assumed to accrue to the user-side subsidy program.

<u>Costs</u>: At the average trip length of three miles and with the assumption of an 80 percent/20 percent taxi to chair car usage ratio, the average cost is estimated to be \$3.46 per one-way trip. The slight increased demand for accessible transit services only negligibly increases the costs associated with additional boarding and alighting times that result from using the lift. Due to the very low levels of demand, supply curves are not shown for this alternative system in this area.

Revenue: The moderate levels of travel demand influence the consideration of fare levels. It appears that a recovery rate of 40 percent would match the low estimate of demand for a program with a subsidy level equivalent to 2.5 percent of the federal operating assistance and a recovery rate of 15 percent for a program at a subsidy level of 5 percent of the federal operating assistance. This would correspond to fare levels of \$1.30 and \$0.50, respectively. However, since the transit fare is \$0.25 and since there is a potential for dampening demand by charging higher fares, a reduced fare may be necessary. The overall effect of reducing fares would, however, be small, amounting to between \$0.02 and \$0.10 increases on per ride costs—an increase of less than 5 percent.

## Comparison of Results

Tables 179 and 180 show the overall system figures for a fully and partially accessible fleet in combination with two levels of user-side subsidy programs. The overall costs of the combination services fall within a range between \$28,420 and \$70,860. As expected, the one-half base period accessible transit combined with user-side subsidy has lower total costs of the possible combinations. The costs per passenger trip also are lower for these options, although the differences in certain cases are not great.

### Coordinated Agency Transportation

Since current organizational and funding mechanisms for agency transportation services are primarily county-oriented, the following discussion concerns only the feasibility of coordinated agency transportation within Racine County. The data utilized in this analysis are primarily the product of the inventory of service providers. The findings of this inventory are reported in greater detail in Chapter V.

In Racine County, there are nine agency transportation programs of which two are school special education programs using contracted service (see Table 181). The remaining agencies provide approximately 6,000 trips per month, over three-quarters of which are provided by two agencies, Lincoln Lutheran Specialized Transportation and Goodwill of southeastern Wisconsin. Lincoln Lutheran provides service to both elderly and handicapped and was created by consolidation of the client population of the Racine senior citizen transportation program and the Lincoln Lutheran of Racine "Pick-me-up" program. The service was developed through a multiparty contract between the Southeastern Wisconsin Area Agency on Aging, the Racine Community Developmental Disabilities Service Board, the City of Racine, and Lincoln Lutheran of Racine. Every effort is made to coordinate this service with the needs of other agencies and programs. Under these circumstances, the potential for further improvement through increased coordination appears limited, since utilization is already fairly high and, in the case of contracted vehicles to Careers for Retarded Adults, Inc., is perceived to be 100 percent. Based on a realistically achievable utilization of 80 percent of available hours, the maximum savings are not likely to exceed 15 percent.

	Accessible Transit		Accessible Transit		User-Side Subsidy Program with \$8,460 ^a Subsidy	User-Side Subsidy Program with \$16,920 ^b Subsidy	Fully Ac Transi User-Side Prograr \$8,460	ccessible t and Subsidy n with Subsidy	Fully A Trans User-Side Program \$16,920	ccessible it and Subsidy n with Subsidy
Annuał Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Low Ridership Estimate	High Ridership Estimate		
Ridership.	14,600	27,010	3,910	5,700	18,510	30,920	20,290	32,700		
Operating Cost Operating Revenue ^C	\$19,860 \$ 1,900	\$38,500 \$3,310	\$13,560 \$ 5,100	\$19,710 \$ 2,790	\$33,420 \$ 7,000	\$52,060 \$ 8,400	\$39,570 \$4,690	\$58,210 \$ 6,100		
Net Operating Cost	\$17,960	\$35,190	\$ 8,460	\$16,920	\$26,420	\$43,660	\$34,880	\$52,110		
Capital Cost	\$18,750	\$18,750			\$18,750	\$18,750	\$18,750	\$18,750		
Total Cost	\$36,710	\$53,940	\$ 8,460	\$16,920	\$45,170	\$62,410	\$53,630	\$70,860		
Per Passenger Cost Net Operating Capital	\$1.23 \$1.28	\$1.30 \$0.69	\$2.16	\$2.97	\$1.43 \$1.01	\$1.41 \$0.61	\$1.72 \$0.92	\$1.59 \$0.57		
Totai	\$2.51	\$2.00	\$2.16	\$2.97	\$2.44	\$2.02	\$2.64	\$2.17		

# OPERATING DATA FOR FULLY ACCESSIBLE TRANSIT AND USER-SIDE SUBSIDY PROGRAM COMBINATION FOR THE RACINE URBANIZED AREA

^a Subsidy level of \$8,460 equals 2.5 percent of the federal operating assistance.

^b Subsidy level of \$16,920 equals 5.0 percent of the federal operating assistance.

^C All revenues from trips on accessible transit which utilize the user-side subsidy program to travel to and from the bus are assigned to the userside subsidy program.

Source: Applied Resource Integration, Ltd.

Combination of Coordinated Agency Transportation with Other Alternative Transportation System <u>Modes</u>: Coordinated agency transportation can be developed in concert with an accessible transit system, demand responsive system, user-side subsidy program, or any combination of these three basic systems. Each basic system alternative is briefly analyzed in combination with coordinated agency transportation as discussed below:

<u>Coordinated Agency Transportation and Accessible</u> <u>Transit System:</u> As indicated previously, there is already a significant degree of coordination of agency operations in the Racine area. It is anticipated that there would be little interaction between the accessible transit system and further coordinated services. The resulting ridership, costs, and revenues of any efforts would be the sum of the two individual operations. Coordinated Agency Transportation and Demand Responsive System: These two systems can operate together; however, as in other areas, a caveat is in order regarding the workshop and educational orientation of many of the potential trips. The peaking problem created by such tripmaking is not conducive to efficient operations. To cope with this situation, a brokerage role rather than the role of independent provider might be more appropriate for the demand responsive system. Another caution is the possible negative impact of providing demand responsive services with limited resources and capacity. The result of the integration of services would be improved agency transportation services, more trips made on demand responsive services, and the concurrent lower cost per trips. The increased number of trips being made on the demand responsive services, however, would be due to a shift by

	One-Half Base Period Accessible Transit Fleet		One-Half Base Period Accessible Transit Fleet		User-Side Subsidy Program with \$8,460 ^a Subsidy	User-Side Subsidy Program with \$16,920 ^b Subsidy	One-Half Accessible User-Side Progra \$8,460	Base Period Transit and Subsidy m with Subsidy	One-Half E Accessible User-Side Progra \$16,920	Base Period Transit and Subsidy m with Subsidy
Annual Data	Low Ridership Estimate	High Ridership Estimate	Ridership Estimate	Ridership Estimate	Low Ridership Estimate	High Ridership Estimate	Low Ridership Estimate	High Ridership Estimate		
Ridership	9,970	18,980	3,910	5,700	13,890	22,900	15,670	24,680		
Operating Cost Operating Revenue ^C	\$11,480 \$ 1,270	\$22,490 \$ 2,890	\$13,560 \$5,100	\$19,710 \$2,790	\$25,030 \$6,360	\$36,040 \$  7,980	\$31,190 \$ 4,060	\$42,200 \$ 5,680		
Net Operating Cost	\$10,210	\$19,600	\$ 8,460	\$16,920	\$18,670	\$28,060	\$27,130	\$36,520		
Capital Cost	\$ 9,750	\$9,750			\$ 9,750	\$ 9,750	\$ 9,750	\$ 9,750		
Total Cost	\$19,960	\$29,350	\$ 8,460	\$16,920	\$28,420	\$37,810	\$36,880	\$46,270		
Per Passenger Cost Net Operating Capital	\$1.02 \$0.98	\$1.03 \$0.51	\$2.16 	\$2.97	\$1.34 \$0.70	\$1.23 \$0.42	\$1.73 \$0.62	\$1.48 \$0.40		
Total	\$2.00	\$1.55	\$2.16	\$2.97	\$2.04	\$1.65	\$2.35	\$1.88		

# OPERATING DATA FOR ONE-HALF BASE PERIOD ACCESSIBLE TRANSIT FLEET AND USER-SIDE SUBSIDY PROGRAM COMBINATION FOR THE RACINE URBANIZED AREA

^a Subsidy level of \$8,460 equals 2.5 percent of the federal operating assistance.

^b Subsidy level of \$16,920 equals 5.0 percent of the federal operating assistance.

^C All revenues from trips on accessible transit which utilize the user-side subsidy program to travel to and from the bus are assigned to the user-side subsidy program.

Source: Applied Resource Integration, Ltd.

agency-sponsored trips from agency vehicles to demand responsive vehicles. In other words, less individual trips would be made on integrated services than if the two systems operated separately. The reason for this situation is the limited capacity on demand responsive services. With unlimited resources, a demand responsive system would be able to service both agency clients and individuals. With limited resources, the two systems should remain separate-at least initially. A coordinated agency transportation program would provide a means to serve agency transportation needs better, and a demand responsive system would provide increased transportation opportunities for the transportation handicapped. This general policy applies only to a demand responsive system that is capacity constrained. If excess capacity exists, the demand responsive system could lower its fares to the transportation handicapped or the general public or encourage agency-sponsored trips in order to provide service to as many as possible. Coordinated Agency Transportation and User-Side Subsidy Program: As with the previous alternative, if agencies are already paying higher fares, this combination of services could result in increased tripmaking and lower per trip costs. However, the program would result in fewer trips being made by the general public and more by agency clients. Therefore, these two programs should also be operated separately.

Coordinated Agency Transportation, Accessible Transit System, and Demand Responsive System: This alternative involves coordinated agency transportation combined with an integrated accessible transit and demand responsive system. For the area within two blocks of transit, this alternative would be the same as accessible transit and coordinated agency transportation while, in the area outside two blocks of transit, the option would be the same as demand responsive and coordinated agency services. Since coordinated agency trans-

## **RACINE COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS**

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Agency ^a	Service Area	Type of Service ^b	Volunteer or Paid Drivers	Monthly One-Way Trips	Number and Type of Vehicles	Daily Operating Hours	Vehicle Utilization (în percent)	Productivity (trips per vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip
American Red Cross	Racine County Kenosha County	FS	Volunteers-26	414	4 Station	8:00 A.M 5:00 P.M.	58	1.25	\$ 250.00 ^c	N/A	N/A
Racine County School	Racine County West of IH-94	FR, FS	N/A	5,000	Contracted Vehicles	7:00 A.M 9:00 A.M. 2:30 P.M 4:30 P.M. Monday Eriday	N/A	N/A	\$ 9,000.00	N/A	N/A
Goodwill Industries of Southeastern Wisconsin	Racine County	FR, FS, RD	Paid Drivers-2	2,160	Contracted Vehicles-2	6:30 A.M 6:00 P.M. Monday-Friday	75	9.00	\$ 1,950.00	\$ 8.12	\$0.90
Careers for Retarded Adults, Inc.	Union Grove Franksville, Racine	FR, FS	N/A	1,600	Contracted Vehicle-1	8:00 A.M 5:30 P.M. Monday-Friday	N/A	4.00	\$ 1,200.00	\$12.00	\$3.00
Racine County Department of Social Services	Racine County	User-Side Reimbursement Passenger Chooses Mode	Volunteers-65	355	Personal Vehicles-65	8:00 A.M 5:00 P.M. Monday-Friday	N/A	N/A	\$ 1,800.00- \$ 2,500.00	N/A	N/A
Racine Unified School District	Racine, Caledonia, Mt. Pleasant, Wind Point, North Bay, Sturtevant, Elmwood Park	FR, FS	Paid Drivers	31,200	Contracted Vehicles-53	6:30 A.M 4:00 P.M. Monday-Friday	60	4.99	\$32,000.00	\$ 5.12	\$1.03
Society's Assets, Inc.	Racine County Kenosha County	DR Existing Transit When Possible	N/A	247	Contracted Vehicle-1	6:30 A.M 4:30 P.M. Monday-Friday	84	1.47	\$ 1,757.00	\$10.45	\$7.11
Southern Wisconsin Colony	Racine County	DR	Agency Outreach Workers	N/A	3 Station Wagons, 1 Passenger Auto 2 Ambulances I	7:45 A.M 4:30 P.M. Monday-Friday	N/A	N/A	N/A	N/A	N/A
Lincoln Lutheran Specialized Transportation	Racine County	FS	N/A	2,268	3 Contracted Vehicles	7:00 A.M 5:30 P.M. Monday-Friday	76	4.73	\$ 5,226	\$ 8.30	\$2.30

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of service : DR - demand responsive.

- FR fixed route.
- RD route deviation.
- FS fixed schedule.

^C Operational costs only.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

portation is recommended to operate separately from either demand responsive or accessible transit, it also would operate separately from a combined accessible transit and demand responsive system. Thus, the combination would have the joint characteristics of a coordinated agency transportation system and a combined accessible transit and demand responsive system.

Coordinated Agency Transportation, Accessible Transit System, and User-Side Subsidy Program: In the same way that the accessible transit, demand responsive system, and coordinated agency transportation alternative results in separate consideration of the coordinated agency transportation and combination of the other two services, this alternative would have the joint characteristics of a coordinated agency transportation and a combined user-side subsidy program and accessible transit system as previously considered.

## EVALUATION OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE RACINE URBANIZED AREA

In the preceding discussion, five basic alternative transportation systems are analyzed along with coordinated agency transportation services operating alone or in combination with the alternative systems. Although each of these five alternative systems may be combined with coordinated agency services, it has been shown that coordinated agency transportation should be considered separately and should not be integrated with the other operating alternatives. This component does not, therefore, affect the evaluation of the five primary alternative transportation systems. Moreover, since coordinated agency transportation involves no increased costs but only more efficient operations, it is recommended for implementation regardless of which of the remaining systems is finally selected for implementation. Thus, any other alternative under consideration, if implemented, will be combined with a recommendation for increased consolidation of the existing complementary coordinated agency transportation service currently provided in Racine County.

For each of the alternative systems, a variety of options have been analyzed in terms of various ridership estimates and differing subsidy levels. In order to compare the alternative systems, a common basis has been established through the use of two scenarios. The first scenario utilizes levels of service comparable to those suggested by UMTA as a frame of reference. The second scenario measures the alternative systems against a higher level of service based on subsidy levels that are approximately the same proportion of the total transportation subsidy as the transportation handicapped are of the general population. (This subsidy level represents a parity position but not necessarily a maximum level.)

Other scenarios could have been considered, including those that could provide maximum service. For example, the high latent demand estimate for demand responsive service or a userside subsidy program at zero fare is approximately 54,000 trips. To serve this volume of ridership would annually cost between \$239,000, and \$260,000. The analysis of alternatives was not conducted for these high subsidy levels because it appears unlikely that the financial resources will be available for these funding levels in the shortrange period under consideration.

## Scenario 1: UMTA-Suggested Guidelines

The UMTA-suggested guideline for accessible transit service is one-half of the operating fleet. In Racine, where the peak period and base period fleets are the same size, this is comparable to onehalf the base period fleet plus 20 percent spares being made accessible. Another suggested guideline is the expenditure of funds for specialized services equal to 5 percent of the federal operating assistance. This guideline is used for the demand responsive and user-side subsidy programs.

In this analysis the low level of ridership is used for the accessible transit option because this is the level considered to best reflect what may actually occur. For demand responsive and userside subsidy programs, an operating deficit equal to 5 percent of federal operating deficit is assumed. For the combination of a user-side subsidy program and accessible transit, one-half of the peak period fleet is assumed to be accessible but the operating subsidy for the user-side program is 2.5 percent of federal operating assistance. The accessible transit plus demand responsive combination was not considered at this level as the available subsidy would only produce marginal extra ridership. Table 182 shows the extent to which each of the alternatives meets the objectives and standards. All the alternatives except a one-half base period accessible fleet meet or exceed the minimum level of latent demand. The second, third, and fourth standards are assumed to be met by all alternatives through actual operations. Flexibility is measured

# COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR UMTA-SUGGESTED LEVELS OF SERVICE FOR THE RACINE URBANIZED AREA

Objectives and Standards	Base Period Accessible Fleet	Demand Responsive System (5 percent of federal operating assistance)	User-Side Subsidy Program (5 percent of federal operating assistance)	User-Side Subsidy Program in Combination with a One-Half Base Period Accessible Fleet (subsidy level of 2.5 percent of federal operating assistance)
Objective No. 1				
Standards				
<ol> <li>Most nearly meet existing and latent travel demand^a</li> <li>Maximize comfort, convenience, and security^b</li> <li>Maximize knowledge of the services being offered^b</li> <li>Serve all trip purposes^b</li> <li>Maintain flexibility in design and operation</li> <li>Utilize existing public mass transit services</li> <li>Utilize other public and private providers where practical</li> <li>Provide recommended levels of service^b</li> </ol>	Serves 90 percent Met Met Inflexible ^C Met Met Met	Met Met Met Fairly Flexible ^d Not Met Met	Met Met Met Very Flexible ^e Not Met Met	Met Met Met Fairly Flexible ^d Partially Met Met
Objective No. 2				
Standard				
1. Conform to federal requirements for vehicle design and operation and fixed facilities design and construction ^b	Met	Met	Met	Met
Objective No. 3				
Standards				
<ol> <li>Minimize subsidy per ride</li> <li>Minimize total operating and</li> </ol>	\$2.12	\$5.23	\$3.36	\$2.04
capital costs 3. Determine fare in the transit	\$19,600	\$24,920	\$16,920	\$28,420
<ul> <li>service area from recovery rate but do not exceed \$2.50</li> <li>Determine fare in areas not served by transit on average</li> </ul>	Lower Fare ^f	Met	Met	Lower Fare ^f
per person trip costs but do not exceed \$2.50	Lower Fare ^f	Lower Fare ^f	Lower Fare ^f	Lower Fare ^f

^a The ability to serve the low estimate of latent demand is measured by this standard.

^b Alternative design does not prohibit meeting this standard, and standard is assumed to be met in actual operation.

^C High capital investment limits future flexibility.

^d Capital investment limits flexibility but not to a large extent.

^e Low capital investment allows flexibility.

^f Fare levels result in cost recovery rates that are lower than those of existing transit service.

in terms of capital investment which could restrict future decisions. In these terms an accessible fleet is inflexible, while a user-side subsidy program is the most flexible. An accessible transit system or partially accessible transit system takes advantage of existing routes, schedules, and operating procedures of the transit service, but requires new equipment or a retrofit of existing equipment. All alternatives incorporate practical use of other providers in the design of services, even though an accessible transit system has no need for other providers. All alternatives are also assumed to provide the minimum levels of service. In terms of the standard for the second objective, all alternatives are assumed to comply with federal regulations.

For the third objective, the subsidy per ride and total cost are shown for each alternative. These are further discussed below. Although the objectives and standards do not specifically address fares aboard accessible transit, it should be noted that due to the higher per trip costs of a transportation handicapped person the transit fare will recover less of the operating cost than is recovered for a trip made by an able-bodied passenger. Fares for both demand responsive service and a user-side subsidy program are recommended to be at the level determined by the cost recovery rate. This level also is compatible with fares determined by supply and demand curves, for the combination services fares are below the cost recovery rate level.

Table 183 presents a detailed quantitative cost analysis of the five basic alternatives being considered. In terms of total costs, the accessible transit/user-side subsidy combination is most expensive followed closely by the demand responsive service. The least expensive alternative is the user-side subsidy alternative. However, from a perspective of the state and local subsidy required to support a service, the user-side subsidy program alone is the most expensive. The reason for this is the fact that it is not clear whether or not a userside subsidy program qualifies for federal operating assistance. From a local perspective, a base level accessible fleet is the least expensive alternative, and also has the lowest cost per trip. Demand responsive service would cost only \$3,200 more, but would have a per trip cost over twice as high.

## Scenario 2: Proportional Level of Subsidy

The alternatives under consideration are fully accessible transit fleet; demand responsive and user-side subsidy systems operating at a proportional subsidy level; a combination system of demand responsive service with an operating subsidy equal to 5 percent of the federal transit operating assistance and a base period accessible fleet; and a base period accessible fleet operating in combination with user-side subsidy program subsidized at 5 percent of the federal transit operating assistance.

Table 184 presents these alternatives and their ability to meet the objectives and standards. As shown, all the alternatives meet the first four standards under the first objective, have different levels of flexibility, vary in terms of involving the private sector, and meet all remaining standards under the first and second objectives. Similar to the previous evaluation, the subsidy per ride and total costs are shown for each alternative. The suggested fare levels for the alternative systems are all below the recommended standard.

Table 185 presents a detailed cost analysis of the alternative systems being evaluated in terms of this second scenario. A user-side subsidy program again has the lowest total costs. The accessible transit and the combination of one-half base period accessible transit with user-side subsidy and demand responsive service have annual costs equal to accessible transit/demand responsive service.

### Systems Comparison and Recommendation

With the emphasis on per ride costs, the total and local values for the five viable alternatives considered are shown in Table 186. Given the likely variability of the values obtained, it is evident that on the basis of total costs the accessible transit, alone or in combination with a userside subsidy, are the candidate systems. If local funding considerations are paramount, then the user-side subsidy combination is ruled out and accessible transit becomes the sole candidate system. Federal support for a user-side subsidy program would make it attractive in terms of total cost but not in terms of local costs unless considered in combination with an accessible transit system.

The current transit fleet is modern (1976) and therefore replacement vehicles are not needed at this time. If the city desires to keep a relatively young average age for the fleet, replacement of vehicles should begin incrementally in five or six years. This would seem to coordinate well with the availability of the newer and more accessible vehicles which are to be available after September 30, 1979. Total per ride costs are

· · · · · · · · · · · · · · · · · · ·		Demand	Llsor Sido	
		Bernonsive	Subsidy	Deriod Accessible
		Svetom	Program	Transit Dius Lloor Sido
	One Half	/E paraant	/E parcent	Subsidy Program
	Pees Devied	(5 percent	(5 percent	Subsidy Program
	Base Period	of tederal	of tederal	(2.5 percent of
A moved Date	Accessible	operating	operating	federal operating
	Iransit	assistance)	assistance)	assistance)
Ridership	9,240	4,760	5,030	13,890
Operating Cost	\$11 120	\$22.870	\$22.250	\$25,030
Operating Revenue	\$ 1 270	\$ 5 950	\$ 5 330	\$ 6 360
	φ 1,210	\$ 9,990	\$ 9,000	\$ 0,300
Net Operating Cost	\$ 9,850	\$16,920	\$16,920	\$18,670
Capital Cost	\$ 9,750	\$ 8,000		\$ 9,750
Total Cost	\$19,600	\$24,920	\$16,920	\$28,420
	¢1.07	40.55	<u> </u>	<b>*</b> 1 04
	\$1.07	\$3,55	\$3.36	\$1.34
	\$1.05	\$1.68		\$0.70
Total Cost Per Trip	\$2.12	\$5.23	\$3.36	\$2.04
Potential Enderal Funding				
	¢ 4 025	¢ 0.460	а	¢ 5 106
	<b>⊅</b> 4,925	\$ 8,40U		\$ 5,105
	\$ 7,800	\$ 6,400		\$ 7,800
Required Local (state, county, and/or municipality) Funding				
Operating	\$ 4,925	\$ 8,460	\$16.920	\$13.564
Capital	\$ 1,950	\$ 1,600		\$ 1.950
Total	¢ 6 975	\$10,060	¢16.020	¢16 614
	\$ 0,075	\$10,060	\$10,920	ຸ 
Local Funding Per Trip				
Operating	\$0.53	\$1.78	\$3.36	\$0.98
Capital.	\$0.21	\$0.34		\$0.14
Total	\$0.74	\$2.12	\$3.36	\$1.12

## COST ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS BY UMTA-SUGGESTED LEVELS OF SERVICE FOR THE RACINE URBANIZED AREA

^aThe ability to secure federal operating assistance for a user-side subsidy program is uncertain.

Source: Applied Resource Integration, Ltd.

approximately the same for accessible transit and accessible transit combined with user-side subsidy, although the latter has a higher per ride cost on a local basis.

In constructing a recommended alternative transportation system, the initial step in formulation of the alternative is recommendation that one-half the transit fleet, including reserve vehicles, should be made accessible. This would result in a total of 13 accessible buses. For immediate implementation, this would require retrofitting present buses and/or purchases of new buses modified before delivery.

## COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR IMPROVED LEVELS OF SERVICE FOR THE RACINE URBANIZED AREA

Objectives and Standards	Fully Accessible Transit System	Demand Responsive System	User-Side Subsidy Program	Demand Responsive System in Combination with a Base Period Accessible Fleet	User-Side Subsidy Program in Combination with a Base Period Accessible Fleet
Objective No. 1					
Standards					
<ol> <li>Most nearly meet existing and latent travel demand^a</li> <li>Maximize comfort, convenience, and security^b</li> <li>Maximize knowledge of the services being offered^b</li> <li>Serve all trip purposes^b</li> <li>Maintain flexibility in design and operation</li> <li>Utilize existing public mass transit services</li> <li>Utilize other public and private providers where practical</li> <li>Provide recommended levels of service^b</li> </ol>	Met Met Met Inflexible ^C Met Met	Met Met Met Fairly Flexible ^d Not Met Met	Met Met Met Very Flexible ^e Not Met Met	Met Met Met Fairly Flexible ^d Partially Met Met	Met Met Met Fairly Flexible ^d Partially Met Met Met
Objective No. 2					
Standard					
<ol> <li>Conform to federal requirements for vehicle design and operation and fixed facilities design and construction^b</li> </ol>	Met	Met	Met	Met	Met
Objective No. 3					
Standards					
<ol> <li>Minimize subsidy per ride</li> <li>Minimize total operating and</li> </ol>	\$2.62	\$5.17	\$3.58	\$5.34	\$2.35
<ul> <li>capital costs</li> <li>3. Determine fare in the transit service area from recovery rate but do not exceed \$2.50</li> <li>4. Determine fare in areas not served by transit on average</li> </ul>	\$36,350 Lower Fare ^f	\$37,890 Lower Fare ^f	\$28,890 Lower Fare ^f	\$76,860 Lower Fare ^f	\$36,880 Lower Fare ^f
per person trip costs but do not exceed \$2.50	Lower Fare ^f	Lower Fare ^f	Lower Fare ^f	Lower Fare ^f	Lower Fare ^f

^a The ability to serve the low estimate of latent demand is measured by this standard.

^b Alternative design does not prohibit meeting this standard, and standard is assumed to be met in actual operation.

^c High capital investment limits future flexibility.

^d Capital investment limits flexibility but not to a large extent.

^e Low capital investment allows flexibility.

^f Fare levels result in cost recovery rates that are lower than those of existing transit service.

# COST ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS FOR ACCESSIBLE TRANSIT FLEET AND PROPORTIONAL SUBSIDY LEVELS FOR THE RACINE URBANIZED AREA

Annual Data	Fully Accessible Transit System	Demand Responsive System	User-Side Subsidy Program	Demand Responsive System in Combination with a Base Period Accessible Fleet (5.0 percent subsidy level)	User-Side Subsidy Program in Combination with a One-Half Base Period Accessible Fleet (5.0 percent subsidy level)
Ridership	13,870	7,130	8,070	14,375	15,670
Operating Cost	\$19,500 \$ 1,900	\$34,240 \$ 5,350	\$35,670 \$6,780	\$61,480 \$ 2,370	\$31,190 \$ 4,060
Net Operating Cost	\$17,600	\$28,890	\$28,890	\$59,110	\$27,130
Capital Cost	\$18,750	\$ 8,000		\$17,750	\$ 9,750
Total Cost	\$36,350	\$36,890	\$28,890	\$76,860	\$36,880
Net Operating Cost Per Trip Capital Cost Per Trip	\$1.27 \$1.35	\$4.05 \$1.12	\$3.79 	\$4.11 \$1.23	\$1.73 \$0.62
Total Cost Per Trip	\$2.62	\$5.17	\$3.58	\$5.34	\$2.35
Potential Federal Funding Operating Capital	\$ 8,600 \$15,000	\$14,445 \$ 6,400	a 	\$29,555 \$14,200	\$ 5,100 \$ 7,800
Required Local (state, county, and/or municipality) Funding Operating Capital	\$ 8,600 \$ 3,750	\$14,445 \$ 1,600	\$28,890 	\$29,555 \$ 3,550	\$22,030 \$ 1,950
Total	\$12,350	\$16,045	\$28,890	\$33,105	\$23,980
Local Funding Per Trip Operating Capital	\$0.62 \$0.27 \$0.89	\$2.02 \$0.22	\$3.58  \$3.59	\$2.06 \$0.24	\$1.41 \$0.12

^aThe ability to secure federal operating assistance for a user-side subsidy program is uncertain.

Source: Applied Resource Integration, Ltd.

The second step in formulation of the alternative is recommendation that a user-side subsidy program should be implemented in conjunction with the one-half accessible fleet program in order to ensure total accessibility in the entire area. A subsidy level for this combination equivalent to 2.5 percent of federal operating assistance is suggested. Because of the innovative nature of

		Cost Per Ride (in dollars)		
	То	otal	La	ocal
	Scenario	Scenario	Scenario	Scenario
Alternative Transportation System	1	2	1	2
Accessible Transit Fleet	2.12	2.62	0.74	0.89
Demand Responsive Service	5.23	5.17	2.12	2.24
User-Side Subsidy	3.36	3.58	3.36	3.58
Demand Responsive plus Accessible Transit	a	5.34	a	2.30
Accessible Transit plus User-Side Subsidy	2.04	2.35	1.12	1.53

### COMPARISON OF PER RIDE COSTS FOR RACINE URBANIZED AREA

^a This combination was not considered at this level as the available subsidy would only produce marginal extra ridership.

Source: Applied Resource Integration, Ltd.

this program, it is further recommended that immediate negotiations be started with the Urban Mass Transportation Administration to clarify the qualifications through which such a program can obtain matching support dollars at the federal level and the possibilities of obtaining UMTA Services and Methods Demonstration (Section 6) monies for the initial implementation, support, and evaluation of the program.

The third step in formulation of the alternative plan involves recognition that increased coordination of agency transportation is feasible in Racine, although the potential for increased efficiency is limited. Nevertheless, a coordinated agency transportation program will provide a means to serve agency transportation needs better, and it is recommended that a coordination effort be initiated immediately which builds upon the existing system.

Therefore, the final alternative plan recommendations result in a comprehensive system for serving the transportation handicapped in the Racine urbanized area. An accessible transit system would provide transit service for the transportation handicapped within two blocks of transit. For other areas within the urbanized area, a user-side subsidy program would serve the residents. Finally, coordinated agency transportation would improve the efficiency and effectiveness of existing agency services. In summary, the recommended alternative for the Racine urbanized area consists of the combination of accessible transit, user-side subsidy, and coordinated agency transportation.

## ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE KENOSHA URBANIZED AREA

The five alternative transportation systems which could be instituted in the Kenosha urbanized area are accessible transit, demand responsive, user-side subsidy, accessible transit combined with demand responsive, and accessible transit combined with user-side subsidy. In accordance with the analysis approach described in the beginning of this chapter, these systems are examined for ridership, cost, operations or administration, and revenue. In addition, the supplemental service which could be provided by coordinated agency transportation is analyzed in combination with each of these five alternative systems. It should be noted that the discussion of coordinated agency transportation applies to the whole of Kenosha County rather than to the urbanized area alone, an analysis approach deemed to be the most efficient since current organizational and funding mechanisms for agency providers are primarily county-oriented.

### Accessible Transit

The existing transit system which serves the City of Kenosha would provide the base system for the implementation of an accessible transit service in this urbanized area. It is assumed in this analysis of accessible transit that current operations in terms of route structure and fare systems will remain in effect. As shown in Table 187, which summarizes some of the characteristics of the Kenosha transit system, there is a total of 28 buses

Table	187
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Fleet Size
<ul> <li>28 buses are in entire fleet.</li> <li>24 buses operate in peak periods (6 buses are used primarily for student transportation).</li> <li>9 buses operate in base or midday period.</li> <li>9 buses operate on Saturday (maximum).</li> </ul>
No Sunday Service
Operating Hours
192 scheduled vehicle hours of service on an average weekday. 108 scheduled vehicle hours of service on an average Saturday.
Cost
\$12.75 per hour - average hourly operating cost.

Source: Applied Resource Integration, Ltd.

in the entire fleet, providing about 192 scheduled vehicle hours of service on an average weekday with an average hourly operating cost of \$12.75.

<u>Ridership</u>: The preferred estimates of latent travel demand for accessible transit, as presented in Chapter VII, indicate a range between 10,950 annual trips for the low ridership estimate to 18,250 annual trips for the high ridership estimate. These estimates assume that the significant changes in bus usage as a result of accessibility features will occur predominantly among wheelchair users and, also, that current transit operations will remain in effect.

To determine ridership by peak and off-peak periods, it is assumed as described in the analysis approach, that 25 percent of the estimated ridership will occur during the peak period with the remaining 75 percent occurring in the off-peak, or base period. Application of these ratios to the high and low estimates of latent travel demand yields the ranges of expected ridership within each period. In the peak period, between 2,740 and 4,560 trips per year are expected. In the off-peak or base period between 8,210 and 13,690 trips per year are expected. The impact on ridership of equipping all or a portion of the fleet with accessible buses must also be considered. Since the latent travel demand estimates are based on equipping all the fleet, a reduction in ridership can be expected if only a portion of the fleet is equipped. For the alternative of equipping all the base period fleet, which also results in a portion of the peak period fleet being equipped, ridership is expected to be 10 percent less than the latent travel demand for the system, or between 9,850 trips and 16,420 trips annually. This proportion was derived by assuming no loss in base period ridership, about 75 percent of total, and retaining three-fifths of the peak period ridership, or about 15 percent of the total ridership. For the option of equipping one-third of the peak period fleet or one-half of the base period fleet, whichever is greater, two-thirds of the base period and one-half of the peak period ridership are assumed to be retained. This approach results in a ridership estimate that is 62.5 percent of the total latent travel demand estimates, or between 6,840 trips and 11,400 trips annually. A proportional ridership loss equal to the reduction in the number of accessible buses is not assumed since persons could alter their travel patterns to accommodate a less than fully accessible fleet.

<u>Costs</u>: Assuming an additional operating time of two minutes and 30 seconds per lift-assisted trip, the additional time resulting on a daily basis from accessible transit operations would range between 1.2 hours for the low ridership estimate and 2.1 hours for the high ridership estimate. As shown earlier, on an average weekday 192 hours of service are provided. Adding 1.2 or 2.1 hours would have minimal impact on the system and no additional vehicles would be needed to accommodate the additional service time. Further, given time allowances already in the schedules this small amount of additional time may not even be apparent. However, the effects of this time are fully considered in the analysis of this system. The additional annual costs resulting from this added time are estimated to range between \$5,800 for the low ridership estimate and \$9,700 for the high ridership estimate.

As previously noted, the estimated costs of maintaining a lift range from \$500 to \$1,000 per year. Therefore, the maintenance costs associated with equipping the entire fleet of 28 buses are assumed to range between \$14,000 for the low cost estimate and \$28,000 for the high cost estimate. Equipping the base period fleet of nine buses plus 20 percent accessible spare vehicles would create maintenance costs ranging between \$5,500 for the low cost estimate and \$11,000 for the high cost estimate. Equipping one-third of the peak period fleet would result in eight accessible buses plus 20 percent accessible spares, or a total of 10 accessible buses. In contrast, equipping one-half of the base period fleet would result in five accessible buses plus 20 percent accessible spares for a total of six accessible buses. Therefore, using the higher estimate of 10 accessible buses-in accordance with the definition of the option-the range of maintenance costs would be between \$5,000 for the low cost estimate and \$10,000 for the high cost estimate.

Because maintenance costs are a function of the number of times a lift is used, the low annual maintenance cost of \$500 per lift is applied in the forthcoming analyses to the low ridership estimates while the high maintenance cost of \$1,000 per year is applied to the high ridership estimate. It is recognized that this technique would appear on the surface to be diametrically opposed to the traditional concept of economies of scale. However, no data currently exist on the cost of lift usage. Furthermore, the relatively low levels of latent travel demand for accessible transit may indicate insufficient ridership volumes to achieve even at highest ridership levels—a point where the maintenance cost per trip begins to decline.

As earlier noted, the total capital cost of equipping a bus with a wheelchair lift, wide doors, wheelchair tie downs, and increased handrails and stanchions is approximately \$9,000. Therefore, the capital costs for making all or part of a fleet accessible for wheelchairs are about \$252,000 for a 100 percent accessible fleet; about \$99,000 for a 100 percent accessible base fleet plus accessible spares; and about \$90,000 for a one-third peak period accessible fleet plus accessible spares. It is assumed that the additional accessibility features would have the same life as that of an average bus, approximately 12 years.

<u>Revenue</u>: The transit fare in Kenosha is 0.25 with a reduced fare of 0.10 for elderly and handicapped persons riding in nonpeak periods. Revenue on an accessible transit fleet is the product of the appropriate fare and the number of rides estimated to occur on the system during the period. For a fully accessible fleet, the estimated revenues would be between 1,450 for the low ridership estimate and 2,420 for the high ridership estimate; for a base period fleet plus 20 percent accessible spares, revenue is estimated to be between 1,300 at low ridership and about 2,180at high ridership; for a one-third peak period accessible fleet, revenue is estimated to be between 900 at low ridership and 1,510 at high ridership.

It should be stressed that the revenue estimates utilize broad assumptions concerning ridership distributions; for example, to calculate revenue for a fully accessible system, a 25 percent peak and 75 percent off-peak ridership distribution is assumed. The sensitivity of this assumption is demonstrated if revenue is calculated on the basis of a distribution similar to that of the general public, namely, 50 percent peak and 50 percent off-peak. The results of this calculation are a revenue range of \$1,920 for the low ridership estimate and \$3,190 for the high ridership estimate.

Summary of Accessible Transit System Analysis: In Tables 188, 189, and 190 the annual operating costs, operating revenues, and capital costs¹⁰ for accessible transit options are presented in summary form. A fully accessible fleet would cost between \$18,350 and \$35,280 a year to operate. Total capital costs would be about \$252,000 or the

¹⁰ Although capital costs would be incurred as lump sums in certain years, such costs have been annualized over the life of the vehicle to provide a reasonable basis for comparison.

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	10,950	18,250
Operating Cost Additional Time Maintenance	\$ 5,800 \$14,000	\$ 9,700 \$28,000
Total	\$19,800	\$37,700
Operating Revenue	\$ 1,450	\$ 2,420
Net Operating Cost	\$18,350	\$35,280
Capital Cost	\$21,000	\$21,000
Total Annual Cost	\$39,350	\$56,280
Net Operating Cost Per Passenger	\$1.68 \$1.92	\$1.93 \$1.15
Total Cost Per Passenger	\$3.60	\$3.08

# COST AND REVENUE ESTIMATES FOR A FULLY ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN KENOSHA

^aOption: Fully accessible transit = 28 accessible buses. Source: Applied Resource Integration, Ltd.

## Table 189

Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership	9,850	16,420
Operating Cost Additional Time Maintenance	\$ 5,220 \$ 5,500	\$ 8,730 \$11,000
Total	\$10,720	\$19,730
Operating Revenue	\$ 1,300	\$ 2,180
Net Operating Cost	\$ 9,420	\$17,550
Capital Cost	\$ 8,250	\$ 8,250
Total Annual Cost	\$17,670	\$25,800
Net Operating Cost Per Passenger	\$0.96 \$0.83	\$1.07 \$0.50
Total Cost Per Passenger	\$1.79	\$1.57

COST AND REVENUE ESTIMATES FOR A BASE PERIOD ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN KENOSHA

^aOption: Base period accessible fleet plus 20 percent accessible spare vehicles = 11 buses. Source: Applied Resource Integration, Ltd.
Annual Data	Low Ridership Estimate	High Ridership Estimate
Ridership.	6,840	11,400
Operating Cost Additional Time	\$ 3,620 \$ 5,000	\$ 6,060 \$10,000
Total	\$ 8,620	\$16,060
Operating Revenue	\$ 900	\$ 1,510
Net Operating Cost	\$ 7,720	\$14,550
Capital Cost	\$ 7,500	\$ 7,500
Total Annual Cost	\$15,220	\$22,050
Net Operating Cost Per Passenger	\$1.13 \$1.10	\$1.27 \$0.66
Total Cost Per Passenger	\$2.23	\$1.93

COST AND REVENUE ESTIMATES FOR A ONE-THIRD PEAK PERIOD ACCESSIBLE TRANSIT FLEET^a AT HIGH AND LOW RIDERSHIP LEVELS IN KENOSHA

^aOption: One-third peak period accessible fleet plus accessible spares = 10 accessible buses.

Source: Applied Resource Integration, Ltd.

equivalent of \$21,000 on an annual basis. The operating cost per passenger ranges between \$1.68 and \$1.93 while the total cost per passenger is between \$3.60 and \$3.08. The major factor affecting the cost per passenger calculations is capital cost; at the low ridership estimates the capital cost per passenger is \$1.92, while at the high ridership estimates the capital cost per passenger is only \$1.15. This cost per passenger reduction more than compensates for the higher operating cost per passenger.

Equipping less than the complete fleet reduces total costs on an annual basis. Equipping the base period fleet reduces net operating costs by approximately 49 percent and capital costs 61 percent below that of a totally lift-equipped fleet, while equipping only one-third of the fleet reduces operating and capital costs 58 percent and 64 percent, respectively. Additionally, on both of the partially accessible systems the costs per passenger are lower than on the fully accessible system. The analysis of accessible transit services is sensitive to three areas. In the following discussion the assumptions involved in each of these areas and the impact of changes to these assumptions are examined utilizing the example of a fully accessible transit system.

The first area of sensitivity involves the additional time of delays realized by passengers. If actual delays encountered in a fully accessible system are only half of what is projected, the annual operating cost savings would be between \$2,900 and \$4,900, resulting in annual operating costs of approximately \$15,450 for the low ridership estimate and \$30,430 for the high ridership estimate. The difference in the cost per passenger numbers would be approximately \$0.27 on the low ridership estimate and \$0.26 on the high ridership estimate.

The second area of sensitivity concerns the division of ridership between peak and off-peak periods. If the ridership splits equally between the two periods, the effects on net operating cost would be small. For the fully accessible option, revenues would increase only \$470 to \$770 above current estimates with resulting decreases in net operating costs. The effect on costs per passenger would be approximately \$0.04.

The third area of sensitivity involves ridership decrease from reduced number of accessible buses. This factor, which is affected by the division of ridership between peak and off-peak periods, also affects the revenue side of the analysis. Using the case of a directly proportional reduction in ridership for equipping only the base period fleet, revenue would change by only \$70 for the low ridership estimate and \$110 for the high ridership estimate. The resulting net operating costs per passenger would increase less than \$0.01.

## **Demand Responsive System**

As with the analysis of accessible transit, ridership, costs, and revenue on demand responsive systems operating at different funding levels are estimated and compared. Unlike accessible transit, however, another major consideration is the effect on service levels of the system management in terms of public versus private operation.

<u>Ridership</u>: The lines in Figure 22 show the expected high and low range of latent travel demand for various fare levels, based on the latent travel demand of the chronic and institutionalized transportation handicapped as presented in Chapter VII. Implicit in the latent travel demand estimates is an assumption of an operating schedule of approximately 12 hours per day, seven days per week. These latent travel demand estimates provide the basic data for the estimation of ridership provided by demand responsive systems which are funded at various subsidy levels.

To determine ridership on a demand responsive system at a given subsidy level, a supply curve which represents the subsidy is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. Two factors determine the supply curve—productivity and hourly operating costs. For example, if productivity is decreased to 2.0 passengers per hour, per trip costs increase to \$6.38 resulting in about 20 percent less service provided at each level of subsidy. Conversely, if productivity is increased from 2.5 to 3.0 passengers per hour, the operating cost per passenger drops from \$5.10 to \$4.25 per trip resulting in approximately 20 percent more service provided at each fare for any of the subsidy levels. Changes in hourly operating costs similarly affect the ridership estimates. Both of these factors—productivity and operating costs—are discussed more fully in the cost analysis.

On a publicly operated demand responsive system in the Kenosha urbanized area, about 3,290 rides per year are expected at a subsidy level equivalent to 5 percent of the federal transit operating assistance (\$11,520); about 4,550 rides per year, at a proportional (based on transportation handicapped population) share of the transit operating deficit (\$16,400); about 5,980 rides per year, at 10 percent of the federal transit operating assistance (\$23,040); and about 10,590 rides per year, at 20 percent of the federal transit operating assistance (\$46,080). It is important to note that, although these ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of this alternative transportation system the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand.

#### Figure 22

## HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE KENOSHA URBANIZED AREA



Source: Applied Resource Integration, Ltd.

Costs: The basis for estimating operating costs is to use an hourly cost equal to that of the hourly cost of the existing public transit system in Kenosha which is \$12.75. Given this hourly operating cost as well as a productivity of 2.5 passengers per hour, supply curves were developed, as shown in Figure 23, to represent the number of trips that could be provided at different subsidy levels: 5 percent, 10 percent, and 20 percent of the federal transit operating assistance expected in FY 1977; and 3.56 percent of the anticipated FY 1977 total transit operating deficit, a percentage which compares to the percentage of the Kenosha urbanized area population that is estimated to be transportation handicapped. The FY 1977 anticipated federal operating assistance is about \$230,400. The anticipated total operating deficit is about \$460,800. Consequently, the subsidy levels are:

- \$11,520 or 5 percent of federal operating assistance
- \$23,040 or 10 percent of federal operating assistance
- \$46,080 or 20 percent of federal operating assistance
- \$16,400 or 3.56 percent of the transit operating deficit

Capital costs are then derived from the curves since the number of vehicles is based on the number of hours of service to be provided plus an allowance of 20 percent for spare vehicles. To meet the projected low level of demand at all subsidy levels, two vehicles will be needed. The second vehicle will serve as a spare.

The service hours which are implemented can have a significant effect upon the productivity of the system. Therefore, a third factor affecting costs is the number of hours during which service is being provided. It has been assumed that each vehicle operates on a schedule which can maintain a productivity level of 2.5 passenger trips per hour. Ideally, this type of service should be provided 12 hours each day of the week, or a total of 84 hours a week. Unfortunately, this service schedule is not economically feasible in Kenosha. Each level of subsidy will permit a limited schedule of service delivery. For example, at a subsidy level of \$23,040, 46 vehicle hours could be provided each week. This level of service could be provided quite adequately with only one vehicle. However, the hours of operation must be planned to allow the maximum amount of convenience to the potential user; and therefore, the supply curves will Figure 23



Source: Applied Resource Integration, Ltd.

remain appropriate only as long as the productivity of 2.5 passenger trips per hour can be maintained.

System Management, Public vs. Private: The hourly operating cost of a publicly operated demand responsive system in Kenosha is assumed to be the same as the hourly operating cost of the Kenosha transit system, about \$12.75 per hour. As shown in Chapter V, private chair car carriers have a similar operating cost of between \$10.50 and \$13.00 per hour. Although private operators may be able to lower the hourly operating cost of a demand responsive system slightly below the \$12.75 level used in the analysis, the resulting differences would not be significant. Therefore, for the purposes of the analysis of a demand responsive system in Kenosha, no difference between private and public operation of the system is assumed, and only one set of supply curves based upon a \$12.75 an hour operating cost has been developed as shown above in Figure 23.

Revenue: The revenue at any service level is equal to the fare times the estimated ridership. Again referring to Figure 23, and using the subsidy based on population percentage allocation (\$16,400), the fare should be set between \$1.10 and \$2.65 to match the demand curves. These fare levels would yield between \$4,400 and \$18,550 in revenue. For Kenosha the fare policy establishes a fare that recovers 40 percent of costs. Forty percent of the projected cost per passenger is \$1.92. With this fare level, however, little ridership is projected at the lower estimate of demand. Implementation of a demand responsive service at this fare level may not be feasible unless the demand is close to the high estimate. At an \$11,520 subsidy level, a fare between \$1.25 and \$3.00 should be charged in order to maximize service within the demand range. Again, it must be noted that, with a fare of \$3.00, annual patronage is expected to be very small. Therefore, for any subsidy level a fare must be established that allows ample level of service but which does not stifle demand. With a \$0.50 fare a system operating at either an \$11,520 or \$16,400 subsidy would be capacity constrained (not able to meet demand). Conversely, any fare above \$2.50 for the \$23,040 subsidized system and \$1.75 for a \$46,080 subsidized system would result in more service than is necessary.

Considering both the need to maximize service at a given subsidy level, and the need to minimize the risk of oversupplying service (to set a fare so high that demand becomes insignificant) the following fares are recommended at the various subsidy levels:

Subsidy Level	Fare
\$11,520	\$1.60
\$16,400	\$1.50
\$23,040	\$1.25
\$46,080	\$0.75

By setting the fares slightly above the low estimate of latent travel demand, the validity of the demand estimates can be assessed during the initial phases of system implementation and errors can be corrected. For example, if after allowing a sufficient time for ridership to reach its projected level, normally three months, demand is lower than anticipated, fares can be reduced to increase ridership to the capacity of the system. Conversely, if the system becomes capacity constrained, raising fares can increase operating revenues to enable more capacity to be added to the system through the addition of more service hours.

The supply and demand curves developed for this analysis are based on expected demand by transportation handicapped individuals. Another source of patronage, however, is agency-sponsored trips.

Agency-sponsored trips would be paid for by the agencies with no cost incurring to the passenger; however, the demand would also be determined by the agency. Experience in Delaware with a publicly operated, demand responsive service that provides service only to agencies indicates an estimated one-third of all agency trips made in the State are made aboard this service. In Kenosha County an estimated 9,300 agency trips are made annually. On the above basis, 3,100 agency trips might be made on any comprehensvie public demand responsive transportation system. This would be a significant level of additional ridership. The extent to which this additional ridership would be realized would depend on many factors including fare levels. As indicated in Chapter V, the survey of agency operations reported average agency trip costs in Kenosha of just over \$1.00 and varying in magnitude from less than \$1.00 to over \$1.70. Consequently, it would appear that the agency costs are below the range of the proposed fares which would make the demand responsive system a less attractive alternative than the present operations of the agencies. For purposes of this analysis, therefore, only individual trips at the stated fare levels are considered.

Summary of Demand Responsive System Analysis: Table 191 summarizes the cost of a publicly operated demand responsive system in the Kenosha urbanized area. Operating costs are based on the supply curves discussed earlier. Operating revenue is the product of the recommended fare and the number of persons that could be served as determined by the supply curve. (It is assumed that demand will meet the available supply at the recommended fare levels.) The number of vehicles represents the minimum number required to operate a system within a reasonable level of productivity.

Table 191 indicates that, at the recommended fare levels, the total trip costs for a publicly operated demand responsive system in the Kenosha urbanized area range between \$5.11 and \$5.93, depending upon the level of subsidy and projected ridership. Total costs vary from \$19,520 to \$54,080 depending upon the level of subsidy provided. Note that as ridership increases, fare levels decrease and operating cost per trip increases; but due to the lower capital costs per trip, total costs per trip decrease.

A publicly operated demand responsive system funded by 5 percent of the federal transit oper-

		Subs	idy Level	
Annual Data	5 Percent of Federal Transit Operating Assistance (\$11,520)	Proportional Share of Operating Deficit (\$16,400)	10 Percent of Federal Transit Operating Assistance (\$23,040)	20 Percent of Federal Transit Operating Assistance (\$46,080)
Ridership Number of Vehicles ^a Vehicle Hours Per Week	3,290 2 25	4,550 2 35	5,980 2 46	10,590 2 81
Operating Cost	\$16,780 \$ 5,260	\$23,230 \$ 6,830	\$30,520 \$  7,480	\$54,020 \$  7,940
Net Operating Cost	\$11,520	\$16,400	\$23,040	\$46,080
Capital Cost ^b	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000
Total Cost	\$19,520	\$24,400	\$31,040	\$54,080
Per Trip Measures Fare	\$1.60	\$1.50	\$1.25	\$0.75
Net Operating Cost	\$3.50 \$2.43	\$3.60 \$1.76	\$3.85 \$1.34	\$4.35 \$0.76
Total Cost	\$5.93	\$5.36	\$5.19	\$5.11

## OPERATING DATA FOR A PUBLICLY OPERATED DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE KENOSHA URBANIZED AREA

^aIncludes one vehicle as a spare.

^bAssumes vehicle cost of \$20,000 and a five-year vehicle life.

Source: Applied Resource Integration, Ltd.

ating assistance, or \$11,520, could provide for about 3,290 rides per year at a fare cost to the transportation handicapped of about \$1.60 per one-way trip; such a system funded at a proportional level of the operating deficit, or \$16,400, could provide for about 4,550 rides per year at a fare cost of about \$1.50 per one-way trip; the system funded at 10 percent of the operating assistance, or \$23,040, could provide for about 5,980 rides per year at a fare cost of \$1.25 per one-way trip; and the system funded at 20 percent of the operating assistance, or \$46,080, could provide for about 10,590 rides per year at a fare cost of \$0.75 per one-way trip.

## User-Side Subsidy

Both the user-side subsidy program and the demand responsive system, as discussed above, provide a type of demand responsive service. The primary difference between the two systems is in terms of resource allocation; instead of directly subsidizing a particular provider of transportation, the eligible users are provided a subsidy for their transportation. Although a public entity would have to be designated to administer the user-side subsidy program, the actual services would be operated by the private sector which would presumably respond to increased consumer pressures with new or modified services. It is assumed in the analysis that 80 percent of the trips made under a user-side subsidy program would be made by taxicab and 20 percent would be made in chair car carriers. Presented below are the ridership, cost, and revenue estimates for a user-side subsidy program in the Kenosha urbanized area.

<u>Ridership</u>: The latent travel demand for a user-side subsidy program and a demand responsive system are considered the same for this analysis. Figure 24 shows the latent travel demand curves developed from data for demand responsive systems presented in Chapter VII. These latent travel demand estimates provide the basic data for estimating ridership by user-side subsidy programs which are funded at various subsidy levels. Although user-side subsidy and demand responsive systems utilize the same base data in these latent travel demand estimates, differences between the systems in average per trip costs result in different estimates of ridership on the two systems at identical funding levels.

To determine ridership on a user-side subsidy program at a given subsidy level, a supply curve which is representative of the subsidy level is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. In the analysis of the user-side subsidy program, the changes in fare levels actually represent changes in the proportion of the average zone fare which the user will have to pay per trip.

Through a user-side subsidy program in Kenosha about 6,230 rides per year are expected to be provided with a \$11,520 subsidy; about 7,420 rides with a \$16,400 subsidy; about 9,640 rides with a \$23,040 subsidy; and about 17,320 rides with a \$46,080 subsidy. It is important to note that although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of the alternative systems the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand (see Figure 25).

<u>Costs</u>: The total cost of a user-side subsidy program is the subsidy per trip times the number of trips plus administrative costs of 20 cents per trip. Costs per trip were determined on the basis of existing taxi rates in Kenosha, which range from \$1.00 to \$2.50 on a zonal basis as shown on Map 3. No chair car service currently exists. Therefore, Milwaukee rates were used—\$5.00 for the first 30 blocks and \$0.60 for each additional mile.

#### Figure 24





Source: Applied Resource Integration, Ltd.

#### Figure 25

## SUPPLY AND DEMAND CURVES FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE KENOSHA URBANIZED AREA



Source: Applied Resource Integration, Ltd.

## Map 3





Taxicab firms operating in the City of Kenosha use a zone fare system to charge their customers. The City is divided into four separate zones that ring outward from the central business district. As a person travels by cab through each successive zone, the fare increases from a minimum of \$1.00 for a trip wholly within one zone to \$2.50 for a trip which passes through three zones and ends in the fourth zone. Trips beyond the City limits or fourth zone start at \$3.00 and are based on miles of travel.

Although no data were collected on taxi travel by using a three-mile average trip length and by analyzing the zone structure, an average taxi fare of \$1.80 was assumed, resulting in total trip costs of \$2.36 (\$1.80 fare plus \$0.36 tip plus \$0.20 administrative charge). For chair car services a \$5.20 cost was assumed (three-mile average trip length). As previously stated, supply curves showing the amount of service that could be provided at a given subsidy level are presented in Figure 25. It is of interest to note that if the low ridership estimates are correct, free fare service can be operated at a subsidy level below \$16,000.

Revenue: The fare level in a user-side subsidy program usually is based on a percent of the user fare. In Figure 25, the vertical lines represent 15 percent, 25 percent, and 40 percent of total program costs recovered by the user payment of a portion of the actual fare. It can be seen that, in terms of maximizing demand, an approximate 15 percent recovery rate is appropriate for the highest subsidy level. An 18 percent recovery rate is reasonable for the \$23,040 subsidy level, while a 25 percent recovery rate is appropriate for the \$16,400 level. At the lowest subsidy level an appropriate recovery rate would be about 37 percent.

Summary of User-Side Subsidy Program Analysis: Table 192 summarizes the operating data for a userside subsidy program. As shown at the \$11,520 subsidy level, 6,230 trips would be made annually with a recovery rate of 37 percent and an average fare of about \$1.08. The \$16,400 and \$23,040 subsidy levels produce similar results with more ridership and lower fares. At the highest subsidy level using a 9 percent recovery rate the program would cost \$50,750 a year with \$4,670 of revenue generated from 17,320 trips at an average fare of approximately \$0.27.

Accessible Transit and Demand Responsive Services This alternative system combines two of the operating concepts already discussed and assumes the two services would operate in a complementary fashion. Those persons living within two blocks of transit who can use accessible transit are expected to do so, while those who live farther

## Table 192

Annual Data	5 Percent of	Proportional	10 Percent of	20 Percent of
	Federal Transit	Share of	Federal Transit	Federal Transit
	Operating	Operating	Operating	Operating
	Assistance	Deficit	Assistance	Assistance
	(\$11,520)	(\$16,400)	(\$23,040)	(\$46,080)
Fare Policy	37 percent	25 percent	18 percent	9 percent
Ridership	4,980	5,940	7,710	13,860
Taxi Trips	1,250	1,480	1,930	3,460
Total Ridership	6,230	7,420	9,640	17,320
Operating Cost	\$18,250	\$21,740	\$28,250	\$50,750
	\$ 6,730	\$ 5,340	\$ 5,210	\$ 4,670
Net Operating Cost	\$11,520	\$16,400	\$23,040	\$46,080
Operating Cost Per Trip	\$2.93	\$2.93	\$2.93	\$2.93
Operating Revenue Per Trip	\$1.08	\$0.72	\$0.54	\$0.27
Net Operating Cost Per Trip	\$1.85	\$2.21	\$2.39	\$2.66

OPERATING DATA FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE KENOSHA URBANIZED AREA

Source: Applied Resource Integration, Ltd.

than two blocks from transit or who live within two blocks of transit but cannot physically use the accessible buses would have demand responsive service available.

As shown in Chapter III, the number of transportation handicapped in the Kenosha urbanized area who live more than two blocks from a transit route represent only 9 percent of the total transportation handicapped population in this urbanized area. Ridership estimates derived from the demand curves reduced to reflect this small proportion of the population indicate that not more than 13 trips per day would be made on a supplemental free fare demand responsive system at the high estimate of demand; the low estimate does not exceed four trips per day. Due to this low level of demand, coupled with the capital expenditures required to initiate the system, no supplementary form of demand responsive service is recommended if accessible transit is provided.

## Accessible Transit and User-Side Subsidy

This alternative system combines two of the operating concepts already discussed and assumes that the two services operate in a complementary fashion. Those persons living within two blocks of transit who can physically use accessible transit are expected to do so while those who live farther than two blocks from transit or who live within two blocks of transit but cannot use accessible buses would have a user-side subsidy program available. Presented below are ridership, cost, and revenue estimates for this combination of alternative transportation systems.

<u>Ridership</u>: Since the demand for a user-side subsidy program is assumed to be the same as the demand responsive service, the projected ridership level is very low as discussed above. However, a user-side subsidy program is capable of being economically implemented with a low level of demand since there is no risk of a major capital loss. Average ridership for a 15 percent recovery rate is expected to be nine trips per day or 3,280 trips per year. The influence of combination services on accessible transit operations is negligible and no increased demand is forecasted.

<u>Costs</u>: A user-side subsidy program operating in the areas more than a two-block distance from transit is expected to have passengers riding a shorter average distance, although due to the zone system the average fare would not decrease. The total costs of a trip of this length made by taxi would still be \$2.36 which includes both a tip allowance

and administrative costs. The same trip made via a chair car service would have a total cost of \$5.20.

Although chair car services are not now provided in Kenosha, such services are considered in the revenue and cost calculations. It is questionable whether such a low demand level would induce the initiation of chair car services. However, another alternative (e.g. paying agencies to transport individuals) could be considered in the event that no service was instituted.

No additional costs are associated with the accessible transit portion of this combination. Therefore, total costs for an annual ridership of 3,280 are \$9,600.

<u>Revenue:</u> Because demand estimates are so low, a high fare would preclude the provision of services and, therefore, a recovery rate of only 15 percent is recommended. At this recovery rate the expected revenue is \$1,440 per year resulting in a net operating loss of \$8,160 per year, which is approximately 4 percent of 1977 federal operating assistance.

Summary of Accessible Transit and User-Side Subsidy Analysis: The low level of latent demand for user-side subsidy services, when operating in conjunction with accessible transit, restricts the effectiveness of supply and demand curves as used under other options. Therefore, the user-side subsidy program has been analyzed in terms of serving a certain minimum number of persons on a daily basis. The result is a combination service that would add about \$8,200 of annual net costs to the operation of any of the three described accessible transit options.

## Coordinated Agency Transportation

Since current organizational and funding mechanisms for agency transportation services are primarily county-oriented, the following discussion concerns only the feasibility of coordinated agency transportation within Kenosha County. The data utilized in the analysis are primarily the product of the inventory of service providers. The findings of this inventory are reported in greater detail in Chapter V of this text.

In Kenosha County there are only three agency transportation programs. These programs are run by the Department of Social Services, Cooperative Education Service Agency (CESA), and the Kenosha Achievement Center (KAC) (see Table 193). The two latter agencies which deal

## KENOSHA COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

							Average			Cost	Cost
			Volunteer	Monthly	Number and	Daily	Vehicle	Productivity		Per	Per
	Service	Type of	or Paid	One-Way	Type of	Operating	Utilization	(trips per	Monthly	Vehicle	Passenger
Agency ^a	Area	Service ^b	Drivers	Trips	Vehicles	Hours	(in percent)	vehicle hour)	Cost	Hour	Trip
Kenosha County Department of Social Services	Kenosha County	DR	Volunteers	600	Personal Vehicles	8:00 A.M 5:00 P.M. Monday-Friday	N/A	N/A	N/A	N/A	N/A
Cooperative Education Service Agency No. 18	All School Districts W. Kenosha County	RD	Paid Drivers	1,100	1 Van 1 Minibus	9:00 A.M 2:45 P.M. Monday-Friday	50	N/A	\$1,888.00	\$16.56	N/A
Kenosha Achievement Center	Kenosha County and Northern part of Lake County, Illinois	DR, FR, FS, RD	Paid Drivers	6,500	6 Buses 3 Vans	7:00 A.M 5:30 P.M. Monday-Friday As Needed	42	10.86	\$6,979.00	\$ 9.97	\$0.92

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of service: DR - demand responsive.

FR - fixed route.

RD - route deviation.

FS - fixed schedule.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

with the handicapped appear to afford the only likely area for coordination. The reported hours of CESA (9:00 A.M.-2:45 P.M.) are within those of KAC which are 7:00 A.M.-5:30 P.M. The possibilities of cooperation should, therefore, be explored although substantial savings are unlikely. Since the Department of Social Services uses volunteers, it is unlikely that any cost benefit can be accorded them by using vehicles from other programs unless special features such as lifts are required by the client.

<u>Combination of Services</u>: Coordinated agency transportation can be developed in concert with an accessible transit system, demand responsive service, user-side subsidy program, or a combination of these three basic systems. Each basic system alternative is briefly analyzed in combination with coordinated agency transportation as indicated in the following discussion:

<u>Coordinated Agency Transportation and Accessible Transit Service:</u> This is a viable alternative in the Kenosha urbanized area. Coordinated agency transportation could operate in combination with an accessible transit system. However, since the two systems would operate separately, little interaction is expected. The ridership, costs, and revenues of the combined operation would be the sum of the two individual alternatives.

<u>Coordinated Agency Transportation and Demand</u> <u>Responsive System:</u> Since coordinated agency transportation is feasible in Kenosha, although the magnitude of cost savings or increased service appears small and a demand responsive system also is feasible, these two services could operate either as separate entities or as integrated systems. However, as shown earlier little financial incentive would exist for agencies to use a demand responsive service since their costs are currently below or close to the proposed fares for demand responsive transportation. Therefore, the two systems could be expected to operate separately of one another.

<u>Coordinated Agency Transportation and User-Side</u> <u>Subsidy Program</u>: As with the above alternative, a coordinated agency transportation program would have costs lower or equal to those of a userside subsidy program and the two alternatives would operate separately.

Coordinated Agency Transportation, Accessible Transit Systems, and Demand Responsive Service: This alternative involves coordinated agency transportation combined with an integrated accessible transit and demand responsive service. Since an integrated accessible transit and demand responsive service is not a viable option in Kenosha, this option is not feasible.

Coordinated Agency Transportation, Accessible Transit System, and User-Side Subsidy Program: This alternative involves coordinated agency transportation combined with an integrated accessible transit and user-side subsidy program. For the area within two blocks of transit, this alternative would be the same as accessible transit and coordinated agency transportation, while, in the area outside two blocks of transit, the option would be the same as user-side subsidy program and coordinated agency services. Since coordinated transportation is to operate separately from either a user-side subsidy program or accessible transit, it would also operate separately from a combined accessible transit and user-side subsidy program. Consequently, the combination would have the joint characteristics of a coordinated agency transportation system and a combined accessible transit and user-side subsidy program.

## EVALUATION OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE KENOSHA URBANIZED AREA

In the preceding discussion, five basic alternative transportation systems are analyzed along with coordinated agency transportation service operating alone or in combination with the alternative systems. Of the five basic alternative systems, accessible transit in combination with demand responsive service is rejected due to the low level of demand for a demand responsive system under this option. Although each of the remaining four alternative systems may be combined with coordinated agency services, it has been shown that coordinated agency transportation should be implemented separately. This component does not, therefore, affect the evaluation of the four primary alternative transportation systems. Moreover, since coordinated agency transportation involves no increased costs but only more efficient operations, it is recommended for implementation regardless of which of the remaining systems is finally selected. in implementation. Any other alternative under consideration, if implemented, should be accompanied by a complementary coordinated agency transportation service.

For each of the alternatives, a variety of options has been analyzed in terms of various ridership estimates and differing subsidy levels. In order to compare the alternatives, a common basis has been established through the use of two scenairos. The first scenario utilizes levels of service comparable with those suggested by UMTA as a frame of reference. The second scenario measures the alternative systems against a higher level of service based on subsidy levels that are the same proportion of the total transportation subsidy as the transportation handicapped are of the general population. (This subsidy level represents a parity position but not necessarily a maximum level.)

Other scenarios could have been considered, including those that could provide maximum service. For example, the high latent demand estimate for demand responsive service or a userside subsidy program at zero fare is approximately 53,000 trips. To serve this volume of ridership would annually cost between \$233,700 and \$254,000. The analysis of alternatives was not conducted for these high subsidy levels because it appears unlikely that the financial resources will be available for these funding levels in the short range period under consideration.

## Scenairo 1: UMTA-Suggested Guidelines

The UMTA-suggested guidelines for accessible transit service is one-half of the operating fleet. This guideline is comparable to an accessible base period fleet. Another suggested guideline is the expenditure of funds for specialized services equal to 5 percent of federal operating assistance. This guideline is used for the demand responsive and user-side subsidy programs.

In this analysis the low level of ridership is used for the accessible transit option because this is the level considered to best reflect what may actually occur. For demand responsive and userside subsidy programs an operating deficit is assumed. For the combination of a user-side subsidy program and accessible transit, one-third of the peak period fleet is assumed to be accessible, and operating subsidies for the user-side subsidy program are 1.25 percent and 2.5 percent of federal operating assistance.

Table 194 shows the extent to which each of the alternatives meets the objectives and standards. All the alternatives except a base period accessible fleet alone meet or exceed the minimum level of latent travel demand for the given mode type. The second, third, and fourth standards under the first objectives are assumed to be met by all alternative systems through actual operations. Flexibility is measured in capital investment which could restrict future decisions. In these terms, an accessible fleet is inflexible, while a user-side subsidy program is the most flexible. An accessible transit system or partially accessible transit system takes advantage of existing routes, schedules, and operating procedures of the transit service, but requires new equipment or a retrofit of existing equipment. All alternatives incorporate practical use of other providers in the design of services, even though an accessible transit system has no need for other providers. All alternatives also are assumed to provide the minimum levels of service. In terms of the standard for the second objective, all alternatives are assumed to comply with federal regulations.

For the third objective the subsidy per ride and total cost are shown for each alternative. These are further discussed in following sections. Although the objectives and standards do not specifically address fares aboard accessible transit, it should be noted that, due to the higher per-trip costs of a transportation handicapped person, the transit fare will recover less of the operating cost than is recovered for a trip made by an able-bodied passenger. Fares for the demand responsive service also are lower than the standard. A user-side subsidy program, however, has fares at the level determined by the cost recovery rate. This level also is compatible with fares determined by supply and demand curves, for the combination services fares are below the cost recovery rate level.

Table 195 presents a detailed quantitative cost analysis of the five basic alternatives under consideration. In terms of total costs the accessible transit/user-side subsidy program is most expensive. The least expensive alternative is the user-side subsidy alternative. However, from a perspective of the state and local subsidy required to support a service, the user-side subsidy program is the second most expensive. The reason for this is that it is not clear whether a user-side subsidy program qualifies for federal operating assistance. From a local perspective a base period accessible transit system in terms of costs is only \$1,000 less than a demand responsive service; however, the cost per trip is 30 percent of the cost per trip on a demand responsive system.

## Scenario 2: Proportional Level of Subsidy

The alternative transportation systems considered against the framework of a proportional level of subsidy are a fully accessible transit fleet, a user-side subsidy system operating at a propor-

## COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR UMTA-SUGGESTED LEVELS OF SERVICE FOR THE KENOSHA URBANIZED AREA

Objectives and Standards	Base Period Accessible Fleet	Demand Responsive System	User-Side Subsidy Program	User-Side Subsidy Program in Combination with a One-Third Accessible Fleet
Objective No. 1				
Standards				
1. Most nearly meet existing and	Serves			
latent travel demand ^e 2. Maximize comfort, convenience,	90 percent	Met	Met	Met
and security ^b	Met	Met	Met	Met
being offered ^b	Met	Met	Met	Met
4. Serve all trip purposes ^b	Met	Met	Met	Met
5. Maintain flexibility in design		Fairly	Very	Fairly
and operation	Inflexible ^C	Flexible ^d	Flexible ^e	Flexibled
6. Utilize existing public mass				Partially
transit services	Met	Not Met	Not Met	Met
7. Utilize other public and private				
providers where practical	Met	Met	Met	Met
8. Provide recommended levels of service ^b	Met	Met	Met	Met
Objective No. 2				
Standard				
1 Conform to federal requirements for				
vehicle design and operation and fixed				
facilities design and construction ^b	Met	Met	Met	Met
Objective No. 3				
Standards				
1. Minimize subsidy per ride	\$1,79	\$5.93	\$1.85	\$2.47
2. Minimize total operating and				
capital costs	\$17,670	\$19,520	\$11,520	\$23,920
3. Determine fare in the transit				
service area from recovery rate	Lower	Lower		Lower
but do not exceed \$2.50	Fare'	Fare'	Met	⊢are'
4. Determine fare in areas not				
served by transit on average			.	
per person trip costs but	Lower	Lower	Lower	Lower
do not exceed \$2.50	Fare'	Fare'	⊢are'	Fare'

^a The ability to serve the low estimate of latent demand is measured by this standard.

^bAlternative design does not prohibit meeting this standard, and standard is assumed to be met during actual operation.

^c High capital investment limits future flexibility.

^d Capital investment limits flexibility but not to a large extent.

^e Low capital investment allows flexibility.

^f Fare levels result in cost recovery rates that are lower than those of existing transit service.

Source: Applied Resource Integration, Ltd.

# COST ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS BY UMTA SUGGESTED LEVELS OF SERVICE FOR THE KENOSHA URBANIZED AREA

		7		i
				User-Side Subsidy
				Program in
			1	Combination
	Baco	Domand	Lloor Side	
	Dase	Demanu	User-Side	with a One- I hird
	Period	Responsive	Subsidy	Accessible Peak
Annual Data	Fleet	System	Program	Period Fleet
Ridership	9,850	3,290	6,230	9,670
Operating Cost	\$10 720	\$16 780	\$18.250	\$19,220
Operating Revenue	\$ 1 200	¢ 5 260	¢ c 720	\$18,220
	\$ 1,300	\$ 5,200	\$ 6,730	\$ 1,800
Net Operating Cost	\$ 9,420	\$11,520	\$11,520	\$16,420
Capital Cost	\$ 8,250	\$ 8,000		\$ 7,500
Total Cost	\$17,670	\$19,520	\$11,520	\$23,920
Net Operating Cost Per Trip	90.02	\$2.50	¢1 05	¢1.70
Capital Cost Per Trip	¢0.00	φ <u></u> σ.50	φ1.00	\$1.70
	<del>۵</del> 0.63			\$0.77
Total Cost Per Trip	\$1.79	\$5.93	\$1.85	\$2.47
Potential Federal Funding				
Operating.	\$ 4 710	\$ 5 750	а	¢ 2 960
Canital		\$ 5,750 \$ 6,600		\$ 3,000
	\$ 0,000	\$ 0,000		\$ 6,000
Required Local (state, county,				
and/or municipality) Funding				
Operating.	\$ 4 7 10	\$ 5 750	\$11 520	\$12 560
Canital	\$ 1,650	¢ 3,750 ¢ 1,650	φ11,520	\$12,500
	\$ 1,050	\$ 1,000		\$ 1,500
Total	\$ 6,360	\$ 7,400	\$11,520	\$14,060
Local Funding Per Trip				
Operating.	\$0.48	\$1 74	\$1.85	\$1.20
Capital.	\$0.17	\$0 E0	φ1.00	φ1.23 ¢0.16
		φ0,50		φυ. 10 
l otal	\$0.65	\$2.24	\$1.85	\$1.45

^aThe ability to secure federal operating assistance for a user-side subsidy program is uncertain.

Source: Applied Resource Integration, Ltd.

tional subsidy level, and a base period accessible fleet operating in combination with a user-side subsidy program.

Table 196 presents these alternatives and their ability to meet the objectives and standards. As shown, all the alternatives meet the first four standards under the first objective, have different levels of flexibility, vary in terms of involving the private sector, and meet all remaining standards under the first and second objectives. Similarly to the previous evaluation, the subsidy per ride and total costs are shown for each alternative. The suggested fare levels for the alternatives also are below the recommended standard.

Table 197 presents a detailed cost analysis of the alternative systems being evaluated in terms of this

## COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR IMPROVED LEVELS OF SERVICE FOR THE KENOSHA URBANIZED AREA

Objectives and Standards	Accessible Transit System	Demand Responsive System	User-Side Subsidy Program	User-Side Subsidy Program in Combination with a Base Period Accessible Fleet
Objective No. 1				
Standards				
<ol> <li>Most nearly meet existing and latent travel demand^a</li> <li>Maximize comfort, convenience.</li> </ol>	Met	Met	Met	Met
and security ^b 3 Maximize knowledge of the	Met	Met	Met	Met
services being offered ^b	Met	Met	Met	Met
<ol> <li>Serve all trip purposes</li> <li>Maintain flexibility in design</li> </ol>	Met	Met Fairlv	Met Verv	Met Fairlv
and operation	Inflexible ^C	Flexible ^d	Flexible ^e	Flexible ^d
transit services	Met	Not Met	Not Met	Met
7. Utilize other public and private	Mot	Mat	Mot	Mot
8. Provide recommended levels of service ^b	Met	Met	Met	Met
Objective No. 2				
Standard				
<ol> <li>Conform to federal requirements for vehicle design and operation and fixed facilities design and construction^b</li> </ol>	Met	Met	Met	Met
Objective No. 3				
Standards				
1. Minimize subsidy per ride	\$3.13	\$5.36	\$2.93	\$2.01
<ol> <li>Minimize total operating and capital costs</li> </ol>	\$34,350	\$24,400	\$16,400	\$26,370
3. Determine fare in the transit				
service area from recovery rate but do not exceed \$2.50	Lower Fare ^f	⊾ower Fare ^f	Lower Fare ^f	Lower Fare ^f
4. Determine fare in areas not				
served by transit on average per person trip costs but	Lower	Lower	Lower	Lower
do not exceed \$2.50	Fare ^f	Fare ^f	Fare ^f	Fare ^f

^a The ability to serve the low estimate of latent demand is measured by this standard.

^bAlternative design does not prohibit meeting this standard, and standard is assumed to be met in actual operation.

^C High capital investment limits future flexibility.

^d Capital investment limits flexibility but not to a large extent.

^e Low capital investment allows flexibility.

^f Fare levels result in cost recovery rates that are lower than those of existing transit service.

Source: Applied Resource Integration, Ltd.

COST ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS FOR FULLY ACCESSIBLE TRANSIT FLEE	Т
AND PROPORTIONATE SUBSIDY LEVELS FOR THE KENOSHA URBANIZED AREA	

	Fully Accessible	Demand Responsive	User-Side Subsidy	User-Side Subsidy Program in Combination with a Base Period
Annual Data	Fleet	System	Program	Accessible Fleet
Ridership	10,950	4,550	7,420	13,130
Operating Cost	\$19,800 \$1,450	\$23,230 \$_6,830	\$21,740 \$5,340	\$20,320 \$ 2,200
Net Operating Cost	\$18,350	\$16,400	\$16,400	\$18,120
Capital Cost	\$21,000	\$ 8,000		\$ 8,250
Total Cost	\$39,350	\$24,400	\$16,400	\$26,370
Net Operating Cost Per Trip Capital Cost Per Trip	\$1.68 \$1.92	\$3.60 \$.176	\$2.21 	\$1.38 \$0.63
Total Cost Per Trip	\$3.60	\$5.36	\$2.21	\$2.01
Potential Federal Funding Operating Capital	\$ 9,175 \$16,800	\$ 8,200 \$ 6,400	_a 	\$ 4,710 \$ 6,600
Required Local (state, county, and/or municipality) Funding Operating Capital	\$ 9,175 \$ 4,200	\$ 8,200 \$ 1,600	\$16,400 	\$13,410 \$1,650
Total	\$13,375	\$ 9,800	\$16,400	\$15,060
Local Funding Per Trip Operating Capital	\$0.84 \$0.38	\$1.80 \$0.35	\$2.21 	\$1.02 \$0.12
Total	\$1.22	\$2.15	\$2.21	\$1.14

^aThe ability to secure federal operating assistance for a user-side subsidy program is uncertain.

Source: Applied Resource Integration, Ltd.

second scenario. An accessible transit system and a combination accessible transit system and userside subsidy program have higher total annual costs than the other options while a demand responsive service alone and a user-side subsidy program alone have the lowest total costs. The per trip cost for accessible transit also is below that of other alternatives. Unlike the lower subsidy level described in the first scenario, a demand responsive system, rather than accessible transit, requires the lowest level of local funding per year.

## Systems Comparison and Recommendations

With the emphasis on per ride costs, the total and local values for the four viable alternatives considered are shown in Table 198. Given the likely variability of the values obtained, it is evident that, on the basis of total per trip costs, the combination

	Cost Per Ride (in dollars)			
	Total Local			ocal
	Scenario	Scenario	Scenario	Scenario
Alternative Transportation System	1	2	1	2
Accessible Transit Elect	1 70	3 60	0.65	1 22
Demand Responsive System	5.93	5.36	2.24	2.15
User-Side Subsidy	1.85	2.21	1.85	2.21
Accessible Transit plus User-Side Subsidy	2.47	2.01	1.45	1.14

#### COMPARISON OF PER RIDE COSTS FOR THE KENOSHA URBANIZED AREA

Source: Applied Resource Integration, Ltd.

accessible transit and user-side subsidy is the best candidate system. If local funding considerations are paramount, the accessible transit and user-side subsidy combination is acceptable at the higher funding level while accessible transit alone is best at the lower funding level.

In constructing a recommended alternative transportation system, the initial step in formulation of the alternative is recommendation that the base period fleet including reserve vehicles should be made accessible. This would result in a total of 11 accessible buses. For immediate implementation this would require retrofitting new buses since the existing fleet is not expected to be replaced for some years. The choice beyond this point appears to be between the following alternatives:

- 1) not implementing any other services beyond coordinated agency transportation already recommended;
- 2) supplementing the fixed routes with a userside subsidy program; and
- 3) making the whole fleet eventually accessible at significantly higher total per ride cost and somewhat higher local cost. (This will depend largely on the ridership realized.)

In view of the fact that a new generation of more accessible transit buses can now be anticipated after September 30, 1979 (assuming no technical delays in the program), it would appear that alternative 3 should not be considered at this time but preserved as a later option. The second step in the formulation of the alternative is recommendation that since accessible transit does not provide mobility opportunities to all transportation handicapped, a user-side subsidy system be implemented for those transportation handicapped living more than two blocks from a transit route and for those transportation handicapped physically unable to use accessible transit services. Because of the innovative nature of this program, it is further recommended that immediate negotiations be started with the Urban Mass Transportation Administration to clarify the qualifications through which such a program can obtain matching support dollars at the federal level and the possibilities of obtaining Services and Methods Demonstration (Section 6) monies for the initial implementation, support, and evaluation of the program.

The third step in the formulation of the alternative plan involves recognition that coordinated agency transportation is feasible in Kenosha although the potential for increased efficiency is limited. A coordinated agency transportation program will, however, provide a means to serve agency transportation needs better, and it is recommended that a coordination effort be initiated immediately.

Therefore, the final alternative plan recommendations result in a comprehensive system for serving the transportation handicapped in the Kenosha urbanized area. An accessible transit system would provide transit service for the transportation handicapped within two blocks of transit. For other areas within the urbanized area, a user-side subsidy program would serve the residents. Finally, coordinated agency transportation would improve the efficiency and effectiveness of existing agency services. In summary, the recommended alternative for the Kenosha urbanized area consists of the combination of accessible transit, user-side subsidy, and coordinated agency transportation.

## ANALYSIS OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE RURAL OR NONURBANIZED AREAS

As indicated in the preliminary sections of this chapter, only two of the five alternative transportation systems could be instituted in the rural or nonurbanized areas of the Region: namely, a userside subsidy program or a demand responsive system. In accordance with the analysis approach described in the beginning of this chapter, these two systems are examined for ridership, costs, and revenue. In addition, the supplemental service which could be provided by coordinated agency transportation is analyzed in combination with each of these alternative systems. It should be noted that the discussion of coordinated agency transportation applies to Ozaukee, Washington, Waukesha, and Walworth Counties only. Discussions of coordinated agency transportation which would apply to the nonurbanized areas of Racine and Kenosha Counties have been incorporated in the preceding discussions of the Kenosha and Racine urbanized areas. This analysis approach was deemed to be the most appropriate since current organizational and funding mechanisms for agency providers are primarily county-oriented.

## Demand Responsive System

In the following discussion, ridership, costs, and revenues on a demand responsive system operating at differing funding levels are estimated and compared. The estimates and discussion apply to the total of the nonurbanized areas of the following counties: Kenosha, Ozaukee, Racine, Walworth, Washington, and Waukesha.

<u>Ridership</u>: The lines in Figure 26 show the expected high and low range of latent travel demand for various fare levels, based on the latent travel demand of the chronic and institutionalized transportation handicapped as presented in Chapter VII. Implicit in the latent travel demand estimates is an assumption of an operating schedule of approximately 12 hours per day, seven days per week. These latent travel demand estimates provide the basic data for estimation of ridership provided by demand responsive systems which are funded at various subsidy levels. To determine ridership on a demand responsive system at a given subsidy level, a supply curve which is representative of the subsidy is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level.

Two factors determine the supply curve—productivity and hourly operating costs. If productivity was decreased from 2.5 to 2.0 passengers per hour, the operating cost per passenger would increase from \$4.80 to \$6.00, resulting in approximately 20 percent less service being provided at each fare for any of the subsidy levels. Conversely, if productivity increased to 3.0 passengers per hour, the operating cost per passenger would drop to \$4.00 and 20 percent more service could be provided at each fare for the respective subsidy levels. Changes

#### Figure 26

## HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A DEMAND RESPONSIVE SYSTEM FOR THE TRANSPORTATION HANDICAPPED IN THE NONURBANIZED AREAS OF THE REGION



Source: Applied Resource Integration, Ltd.

in hourly operating costs similarly affect the ridership estimates. Both of these factors—productivity and operating costs—are discussed more fully in the cost analysis.

On a publicly operated demand responsive system in the rural areas, about 13,330 rides per year are expected at a subsidy level of about \$44,000; about 18,650 rides at about \$69,000; about 23,160 rides at about \$88,000; and about 38,680 rides at about \$176,000.

Costs: Given an hourly operating cost of \$12.00 per hour¹¹ as well as a productivity of 2.5 passengers per hour, supply curves were developed for various levels of possible subsidy as shown in Figure 27. Subsidy levels were calculated to represent funding levels similar (on a per capita basis) to levels used in analysis of the Kenosha and Racine urbanized areas. However, where the Kenosha and Racine funding levels were related to the amount of Section 5 monies available to them, no such attempt was made to relate the amount of subsidy to a source of funds in the nonurbanized areas. A discussion of possible funding sources and the distribution of costs among the different counties would be found in the next chapter. The separate subsidy levels which are used in the analysis of this alternative system are \$44,000, \$69,000, \$88,000, and \$176,000. Capital costs are then derived from the curves since the number of vehicles is based on the amount of service to be provided plus an allowance for spare vehicles. For example, if the lower estimate of demand were accurate, then the \$176,000 subsidy level would allow five vehicles (four plus one spare); two vehicles (one spare) would also be needed at the lowest subsidy level (\$44,000) to provide 84 hours of service a week. To calculate capital costs, an average vehicle cost of \$20,000 and a vehicle life of five years are assumed.

The service hours which are implemented can have a significant effect upon the productivity of the system. Thus, another factor affecting costs is the number of hours during which service is provided. It has been assumed that each vehicle operated 84 hours per week, 12 hours per day, seven days per week. Eighty-four hours of service

#### Figure 27



Source: Applied Resource Integration, Ltd.

are considered a reasonable base for consideration; but it does not necessarily mean that service will be provided 84 hours per week by each vehicle. For example, at a subsidy level that only allowed 100 hours of service, two vehicles could be operated five days per week at 10 hours per day. From an implementation point of view, however, it may be preferable to operate two vehicles nine hours per day for five days per week (Monday through Friday) and one vehicle for 10 hours on Saturday (again a total of 100 hours of service). Appropriate service hours must be selected to ensure the minimum productivity of 2.5 trips per hour. In terms of the supply curve no distinction need be made as long as this productivity level is maintained. Because the nonurbanized area is large, service hours may have to be implemented for specific sections. For example, service can be scheduled for three days a week-perhaps Monday,

¹¹ The hourly operating cost was estimated on the basis of costs of demand responsive systems in other locations plus the operating costs of transit and paratransit services in southeastern Wisconsin.

Wednesday, and Friday in the Ozaukee, Washington, and Waukesha nonurbanized areas—and three alternate days—Tuesday, Thursday, and Saturday—in the Kenosha, Racine, and Walworth nonurbanized areas. In addition, vehicles can be assigned and service can be limited to specified counties or districts.

Revenue: The revenue for any of the subsidy levels is the charge times the estimated ridership at that fare. Referring to Figure 27 and using the subsidy of \$69,000, it is shown that the fare should be set between \$0.80 and \$2.25 (the intersection of the low and high demand curves with the supply curve). A fare within this fare level range would maximize ridership at the given level of subsidy. At a \$176,000 subsidy level a fare between \$0.10 and \$1.50 should be charged in order to maximize service within the demand range. It must be noted, however, that with a fare of \$1.50, if the low demand estimates are correct, the service would be operating much below its capacity. For any subsidy level a fare must be established that allows ample level of service but which does not stifle demand. With a \$0.10 fare, a system operating at any of the subsidy levels would be capacity constrained (not able to meet demand). Conversely, any fare above \$1.50 for the \$176,000 subsidized system and \$2.75 for a \$44,000 subsidized system would result in the provision of more service than is necessary.

Considering both the need to maximize service at a given subsidy level and the need to minimize the risk of oversupplying service (setting a fare so high that demand for the service is much lower than what can be served), the following fares are recommended at the various subsidy levels:

Subsidy Level	Recommended Fare
\$ 44,000	\$1.50
\$ 69,000	\$1.10
\$ 88,000	\$1.00
\$176,000	\$0.25

It should be noted that these fares imply an expected ridership somewhat higher than that of the low latent travel demand estimate. By setting fares at these levels initially, the validity of the latent travel demand estimates can be assessed. If after allowing a sufficient time for ridership to reach its projected level—approximately three months-demand is lower than was anticipated, fares can be reduced to increase ridership to the capacity of the system. Conversely, if the system becomes capacity constrained, raising fares can increase operating revenues to enable more capacity to be added to the system, through the addition of more service hours.

The supply and demand curves developed for this analysis are based on expected demand by transportation handicapped individuals. Another source of patronage, however, is agency-sponsored trips. Agency-sponsored trips would be paid for by the agencies with no cost incurring to the passenger. However, the demand would also be determined by the agency. In Delaware a publicly operated demand responsive service that provides service only to agencies has estimated that one-third of all agency trips made in the state are made aboard this service. In Ozaukee, Walworth, Washington, and Waukesha Counties an estimated 15,000 agency trips are made annually. On the above basis, about 5,000 agency client trips might be made on any comprehensive public demand responsive transportation system. This would be a significant level of additional ridership. The extent to which it could be realized would, of course, depend on many factors, including service hours, peak hour capacities, the days of service, and, of course, fare levels. In Chapter V the survey of agency operations reported costs per passenger trip averaging approximately \$1.30 and varying in magnitude from less than \$1.00 to over \$13.00. Thus, it would appear that most agency costs are in a range below that which would make the system a feasible alternative to their present operation.

Summary of Demand Responsive System Analysis: Table 199 summarizes the costs of a demand responsive system in the nonurbanized area. Operating costs are based on the supply curves discussed earlier. Operating revenue is the product of the recommended fare and the number of trips that could be served as determined by the supply curve. It is assumed that demand will meet the available supply at the recommended fare levels. The number of vehicles represents the minimum number required to operate a system within a reasonable level of productivity. At the recommended fare levels, the total per trip costs range between \$4.20 and \$5.06, depending upon the amount of subsidy and estimated ridership which varies from 13,330 trips annually (at the \$44,000 level of subsidy) to 38,680 trips annually (at the \$176,000 subsidy level).

OPERATING DATA FOR A DEMAND RESPONSIVE SYSTEM FOR THE
TRANSPORTATION HANDICAPPED IN THE NONURBANIZED AREAS

	Subsidy Level								
Annual Data	5 Percent of Federal Transit Operating Assistance (\$44,000)	Proportional Share of Operating Deficit (\$69,000)	10 Percent of Federal Transit Operating Assistance (\$88,000)	20 Percent of Federal Transit Operating Assistance (\$176,000)					
Ridership Number of Vehicles ^a Vehicle Hours Per Week	13,330 3 103	18,650 3 144	23,160 4 178	38,680 5 298					
Operating Cost	\$64,000 \$20,000	\$89,510 \$20,510	\$ 11,160 \$ 23,160	\$185,670 \$   9,670					
Net Operating Cost	\$44,000	\$69,000	\$ 88,000	\$176,000					
Capital Cost ^b	\$12,000	\$12,000	\$ 16,000	\$ 20,000					
Total Cost	\$56,000	\$81,000	\$104,000	\$196,000					
Per Trip Measures Fare	\$1.50	\$1.10	\$1.00	\$0.25					
Net Operating Cost	\$3.30 \$0.90	\$3.70 \$0.64	\$3.80 \$0.69	\$4.55 \$0.52					
Total Cost	\$4.20	\$4.34	\$4.49	\$5.07					

^aIncludes one vehicle for use as a spare.

^bAssumes a vehicle cost of \$20,000 and a five-year vehicle life.

Source: Applied Resource Integration, Ltd.

In summary, a publicly operated demand responsive system in the nonurbanized area funded by \$44,000 could provide about 13,330 rides per year at a fare cost to the transportation handicapped user of about \$1.50 per one-way trip. Such a system funded by \$69,000 could provide about 18,650 rides per year at a fare cost of \$1.10 per one-way trip; a system funded by \$88,000 could provide about 23,160 rides per year at a user fare cost of \$1.00 per one-way trip; and a system funded by \$176,000 could provide about 38,680 rides per year at a user fare cost of \$0.25 per one-way trip.

#### User-Side Subsidy

Both the user-side subsidy program and the demand responsive system, as discussed above, provide a type of demand responsive service. The primary difference between the two systems is in terms of resource allocation; instead of directly subsidizing a particular provider of transportation, the eligible users are provided a subsidy for their transportation. Although a public entity would have to be designated to administer the user-side subsidy program, the actual services would be operated by the private sector which would presumably respond to increased consumer pressures with new or modified services. It is assumed in the analysis that 80 percent of the trips made under a user-side subsidy program would be made by taxicab and 20 percent would be made in chair car carriers. Presented below are the ridership, cost, and revenue estimates for the user-side subsidy program in the nonurbanized areas.

<u>Ridership</u>: The latent travel demand for a user-side subsidy program and a demand responsive system are considered the same for this analysis. Figure 28 shows the latent travel demand curve developed from data for demand responsive systems presented in Chapter VII. These latent travel demand estimates provide the basic data for estimating ridership by user-side subsidy programs which are funded at various subsidy levels. Although user-side subsidy and demand responsive systems utilize the same base data in these latent travel demand estimates, differences between the systems in average per trip costs result in different estimates of ridership on the two systems at identical funding levels.

To determine ridership on a user-side subsidy program at a given subsidy level, a supply curve which is representative of the subsidy level is developed and applied against the latent travel demand curve. Changes in fare levels are then used to match the estimated latent travel demand with the supply to determine the maximum potential ridership at the given subsidy level. In the analysis of the user-side subsidy program, changes in fare levels actually represent changes in the proportion of the average metered fare which the user will have to pay per trip.

Through a user-side subsidy program in the nonurbanized areas, about 14,620 rides per year are expected to be provided with a \$44,000 subsidy; about 21,400 rides with a \$69,000 subsidy; about 27,250 rides with a \$88,000 subsidy; and about 43,320 rides with a \$176,000 subsidy. It is important to note that although the ridership estimates are actually subject to the full potential range established by the latent travel demand estimates at the given fare level, in the analysis of alternative systems the ridership estimates are assumed to be relatively close to the lower estimate of latent travel demand.

<u>Costs</u>: The total cost of a user-side subsidy program is the subsidy per trip times the number of trips plus administrative costs of \$0.20 per trip. Since the rural areas do not have extensive taxi and

#### Figure 28

HIGH AND LOW ESTIMATES OF LATENT TRAVEL DEMAND FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE NONURBANIZED AREA



Source: Applied Resource Integration, Ltd.

chair car systems, the rates for Milwaukee were used: \$0.95 for the first two-fifths of a mile and \$0.20 for each two-fifths thereafter for taxis; \$5.00 for the first 30 blocks and \$0.60 each additional mile for chair cars. For the rural areas, an average trip length of five miles is assumed, resulting in costs of \$4.06 (fare \$3.25 plus \$0.61 tip plus \$0.20 administrative) for taxi and \$6.40 for chair car services. Similarly, to the demand responsive option, supply curves which represent the amount of service that could be provided at a given subsidy level are presented in Figure 29, together with an indication of the percentage of recovery levels discussed later.

A major factor affecting cost estimates is the average trip length, which for these rural areas was assumed to be five miles. The analysis is

#### Figure 29

## SUPPLY AND DEMAND CURVES FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE NONURBANIZED AREAS



Source: Applied Resource Integration, Ltd.

sensitive to the assumption of average trip length. As an example of this sensitivity, for an average trip length of six miles instead of five, the average cost per trip increases approximately 14 percent, while the amount of service that can be supplied would drop by 12 percent. With this new average trip length, the supply curves would all be shifted down and to the right a proportional amount.

<u>Revenues:</u> The fare level in a user-side subsidy program usually is based on a percent of the fare. In Figure 29 the vertical lines represent 15 percent, 25 percent, and 40 percent of total program costs recovered by the user payment of a portion of the actual fare. It can be seen that in terms of maximizing demand, a 15 percent recovery rate is too low for the lower subsidy levels, may be too low for the middle subsidy levels, and is appropriate for the higher subsidy level. The most appropriate fare policies appear to be between 25 percent and 40 percent of metered fare, depending upon the subsidy level. For a subsidy level below \$44,000, a 35 percent recovery rate is recommended, and for subsidy levels between \$69,000 and \$88,000, a 30 percent recovery rate is recommended. For subsidy levels around \$175,000, a 15 percent recovery rate is assumed.

Summary of User-Side Subsidy Program Analysis Table 200 summarizes the operating data for a user-side subsidy program. At the \$44,000 subsidy level, about 14,620 trips would be made annually with a recovery rate of 34 percent. The average fare at this subsidy level would be approximately \$1.50 for a trip consisting of the five-mile average trip length. At the \$69,000 and \$88,000 subsidy levels about 21,400 and 27,250 trips per year would be expected. Since programs at this level would have an approximate 30 percent recovery rate, the average fare and cost per trip would be changed only slightly. Thus, the primary effect of the higher of the two subsidy levels is to simply produce more ridership. At the highest subsidy level, the program would cost \$205,300 a year with \$29,460 of revenue generated by an approximate 15 percent recovery rate from 45,320 trips.

## **Coordinated Agency Transportation**

Since current organizational and funding mechanisms for agency transportation services are primarily county-oriented, the following discussion concerns only the feasibility of coordinated agency transportation within Ozaukee, Walworth, Washington, and Waukesha Counties. The data utilized in this analysis primarily is the product of the inventory of service providers. The findings of this inventory are reported in greater detail in Chapter V of this text.

Ozaukee County: Table 201 shows the four programs reported within Ozaukee County which provide an estimated 800 trips per month of which 45 percent are contributed by the services of the Port Washington Senior Citizens Project. There would appear to be some potential for cooperation between the services since none reported a utilization above 50 percent. Such cooperation, or coordination, should at least produce an increase in utilization approaching 40 percent.

Annual Data	5 Percent of	Proportional	10 Percent of	20 Percent of
	Federal Transit	Share of	Federal Transit	Federal Transit
	Operating	Operating	Operating	Operating
	Assistance	Deficit	Assistance	Assistance
	(\$44,000)	(\$69,000)	(\$88,000)	(\$176,000)
Fare Policy	34 percent	29 percent	29 percent	14 percent
Ridership	11,690	17,120	21,800	36,260
Taxi Trips	2,930	4,280	5,450	9,060
Total Ridership	14,620	21,400	27,250	45,320
Operating Cost	\$66,220	\$96,900	\$123,400	\$205,300
	\$22,220	\$27,900	\$35,410	\$ 29,460
Net Operating Cost	\$44,000	\$69,000	\$ 88,000	\$175,840
Operating Cost Per Trip	\$4.53	\$4.53	\$4.53	\$4.53
Operating Revenue Per Trip	\$1.52	\$1.30	\$1.30	\$0.65
Net Operating Cost Per Trip	\$3.01	\$3.23	\$3.23	\$3.88

# OPERATING DATA FOR A USER-SIDE SUBSIDY PROGRAM FOR THE TRANSPORTATION HANDICAPPED IN THE NONURBANIZED AREA

Source: Applied Resource Integration, Ltd.

Washington County: Table 202 presents an array of the operating characteristics of the service agencies in Washington County. The Threshold transports over 90 percent of the estimated trips provided in the County. The reported utilizations were in the 75 percent to 95 percent range and consequently little further gain would appear possible from cooperative service.

<u>Waukesha County</u>: Of the nine services shown in Table 203, five were FISH organizations, which do not appear to contribute more than 4 percent of the estimated 5,700 monthly trips occurring in Waukesha County. The overwhelming majority of the transportation was contributed by the Waukesha Training Center. Since the Center uses a contractor, Dairyland Transportation Company, and the American Red Cross and FISH use volunteers, there does not appear to be any realistic possibilities for coordination in the short term. Walworth County: Almost 2,500 trips per month are estimated to be made monthly in Walworth County as shown in Table 204. Over one-half of these are provided by the County Senior Citizens Service. Vocational Industries relies on a contractor to provide their service so that the short-term coordination efforts would probably be confined to the other services, most of which use a combination of volunteers and paid drivers. The actual potential cannot be narrowly defined; however, a 40 percent potential improvement in utilization might be possible depending on the ability to coordinate schedules of participants that are distributed across the County.

<u>Combination of Service:</u> Coordinated agency transportation can be developed in concert with either a demand responsive system or a user-side subsidy program. Each of these alternative systems is briefly analyzed in combination with coordinated agency transportation.

## OZAUKEE COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

Agency ^a	Service Area	Type of Service ^b	Volunteer or Paid Drivers	Monthly One-Way Trips	Number and Type of Vehicles	Daily Operating Hours	Average Vehicle Utilization (in percent)	Productivity (trips per vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip
Portal Programs, Inc.	Ozaukee County	FS, RD	Paid Drivers	80	3 Vans	7:00 A.M 8:30 A.M. 3:30 P.M 5:30 P.M. Monday-Friday	36	1.14	\$1,000.00	\$14.29	\$12.99
American Red Cross	Oaukee County	FS	Volunteers	260	1 Station Wagon	8:00 A.M 9:00 A.M. 5:00 P.M 9:00 P.M. Monday-Friday Saturday and Sunday As Needed	N/A	N/A	\$ 150.00	N/A	N/A
Catholic Social Services Elderly Project	Ozaukee County	DR	Paid Drivers	110	Personal Vehicles	9:00 A.M 6:00 P.M. Monday-Friday	11	N/A	N/A	N/A	N/A
Port Washington Senior Citizens	City of Port Washington	DR	Paid Drivers-3	350	1 Van	10:00 A.M 4:00 P.M. Monday, Wednesday, Friday	49	4.49	N/A	N/A	N/A

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of service: DR - demand responsive.

- FR fixed route.
  - RD route deviation.
  - FS fixed schedule.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

## WASHINGTON COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

Agency ^a	Service Area	Type of Service ^b	Volunteer or Paid Drivers	Monthly One-Way Trips	Number and Type of Vehicles	Daily Operating Hours	Average Vehicle Utilization (in percent)	Productivity (trips per vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip
The Threshold Washington County Older Adult Transportation	Washington County Washington County	FR, FS	Paid Drivers-8 Paid Drivers-1	5,300 400	2 Buses 6 Vans 1 Bus	6:30 A.M 8:30 A.M. 12:00 P.M 1:00 P.M. 3:00 P.M 5:00 P.M. Monday-Friday plus field trips and special events 8:00 A.M 5:00 P.M. Monday-Friday	82 95	N/A N/A	\$5,000.00 \$13,000.00	\$6.79 \$8.78	N/A N/A
American Red Cross	Allentown, Richfield, Polk, Hartford, Erin, Germantown	DR	Volunteers	33	1 Station Wagon; 4 Personsl Vehicles	As Needed	75	N/A	\$ 172.00	\$1.43	N/A

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of service: DR - demand responsive, FR - fixed route. RD - route deviation. FS - fixed schedule.

^C Vehicle utilization includes deliveries of blood.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and <u>Transportation for the Elderly and the Handicapped in Wisconsin</u>, November 1976, Wisconsin Department of Transportation, Division of Planning.

## WAUKESHA COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

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Agency ^a	Service Area	Type of Service ^b	Volunteer or Paid Drivers	Monthly One-Way Trips	Number and Type of Vehicles	Daily Operating Hours	Average Vehicle Utilization (in percent)	Productivity (trips per vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip
American Red Cross Greater Milwaukee Chapter	Waukesha County	FS	Volunteers-15	180	2 Station Wagoons	9:00 A.M 7:00 P.M. Monday-Friday	18.75	3.0	\$ 171.00	\$ 1.37	\$0.45
FISH- Menomonee Falls	Germantown, Richfield, Sussex, Lannon, Menomonee Falls Colgate	DR	Volunteers-30	60	Personal Vehicles	24 hours, 7 days a week	N/A	N/A	\$ 50.00	N/A	\$0.83
Menononee Fails Center	Menomonee Falls, Sussex, Brookfield, Germantown	FS	Volun teers-3	106	N/A	9:00 A.M 1:00 P.M. Tuesday, Thursday	N/A	N/A	N/A	N/A	N/A
FISH— Elmbrook	Brookfield, Elm Grove	DR	Volunteers-30	30-40	Personal Vehicles	24 hours, 7 days a week	N/A	N/A	N/A	N/A	N/A
FISH— Oconomowoc	Oconomowoc, Dousman, Hartland	DR	Volunteers-25	15	Personal Vehicles	7:00 A.M 7:00 P.M. 7 days a week	N/A	N/A	N/A	N/A	N/A
FISH- Pewaukee	Pewaukee	DR	Volunteers-27	40	Personal Vehicles	24 hours, 7 days a week	N/A	N/A	N/A	N/A	N/A
FISH— Waukesha	City of Waukesha	DR	Volunteers-8	33	Personal Vehicles	24 hours, 7 days a week	N/A	N/A	N/A	N/A	N/A
Waukesha County Program on Aging	Waukesha County	DR	Paid Drivers-3	903	2 Small Buses	8:30 A.M 4:00 P.M. Monday-Friday	75.00	3.78	\$2,778	\$11.58	\$3.06
Waukesha Training Center	Waukesha County	FR	Paid Drivers	5,000	Contracted Vehicles-6	6:00 A.M 7:30 A.M. 3:30 P.M 5:00 P.M. Monday-Friday	N/A	N/A	N/A	N/A	N/A

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of service: DR - demand responsive. FR - fixed route. RD - route deviation. FS - fixed schedule.

Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and Transportation for the Elderly and the Handicapped in Wisconsin, November 1976, Wisconsin Department of Transportation, Division of Planning.

#### WALWORTH COUNTY SOCIAL SERVICE AGENCY TRANSPORTATION PROVIDERS AND OPERATING CHARACTERISTICS

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Agency ^a	Service Area	Type of Service ^b	Volunteer or Paid Drivers	Monthly One-Way Trips	Number and Type of Vehicles	Daily Operating Hours	Average Vehicle Utilization (in percent)	Productivity (trips per vehicle hour)	Monthly Cost	Cost Per Vehicle Hour	Cost Per Passenger Trip
Lakeland Counseling Center	Walworth County	FR, FS	Paid and Volunteer Drivers	500	1 Van	8:30 A.M 3:30 P.M. Monday, Wednesday 8:30 A.M 6:30 P.M. Thursday 8:30 A.M 1:30 P.M. Friday	94	N/A	N/A	N/A	N/A
University of Wisconsin, Whitewater	Campus and Vicinity	DR, FR, FS, RD	Paid Drivers	N/A	2 Vans	7:00 A.M11:00 A.M. Monday, Tuesday Wednesday, Sunday 7:00 A.M 12:00 P.M. Thursday 7:00 A.M 2:00 P.M. Friday Saturday	53	N/A	\$1,500.00	\$ 3.00	N/A
Walworth County Senior Citizens Services	Walworth County	DR	Paid and Volunteer Drivers	1,375	2 Vans	8:00 A.M 5:00 P.M. Monday-Friday	78	8.59	\$2,164.00	\$13.52	\$1.57
Christian League for the Handicapped	Walworth County	FS	Paid and Volunteer Drivers	N/A	4 Vans	As Needed	20	N/A	\$ 700.00	N/A	N/A
Vocational Industries, Inc.	Walworth County	FS	N/A	150	1 Bus 1 Van	7:30 A.M3:30 P.M. Monday-Friday	N/A	N/A	\$2,700.00	N/A	N/A
Fairhaven Corp.	City of Whitewater	DR	Volunteer Drivers	465	1 Van	9:30 A.M 4:30 P.M. Wednesday-Sunday Evenings by Appointment	45	3.11	\$ 170.00	\$ 1.13	\$0.36
Walworth County Department of Social Services	Walworth County	DR	Volunteer Drivers	N/A	Personal Vehicles	8:00 A.M 5:00 P.M. Monday-Friday	N/A	N/A	\$1,420.00	N/A	N/A

NOTE: N/A indicates data not available.

^a Operating characteristics were obtained from a representative of each agency and represent approximations concerning each agency's transportation service operations.

^b Type of service: DR - demand responsive.

- FR fixed route.
- RD route deviation.
- FS fixed schedule.
- Source: SEWRPC survey of elderly and handicapped transportation providers, April 1977, and <u>Transportation for the Elderly and the Handicapped in Wisconsin</u>, November 1976, Wisconsin Department of Transportation, Division of Highways.

Coordinated Agency Transportation and Demand Responsive Service: If funding can be obtained, a demand responsive service is a feasible alternative. The coordination of agency transportation, however, does not appear to be practical, except in Ozaukee County and possibly Walworth County. As discussed earlier, many trips now being provided by agencies could be made on a demand responsive service. This would be especially likely to happen for those agencies who have a per-trip cost higher than the per-trip fare of a demand responsive service. Agencies, however, that coordinate transportation services are likely to increase their utilization and, consequently, lower vehicle per-trip costs. Thus, coordination will act to lower the number of agency trips that would be likely to use the demand responsive service. Moreover, those agency clients who elect to ride on the demand responsive service would, in fact, be using a coordinated service, because clients of different agencies could easily find themselves aboard the same vehicle. The result of this integration of services would be improved efficiency in the provision of agency transportation, and more trips made on the demand responsive system, which would be due to a shift of trips from agency providers. In a demand responsive service which operates at or near capacity, many individuals, or nonagency, trips would be displaced by agency trips.

With unlimited resources, a demand responsive service would be able to serve both agency clients and individuals. With limited resources, however, the two services should remain separate, at least initially; a coordinated agency transportation program would provide a means to serve agency transportation needs better; a demand responsive service would provide increased transportation opportunities for the transportation handicapped individuals who are not agency-affiliated. This general policy would apply only to a demand responsive system that is capacity constrained. If excess capacity exists, the demand responsive service could lower its fares to the transportation handicapped general public or encourage agencysponsored trips in order to provide service to as many people as possible.

In terms of implementation, a caveat is in order. Many agency trips are made by transportation handicapped persons during short peak periods, as they go to and from such places as workshops and classes each morning and evening. This peaking of agency trips can cause under-utilization of vehicles during the off-peak periods, unless care is taken to prevent purchasing too many vehicles merely to meet a peak period demand.

<u>Coordinated Agency Transportation and User-Side</u> <u>Subsidy Program:</u> As with the above alternative, if current agency per trip costs are higher than the subsidized individual fares, this combination of services could result in increased demand and lower per-trip costs for the agencies. The program would result in fewer trips being made by the general public and more by agency clients. Therefore, these two programs should also be operated separately.

## EVALUATION OF ALTERNATIVE TRANSPORTATION SYSTEMS IN THE NONURBANIZED AREAS

In the preceding discussion, two basic alternative transportation systems are analyzed along with coordinated agency transportation services operating alone or in combination with the alternative systems. Unlike the urbanized areas where federal transit funding is contingent upon special efforts being made to serve the transportation handicapped, the rural areas have no mandate to provide such service. An identified need does exist, however, for these services. The two basic alternative systems which could provide for improved service in the nonurbanized area are a demand responsive system and a user-side subsidy program. Although both of these alternative systems may be combined with coordinated agency transportation services in Ozaukee and Walworth Counties where coordinated agency transportation appears feasible, it has been shown that coordinated agency transportation should be considered separately and should not be integrated with the other operating alternatives. This component does not, therefore, affect the evaluation of the two basic alternative transportation systems. Moreover, since coordinated agency transportation involves no increased costs, but only more efficient operations, it is recommended for implementation regardless of which of the remaining systems is finally selected for implementation. Any other alternative under consideration, therefore, if implemented, will be combined with a complementary coordinated agency transportation service where feasible.

It is important to note that the nonurbanized areas are not eligible for UMTA operating assistance for demand responsive service or user-side subsidies. The levels of subsidy which these alternatives would require in order to achieve desired ridership at a certain fare must be furnished by the six counties, the State, or through other federal agencies or programs. This cost might be distributed among the counties on many bases: for example, per capita, per eligible person, or in some other equitable manner. Furthermore, service hours available to an area might be determined on the amount of money that area was able to raise.

Another issue of importance is that of service compatibility with adjacent areas. For example, the nonurbanized area of Racine could elect to supply a demand responsive service, while the urbanized area may choose to develop a user-side subsidy program. Could persons in the Racine urbanized area use the nonurban system? Would the demand responsive system be limited by service boundaries which exclude the urbanized area? These are implementation questions which must be addressed after the alternatives are selected for each area. The interfaces between the system can then be developed to minimize the kinds of problems described above.

The formation of service areas need not be strictly on a county basis. If demand responsive service is selected for adjacent areas, it may efficiently serve more than one county at a time. Care must be taken, however, to assure that service areas are not made so large that vehicle productivity suffers. This can occur when empty vehicles must travel long distances to pick up their next fare. Again, this problem must be addressed after alternatives are selected.

This evaluation is complicated by the fact that the alternative modes are affected by different variables and thus sensitive to various areas of the analysis. The major factor affecting demand responsive service is productivity. If productivity were to decrease from 2.5 to 2.0 passengers per hour (20 percent decrease), the total operating cost per trip would increase from \$4.80 to \$6.00 (25 percent increase). For the user-side subsidy program, major factors affecting the analysis are average trip length and funding levels. As discussed earlier, an increased average trip length of one mile results in a 12 percent drop in service that could be supplied at any given level. Moreover, higher subsidy levels increase the net operating costs per trip from \$3.01 to \$3.88. Although such variation is recognized, the analysis is based on the best estimates of ridership, revenue, and costs.

The rural area has only two viable alternatives demand responsive service and a user-side subsidy

program-from which to choose. Agency coordination is recommended as a separately implemented option only in Ozaukee and Walworth Counties. The other counties do not appear to have a potential for utilizing this option. The user-side subsidy is marginally feasible only in Waukesha, Walworth, and Washington Counties. Racine, Kenosha, and Ozaukee Counties do not have a taxi cab industry large enough to support the expected demand. In any event, the six counties do not currently have, or only marginally have, private chair car carriers in operation. It is assumed that an existing chair car carrier could be induced to extend its service in Waukesha, Walworth, and Washington Counties if the user-side subsidy program were initiated. On the other hand, demand responsive service is feasible in all six counties (given the provision of a subsidy). Therefore, it is the only option possible in the nonurbanized areas of Racine, Kenosha, and Ozaukee Counties (not including agency coordination). The nonurbanized areas of Waukesha, Walworth, and Washington Counties must choose between a demand responsive system and a userside subsidy program.

Table 205 shows how the two alternatives meet the goals and objectives of the study. As shown, all the standards under the first two objectives are met by both alternatives. The cost data are shown for both the high and low subsidy levels and are further discussed below.

Table 206 presents a comparison between three of the major parameters of these alternatives for each level of subsidy considered on an areawide basis. These parameters include: number of trips made each year, the average cost to the user per trip, and the total cost (capital plus operating cost) per trip. At the lowest level of subsidy, the userside subsidy provides slightly more trips per year at a lower cost to the user per trip. The total cost per trip is slightly higher on the user-side subsidy. Conversely, at the highest level of subsidy, the demand responsive service provides slightly more ridership at a slightly lower per-trip cost than does the user-side subsidy program. The decision, therefore, depends upon the level of subsidy that is provided.

In constructing a recommended alternative plan, the initial step in formulation of the alternative is the recommendation that the nonurbanized areas of Racine, Kenosha, and Ozaukee Counties implement a demand responsive system. Coordination or joint operation of the Racine and Kenosha County services should be explored. The second step in

## COMPARISON OF ALTERNATIVE TRANSPORTATION SYSTEMS BY OBJECTIVES AND STANDARDS FOR THE NONURBANIZED AREA

Objectives and Standards	Demand Besponsive System	User-Side Subsidy Program
		Cubildy Program
Objective No. 1		
Standards		
1. Most nearly meet existing and latent travel demand ^a	Met	Met
2. Maximize comfort, convenience, and security ^b	Met	Met
3. Maximize knowledge of the services being offered ^b	Met	Met
4. Serve all trip purposes ^b	Met	Met
5. Maintain flexibility in design and operation	Fairly Flexible ^C	Very Flexible ^d
6. Utilize existing public mass transit services	Met	Met
7. Utilize other public and private providers		
where practical	Met	Met
8. Provide recommended levels of service ^b	Met	Met
Objective No. 2 Standard		
1. Conform to federal requirements for vehicle		
design and operation and fixed facilities		
design and construction ^o	Met	Met
Objective No. 3		
Standards		
1. Minimize subsidy per ride	\$4.20 - \$5.07	\$3.01 - \$3.88
2. Minimize total operating and capital costs	\$44,000 - \$176,000	\$44,000 - \$176.000
3. Determine fare in the transit service area	,	
from recovery rate but do not exceed \$2,50	Lower Fare ^e	Lower Fare ^e
4. Determine fare in areas not served by transit		
on average per person trip costs but		
do not exceed \$2.50	Lower Fare ^e	Lower Fare ^e

^a The ability to serve the low estimate of latent demand is measured by this standard.

^bAlternative design does not prohibit meeting this standard, and standard is assumed to be met in actual operation.

^C Capital investment limits flexibility but not to a large extent.

^d Low capital investment allows flexibility.

^e Fare levels result in cost recovery rates that are lower than those of existing transit service.

Source: Applied Resource Integration, Ltd.

Annual Data	Trips Per Year	Average Cost to User Per Trip	Total Cost Per Trip
\$44,000 Subsidy			
Demand Responsive System User-Side Subsidy Program	13,330 14,620	\$1.50 \$1.52	\$4.20 \$4.53
\$69,000 Subsidy			
Demand Responsive System User-Side Subsidy Program	18,650 21,400	\$1.10 \$1.30	\$4.34 \$4.53
\$88,000 Subsidy			
Demand Responsive System User-Side Subsidy Program	23,160 27,250	\$1.00 \$1.30	\$4.49 \$4.53
\$176,000 Subsidy			
Demand Responsive System User-Side Subsidy Program	38,680 43,320	\$0.25 \$0.65	\$5.06 \$4.53

## COST ANALYSIS OF DEMAND RESPONSIVE SYSTEM AND USER-SIDE SUBSIDY PROGRAM AT VARIOUS SUBSIDY LEVELS IN THE NONURBANIZED AREA

Source: Applied Resource Integration, Ltd.

formulation of the alternative is the recommendation that the nonurbanized areas of Washington, Waukesha, and Walworth Counties also implement a demand responsive system. Although a user-side subsidy program is feasible in these areas, a demand responsive program is recommended as the most efficient and cost effective program in these areas. The third step in formulation of the alternative plan is the recommendation that in Ozaukee and Walworth Counties efforts be made to establish a system of coordinated agency transportation. In summary, the recommended alterantive for the nonurbanized areas of the Region consists of establishment of a demand responsive system to serve all of the nonurbanized area with complementary but separate coordinated agency transportation available in Ozaukee and Walworth Counties.

## SUMMARY

Any functional planning process should terminate in adoption of a general plan that best meets the particular needs under consideration. In the elderly and handicapped study planning process, as reported in this chapter, the alternative transportation systems within each of the study subareas have been analyzed and evaluated, and the most effective system within each subarea has been identified. The listing of these most effective alternative systems for the subareas in a regional summation yields the recommended alternative plan.

For the urbanized areas of the Region a total of five alternative transportation systems were analyzed and evaluated in depth in this chapter. Evaluated for the urbanized areas were accessible transit systems, demand responsive systems, userside subsidy programs, accessible transit combined with demand responsive systems, and accessible transit combined with user-side subsidy programs. Due to the absence of any extensive local transit systems in the nonurbanized, or rural, areas of the Region, only two alternative systems were analyzed and evaluated in depth: namely, demand responsive systems and user-side subsidy programs. In addition, the effect of coordinated agency transportation on each of the alternative systems evaluated for the urban and rural areas was examined in this chapter.

The analysis approach to each alternative transportation system consisted of consideration of certain critical factors: namely, ridership, costs, revenue, and management and operating characteristics. Each system was examined in light of several ridership and funding levels. Furthermore, because of the difficulties inherent in expressing certain factors in quantitative terms, both quantitative and qualitative measures were considered in the analysis and evaluation of the alternative systems.

The evaluation technique employed comparison of the alternative transportation systems against three sets of criteria: namely, the agreed-upon objectives and standards of the elderly and handicapped study, the UMTA-suggested guidelines for providing service to the transportation handicapped in terms of accessible fleet size or proportion of transit operating deficits, and comparison in terms of allocation of total transportation subsidies to specialized programs proportionately to the percentage of the transportation handicapped in the general population.

Following these extensive analyses and evaluations, the recommended regional plan elements for each of the study subareas were found to be:

- 1) For the Milwaukee urbanized area, establishment of the combination of an accessible transit and user-side subsidy program which is complemented by establishment of coordination of agency transportation in Milwaukee County;
- 2) For "rural" Ozaukee County, establishment of a demand responsive system complemented by coordinated agency transportation in Ozaukee County;

- 3) For "rural" Washington County, establishment of demand responsive system;
- 4) For "rural" Waukesha County, establishment of a demand responsive system;
- 5) For the Racine urbanized area, establishment of the combination of an accessible transit and user-side subsidy program which is complemented by a coordination effort which builds upon the existing system for coordinated agency transportation in Racine County;
- 6) For "rural" Racine County, establishment of a demand responsive system which is complemented by coordinated agency transportation in Racine County;
- 7) For "rural" Kenosha County, establishment of a demand responsive system which is complemented by coordinated agency transportation in Kenosha County;
- 8) For the Kenosha urbanized area, establishment of the combination of an accessible transit and user-side subsidy program which is complemented by establishment of coordination of agency transportation in Kenosha County; and
- 9) For Walworth County, establishment of a demand responsive system which is complemented by coordinated agency transportation.

In summary, the recommended alternative plan for the Southeastern Wisconsin Region consists of the combination of an accessible transit system and a user-side subsidy program in the urbanized areas of the Region, and the establishment of a demand responsive system to serve all of the nonurbanized area with complementary coordinated agency transportation established in Milwaukee, Racine, Kenosha, Ozaukee, and Walworth Counties. (This page intentionally left blank)

## RECOMMENDED REGIONAL PLAN FOR THE ELDERLY AND TRANSPORTATION HANDICAPPED

## INTRODUCTION

Previous chapters of this report have presented the basic data essential to sound regional transportation system planning for the transportation handicapped. Data were presented concerning existing transportation facilities and services used by the transportation handicapped, estimates of the number and geographic distribution of the transportation handicapped, analyses of the socioeconomic characteristics of the transportation handicapped, descriptions of the travel habits of the transportation handicapped, and estimates of the latent travel demand of the transportation handicapped for various types of transportation systems. A set of elderly and handicapped transportation system development objectives, principles, and standards was presented for utilization as a basis for the preparation and evaluation of alternative plans. Finally, a number of alternative transportation system plans were developed, described, and evaluated in an effort to identify the most cost-effective system plan for the transportation handicapped within each subarea of the Region considered.

Based upon evaluation of the alternative transportation system plans, the Citizens Technical Coordinating and Advisory Committees selected a recommended plan for each subarea of the Region, and that plan was presented for further public review and comment at a series of informational meetings and public hearings. Basically, the recommended plan proposes the establishment of a combination of accessible transit systems and user-side subsidy programs in the Kenosha, Milwaukee, and Racine urbanized areas, and the establishment of a demand responsive transportation system to serve the nonurbanized areas of the Region. The plan also recommends the coordination of social service agency transportation efforts at the county level.

In the more detailed description of the recommended system plan presented in the body of this chapter, recommendations are made for both the initial and continuing program administration. Cost estimates are presented for each recommended plan element over a five-year plan implementation

period in keeping with the short-range concept of the plan. It should be noted that the cost and funding estimates presented in this chapter are intended to provide a basis on which concerned agencies can initiate plan implementation; and that these estimates are subject to change through the plan implementation actions themselves which may result in program expansion or modification. In addition to cost and funding data, this chapter describes recommended vehicle operations, marketing efforts, registration procedures, and fare structures and provides an outline of a five-year development program for each of the seven counties. Certain more detailed aspects of the initial and ongoing program administration are addressed in the appendices rather than directly in this chapter. Included in the appendices are: a) recommended procedures for retrofitting buses to make them more accessible to the transportation handicapped in Appendix E; b) recommended criteria for use in establishing the eligibility of persons to use demand responsive transportation systems and user-side subsidy programs for the transportation handicapped in Appendix F; c) guidelines for use in developing a user-side subsidy program in Appendix G; d) guidelines for social service agency coordination in Appendix H; and e) a service performance inventory procedure for use in compiling information needed to assess the feasibility of coordinated agency transportation in Appendix L

## THE REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN: A REGIONAL OVERVIEW

The elderly and handicapped transportation system plan recommended to serve the travel needs of the transportation handicapped residents of the Southeastern Wisconsin Region over a five-year period is comprised of four primary elements: 1) accessible transit systems; 2) user-side subsidy programs; 3) demand responsive transportation systems; and 4) coordinated agency transportation.

#### Accessible Transit Systems

The regional plan for the transportation handicapped calls for the establishment of accessible transit systems in the Milwaukee, Racine, and Kenosha public transit service areas. An accessible transit system is defined herein as a transit system in which accessible buses are used to provide all of the service during the base period or in which a minimum of one-half of the total fleet consists of accessible buses. An accessible bus has the following characteristics:

- 1. Floor height of no more than 22 inches, with an effective floor height of 18 inches available through a mechanical "kneeling" mechanism;
- 2. Wheelchair access lift or ramp device installed to permit ready entry of vehicle;
- 3. Entryways of sufficient width to accommodate wheelchairs;
- 4. Tiedowns for at least two wheelchairs;
- 5. Reserved seats for elderly and handicapped; and
- 6. More handrails and stanchions than are currently found on standard transit vehicles.

The above configuration is fully consistent with the U. S. Secretary of Transportation ruling of May 19, 1977, with respect to federal guidelines for buses manufactured after September 30, 1979. The federal guidelines relating to floor height may be waived for existing buses that are being retrofitted with the other accessibility features.

The recommended plan proposes that the Milwaukee County Transit System purchase a total of 280 accessible buses; that the Belle Urban System (the Racine Transit System) retrofit a total of 15 buses with accessibility features; and that the Kenosha Transit System retrofit a total of 11 buses with accessibility features. Implementation of this recommendation would provide all of the service during the base period by accessible buses and 50 percent of the service during peak periods by such buses in the Milwaukee area; would provide 50 percent of the service during both base and peak periods in Racine by such buses; and would provide all of the service during the base period by such buses, and nearly 50 percent of the service during peak periods by such buses in Kenosha, All of the accessible buses are proposed to be in full operation by mid-1979. More detailed recommendations concerning establishment of each of these accessible systems are presented later in this chapter as they pertain to the individual urban transit service areas.

## User-Side Subsidy Program

The recommended plan proposes that within the Milwaukee, Racine, and Kenosha urbanized areas a user-side subsidy program be established to facilitate both the transportation handicapped persons living farther than two blocks from a transit route and the transportation handicapped persons living within two blocks of a transit route who cannot use an accessible bus due to their particular disability. The user-side subsidy program recommends utilizing existing taxicab and chair car carriers in providing the desired increased mobility with no restriction on trip purpose. The subsidized users would thus purchase service from any available certified provider. A service provider would receive certification from the program administrative agency-proposed to be a county agency-by insuring that its taxicab, chair car carrier, or private bus fleet meets specified service and safety guidelines and by entering into an agreement with the county specifying the responsibilities of the county and the provider in the conduct of the program. Recommendations concerning procedures for the establishment of user-side subsidy programs in each urbanized area of the Region are discussed more fully later in this chapter.

## Demand Responsive Transportation Systems

The recommended plan proposes that demand responsive transportation systems be provided within the nonurbanized areas of the Region. A demand responsive transportation system consists of wheelchair accessible vehicles which transport passengers upon request to and from any point within a defined service area. The demand responsive transportation system proposed in the recommended plan provides for shared-ride service with no restrictions on trip purpose. Since transportation handicapped persons encounter many barriers to travel other than vehicle access, a door-through-door service is also recommended, although implicit in such service is some increase in travel time per passenger and somewhat lower productivity ratios. A primary difference between the demand responsive transportation system and the user-side subsidy program is the difference in resource allocation; under the demand responsive transportation system the service provider receives a direct subsidy for his overall operations, while under the user-side subsidy program approximately one-half of the users cost of each eligible trip on any certified taxi or chair car carrier is subsidized.
In five of the six counties within the Region having nonurbanized areas, demand responsive transportation services for the transportation handicapped are recommended to be provided under existing specialized transportation programs. This approach best utilizes existing county resources and eliminates possible duplication of service while reducing potential costs. In the sixth county—Ozaukee County—implementation of demand responsive transportation services by contracting with a private provider is recommended. In any review of the proposed plan, several important points must be remembered:

- 1. Funds from Area Agencies on Aging (AAA) prohibit a fare being charged to persons 60 years of age or older. Where joint elderly and transportation handicapped service is proposed on vehicles purchased and/or subsidized with Title III funds, fares are not recommended for persons 60 years of age or older.
- 2. Direct contracting of services by the county with a private operator is only specifically recommended in one county-Ozaukee County. In those counties where service is currently provided by or through an existing agency, the plan recommends that present operations be expanded by purchasing, leasing, or contracting for additional vehicles. When implementing or expanding transportation services for the transportation handicapped, an economic analysis of the costs and benefits of using either existing public or private providers or a mix thereof should be undertaken to determine the most costeffective transportation system for a specific area.
- 3. New vehicles are recommended to be liftequipped and of a size to accommodate between 19 and 25 passengers. The actual number of seats will vary based on the number of wheelchair tiedowns provided. However, a minimum of three tiedowns will always be provided. The larger vehicles have a higher capital cost especially when compared to a van, but allow more flexibility in terms of subscription service, group riding, and potential charter-type service or special outings.
- 4. The patronage and revenue estimates are based on passenger growth during the first

three months and a leveling of ridership thereafter. However, it should be noted that planning for the transportation needs of the transportation handicapped is a relatively new field with minimal data upon which good planning standards can be developed, especially in the area of passenger demand.

- 5. The state funding referenced in the various sections refers to monies available for elderly and handicapped transportation services under the recently established state program—Section 85.08(5) of the Wisconsin Statutes. Each county will have to decide whether these funds will be used to implement the proposals.
- 6. The preferred alternative means of establishing the demand responsive transportation system in the nonurbanized areas of Racine and Kenosha Counties may be influenced by the implementation or lack of implementation of urbanized area transportation programs.

# Coordinated Agency Transportation

The recommended plan proposes that efforts be made to coordinate existing agency transportation systems which currently function independently of one another and frequently provide overlapping and duplicative services. Coordination of these agency services should significantly improve the efficiency of existing agency operations with no increase in costs. The plan recommends that efforts toward coordination of social service agency transportation efforts begin immediately in Milwaukee, Racine, Kenosha, Ozaukee, and Walworth Counties where such coordination appears to be particularly feasible and that agency services be monitored through service performance inventories in Washington and Waukesha Counties with efforts at coordination beginning at such time as the monitoring efforts indicate that coordination is feasible.

Funding sources of many social service agencies in the Region include federal programs such as provided under Titles XIX and XX of the Social Security Act of 1935 as amended; Titles III and VII of the Older Americans Act of 1965 as amended; and the Community Services Act of 1974 as amended. Additionally Sections 51.42 and 51.437 of the Wisconsin Statutes provide for the creation of boards to administer federal and state funds for community mental health and developmental disability programs, respectively. Counties also

provide monies from general funds for certain programs. To secure funds from these various sources, various request procedures must be followed, some of which require the provision of detailed program plans. The requests for federal or state funds for all programs, except for those under the Community Services Act of 1974 as amended, are initially filed with various units of the Wisconsin Department of Health and Social Services. Funding requests for monies under the Community Services Act are filed with the Department of Local Affairs and Development. Funding requests at the county level are handled by the county boards. Currently, no mechanism exists at the county or state level for coordinating the transportation services provided by the various agencies. In some cases, the agencies do not even need to provide a detailed description of their transportation services.

The plan accordingly recommends that each agency in southeastern Wisconsin applying for county, state, or federal funds be required to complete a service performance inventory as part of its application process. The service performance inventory data obtained from the various agencies in each county can then be analyzed to determine the feasibility of coordinating agency transportation. Where coordination is feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken toward coordination.

The role of the state will be determined primarily by actions taken at the county level. If the county actively pursues coordination, the state role will be minimal. If the county does not attempt to coordinate services or requests assistance from the state, the state may have to take an active role. At the state level, the review of the service performance inventory data should be a joint process involving appropriate departments responsible for funding. The precedent exists for such procedures since the Wisconsin Department of Health and Social Services and the Wisconsin Department of Transportation now cooperate on requests for vehicles under the UMTA 16(b)(2) program.

Once recommendations are made, either by the county or by the state, the administrative agencies responsible for the regional transportation handicapped transportation plan implementation in each county would be responsible for overseeing the coordination efforts. In addition, each affected agency would have an interest in improving services because future funding could be affected.

# Administrative Agencies

In all cases the recommended regional plan for the transportation handicapped proposes that existing public agencies of each county be responsible for the administration of the recommended county specific plan elements. All agencies are to be responsible to their respective county boards of supervisors. In their deliberations, the Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped have recommended that certain specific agencies within each county be considered for designation by the county boards to perform the administrative functions, duties, and responsibilities required to establish the improved transportation systems delineated under this regional plan. The specific administrative agencies and their areas of responsibility within each county are identified later in this chapter.

It is important to stress the need for cooperation among the various administrative agencies. The recommended regional plan for the transportation handicapped is designed to provide an extensive network of interrelated services to enhance the transportation mobility of the transportation handicapped residents of the Region. The travel habits and patterns of these residents are determined largely by geographic linkages that commonly transcend individual political jurisdictions. No operating authority currently exists, however, which has a political jurisdiction coterminous with the seven-county Region or with the urbanized or nonurbanized subareas of this Region. Consequently, the responsibility for implementation of the recommended plan and establishment of the various proposed transportation improvements must rest with each county and with the local agencies within the counties. This county level system, while offering the most cost-effective and efficient method for plan implementation currently available, nevertheless presents a possibility of fragmentation in implementation of various components of the proposed plan elements. Such fragmentation would be detrimental to the overall system plan and can best be avoided by continuing communication and coordination among the seven county boards and the various administrative agencies involved in plan implementation.

# **Advisory Committees**

Since planning is a continuing function, a public body should remain on the scene to coordinate and

advise on the execution of the regional plan for the transportation handicapped and should undertake plan updating and renovation as necessitated by changing events. It is recommended, then, that the Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped be reconstituted as a continuing intergovernmental advisory committee. This new Committee would provide a focus for the coordination of actions of all levels of government in the execution of the regional transportation system plan for the transportation handicapped. The primary focus of the Committee is expected to be upon the technical and institutional aspects of plan implementation including the technical aspects related to the design criteria used in preparation of the plan, the system refinements, and any plan updates and the institutional aspects relating to the recommended jurisdictions for implementation of the regional plan.

Further, the U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) require the formation of advisory groups comprised of transportation handicapped to assist in the planning and implementation of transportation handicapped transportation services. An advisory group can greatly assist in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that county level advisory groups including not less than seven transportation handicapped persons be appointed by each primary administrative agency within each county.

# Costs

Presented in Table 207 is a five-year budget for the provision of the recommended improved transportation handicapped transportation services. It is estimated that between 1978 and 1982 the number of transportation handicapped passenger trips made on the total of the improved transportation services may be expected to increase from 170,000 to 427,400 trips per year. During the same period net operating costs are anticipated to increase from about \$357,800 to about \$1,092,800 and a total of about \$3,000,000 in capital costs will be incurred. As shown in Table 207, the bulk of these operating and capital costs are anticipated to be borne through federal and state funding programs.

It should be noted that this budget summary, as well as the detailed county budget summaries presented later in this chapter, represents refined revenue and patronage estimates, and therefore, differs from such data presented in Chapter VIII. Whereas the estimates in Chapter VIII reflected a hypothetical, static, full-year operation, the estimates herein reflect the dynamics of patronage growth, incremental implementation, and changing funding sources, and the input of the Technical Coordinating and Advisory Committees in arriving at a recommended alternative plan.

# Funding Sources

Briefly described below are seven programs which offer potential funding sources for the recommended elderly and handicapped transportation system plan.

Federal Discretionary Capital Grants: There are three basic federal discretionary capital grant programs authorized by the Urban Mass Transportation Act of 1964, as amended. These are authorized under Sections 3, 16(b)(1), and 16(b)(2) of that Act. The largest program of the three is the Section 3 program, funded at \$1.4 billion for the federal fiscal year ending September 30, 1978. The other two programs are, in certain respects. subsets of the Section 3 program. Whereas Section 3 grants are only available to assist mass transit systems serving the general public, Section 16(b)(1) and Section 16(b)(2) grants are available to assist transportation systems serving only the elderly and/or handicapped residents of an area. The differences between the 16(b)(1) and 16(b)(2) programs are explained in detail below.

Under the Section 3 program, the federal Urban Mass Transportation Administration (UMTA) provides 80 percent of the costs of capital facilities and equipment for use in public transportation service in urban areas. The program is "discretionary" in that Section 3 grants are approved on a nationwide, project-by-project basis at the discretion of UMTA. Only public agencies in urban areas of more than 5,000 population are eligible to apply for Section 3 grants. Private transportation companies may participate in federally assisted projects through contractual arrangements with the applicant, a public agency. At present, the State of Wisconsin does not provide any portion of the required 20 percent nonfederal share of Section 3 projects. Consequently, local public agencies apply directly to UMTA for such grants and the applications are not channeled through the Wisconsin Department of Transportation (DOT). In the Region, the Cities of Racine and Kenosha as well as Milwaukee County have been recipients of Section 3 grants.

### Table 207

# BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-TOTAL

Projected Annual Passenger Trips and Implementation Costs ⁸ for Each Proposed Transportation System											
_	19	978	15	1979		1980		1981		1982	
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	
Accessible Transit Systems Passenger Trips	85 \$ 26,350 112,900 86,550 1,008,000	,800 \$ 26,350 112,900 86,550 1,008,000	15 \$ 41,000 268,100 227,100 1,746,000	6,900 \$ 41,000 248,200 207,200 1,746,000	1 \$ 50,800 304,700 253,900 	75,000 \$ 50,800 261,200 210,400 	1 \$ 55,700 343,000 287,300 	92,000 \$ 55,700 272,300 216,600	2' \$ 61,400 387,100 325,700 	11,000 \$ 61,400 284,500 223,100 	
User-side Subsidy Program Passenger Trips Revenue Operating Cost Net Operating Cost	58, \$ 71,600 245,000 173,400	700 \$ 71,600 245,000 173,400	70, \$ 93,100 280,200 187,100	800 \$ 93,100 259,500 166,400	81 \$ 116,700 346,400 229,700	- ,800 \$116,700 296,900 180,200	90 \$ 139,200 410,400 271,200	0,600 \$139,200 325,800 186,600	99 \$ 164,900 483,300 318,400	,400 \$ 164,900 355,400 190,500	
Rural Demand Responsive Systems         Passenger Trips.         Revenue.         Operating Cost.         Net Operating Cost.         Capital Cost.	25,1 \$ 12,150 110,000 97,850 80,000	500 \$ 12,150 110,000 97,850 80,000	52, \$ 50,500 280,200 229,700 120,000	000 \$ 50,500 259,400 208,900 120,000	91 \$ 44,250 433,900 389,650 100,000	,000 \$ 44,250 371,880 327,630 100,000	10 \$ 50,500 468,700 418,200 	4,000 \$ 50,500 372,100 321,600	117 \$ 56,750 505,400 448,650 	7,000 \$ 56,750 371,500 314,750 	
Accessible Transit System, User-Side Subsidy Program, and Rurai Demand Responsive System Passenger Trips Revenue Operating Cost Net Operating Cost Capital Cost	170 \$ 110,100 467,900 357,800 1,088,000	,000 \$ 110,700 467,900 357,800 1,088,000	279 \$ 184,600 828,500 643,900 1,866,000	,700 \$ 184,600 767,100 582,500 1,866,000	347 \$ 211,750 1,085,000 873,250 100,000	,800 \$211,750 929,980 718,230 100,000	386, \$ 245,400 1,222,100 976,700 	600 \$245,400 970,200 724,800 	427 \$ 283,050 1,375,800 1,092,750 	,400 \$ 283,050 1,011,400 728,350 	

Estimated Annual Total Expenditures by Expected Sources of Revenues												
	1	978	19	979	19	980	1	981	19	982		
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars		
Funding Sources for Operating Costs Federal UMTA Section 5	\$ 43,280 28,850 230,630	\$ 43,280 28,850 230,600	\$ 113,550 75,700 263,150	\$ 103,600 69,070 248,480	\$ 126,950 84,630 557,420	\$105,200 70,130 457,050	\$ 143,650 95,770 620,460	\$108,300 72,200 457,380	\$ 162,850 108,560 690,350	\$ 111,550 74,360 454,730		
Kenosha Milwaukee Ozaukee Racine Walworth Washington Waukesha	1,300 26,960 7,630 6,800 1,600 6,690 3,640	1,300 26,960 7,630 6,800 1,600 6,690 3,640	11,280 49,410 9,780 54,700 15,200 17,290 30,870	8,080 44,720 8,080 46,900 12,200 14,390 24,470	6,950 56,500 2,190 10,070 8,100 5,620 11,120	5,850 45,950 1,820 8,410 6,770 4,700 9,250	7,500 64,970 2,420 10,960 8,770 6,030 12,110	5,780 47,440 1,830 8,340 6,690 4,600 9,120	8,170 74,750 2,640 11,920 9,490 6,450 13,150	5,750 48,850 1,800 8,230 6,600 4,470 8,920		
Totəl City ^b Kenosha	\$ 54,620 \$ 230 190	\$ 54,620 \$ 230 190	\$ 188,530 \$ 1,450 1,520	\$ 158,640 \$ 1,330 1,380	\$ 100,550 \$ 1,800 1,900	\$ 82,750 \$ 1,500 1,600	\$ 112,760 \$ 1,980 2,080	\$ 83,800 \$ 1,520 1,600	\$ 126,570 \$ 2,170 2,250	\$ 84,620 \$ 1,520 1,570		
Total	\$ 420	\$ 420	\$ 2,970	\$ 2,710	\$ 3,700	\$ 3,100	\$ 4,060	\$ 3,120	\$ 4,420	\$ 3,090		
Total	\$ 357,800	\$ 357,800	\$ 643,900	\$ 582,500	\$ 873,250	\$718,230	\$ 976,700	\$724,800	\$1,092,750	\$ 728,350		
Funding Sources for Capital Costs Federal UMTA Section 3 or 5 Federal UMTA Section 16(b)(1) or 16(b)(2)	\$ 806,400 64,000	\$ 806,400 64,000	\$1,396,800 96,000	\$1,396,800 96,000	 80,000	 80,000						
Kenosha. Milwaukee Ozaukee Racine. Walworth Washington	 180,000  4,000 4,000 4,000	180,000  4,000 4,000 4,000	4,000 324,000  8,000 4,000 4,000	4,000 324,000  8,000 4,000 4,000	4,000   8,000 4,000	4,000   8,000 4,000						
Total	4,000 \$ 196,000	4,000 \$ 196,000	4,000 \$ 348,000	4,000 \$ 348,000	4,000 \$ 20,000	4,000 \$ 20,000						
City ^b Kenosha Racine	\$ 10,800 10,800	\$ 10,800	\$ 9,000 16,200	\$ 9,000 16,200								
	\$ 21,600	\$ 21,600	\$ 25,200	\$ 25,200								
Total	\$1,088,000	\$1,088,000	\$1,866,000	\$1,866,000	\$ 100,000	\$100,000						

^a Costs shown are in addition to costs incurred in operating the existing transit and demand responsive systems. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b The Cities of Racine and Kenosha being the designated eligible recipients of federal funds under Sections 3 and 5 of the Urban Mass Transportation Assistance Act of 1964 as amended would be expected to pay only the local one-sixth and one-fifth matching shares of the federal operating and capital assistance funds for their publicly owned bus systems. All other local share matching funds for the userside subsidy program and the demand responsive transportation system would be paid by the counties.

Source: Applied Resource Integration, Ltd., and SEWRPC.

The Section 16(b)(1) program is identical to the Section 3 program in all respects save one. The difference is that Section 3 funded projects can be designed only to serve the general public, while 16(b)(1) funded projects can be designed to serve only the elderly and/or the handicapped. All other federal rules and regulations applicable to the Section 3 program are, however, also applicable to the 16(b)(1) program. In Wisconsin, local public agencies seeking a 16(b)(1) capital grant would apply directly to UMTA. No state funds are available to match the 80 percent federal grant. To date, no 16(b)(1) grants have been awarded in either the SEWRPC Region or in the State of Wisconsin.

The Section 16(b)(2) program is identical to the 16(b)(1) program in only one respect, i.e., the projects funded can be designed to serve only the elderly and/or the handicapped and not the general public. Eligible applicants for 16(b)(2)capital grants are limited to private nonprofit corporations only. Whereas the transportation services provided under Section 3 or Section 16(b)(1) projects must be focused within urban areas of 5,000 population or more, services provided under a Section 16(b)(2) project can be "rural" in nature. "Intercity" services cannot, however, be funded under Sections 3, 16(b)(1), or 16(b)(2). All 16(b)(2) grants are channeled through a state agency as a matter of federal policy. In Wisconsin, this state agency is the Wisconsin Department of Transportation, with assistance from the Wisconsin Department of Health and Social Services. In addition, beginning July 1, 1977, state aids are available to 16(b)(2)recipients to match the 80 percent federal capital grant and for operating assistance. This state aid program is described below. In the Region, the following organizations have received 16(b)(2)grants: Portal Programs, Inc., Grafton; American Cancer Society, Milwaukee; Curative Workshop of Milwaukee, Inc.; Elder Care Line, Inc., Milwaukee; Goodwill Industries of Milwaukee, Inc.; Jewish Vocational Service, Milwaukee; Project Involve, Inc., Milwaukee; Lincoln Lutheran of Racine, Wisconsin, Inc.; Christian League for the Handicapped, Inc., Walworth; The Threshold, Inc., West Bend; and Fairhaven Corporation, Whitewater.

Federal Formula Operating and Capital Grants: In November of 1974, Congress created a new federal mass transit formula grant program as Section 5 of the Urban Mass Transportation Act of 1964, as amended. As part of Section 5, Congress established a national formula based on population and population density to distribute the annual appropriations made for Section 5 among all "urbanized" areas of the country. Eligible recipients of Section 5 funds may use their allocations for operating costs on a 50 percent federal, 50 percent nonfederal matching basis, or for capital purposes on a 80 percent federal, 20 percent nonfederal matching basis.

There are fewer potential applicants for Section 5 funds than for Section 3 grants because the Section 5 program is restricted to "urbanized" areas as defined by the U. S. Bureau of the Census. To meet the Census Bureau's definition of an "urbanized area," an urban area must have either:

- a. A central city of 50,000 inhabitants or more; or
- b. Twin cities with a combined population of at least 50,000 and with the smaller of the twin cities having a population of at least 15,000.

According to the 1970 census, Wisconsin has nine urbanized areas: Appleton, Kenosha, Duluth-Superior, Green Bay, La Crosse, Madison, Milwaukee, Oshkosh, and Racine. Three of these urbanized areas—Milwaukee, Racine, and Kenosha—are in the Southeastern Wisconsin Region.

Another unique feature of the Section 5 program is that federal law requires that specific local public agencies be designated as the official recipients of Section 5 funds for each urbanized area. In the Region Milwaukee, Ozaukee, Washington, and Waukesha Counties have been designated as recipients within the Milwaukee urbanized area; the City of Racine within the Racine urbanized area; and the City of Kenosha within the Kenosha urbanized area. To date, all of the above-listed designated recipients, with the exception of Washington County, have applied for Section 5 funds.

Although Section 5 grant applications are submitted by designated recipients to the federal UMTA, all recipients of Section 5 grants for operating purposes are also recipients of state urban mass transit operating assistance. In this regard, the Wisconsin DOT and UMTA carefully coordinate the administration of their respective operating assistance programs.

The annual allocations of Section 5 funds to the three urbanized areas in the Region for federal fiscal years 1975 through 1978 are set forth in Table 208.

### Table 208

# URBAN MASS TRANSPORTATION ADMINISTRATION SECTION 5–FUNDING ALLOCATIONS FOR THE MILWAUKEE, RACINE, AND KENOSHA URBANIZED AREAS: 1975-1978

Fiscal Year	Milwaukee	Racine	Kenosha		
1975 1976 1977 1978	\$ 2,601,554 4,335,924 1,083,923 5,636,395 6,720,217	\$ 295,766 492,943 123,229 640,792 764 021	\$ 228,810 381,350 95,332 495,728		
Total	\$20,378,113	\$2,316,751	\$1,792,281		

Source: Wisconsin Department of Transportation.

State Elderly and Handicapped Transportation <u>Aid Programs</u>: The 1977 State Budget Act also contained a \$2.6 million biennial appropriation for two new state aid programs to finance the improvement of specialized transportation services for Wisconsin's elderly and handicapped residents. These two new programs, to be administered by the Wisconsin Department of Transportation, are authorized under Sections 85.08(5) and 85.08(6) of the Wisconsin Statutes. The annual appropriations for these two new programs are \$1 million for Section 85.08(5) and \$300,000 for Section 85.08(6).

Under the first new program, authorized by Section 85.08(5), each county in Wisconsin will be allocated a proportionate share of the \$1 million annual appropriation based on each county's percent of the total number of elderly and handicapped individuals in Wisconsin. In general, counties may use these funds to: (1) directly provide transportation services to the elderly and handicapped; (2) aid other organizations which are providing such services, and; (3) create a "Transportation Stamp" program for elderly and handicapped residents to purchase transportation services from existing providers. Calendar year 1978 will be the first program year for purposes of Section 85.08(5). The annual allocations of state aids to the seven counties of the SEWRPC Region are: Kenosha \$24,426; Milwaukee \$225,339; Ozaukee \$9,625; Racine \$32,797; Walworth \$15,806; Washington \$12,708; and Waukesha \$37,027.

The second new program, Section 85.08(6), is intended to supplement the federal capital grant program authorized under Section 16(b)(2) of the Urban Mass Transportation Act. All private, nonprofit corporations which qualify for a 16(b)(2)grant will be eligible for state aids under Section 85.08(6) which will provide the 20 percent local match for capital acquisitions. Such corporations would also qualify for \$5,000 per vehicle "block grants" under Section 85.08(6) to offset operating expenses. By statute, the "block grants" are one-time only grants and once a recipient had expended the funds, no additional state aids would be given under Section 85.08(6).

Only those private nonprofit corporations which qualified for a 16(b)(2) grant after July 1, 1977, will be eligible for state aids under Section 85.08(6).

State Urban Mass Transit Aids: Beginning with calendar year 1974, the State of Wisconsin, through its Department of Transportation, has provided financial assistance to local public agencies which subsidize urban mass transit systems serving the general public. The state urban mass transit operating assistance program, authorized under Section 85.05 of the Wisconsin Statutes, provides local governments up to two-thirds of the nonfederal share of annual operating losses. Since all of the current recipients of state mass transit aids under Section 85.05 in the SEWRPC Region are also eligible for federal operating assistance under the Section 5 program, the theoretical sharing ratio of annual operating losses is 50 percent federal, 33 percent state, and 17 percent local.

Other urban areas within the Region of 5,000 or more population are, however, eligible for state mass transit aids if they choose to subsidize an urban transit system. Also for purposes of Section 85.05, a "mass transit" system can be a "shared-ride" taxi system as well as the more conventional bus system. The current recipients of Section 85.05 funds in the Region are: Milwaukee, Ozaukee, and Waukesha Counties, and the Cities of Racine and Kenosha. For the 1977-79 State Biennium, the statewide appropriation for Section 85.05 program is \$17.5 million. More than one-half of that amount is expected to be expended in the Region.

In addition to these seven potential funding sources, other monies are also available to fund county elderly and handicapped transportation services. These include federal funds available

through programs such as federal revenue sharing, Title VII of the Older American's Act (nutrition program); Title XIX of the Social Security Act (medical assistance program); Title XX of the Social Security Act (Social Services for low-income and public assistance recipients) and state funds available through the Department of Health and Social Services, State Division of Vocational Rehabilitation. The distinction between these potential funding sources and the seven previously discussed is that while some portion of the monies available through these sources can be used for transportation they are not specifically available only for that purpose. Thus a decision to use these funds for transportation means that some other eligible expenditure under these programs such as the purchase of additional meals under the Title VII nutrition program must be foregone because a decision is made to use some of the nutrition funds for transportation to the nutrition sites. In addition, use of these funds is in many instances restricted to specific clientele and limited trip purposes. Thus, except for revenue sharing funds, these special program funds are generally too restrictive to be used to fund a major part of any general transportation service of the elderly and handicapped.

In the case of the seven previously discussed funding sources available for elderly and handicapped transportation services, however, monies are specifically designated for only transportation uses. In addition, a local unit of government's eligibility for funds under these programs requires that "special efforts" to provide transportation for the elderly and handicapped, particularly wheelchair users and semiambulatory persons, be made. Therefore, these funds should be sought first by local units of government to assist them in providing general transportation services to the elderly and handicapped.

# THE REGIONAL PLAN FOR THE TRANSPORTATION HANDICAPPED WITHIN THE FOUR STUDY AREAS

Since the travel habits and patterns of the transportation handicapped residents of the Region are largely influenced by geographic linkages that transcend local political jurisdiction, the structure of the recommended plan was designed to serve four integral subareas of the Region, namely, the Milwaukee urbanized area, the Kenosha urbanized area, the Racine urbanized area, and the rural or nonurbanized area of the Region. Although the basic responsibility for the plan implementation, the program administration, and the specific procedures for establishing the improved transportation systems is proposed to rest at the county level, it is considered, nevertheless, desirable to highlight and broadly summarize the recommended plan elements for each of these four study areas as a means of stressing the interrelationship of the various agencies in achieving total plan implementation.

# Milwaukee Urbanized Area

The recommended plan for the transportation handicapped proposes that in the Milwaukee urbanized area an accessible transit system, a userside subsidy program, and a coordinated agency transportation system be implemented. The Milwaukee urbanized area encompasses all of Milwaukee County and the adjacent highly urbanized portions of Ozaukee, Washington, and Waukesha Counties. However, since no operating authority exists which covers all of the urbanized area, the administration of the various plan elements is divided among the four counties. Based upon the recommendations of the Citizens Technical and Coordinating Advisory Committees, it is proposed that the respective county boards designate certain existing county agencies to administer the recommended system improvements. Within Milwaukee County the principal administrative agency is recommended to be the Milwaukee County Transit Board; and in Ozaukee, Washington, and Waukesha Counties, it is recommended that the County Highway Committee be the principal administrative agency.

The Washington County Older Adult Transportation Program and the Waukesha County Program on Aging would also be involved in the establishment and administration of the demand responsive transportation systems in the nonurbanized areas of these two counties. Even though these two agencies may not be directly involved in the implementation of the plan recommendations within the urbanized area, it is important that these two agencies be consulted in implementation of all plan elements in order to assure optimal coordination of total service improvements aimed at enhancing the mobility of the transportation handicapped in the Milwaukee urbanized area.

Administration of the accessible transit system which operates almost entirely within Milwaukee County boundaries is recommended to be undertaken by the Milwaukee County Transit Board.

Similarly, implementation and administration of coordinated agency transportation would be undertaken by each respective county designated administrative agency, with these agencies assuming responsibility for the coordination of intercounty as well as intracounty transportation. Administration of the user-side subsidy program will necessarily involve extensive coordination among the four counties. No local taxi service exists in the portion of Washington County included as part of the Milwaukee urbanized area and only nominal service exists in the portion of Ozaukee County included as part of the Milwaukee urbanized area. These areas are often served by taxi systems located in Milwaukee County when trips are made between the counties. Since the user-side subsidy program is limited to the Milwaukeeurbanized-area portions of these two adjacent counties, and since the areas are a very small portion of the overall area of these two counties. it is recommended that Washington and Ozaukee Counties consider entering an intergovernmental agreement with Milwaukee to administer the user-side subsidy program for those portions of Ozaukee and Washington Counties included as part of the Milwaukee urbanized area. The intergovernmental relationship would minimize the administrative burden of the user-side subsidy program in Ozaukee and Washington Counties while enhancing the efficiency of the service to be provided by putting into action the urbanized area concept of transportation. In Waukesha County, unlike Ozaukee and Washington Counties, over one-fourth of the County is included as part of the Milwaukee urbanized area and four taxi services operate in this area. The Waukesha County Highway and Transportation Committee currently oversees the operations of Wisconsin Coachlines commuter bus service to downtown Milwaukee. Therefore, it has been recommended that this agency be designated by the Waukesha County Board to administer the user-side subsidy transportation program for the transportation handicapped. It is important to stress the need for cooperation and coordination among all of the administrative agencies involved if the goal of an effective and efficient user-side subsidy program which provides a broad range of service over the entire Milwaukee urbanized area is to be met.

# Racine Urbanized Area

The recommended plan for the transportation handicapped proposes that in the Racine urbanized area an accessible transit system and a user-side subsidy program be implemented. It also proposes further coordination of the existing coordinated agency transportation system. The Racine urbanized area roughly encompasses the City of Racine and the highly urbanized areas adjacent but beyond the City boundaries. Existing transportation within the Racine urbanized area consists of a City-owned-and-operated transit system, a taxicab service, and a coordinated agency transportation system provided by Lincoln Lutheran Specialized Transportation. Based upon the recommendations of the Technical and Coordinating Advisory Committee, it is proposed that the county board designate existing agencies to implement the recommended plan.

Within Racine County the principal administrative agencies recommended for such designation are the Racine County Human Services Board, the City of Racine Transit and Parking Commission, and Lincoln Lutheran Specialized Transportation. It is important to note that the Racine County Human Services Board and Lincoln Lutheran Specialized Transportation are the recommended agencies to also be involved in the administration of the demand responsive transportation system in the nonurbanized area of Racine County. Coordination of this demand responsive system and the user-side subsidy program in terms of service provision is essential, particularly as such coordination assures the most efficient and effective provision of service possible on an areawide basis.

# Kenosha Urbanized Area

The recommended plan for the transportation handicapped proposes that in the Kenosha urbanized area an accessible transit system and a userside subsidy program be implemented and that the existing agency transportation systems be coordinated. The Kenosha urbanized area roughly approximates the City of Kenosha, but in some areas extends beyond the City to include contiguous highly urbanized areas. Existing services within the Kenosha urbanized area consist of a City-owned-and-operated transit system and three taxicab companies. Based upon the recommendations of the Technical and Coordinating Advisory Committee, it is proposed that the county board designate certain existing agencies to administer the recommended transportation system improvements. Within Kenosha County, the principal administrative agencies recommended to be so designated are the Kenosha County Highway Committee, the Kenosha Parking and Transit Commission of the City of Kenosha, and the Kenosha Achievement Center. It should be stressed that the designated County Board agency and the Kenosha Achievement Center should also

be active in the administration of the demand responsive transportation system in the nonurbanized part of Kenosha County. Coordination of the rural demand responsive transportation system with the Kenosha urbanized area user-side subsidy program in terms of service provision is essential, particularly since such coordination assures the most efficient and effective provision of service which can be obtained under the two systems.

# Nonurbanized Areas of the Region

The recommended plan for the transportation handicapped proposes that in the nonurbanized areas of the Region-all of Walworth County and the nonurbanized portions of Kenosha, Ozaukee, Racine, Washington, and Waukesha Countiesdemand-responsive transportation services and coordinated agency transportation be established. It is recommended that implementation of the demand responsive service be made the responsibility of existing agencies to be designated by the individual county boards concerned. As indicated earlier, in five of the six counties which constitute the nonurbanized area, demand responsive systems are recommended to be instituted as part of existing specialized transportation programs and in one county, Ozaukee County, establishment of the system is to be achieved through contract with a private provider. This plan approach utilizes existing county resources to the maximum extent possible and eliminates potential duplication of service. The agencies recommended by the Advisory Committees to be the principal agencies responsible for providing demand responsive transportation services are: in Kenosha County, the Kenosha Achievement Center; in Ozaukee County, a private service provider designated by the county board under contract to Ozaukee County; in Racine County, Lincoln Lutheran Specialized Transportation; in Walworth County, Walworth County Senior Citizens' Services; in Washington County, the Older Adult Transportation program; and, in Waukesha County, the Waukesha County Program on Aging.

Cooperation in the service provision and service areas of the demand responsive transportation system must be maintained between the urbanized and nonurbanized areas of each county. Further, it should be stressed that tripmaking between any of the seven counties in the Region is recommended to be accommodated in the program operations. Clearly, the scope of all the plan elements are interdependent within each subarea of the Region, between the subareas within counties, and between counties. Failure of one unit or level of government to implement a major element of the recommended system plan may adversely affect the actions of many other units and agencies of government and thereby detract from the ability of the entire Region to accommodate the transportation needs of the transportation handicapped residents of the Region in an efficient and costeffective manner.

# THE REGIONAL PLAN FOR THE TRANSPORTATION HANDICAPPED WITHIN EACH OF THE SEVEN COUNTIES

Presented below are detailed recommendations for implementing the recommended elements of the regional plan for the transportation handicapped within each of the seven counties in the Southeastern Wisconsin Region. Also presented below are recommendations concerning initial and ongoing program administration as well as program development and preliminary budget schedules.

The development schedules are brief and vary by administrative structure for each proposed operation. For example, in the nonurbanized areas of the Region where the demand responsive service is proposed to be combined with existing programs, a detailed implementation process is not needed, since designated agencies are familiar with the establishment and operation of such services. Moreover, the county summaries are intended to serve as initial development guides. In actual practice, those responsible for implementing services are envisioned as developing their own refined development programs and schedules based on local experience and conditions.

Therefore, in each county, recommended activities for the third, fourth, and fifth years should be considered tentative pending analyses of experiences in the first year of operation. It is recommended that this plan be updated at the end of the second year to provide a better perspective of the later years of operation.

The budget summaries are intended to succinctly present anticipated expenditures for each recommended service within each county. Several factors are important in analyzing the data contained in the tables. First, an 8 percent inflation factor, compounded annually, was used to determine futureyear operating costs. Comparative fixed dollar costs are also provided. The \$20,000 capital cost estimate for purchased vehicles used to provide demand responsive transportation service—should an individual county or its designated administrative agency determine it to be more cost-effective to purchase vehicles rather than lease them or contract with a private operator to provide this service-is considered appropriate for a two- to three-year period. In the nonurbanized areas where demand responsive services may be combined with existing operations the costs represent the public costs of providing the recommended service in addition to any existing funds currently being expended. In counties with nonurbanized areas. excluding Ozaukee County, the patronage estimates include new ridership in addition to any existing ridership by both transportation handicapped and elderly, since transportation services for these two groups are to be combined.

Two assumptions have been made concerning future funding sources. The first assumption is that existing funding programs will be continued. The second assumption is that by 1980 adequate funding will be available from existing and new sources to meet at least two-thirds of the net operating costs of special transportation programs for the elderly and the handicapped

# Milwaukee County

In the recommended regional plan for transportation handicapped, an accessible transit system, a user-side subsidy program, and coordinated agency transportation services are proposed for Milwaukee County.

Administrative Agency: The Milwaukee County Transit Board is recommended to have the lead responsibility for implementing the recommended plan. The Transit Board would determine capital needs for transit improvement, subject to County Board approval. In this way the Transit Board would control the timing of the introduction of accessible buses. The Transit Board also would exercise direct policy control over operations and. thus, could mandate that service be implemented in accordance with the plan recommendations. The management company and employees comprising the staff of the Milwaukee County Transit System would have responsibility for the day-to-day administrative and operating duties involved in plan implementation.

With regard to the user-side subsidy program, it is proposed that the Transit Board again determine policy. It is further recommended that the Transit Board charge an appropriate County agency or department with the responsibility for administering the program. The agency or department so designated could also be made responsible for coordinating agency transportation services. Again, under the direction of the Transit Board, the designated agency or department would analyze the service performance inventories suggested herein, and based on these analyses make recommendations to the Transit Board. The Transit Board would then advise the County Board concerning funding for agency transportation services. The Transit Board would also notify the Wisconsin Departments of Health and Social Services and Transportation as to the progress being made in coordinating services.

Advisory Committee: The U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) require the formation of advisory groups which include transportation handicapped to assist in the planning and implementation of transportation services. An advisory group can assist the Transit Board in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County level advisory group including not less than seven transportation handicapped persons be appointed by the Transit Board.

Establishment of the Accessible Transit System: The Milwaukee County Transit Board plans to replace 250 regular buses with accessible buses over the next two years, and to purchase 30 additional smaller accessible buses of 25 to 35 passenger capacity. The schedule calls for the order of 100 accessible buses in 1977 with delivery in 1978, and with the remaining 150 large accessible buses and 30 smaller accessible buses to be ordered in 1978 and delivered in late 1978 or early 1979.

Routes of Accessible Buses: Based on analyses of the ridership on existing transit routes, population patterns, and specific land uses of potential importance to the transportation handicapped the following assignment of the first 100 accessible buses is recommended: 88 of the first 100 buses are recommended to be assigned to 11 routes: Route 10-Wells Street; Route 11-Vliet-Howell; Route 14-Holton-Mitchell; Route 18-National Avenue; Route 21-North Avenue; Route 23-Fond du Lac-Wisconsin; Route 27-27th Street; Route 62-Capitol Drive; Route 71-State Street; Route 76-N. 60th-S. 71st Streets; and, Route 80-6th Street-Teutonia. It is anticipated that all 100 buses will be delivered at approximately the same time and can be put into service on these routes virtually concurrently. The remaining 12 accessible buses are recommended to be used as spare vehicles. If experience indicates a need for fewer spares, Route 51—Oklahoma Avenue, which requires four buses, is recommended as the next route to be made accessible.

The assignment of these 88 accessible buses as recommended would result in the above routes being made completely accessible during the base service period with approximately one-half of the peak period buses accessible. These routes would also be fully accessible on Saturdays and Sundays. The areas of the County that would have accessible service are shown on Map 4. Table 209 indicates the approximate headways for accessible buses on these routes. The second purchase of 180 buses would result in a completely accessible base period fleet and a partially accessible peak period fleet as recommended in Chapter VIII. The 180 buses would be assigned to the remaining 24 transit routes over which bus service is provided during the base period as required to meet the plan objectives with attendant appropriate changes to the public timetables and transit maps.

Identification of Accessible Buses: In addition to the purchase of accessible buses, several ancillary steps should be taken to assure the accessibility of the system. A well-known symbol, such as the universal accessibility decal, should be placed in a readily visible location on the outside of each accessible bus indicating that the bus is accessible. Since the buses will be a newer and different model from those now operated, their very appearance

#### Table 209

	Bus Route		Peak Period ^a Headway ^b	Midday Headway	Saturday Headway	Sunday Headway
Number	Name	of Buses	(minutes)	(minutes)	(minutes)	(minutes)
10	Wells Street	10	10-20 ^c	10-25	10-30	15-30
11	Vliet-Howell	8	10	15	15	25
14	Holton-Mitchell	9	10-20	15-30	15-25	15-35
18	National Avenue	8	10-20	15-25	15-25	15-35
21	North Avenue	7	15	15	15	15
23	Fond du Lac-Wisconsin	10	10-30	10-75	10-40	15-30
27	27th Street	10	10-20	10-25	10	15
62	Capitol Drive	6	5-10	15	15-25	15-30
71	State Street	4	15	30	25	25
76	North 60th-South 70th Streets	8	15-30	15-30	15-30	20-40
80	6th Street-Teutonia	8	10	15	15-30 (Airport)	20-35 (Airport)
	Spare Vehicles	12				

#### SCHEDULE OF SERVICE FOR FIRST 100 ACCESSIBLE BUSES IN THE MILWAUKEE URBANIZED AREA

^a Represents morning peak period.

^bAll headways are approximated and rounded to the nearest five minutes unless otherwise indicated.

^C When two headways are shown, the lower number represents main route, and the higher number represents maximum headway on branch routes.

Source: Applied Resource Integration, Ltd.

Map 4

ROUTES AND AREA OF COVERAGE FOR FIRST 100 ACCESSIBLE TRANSIT BUSES IN MILWAUKEE COUNTY



The initial purchase in 1977 of 100 new wheelchair lift-equipped buses to upgrade and expand the Milwaukee County Transit System's 537-bus fleet will be sufficient to ensure that 11 of the 29 "major local service routes" in the entire 58-route system—those serving the greatest number of typical travel origins and destinations of the handicapped—have accessible bus service operating at headways of 10-30 minutes between buses depending on the route and time of day. The puchase of an additional 180 wheelchair lift-equipped buses recommended in 1978 will provide the Milwaukee County Transit System with a sufficient number of accessible buses to operate all transit service during the base and 50 percent of the transit service during the peak periods with accessible buses.

Source: Applied Resource Integration, Ltd., and Milwaukee County Transit System.

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should be sufficiently different from the nonaccessible buses to make them readily visible at a distance of at least a city block. In addition the buses could be painted in different livery from nonaccessible buses. Public timetables and transit maps should be changed to indicate the routes and the buses that are accessible. The public timetable should indicate that the nonpeak period service on certain routes is fully accessible. Also, the timetable should indicate which buses are accessible during the peak periods.

Driver Training: A very important step in assuring the effectiveness of the accessible transit system is special driver instruction on the use of a wheelchair lift and on appropriate operating procedures when a transportation handicapped person is traveling. A driver must be able to position a bus in order to effectively activate the lift or ramp and enable a transportation handicapped person to use the lift or ramp. Additionally, although a driver will not be required to assist a passenger in any way except to raise and lower a lift or ramp, the driver must not put a bus in motion until the transportation handicapped person is seated or, in the case of a person in a wheelchair, has been secured in a tiedown. Drivers should not be expected to assist in the use of a tiedown; a transportation handicapped person in a wheelchair must be able to board and secure himself in the wheelchair tiedown.

<u>Costs</u>: The costs of equipping a bus with a wheelchair lift or ramp and attendant accessibility features are estimated to be about \$9,000 per bus. The provision of accessibility features on the first 100 new buses, therefore, has an incremental capital cost of about \$900,000, and on the next 180 new buses an incremental capital cost of about \$1,620,000. A federal capital grant under Section 3 of the Urban Mass Transportation Act of 1964, as amended, can be used to offset 80 percent of these incremental costs.

The net annual operating costs associated with the recommended accessible transit system have been estimated at approximately \$84,000. One-half of these transit system costs are eligible for funding through federal transit operating assistance under Section 5 of the Urban Mass Transportation Act of 1964, as amended, and two-thirds of the remainder can be funded through state operating assistance.

Establishment of the User-Side Subsidy Program: The plan recommends the establishment of a userside subsidy program in the Milwaukee urbanized

area to serve the transportation handicapped living farther than two blocks from an accessible transit route and for those living within two blocks of such a route but who cannot use accessible transit due to their particular disability. Of the various types of user-side subsidy programs that could be implemented, a user-side subsidy program involving user payment of a part of the cost at the time of the trip is recommended, with subsequent reimbursement of the remaining cost to the service provider by the public agency responsible for the program. The different types of programs, the reasons for selecting a program that involves partial payment by the user at the time of the trip, and the operating procedures of this type of program are discussed in Appendix G.

Administrative Agency: The unit of government recommended as the policymaking agency for the user-side subsidy program is the Milwaukee County Transit Board. It is further recommended that a Milwaukee County agency or department be made available as staff to the Transit Board to aid in the administration of the program.

It is important to note the proposed role of Milwaukee County in the conduct and administration of the user-side subsidy program in Ozaukee and Washington Counties. As noted earlier, the plan recommends that Washington and Ozaukee Counties enter into an intergovernmental agreement with Milwaukee County under the terms of which the former would reimburse Milwaukee County for the administration of the user-side subsidy program in the urbanized area portions of these two counties.

Vehicle Operations: In Milwaukee County the taxicab systems use metered fares based upon mileage traveled. All of the taxi services are exclusive ride, so that no additional passengers can be picked up unless the first passenger in the taxicab grants permission. In contrast, chair car carriers currently operate on a shared-ride basis. It is recommended that the user-side subsidy program initially operate on the same basis as the existing taxicab and chair car services.

Contracts would have to be negotiated between these private transportation providers and the agency or department administering the user-side subsidy program. Each provider listed in Chapter V should be contacted and those willing to participate in the program would be certified. Certification would involve insuring that the vehicle fleet to be used is safe, that drivers have or are planning to take handicapped sensitivity training, and that an operator has adequate financial accountability. The actual contract between the County and the providers would specify the duties of the provider, provider reporting requirements, and the basis for reimbursement of each provider (see Appendix G).

Refinement of System Design: A critical element in the initial process of establishing a user-side subsidy program is refinement of the program recommended herein. Upon actual implementation of the recommended program some of the assumptions underlying the design of that program may change based on additional knowledge and experience with such programs elsewhere. The development of the program should be regarded as an evolutionary process in which initial experience, properly monitored, provides input for the successive refinement of the program. Consequently, the initial period of providing transportation service to the transportation handicapped should be viewed as a demonstration period during which valuable experience and knowledge about operating such a program is gained and used to improve the program in subsequent years. The only firm guidelines offered herein are that the program be administered by an existing County agency or department and that the data gathering operations required for monitoring the program be carefully designed to provide the data required for updating the plan in subsequent years as part of a continuing transportation planning process for the transportation handicapped. Such data should include: trip origins and destinationsparticularly major travel destinations served; number of persons served; number of trips; fare charge per trip; user complaints or suggestions; and cost per trip.

Marketing: A marketing program should be undertaken to promote utilization of the program. Pamphlets explaining the program should be distributed through social service agencies to their clientele and through various organizations for the handicapped. Newspaper advertising copy and public service announcements for use on radio and television should be prepared which describe the program to potential users. This advertising should explain that the user-side subsidy program consists of reduced taxi and chair car fares, that persons who cannot board an accessible transit vehicle are eligible for the subsidy, that a person must register and be certified as eligible to use the program, and that further information is obtainable from the County.

Another facet of the marketing program should involve training sessions on use of the services. Such sessions could be conducted by social service agencies serving clients who would be eligible for the user-side subsidy program. Since the firm presently operating the Milwaukee County transit system for the Milwaukee County Transit Board has a marketing department, it is recommended that the development of the overall marketing program, including both the advertising and training segments to be used by interested Social Service agencies, be delegated to this department.

Registration: A valid identification card should be required for use of the user-side subsidy program. Since the Milwaukee County transit system already has a machine that produces photo-identification cards for the elderly and handicapped H.A.L.F fare program, it is recommended that this machine be made available for use in registration of potential users of the user-side subsidy program. Once the program is operating, an eligible person would be required to secure an identification card from the Milwaukee County Transit System administrative offices. However, during the initial three months of operation of the program, it is recommended that a community registration program be mounted under which eligible transportation handicapped persons could register and obtain an identification card at various sites conveniently located throughout the urbanized area. Eligibility criteria and certification forms are discussed in Appendix F.

Fare Structure and Fare Collection: As described in Appendix G, under the recommended user-side subsidy program, a passenger would pay a specified percentage of the total taxi or chair car carrier trip cost at the time of the trip. Required attendants would be permitted to ride free on both taxis and chair car carriers. The driver would complete a trip voucher which would be subsequently filed by the firm providing the service for payment by the public agency responsible for administering the program.

In Chapter VIII a user fare level of 50 percent of the normal taxi metered or zone fare for a trip by taxi or chair car carrier was recommended. The passenger would not pay any gratuity to the driver. Instead, the taxi firm, in seeking reimbursement from the designated public agency responsible for administering the program, would add a 15 percent special service subsidy to the normal full fare charge for the trip and receive payment for this amount in addition to the remaining 50 percent of the full user fare for the trip not paid by the user. The taxi firm would then pay the 15 percent special service subsidy to the driver in addition to his regular wage for each transportation handicapped person trip he services. This special service subsidy would be guaranteed to the driver to compensate for any passenger assistance the driver may be required to provide to transportation handicapped persons.

The fare for persons using chair car carriers should be the same as for those using taxi services. However, since almost all chair car service is in response to advance notice or immediate telephone requestas opposed to hail-and-ride service-a passenger can be informed in advance what the fare will be. The chair car carrier service provider will, like the taxi operator, submit trip vouchers for reimbursement. However, in this case, the reimbursement for the trip by the designated public agency responsible for administering the user-side subsidy program will be based on the pre-established fares ordinarily charged by chair car carriers for their services. In other words, if a chair car carrier firm has an approved fare rate that includes a minimum fare of \$12.00 for the first 30 blocks traveled, the firm would be reimbursed by the program administrative agency for the difference between a taxi fare for a trip of similar length and the customary \$12.00 charge for the trip. The rider under the user-side subsidy program would be charged a fare based on the taxi fare for a trip of similar length. Since this customary charge is already much higher than the charge for the same trip by taxi and includes customer service charges or gratuity, no payment for a gratuity will be made to chair car carrier firms. Also, because the public subsidy costs per trip for persons using chair car carrier services will be considerably higher than the same trip made by a transportation handicapped person traveling by taxi, chair car carrier trips should be restricted to only the most severely disabled.

In Chapter VI, the recommended fare policy included an upper limit of \$2.50. Since an upper fare limit can encourage longer trips than necessary, it is recommended that the maximum \$2.50 fare apply only to intracounty trips, while no fare limit be set on intercounty trips. Regularly scheduled long trips can be handled on a case-by-case basis. For example, a regular commuting work trip of 10 miles could be arranged at a lower fare, especially through chair car carriers who already have subscription rates. Moreover, Ozaukee and Washington Counties may choose to limit fares to \$2.50 maximum for trips to downtown Milwaukee. Persons making other long trips would be required to pay higher fares or more preferably arrange for a combination user-side subsidy/accessible bus trip.

Cost of Initial Establishment of the User-Side Subsidy Program: The cost of the initial work required to establish a user-side subsidy program is estimated to total about \$17,200. Most of this total would be absorbed in the salary and fringe benefits of staff persons assigned to this program part time during its initial six month period of implementation. About \$6,000 would be required for program refinement; about \$3,000 for registration including costs of cards, supplies, and personnel; about \$3,000 for development of electronic data handling procedures and software as needed; about \$3,500 for marketing; and about \$1,700 for miscellaneous expenses.

Annual Ongoing Program Administrative Costs: Experience elsewhere and more specifically in Danville, Illinois, has indicated that once a user-side subsidy program is established, the administrative duties and functions are minimal. For the Milwaukee area, it is estimated that up to 10 percent of the time of a senior level staff member of the designated agency or department responsible for the program, and up to 25 or 30 percent of the time of two assistants may be required to administer the program. Thus, the program may require the hiring of an additional full-time staff person to help administer the program and to assume some of the work load of the other assistants.

The annual ongoing program administrative costs for Milwaukee County are estimated to be about \$25,500. About \$16,000 of this total would be required for wages and benefits; about \$1,500 would be required for office space and telephone service; about \$1,500 would be required for materials and supplies; about \$4,000 would be required for data processing; about \$1,500 would be required for advertising; and about \$1,000 for miscellaneous expenses. This cost figure is approximately \$14,000 higher than that originally estimated in Chapter VIII.

<u>Total Operating Costs</u>: The initial and continuing program implementation costs presented herein are somewhat higher than the original cost estimates utilized in the analyses of the alternative plans presented in Chapter VIII. Furthermore, at the direction of the Advisory Committee, the cost of the first year's operation of the program has been adjusted to reflect the potential impact of a start-up period on program costs and revenues. The adjusted costs for 1978—the recommended first of operation—are set forth in Table 210.

The ridership cost and revenue projections are all based on assumptions derived from actual though limited experience in other communities. Therefore, as previously discussed, during the first year of program operation, data should be collected on such factors as: trip origins and destinations, particularly major travel destinations served; number of persons served; number of trips; fare charge per trip; user complaints or suggestions; and cost per trip. These data should then be used to revise forecasts of ridership, revenue, and costs for future years. Since such data are not now available, preliminary estimates for future years are based on an estimated 15 percent average growth per year in ridership, an 8 percent rate of general price inflation, and subsequent increases in taxi fares due to inflation. The resulting preliminary forecast of program costs and revenues through 1982 are shown in Table 211. For comparative purposes the data are also shown in constant 1978 dollars.

Funding: The proposed user-side subsidy program in Milwaukee County would not be eligible for federal operating assistance because it does not offer shared ride services. The implementation of

# Table 210

# ANTICIPATED FIRST-YEAR (1978) OPERATING STATISTICS FOR THE USER-SIDE SUBSIDY PROGRAM-MILWAUKEE

Operating Statistics	Year: 1978
Estimated Ridership	46,300 Trips
Annual Trip Cost Annual Administrative Cost Annual Implementation Cost	\$154,600 25,500 17,200
Total First Year Costs	\$197,300
Total Revenue	\$ 57,700
Net First Year Cost	\$139,600

Source: Applied Resource Integration, Ltd.

shared-ride services would be complicated. Existing taxi meters in Milwaukee cannot record more than one passenger trip at a time. Therefore, shared riding would require either new taxi meters at an approximate cost of \$400 each, or conversion from a metered fare system to a zone fare system. With either change, shared riding could be implemented. Either of these two major changes to the taxi system in Milwaukee would, however, benefit only a small proportion of the total taxi ridership. Moreover, the existing transit services may be expected to completely exhaust available federal transit operating assistance in the future. Attempts at diverting federal operating assistance to the proposed user-side subsidy program through establishment of shared riding would consequently require a reduction in the regular public transit service, increases in regular transit fares, or increases in local transit operating subsidies to replace the diverted monies. Consequently, it is recommended that the present operating procedures be maintained, and that all funding of the user-side subsidy program be by county and state monies.

Recent state legislation has made Milwaukee County eligible for about \$225,000 per year to assist in operating transportation services for the elderly and handicapped. This is an amount in excess of the estimated net annual program costs for 1978 as set forth herein. As stated in Chapter VIII, however, the estimates of potential ridership are based on assumptions concerning the effects of cost constraints and actual ridership may vary significantly from the estimate. Therefore, any surplus monies should be used as a contingency fund for the user-side subsidy program and then, if available, applied to assist in the coordination and operation of social service agency vehicles.

Coordinated Agency Transportation: Most social service agencies apparently agree that coordinated agency transportation is a good concept that has the potential for improving the delivery of social service agency transportation services, as well as for reducing the costs thereof. In actual practice, however, the barriers to coordination can be formidable. Given the existing institutional structure, voluntary cooperation at the local level is probably the best means available for achieving coordinated services. However, if such voluntary cooperation is lacking, other means to achieve the desired coordination are available. The state and the county provide funding for various social service transportation programs and, consequently, are in a position to encourage coordination. It is

#### Table 211

#### BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-MILWAUKEE COUNTY

	Projected Annual Passenger Trips and Implementation Costs ^a for Each Proposed Transportation System											
	1978		19	1979		1980		1981		1982		
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars		
Accessible Transit Systems Passenger Trips	83	83,400		139.900		153.000		168.000		185.000		
Revenue Operating Cost Net Operating Cost Capital Cost	\$ 26,000 110,000 84,000 900,000	\$ 26,000 110,000 84,000 900,000	\$ 38,600 247,900 209,300 1,620,000	\$ 38,600 229,500 190,900 1,620,000	\$ 47,800 279,500 231,700	\$ 47,800 239,600 191,800 	\$ 52,500 315,400 262,900	\$ 52,500 250,400 197,900	\$ 57,800 357,000 299,200 	\$ 57,800 262,400 204,600 		
User-side Subsidy Program Passenger Trips Revenue. Operating Cost Net Operating Cost	46,300 \$ 57,700 \$ 57,700 187,300 187,300 139,600 139,600		55,900 \$ 75,100  \$ 75,100 220,400  204,100 145,300  129,000		64,700 \$ 94,400     \$ 94,400 273,200    234,200 178,800    139,800		71,600 \$112,800 \$112,800 324,300 257,400 211,500 144,600		78,600 \$133,700 \$133,700 382,500 281,200 248,800 147,500			
Accessible Transit System, User-Side Subsidy Program, and Rural Demand-Responsive System Passenger Trips.	122 200		194	101.000		217 700		220,600		263.600		
Revenue Operating Cost Net Operating Cost Capital Cost.	\$ 83,700 297,300 213,600 900,000	\$ 83,700 297,300 213,600 900,000	\$ 113,700 468,300 354,600 1,620,000	\$ 113,700 433,600 319,900 1,620,000	\$142,200 552,700 410,500	\$142,200 473,800 331,600	\$165,300 639,700 474,400	\$165,300 507,800 342,500	\$191,500 739,500 548,000 	\$191,500 543,600 352,100 		

Estimated Annual Total Expenditures by Expected Sources of Revenues												
	1	1978		1979		1980		1981		1982		
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars		
Funding Sources for Operating Costs         Federal UMTA Section 5         State 85.05         State 85.08(5)         County         Total	\$ 42,000 28,000 116,640 26,960 \$213,600	\$ 42,000 28,000 116,640 26,960 \$213,600	\$ 104,650 69,770 130,770 49,410 \$ 354,600	\$ 95,450 63,630 116,100 44,720 \$ 319,900	\$115,850 77,230 160,920 ^b 56,500 \$410,500	\$ 95,900 63,930 125,820 45,950 \$331,600	\$131,450 87,630 190,350 ^b 64,970 \$474,400	\$ 98,950 65,970 130,140 ^b 47,440 \$342,500	\$149,600 99,730 223,920 ^b 74,750 \$548,000	\$102,300 68,200 132,750 ^b 48,850 \$352,100		
Funding Sources for Capital Costs Federal UMTA Section 3 or 5 County	\$720,000 180,000 \$900,000	\$720,000 180,000 \$900,000	\$1,296,000 324,000 \$1,620,000	\$1,296,000 324,000 \$1,620,000			 					

^a Costs shown are in addition to costs incurred in operating the existing transit and demand responsive systems. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years the county would have to assume these costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration, Ltd., and SEWRPC.

accordingly recommended that the Milwaukee County Transit Board take the lead in seeking better coordination, with the state becoming active only if no action is taken at the local level. It would also be feasible for the responsibility for coordination to be delegated by the County Board to another County agency or department, with the Transit Board remaining the policymaking body for these activities.

Until a supplemental social service agency coordination strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agencies furnishing transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds-such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amended-for new facilities or equipment through the agency designated by the County Board as being responsible for coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service, identified in this plan the County's designated responsible agency or the County Board itself should disapprove of capital grant applications for a use of public funds by existing county- or state-supported social service agency transportation providers to do anything more than replace existing transportation-related equipment or facilities. Similarly, except for new vehicle acquisitions for use in

demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by social service transportation providers not supported by county or state funds for use of public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

The transportation services provided by the eight largest social service agencies operating in Milwaukee County appear to form a good basis for initial efforts toward consolidation or coordination of agency transportation in the County. These eight agencies provide approximately 85 percent of the agency handicapped tripmaking and 95 percent of the agency elderly tripmaking. Based on the agency vehicle data presented in Chapter VIII, a potential exists for up to a 40 percent increase in overall productivity. It is expected, however, that no more than 50 percent of this gain could be realized as a practical matter. Nevertheless, this would represent a savings of approximately \$4,000 per year for the same level of service, or approximately 2,000 to 4,000 extra passenger trips. The eight agencies which should be considered in any initial coordination effort are Goodwill Industries, Elder Care Lines, Project Involve, Inc., Curative Workshops, Red Bus Corporation, Housing Authority (City of Milwaukee), American Red Cross, and Jewish Vocational Service. It should be emphasized that there is no intention here to exclude other agencies who would be willing to participate.

Methods of Coordination: As noted in Chapter VIII, there are a number of means of achieving coordinated agency transportation services. A more detailed description of these methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operations, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county is the service performance inventory described in Appendix I. Under the service performance inventory an agency providing service monitors its vehicle operations for a period of at least two weeks and thereby collects such information as: type of service, number of vehicles, service area, hours of service, ridership, vehicle utilization, productivity, and annual transportation budget. The service performance inventory could be used voluntarily by agencies interested in coordination. However, it is recommended that each agency in southeastern Wisconsin applying for county- or state-administered funds be required to complete such an inventory as part of its application process. The service performance inventory data obtained from the various agencies would be analyzed to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a social service agency coordinated transportation plan. Where coordination appears feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would be made dependent upon steps taken towards coordination. Once recommendations are made, either by the county or by the state, the Milwaukee County Transit Board would be responsible for overseeing the coordination efforts.

Development Schedule: A transportation system development schedule encompassing all special handicapped transportation services proposed for Milwaukee County is presented in Table 212. The schedule covers a five-year period, 1978-1982. The schedule for the first two full years highlights the major steps to be undertaken. During the latter three years, the schedule is not as detailed. Planning for the transportation needs of the elderly and handicapped is a relatively new field in which minimal data exist upon which good planning standards can be developed. Therefore, operations during the first years of the program should provide the data necessary to update or refine the program in the latter years.

The system development schedule contains a listing of the agency or agencies recommended to be responsible for conducting such activity. Although the Transit Board is recommended to have the central role and, as the principal administrative agency, would be involved in all phases of the program, it has only been listed in the implementation schedule where it plays a highly active role. The staffs of the respective agencies or departments listed on the development schedule would conduct the work under the policy direction of the Transit Board.

### Table 212

# REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN DEVELOPMENT SCHEDULE FOR MILWAUKEE COUNTY

Staging Year	Recommended Action	Implementing Agency
1977	Prepare and submit a UMTA Section 3 capital grant	Milwaukee County Board/
	application to purchase 100 accessible buses	Milwaukee County
1978	Finalize design of user-side subsidy program	Agency or staff designated by the Transit Board
	Begin contract negotiations with private taxi and	Agency or staff designated
	chair car carriers that want to be involved in user-side subsidy program	by the Transit Board
I	Design marketing program for all transportation handicapped transportation services	Milwaukee County Transit System
	Appoint Transportation Handicapped Advisory Committee	Transit Board
	Require social service agencies to complete a service performance inventory	Agency or staff designated by the Transit Board
	Establish registration procedures for user-side subsidy	Agency or staff designated
	program and identify registration sites	by the Transit Board
	Implement registration process	Agency or staff designated by the Transit Board
	Train transit bus drivers in use of lift and operating	Milwaukee County Transit System
	procedures for transportation handicapped	
	Change public timetable and map to reflect accessible transit routes	Milwaukee County Transit System
	Implement accessible transit operations on 11 routes (expected mid-year)	Milwaukee County Transit System
	Prepare and submit a UMTA Section 3 grant application to purchase 180 buses	County Board/Transit Board/ Agency or staff designated by the Transit Board
	Order 180 buses upon receipt of grant	County Board/Transit Board
	Sign contracts with private taxi and chair car operators for provision of user-side subsidy service	Transit Board
	Implement user-side subsidy program	Agency or staff designated by the Transit Board
1979	Continue user-side subsidy registration process and	Agency or staff designated
	Initiate full marketing program	Milwaukee County Transit System
	Recommend agency procedures for coordination	Agency or staff designated
	Mandate coordination implementation	County Board/Transit Board
	Implement accessible transit service on remaining	Milwaukee County Transit System
	Milwaukee County Transit System routes	
	Review agency coordination efforts and recommend	Agency or staff designated
	further actions	by the Transit Board
1980	Continue operations	All agencies
1981	Continue operations	All agencies
1982	Continue operations	All agencies

Source: Applied Resource Integration, Ltd.

<u>Budget:</u> Table 211 presents a five-year budget for the accessible transit and user-side subsidy programs. Both programs would expand gradually over the five-year period.

The funding for the programs is recommended to be derived from three sources. The federal portion represents federal transit operating assistance under Section 5 and capital assistance under Section 3 of the Urban Mass Transportation Act of 1964, as amended. The state funding represents monies available under Section 85.05 of the State Statutes (state transit operating assistance), and Section 85.08(5) of the State Statutes (operating assistance for elderly and handicapped transportation programs). Local funds would have to be made available from the general fund or other local funding sources. Under the plan, the required local funding would increase from \$27,000 in 1978 to \$74,800 in 1982.

Costs for coordinated agency services are not shown. Although certain administrative costs would be incurred by implementing such services, these should be minor and capable of absorbtion by existing agencies.

# Ozaukee County

In the recommended regional plan for the transportation handicapped, a user-side subsidy program, a rural demand responsive transportation service, and coordinated agency transportation are proposed for Ozaukee County.

Administrative Agency: An agency designated by the Ozaukee County Board such as the Ozaukee County Highway Committee should be assigned reponsibility for implementation of the Ozaukee County proposals. The designated agency would oversee the user-side subsidy program in that part of the County included in the Milwaukee urbanized area. The program should be implemented through an intergovernmental agreement between Ozaukee and Milwaukee Counties. In this way, Ozaukee County would retain policy control over operations in the County, but would be relieved of an additional administrative burden. It should be noted that the administration of the program primarily involves verifying trip vouchers, reimbursing taxi and chair car operators, and recording pertinent monitoring information on the operations. This work would be accomplished by a Milwaukee County agency. The one administrative duty Ozaukee County may want to assume would be handling customer information and

complaints. This duty would provide a local focal point for public contact.

In terms of the recommended rural demand responsive service, it is proposed that the County Board designate an agency such as the County Highway Committee to contract with a private operator for the management and operations of the service. The Highway Committee would again be in a policymaking role with a private contractor periodically reporting to the Committee concerning the management and operation of the system.

The Highway Committee, or other agency or department designated by the County Board, would also be the body responsible for coordinating social service agency transportation. The role of the Committee would be to analyze the service performance inventory data (Appendix I) and identify areas of potential coordination. The individual social service agencies would then be responsible for establishing, administering, and operating coordinated transportation services. The Committee would also keep the Wisconsin Department of Transportation and Health and Social Services informed as to progress toward coordination.

Advisory Committee: The U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA) require the formation of advisory groups which include the transportation handicapped to assist in the planning and implementation of transportation services. An advisory committee can assist in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County level advisory group including not less than seven transportation handicapped persons be appointed by the Ozaukee County Highway Committee or the appropriate agency designated by the County Board.

Establishment of the User-Side Subsidy Program: The plan recommends the establishment of a userside subsidy program in the Milwaukee urbanized area to serve the transportation handicapped living more than two blocks from an accessible transit route and for those living within two blocks of a route but who cannot use accessible transit due to their disability. Taxi service exists in the urbanized portion of Ozaukee County. Further, taxi systems in Milwaukee County can be utilized to make trips between Milwaukee and Ozaukee Counties. Therefore, as indicated above, it is recommended that Ozaukee County enter into an intergovernmental agreement with Milwaukee County to administer the user-side subsidy program, thereby minimizing the administrative burden of this program in Ozaukee County, while enhancing the geographic area to be serviced.

The initial period of providing transportation service for the transportation handicapped through a user-side subsidy program and through an intergovernmental agreement with Milwaukee County should be viewed as a demonstration period. During this time valuable experience and knowledge about operating such a program will be gained which can be used to improve the program in subsequent years.

Program Operations: The user-side subsidy program marketing, registration, and program refinement services would be provided by Milwaukee County if Milwaukee and Ozaukee Counties enter into a cooperative agreement. Each eligible person in Ozaukee County would be issued an identification card and number which would be coded with the designated home county. With the use of this card, any trip made by residents of Ozaukee County could be duly recorded. In processing the receipts of the taxi and chair car operators, Milwaukee County would segregate and sum the trips made by Ozaukee County residents. The County would then be billed for the trip costs plus any administrative charges.

In Chapter VI, the recommended fare policy included an upper limit of \$2.50. Since an upper fare limit can encourage longer trips than necessary, it is recommended that the maximum \$2.50 apply for intracounty trips while no fare limit be set on intercounty trips. Regularly scheduled long trips can be handled on a case-by-case basis. For example, a regular commuting work trip of 10 miles could be arranged at a lower fare, especially with the use of chair car carriers who already have subscription rates. Moreover, Ozaukee County may choose to limit fares to \$2.50 maximum for trips to downtown Milwaukee. Persons making other long trips would be required to pay higher fares or to arrange for a combination user-side subsidy/ accessible bus trip.

Program Costs: It is estimated that approximately \$500 would be expended on behalf of Ozaukee County as part of the costs associated with the initial procedures for establishment of the userside subsidy program in the Milwaukee urbanized area. It is also anticipated that annual administrative costs of the program will be approximately \$500. The 1978 operating statistics for a user-side subsidy program in the urbanized area of Ozaukee County are set forth in Table 213.

Establishment of Demand-Responsive System in the Nonurbanized Area of Ozaukee County: Ozaukee County does not currently own or operate any vehicles for the transportation of the elderly or the handicapped, although the Ozaukee County Department of Social Services has arrangements for client transportation. It is recommended that the county, through contract with a private operator, provide 24-hour advance notice, demand responsive service in the nonurbanized areas of the County. At the same time, however, the plan is intended to be sufficiently flexible to allow the County's designated administrative agency responsible for implementing the recommended plan to undertake further analyses to determine the advantages and disadvantages of using other potential public or private transportation providers. Service would initially be provided eight hours per day, three days per week, with the equivalent of one-vehicle service. The County would be divided into three sections, each receiving one-day-a-week service. Again, the initial period of providing transportation service to the transportation handicapped should be considered a demonstration period during which valuable experience and knowledge about operating such a program is gained which can be used to improve the program in subsequent years.

### Table 213

# ANTICIPATED FIRST-YEAR (1978) OPERATING STATISTICS FOR THE USER-SIDE SUBSIDY PROGRAM OZAUKEE COUNTY

Operating Statistics	Year: 1978
Estimated Ridership	1,200 Trips
Annual Trip Cost Annual Administrative Cost Implementation Cost	\$4,100 500 500
Total First Year Costs	\$5,100
Total Revenue	\$1,500
Net First Year Cost	\$3,600

Source: Applied Resource Integration, Ltd.

After six months of operation, service would be expanded to six days per week, with each section receiving two-day-per-week service. At this time, a \$0.50 fare would also be imposed. Due to the relatively small number of rural transportation handicapped in Ozaukee County, any fare higher than \$0.50 would most likely result in too small a demand to justify any service at all. The expected ridership in Ozaukee County during the first six months is 1,200 trips, or 200 trips per month. Although institution of the \$0.50 fare may be expected to reduce demand, 1,500 trips are still projected to be made in the second six months of operation. The cost of providing the service is estimated at \$12 per hour, or \$15,000 per year. Revenues of \$1,350 are anticipated. Funding for the service would come partially from state programs and partially from the general fund of the County.

During the five-year plan period a number of demand responsive transportation service improvements are recommended for implementation. In 1979, it is recommended that five-day-per-week subscription service for work and educational trip purposes be implemented. In 1980, it is recommended that general demand responsive transportation services for any trip purpose be expanded to four days per week by contracting with a private transportation provider for additional service. By 1980, it is anticipated that increased funding under newly developing state and federal aid programs will become available to further financially assist local units of government in the provision of transportation services for the elderly and handicapped. Should these additional monies become available it is proposed that the user fare be lowered to a flat fare of \$0.25 per ride. Lastly, in 1981 and 1982 the plan recommends a continuation of demand responsive transportation services with possible service expansion as user demand warrants.

<u>Coordinated Agency Transportation</u>: Most social service agencies would probably agree that coordinated agency transportation is a good concept that has the potential for improving the delivery of social service agency transportation services as well as for reducing the costs thereof. In actual practice, however, the barriers to coordination can be formidable. Given the existing institutional structure, voluntary cooperation at the local level is probably the best means available for achieving coordinated services. However, if such voluntary cooperation is lacking, other means to achieve the desired coordination are available. The state and the county provide funding for various social service transportation programs, and, consequently, are in a position to encourage coordination. It is accordingly recommended that the County Board designate an agency such as the Ozaukee County Highway Committee to take the lead in obtaining coordination, with the state becoming active only if no action is taken at the local level. It must also be noted that it is feasible for the responsibility for coordination to be delegated by the County Board to another County agency or department with the Highway Committee remaining the policymaking body for these activities.

Until a supplemental social service agency coordination strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agencies furnishing transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds-such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amended-for new facilities or equipment through the agency designated by the County Board as being responsible for achieving coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the County's designated responsible agency or the County Board itself should disapprove of the submittal of capital grant applications for a use of public funds by county- or state-supported social service agency transportation providers to do anything more than replace existing transportation-related equipment or facilities. Similarly, except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by any social service transportation provider not supported by county or state funds for use of public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

In Ozaukee County there are currently four agency transportation programs in effect which provide a total of about 800 trips per month. Of this total, about 45 percent are provided by the Port Washington Senior Citizens Project. Since none of the agencies reported a vehicle utilization in excess of 50 percent, there appears to be a good potential for coordination between these agency transportation services which should produce substantially higher vehicle utilization and service efficiency.

Methods of Coordination: There are numerous alternative means of achieving coordinated agency transportation services as previously described in Chapter VIII. A more detailed description of the alternative methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operations, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county and developing a coordinated social service agency transportation plan is the service performance inventory described in Appendix I. Under the service performance inventory an agency monitors its vehicle operations for a minimum period of two weeks and provides such information on: type of service, number of vehicles, service area, hours of service, ridership, vehicle utilization, productivity, and annual transportation budget. The service performance inventory could be used voluntarily by agencies interested in coordination. It is recommended, however, that each agency in southeastern Wisconsin applying for county or state administered funds be required to complete a service performance inventory as part of its application process. The service performance inventory data obtained from the various agencies in each county would be analyzed to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a social service agency coordinated transportation plan. Where coordination is feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken to effect coordination. Once recommendations are made, either by the County or by the state, the designated County agency would be responsible for overseeing the coordination efforts.

Development Schedule: A five-year transportation system development schedule for Ozaukee County is set forth in Table 214. The County Highway Committee or other County designated agency with County provided staff is anticipated to be directly responsible for the majority of activities. Once a private operator has been contracted with, the operator would assume certain responsibilities concerning operation of the demand responsive service. Similarly, once an intergovernmental agreement has been made with Milwaukee County, the Milwaukee County Transit Board would administer the user-side subsidy program.

Activities in 1978 and 1979 have been identified in relatively specific terms. For the years 1980, 1981, and 1982 less specific detail is given. As noted earlier, planning for the transportation needs of the elderly and handicapped is a relatively new field with minimal data upon which good planning standards can be developed. Experience during the first years of operation will determine specific activities in the latter years.

Budget: A five-year budget for the user-side subsidy program and the rural demand responsive service is presented in Table 215. The user-side subsidy program begins in 1978 with patronage of 1,200 annual passenger trips and net annual operating costs of \$3,600. The program expands gradually over the five-year period reaching patronage of 2,100 rides per year and net annual operating costs of \$6,700 in 1982.

The rural demand responsive service has a slightly different pattern. The projected patronage growth is gradual over the five-year period with a slight increase when fares are reduced to \$0.25 in 1980. This fare, which is the lowest of the rural demand responsive services, results in higher per capita ridership in Ozaukee County. The costs of these services follow a pattern similar to the revenue, increasing gradually over the five-year period.

The combined budgets for the user-side subsidy program and rural demand responsive service program show first year operating costs of \$17,250. No costs are associated with coordinated agency transportation since it is a measure to reduce existing expenditures. Although small administrative costs would be incurred, they are considered to be more than offset by the savings. For the user-side subsidy program and rural demand responsive program, total costs reach \$26,450 by 1982. Although net operating costs almost double over the five-year period, anticipated local costs should only increase by one-third if current funding trends are continued.

#### Table 214

### REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN DEVELOPMENT SCHEDULE FOR OZAUKEE COUNTY

Staging Year	Recommended Action	Implementing Agency
1978	<ul> <li>Coordinate efforts with Milwaukee County for planning, marketing, and implementing user-side subsidy program Identify private operators who could provide rural demand responsive service</li> <li>Solicit bids for the provision of rural demand responsive service.</li> <li>Prepare a small-scale marketing program for rural demand responsive service</li> <li>Appoint Transportation Handicapped Advisory Committee</li> <li>Establish registration procedures for user-side subsidy program in conjunction with Milwaukee County and for rural demand responsive service in conjunction with social service agencies</li> </ul>	Agency designated by the Ozaukee County Board Agency designated by the County Board
	<ul> <li>Require agencies to complete a service performance inventory</li> <li>Contract with a private operator for demand responsive service</li> <li>Conduct a community registration program for both user- side subsidy program and demand responsive service</li> <li>Implement demand responsive service with no fare</li> <li>Raise fare on demand responsive service to \$0.50 (mid-year)</li> <li>Finalize an intergovernmental agreement with</li> </ul>	Agency designated by the County Board Agency designated by the County Board Agency designated by the County Board Private Operator Private Operator County Board
	Milwaukee County Implement user-side subsidy program	Agency designated by the the County Board/ Milwaukee County
1979	Recommend agency procedures for coordination Implement five-day-per-week subscription service for work and education trips	Agency designated by the County Board Private Operator
1980	Contract for additional demand-responsive service to expand operations to four days per week Reduce demand responsive transportation system fares to \$0.25 per one-way trip	Agency designated by the County Board Agency designated by the County Board
1981 and 1982	Continue operations (possible expansion)	All agencies

Source: Applied Resource Integration, Ltd.

The state funding indicated for 1978 is based on preliminary allocations of monies under the new state funding for elderly and handicapped services—Statute 85.08(5). In the remaining years the estimates of state funding are based on the assumption that current trends have increased the funding for services in this area and should continue to do so; however, it is also conceivable that a portion of these latter year costs would be funded through future federal programs.

#### Table 215

#### BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-OZAUKEE COUNTY

	Projected A	nnual Passenger T	rips and Imple	mentation Costs ^a	for Each Prop	posed Transporta	tion System				
	1	978	1	1979		1980		1981		1982	
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	
User-side Subsidy Program Passenger Trips	1,200		1,	1.500		1,700		1,900		2.100	
Revenue	\$ 1,500 5,100 3,600	\$ 1,500 5,100 3,600	\$ 2,000 5,900 3,900	\$ 2,000 5,500 3,500	\$ 2,500 7,300 4,800	\$ 2,500 6,200 3,700	\$ 2,900 8,600 5,700	\$ 2,900 6,800 3,900	\$ 3,500 10,200 6,700	\$ 3,500 7,500 4,000	
Rural Demand Responsive Systems	2,700		3 000		5.000		6.000		7.000		
Revenue. Operating Cost Net Operating Cost Capital Cost	\$ 1,350 15,000 13,650 	\$ 1,350 15,000 13,650 	\$ 1,500 17,000 15,500 	\$ 1,500 15,700 14,200 	\$ 1,250 18,400 17,150	,000 \$ 1,250 15,780 14,530 	\$ 1,500 20,000 18,500 	\$ 1,500 \$ 1,500 15,900 14,400 	, \$ 1,750 21,500 19,750 	,000 \$ 1,750 15,800 14,050 	
User-Side Subsidy Program and Rural Demand Responsive Systems											
Passenger (1)ps         Revenue         Operating Cost         Net Operating Cost         Capital Cost	3 \$ 2,850 20,100 17,250 	\$ 2,850 20,100 17,250 	4, \$ 3,500 22,900 19,400 	\$ 3,500 21,200 17,700 	6 \$ 3,750 25,700 21,950 	,700 \$ 3,750 21,980 18,230 -	\$ 4,400 28,600 24,200	\$ 4,400 22,700 18,300 	9 \$ 5,250 31,700 26,450 	,100 \$ 5,250 23,300 18,050 	

Estimated Annual Total Expenditures by Expected Sources of Revenues												
	1978		1	1979		1980		1981		1982		
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars		
Funding Sources for Operating Costs State 85.08(5)	\$ 9,620 7,630 \$17,250	\$ 9,620 7,630 \$17,250	\$ 9,620 ^b 9,780 \$19,400	\$ 9,620 ^b 8,080 \$17,700	\$19,760 ^c 2,190 \$21,950	\$16,410 ^c 1,820 \$18,230	\$21,780 ^c 2,420 \$24,200	\$16,470 ^c 1,830 \$18,300	\$23,810 ^C 2,640 \$26,450	\$16,250 ^c 1,800 \$18,050		

^a Costs shown are in addition to costs incurred in operating the existing transit and demand responsive systems. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b Maximum state allocation to Ozaukee County for fiscal years 1978 and 1979.

c Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years, the County would have to assume the costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration Ltd., and SEWRPC.

#### Washington County

In the recommended regional plan for the transportation handicapped, a user-side subsidy program, a rural demand responsive transportation service, and coordinated agency transportation¹ are proposed for Washington County.

Administrative Agency: An agency designated by the County Board, such as the Washington County Highway Committee is proposed as the agency responsible for implementing the recommendations. As with Ozaukee County, it is proposed that Washington County enter into an intergovernmental agreement with Milwaukee County for the administration of the user-side subsidy program in that part of the County included in the Milwaukee urbanized area. Under the agreement, the County Highway Committee or other designated agency would establish policy direction for the operation of the program in the County, but day-to-day management would be provided by Milwaukee County. These day-to-day administrative functions would involve primarily verifying trip vouchers, reimbursing taxi and chair car operators, and recording pertinent monitoring information on the opera-

¹Although it was determined in Chapter VIII that coordinated agency transportation did not presently appear feasible in Washington County because existing vehicle utilization by the three social service agencies which provide transportation is quite high, being in the range of 75-95 percent, it is included in the development program so that any services provided can be periodically monitored through evaluation of the service performance inventory.

tions. An administrative duty Washington County may want to assume would be handling customer information and complaints. This duty would provide a local medium of contact with the daily operations. It is recommended that the rural demand responsive service be operated in conjunction with the County Older Adult Transportation (OAT) Program. The Highway Committee would provide overall policy direction but the daily management and operation of the program would rest with the OAT Program.

The County Highway Committee would also oversee the agency coordination efforts within the County. It should be noted that the responsibility for this effort could also be delegated to another county agency; however, the Committee would maintain policy direction. The major role of the Committee would be to evaluate the service performance inventory data (Appendix I), identify areas of coordination, and keep the Wisconsin Departments of Transportation and of Health and Social Services informed as to progress being made in the area of social service agency transportation coordination.

Advisory Committee: The U. S. Department of Transportation, the Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) require the formation of advisory groups which include transportation handicapped to assist in the planning and implementation of transportation services. An advisory committee can greatly assist the local agency responsible for the program in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County level advisory group including not less than seven transportation handicapped persons be appointed by the Washington County Highway Committee.

Establishment of the User-Side Subsidy Program: The plan recommends establishment of a user-side subsidy program in the Milwaukee urbanized area to serve the transportation handicapped living farther than two blocks from a transit route and for those living within two blocks of a route but who cannot use accessible transit due to their disability. No taxi service exists in the small portion of Washington County which is a part of the Milwaukee urbanized area. Taxi systems in Milwaukee County are normally utilized when trips are made between Milwaukee and Washington Counties. Therefore, as indicated above, it is recommended that Washington County enter into an intergovernmental agreement with Milwaukee County to administer the user-side subsidy program, thereby minimizing the administrative burden of this program in Washington County, while enhancing the efficiency of the service to be provided through the broadness of the urbanized area concept.

The initial period of providing transportation service for the transportation handicapped through a user-side subsidy program and through an intergovernmental agreement with Milwaukee County should be viewed as a demonstration period. During this time valuable experience and knowledge about operating such a program will be gained which can be used to improve the program in subsequent years.

Program Operations: The user-side subsidy program marketing, registration, and system refinement services in Washington County would be provided by Milwaukee County if Milwaukee and Washington Counties enter into the recommended cooperative agreement. Each eligible person in Washington County would be provided with an identification card and number which would be coded with the designated home county. With the use of this card, any trip made by residents of Washington County could be duly recorded. In processing the receipts of the taxi and chair car operators, Milwaukee County would segregate and sum the trips made by Washington County residents. The County would then be billed for the trip costs plus any administrative charges.

In Chapter VI, the recommended fare policy included an upper limit of \$2.50. Since an upper fare limit can encourage longer trips then necessary, it is recommended that the maximum \$2.50 apply for intracounty trips while no fare limit be set on intercounty trips. Regularly scheduled long trips can be handled on a case-by-case basis. For example, a regular commuting work trip of 10 miles could be arranged at a lower fare, especially with the use of chair car carriers who already have subscription rates. Moreover, Washington County may choose to limit fares to \$2.50 maximum for trips to downtown Milwaukee. Persons making other long trips would be forced to pay higher fares or more preferably arrange for a combination user-side subsidy/accessible bus trip.

Program Costs: It is estimated that approximately \$300 would be expended on behalf of Washington County as part of the costs associated with the initial procedures for establishment of the userside subsidy program in the Milwaukee urbanized area. It is also anticipated that annual administrative costs of the program will be approximately \$300. The 1978 operating statistics for a user-side subsidy program in the urbanized area of Washington County are set forth in Table 216.

Establishment of Demand-Responsive System in Washington County: Washington County provides transportation services through its Older Adult Transportation (OAT) Program, which is funded primarily through the Area Agency on Aging (AAA) with in-kind services and some funding from the City of Hartford and Washington County. The service consists of one van providing 24-hour advance notice, demand responsive service in different parts of the County on each day, five days per week. The service is free and limited to persons over 60 years of age.

It is recommended that Washington County purchase, lease, or contract for the services and operate one additional 19- to 25-passenger vehicle, increase service to six days per week, and provide two vehicles two days per week in each of three different sections of the County. The service would be operated under the auspices of the Older Adult Transportation program with existing service hours and procedures, but would be expanded to include as clients the transportation handicapped. Since the current funding source prohibits charging fares to the elderly, none would be levied for the transportation handicapped. If such fares were levied, the transportation handicapped would be sub-

### Table 216

### ANTICIPATED FIRST-YEAR (1978) OPERATING STATISTICS FOR THE USER-SIDE SUBSIDY PROGRAM WASHINGTON COUNTY

Operating Statistics	Year: 1978
Estimated Ridership	200 Trips
Annual Trip Cost Annual Administrative Cost Implementation Cost	\$1,000 300 300
Total First Year Costs	\$1,600
Total Revenue	\$ 200
Net First Year Cost	\$1,400

Source: Applied Resource Integration, Ltd.

sidizing the elderly patrons. However, if the current funding is discontinued, as may be the case in 1979, a fare of \$1.00 is recommended.

The anticipated patronage of this service is 5,000 annual trips by the transportation handicapped. Projected costs of \$18,000 were derived using an hourly cost of \$9.00 which is slightly higher than reported current costs. Capital costs of purchased vehicles are estimated at \$20,000. A capital grant under Section 16(b)(1) of the Urban Mass Transportation Act of 1964, as amended, would provide 80 percent of the \$20,000 resulting in a local share of \$4,000. The operating costs would be funded through state and county funds.

During the five-year plan period a number of demand responsive transportation service improvements are recommended for implementation. In 1979, it is recommended that one additional vehicle be purchased, leased, or contracted for service. By this time the Older Adult Transportation Program would have a fleet of three vehicles. At such time it is recommended that the County be divided into two sections, with transportation service expanded to three days per week at a fare of \$1.00 per one-way trip. It is also recommended that subscription transportation service be implemented on a five-day-per-week basis for work and educational trips. By 1980, it is anticipated that increased funding under newly developing state and federal aid programs will become available to further financially assist local units of government in the provision of transportation services for the elderly and handicapped. Should these additional monies become available it is proposed that the user fare be lowered to a flat fare of \$0.50 per one-way trip. To serve an expected higher level of travel demand among the transportation handicapped at this lower fare it is further recommended that in 1980 an additional vehicle be purchased, leased, or contracted for service. In 1981 and 1982, the plan recommends a continuation of demand responsive transportation services with possible service expansion as user demand warrants.

<u>Coordinated Agency Transportation:</u> Most social service agencies would probably agree that coordinated agency transportation is a good concept that has the potential for improving the delivery of social service agency transportation services as well as for reducing the costs thereof. In actual practice, however, the barriers to coordination can be formidable. Given the existing institutional structure, voluntary cooperation at the local level is probably the best means available for achieving coordinated

transportation services. However, if such voluntary cooperation is lacking, other means to achieve the desired coordination are available. The state and the county provide funding for various social service agency transportation programs and consequently are in a position to encourage coordination. It is accordingly recommended that the County Highway Committee take the lead role in seeking better coordination of social service agency transportation, with the state becoming active only if no action is taken at the local level. It must also be noted that it is feasible for the responsibility for coordination to be delegated by the County Board to another county agency or department with the Highway Committee remaining the policymaking body for these activities.

Until a supplemental social service agency coordination strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agency transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds-such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amended—for new facilities or equipment through the agency designated by the County Board as being responsible for achieving coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the County's designated responsible agency or the County Board itself should disapprove of the submittal of capital grant applications for a use of public funds by county- or state-supported social service agency transportation providers to do anything more than replace existing transportation-related equipment or facilities. Similarly, except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by any social service transportation provider not supported by county or state funds to expend public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

As indicated in Chaper V, coordinated agency transportation is not considered feasible at the present time in Washington County. The following information is presented as guidelines in the development of coordinated programs at such time as coordination efforts would be beneficial. Methods of Coordination: There are numerous alternative means of achieving coordinated agency transportation services as previously described in Chapter VIII. A more detailed description of the alternative methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operation, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county and developing a coordinated social service agency transportation plan is the service performance inventory described in Appendix I. Under the service performance inventory, an agency monitors its vehicle operations for a minimum period of two weeks and provides such information on type of service, number of vehicles, service area, hours of service, ridership, vehicle utilization, productivity, and annual transportation program budget. The service performance inventory could be used voluntarily by agencies interested in coordination. It is, however, recommended that each agency in southeastern Wisconsin applying for county- or state-administered funds be required to complete a service performance inventory as part of its application process. The service performance inventory data obtained from the various agencies in each county would be analyzed to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a social service agency coordinated transportation plan. Where coordination is feasible an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken to effect coordination. Once recommendations are made, either by the County or by the state, the County Highway Committee would be responsible for overseeing the coordination efforts.

<u>Development Schedule</u>: A five-year transportation system development schedule for Washington County is set forth in Table 217. In its policymaking role, the agency designated by the county board, such as the County Highway Committee,

### Table 217

# REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN DEVELOPMENT SCHEDULE FOR WASHINGTON COUNTY

Staging Year	Recommended Action	Implementing Agency
1978	Coordinate efforts with Milwaukee County for planning, marketing, and implementing user-side subsidy program	Agency designated by the Washington County Board
	Make appropriate changes in the operating procedures of the Older Adult Transportation Program to allow the transportation handicapped to ride	Older Adult Transportation Program
	Prepare a small-scale marketing plan for the rural demand responsive service	Older Adult Transportation Program
	Establish registration procedures for user-side subsidy program	Agency designated by the County Board/Older Adult Transportation Program
	Require agencies to complete a service performance inventory	Agency designated by the County Board
	Conduct a community registration program for user- side subsidy program and demand responsive service	Agency designated by the County Board/Older Adult Transportation Program
	Purchase, lease, or contract for services and operate an additional vehicle. Implement demand responsive service	County Board/Agency designated by the County Board/Older Adult Transportation Program
1979	Finalize an intergovernmental agreement with Milwaukee County	County Board
	Implement the user-side subsidy program	Agency designated by the County Board/Milwaukee County Transit Board
	Recommend agency procedures for coordination	Agency designated by the County Board
	Purchase, lease, or contract for services and operate one additional vehicle in demand responsive service	County Board/Agency designated by the County Board/Older Adult Transportation Program
	Expand demand-responsive service to three days per week with the County divided into two sections	Older Adult Transportation Program
	Implement a \$1.00 fare on the rural demand responsive service	Older Adult Transportation Program
	Implement five-day-per-week subscription service for work and educational trips	Older Adult Transportation Program
1980	Purchase, lease, or contract for services and operate one additional vehicle in demand responsive service	County Board/Agency designated by the County Board
	Reduce fare to \$0.50 on the demand responsive transportation service	Older Adult Transportation Program
1981	Continue operations (possible expansion)	All agencies
1982	Continue operations (possible expansion)	All agencies

Source: Applied Resource Integration, Ltd.

is ultimately responsible for all tasks. The other key agencies are the OAT Program and the County Board, which has authority over the designated administrative agency responsible for implementing the plan recommendations. A detailed program is presented for the first two years of 1978 and 1979, with activities for the following three years, 1980 to 1982, contingent upon actual program operating experience. As noted earlier, planning for the transportation needs of the transportation handicapped is a relatively new field with minimal data upon which good planning standards can be developed. Experience during the early years of service expansion will determine specific activities in the latter years. <u>Budget</u>: A five-year budget for the user-side subsidy program and the rural demand responsive service is presented in Table 218. Due to the low number of transportation handicapped living in the urbanized area of Washington County, the user-side subsidy program is expected to increase only slightly in both patronage and costs over the five-year plan period, beginning with 200 annual passenger trips and a net operating cost of \$1,400 in 1978 and increasing to 300 annual passenger trips and a net operating cost of \$1,500 by 1982.

The rural demand responsive service exhibits a slightly different pattern, due to the fact that both able-bodied elderly and transportation handi-

### Table 218

#### BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-WASHINGTON COUNTY

Projected Annual Passenger Trips and Implementation Costs ⁸ for Each Proposed Transportation System										
	1	1978 1979		1980		1981		1982		
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
User-side Subsidy Program Passenger Trips. Revenue. Operating Cost Net Operating Cost	\$ 200 1,600 1,400	200   \$ 200   ,600   1,400	\$ 300 1,300 1,000	200 \$ 300 . 1,200 900	\$ 300 1,500 1,200	200   \$ 300   1,300   1,000	\$ 400 1,700 1,300	300 \$ 400 1,400 1,000	\$ 500 2,000 1,500	300   \$ 500   1,500   1,000
Rural Demand Responsive Systems         Passenger Trips.         Revenue.         Operating Cost         Net Operating Cost         Capital Cost.	5 18,000 18,000 20,000	,000 18,000 18,000 20,000	9 \$ 9,000 38,000 29,000 20,000	,000 \$ 9,000 35,200 26,200 20,000	16 \$ 8,000 63,000 55,000 20,000	5,000 \$ 8,000 54,000 46,000 20,000	18 \$ 9,000 68,000 59,000 	5,000 \$ 9,000 54,000 45,000 	20 \$10,000 73,000 63,000 	,000 \$10,000 53,700 43,700 
User-Side Subsidy Program and Rural Demand Responsive System Passenger Trips . Revenue. Operating Cost . Net Operating Cost . Capital Cost .	5 \$ 200 19,600 19,400 20,000	,200 \$ 200 19,600 19,400 20,000	9 \$ 9,300 39,300 30,000 20,000	,200 \$ 9,300 36,400 27,100 20,000	16 \$ 8,300 64,500 56,200 20,000	5,200 \$ 8,300 55,300 47,000 20,000	18 \$ 9,400 69,700 60,300	\$,300 \$ 9,400 55,400 46,000 	20 \$10,500 75,000 64,500 	,300 \$10,500 55,200 44,700 

Estimated Annual Total Expenditures by Expected Sources of Revenues										
	1978		1979		1980		1981		1982	
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
Funding Sources for Operating Costs State 85.08(5)	\$12,710 ^b 6,690 \$19,400	\$12,710 ^b 6,690 \$19,400	\$12,710 ^b 17,290 \$30,000	\$12,710 ^b 14,390 \$27,100	\$50,580 ^c 5,620 \$56,200	\$42,300 ^C 4,700 \$47,000	\$54,270 ^c 6,030 \$60,300	\$41,400 ^c 4,600 \$46,000	\$58,050 [°] 6,450 \$64,500	\$40,230 ^c 4,470 \$44,700
Funding Sources for Capital Costs Federal UMTA Section 16(b)(1) or 16(b)(2) County Total	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000				

^a Costs shown are in addition to costs incurred in operating the existing demand responsive system. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b Maximum state allocation to Washington County for fiscal years 1978 and 1979.

^C Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years, the County would have to assume these costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration, Ltd., and SEWRPC.

capped will be served by the same system. In 1978 with no fare being charged, an estimated 5,000 additional new trips would be made in Washington County by nonelderly transportation handicapped persons who will now be eligible for the OAT Program. In subsequent years patronage will increase, and thus ridership figures presented in Table 218 represent both transportation handicapped and able-bodied elderly. It must be remembered that all figures are marginal and do not include elderly and transportation handicapped currently transported on vehicles of the OAT Program or other agencies.

In 1979 a \$1.00 fare is proposed to compensate for the expected discontinuance of Area Agency on Aging funding. The following year fares are reduced by one-half because new state and federal funding sources are projected to be available in that year. The result is that the increase in ridership in 1979 due to increased service is initially dampened but in 1980 is enhanced.

Funding during the first two years is available from two sources. Under a new program state funding is available for transportation services for the elderly and transportation handicapped. The money can be used in several ways, but it is proposed that the County use those funds to finance the two proposals. The local share of the deficit would be general funds. In the last three years, it is anticipated that state sources will continue to exist to finance up to two-thirds of the deficit; however, it is conceivable that a portion of these latter year costs could be funded through future federal programs.

The projected budget does not show any costs associated with coordinated agency transportation. Although this concept will involve some administrative costs, these should be offset by the savings resulting from coordination.

# Waukesha County

In the recommended regional plan for the transportation handicapped, a user-side subsidy program, a rural demand responsive system, and coordinated agency transportation services² are proposed for Waukesha County.

Administrative Agency: An agency appointed by the County Board, such as the Waukesha County Highway and Transportation Committee, is recommended to be the agency responsible for implementing the proposed services for the transportation handicapped. Unlike the other outlying counties in the Milwaukee urbanized area, the user-side subsidy program in Waukesha County is proposed to be administered and operated separately from the Milwaukee County program. In Waukesha County over one-fourth of the County is urbanized and three taxi services operate in the area. Waukesha County currently oversees the provision of publicly subsidized transit service between Waukesha County and downtown Milwaukee. The Waukesha County Highway and Transportation Committee is, therefore, a logical agency to administer the user-side subsidy program. The taxicab companies and chair car carriers would provide the necessary services.

The rural demand responsive system should also function under the overall policy direction of the Waukesha County Highway and Transportation Committee, but the daily management and operation of the system could be delegated to the Waukesha County Program on Aging (WCPA).

The County Board appointed agency should also foster the coordination of agency transportation. The administrative and policymaking duties could be handled by the designated County agency. A major responsibility in the coordination of social service agency transportation would be to evaluate the service performance inventory data (Appendix I), identify areas of coordination, and keep the Wisconsin Department of Transportation and of Health and Social Services informed as to the progress being made.

Advisory Committee: The U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) requires the formation of advisory groups which include transportation handicapped persons to assist in the planning and implementation of transportation services. An advisory committee can assist in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County level advisory group including not less than seven transportation handicapped persons be appointed by the Waukesha County Highway and Transportation Committee.

Establishment of the User-Side Subsidy Program: The plan recommends the establishment of a user-

²Although it was determined in Chapter VIII that coordinated agency transportation did not presently appear feasible, it is included in the development program so that activities can be periodically monitored through evaluation of the service performance inventories.

side subsidy program in the Milwaukee urbanized area to serve the transportation handicapped living farther than two blocks from a transit route and for those living within two blocks of a route but who cannot use accessible transit due to their particular disability. Of the various types of userside subsidy programs that could be implemented, a user-side subsidy program involving user payment of a part of the cost at the time of the trip is recommended with subsequent reimbursement of the remaining cost to the service provider by the public agency responsible for the program. The different types of programs, the reasons for selecting a program that involves partial payment by the user at the time of the trip, and the operating procedures for this type of program are discussed in Appendix G.

Administrative Agency: Since no urbanized area operating authority exists, the administration of a user-side subsidy program in the Milwaukee urbanized area must be at the local government levels. In the Waukesha County portion of the Milwaukee urbanized area, the administrative agency is recommended to be the Waukesha County Highway and Transportation Committee.

The regional plan for the transportation handicapped was developed on the basis of study areas which reflect the origins and destinations of travel movements as well as fairly homogeneous groupings of populations in terms of urban versus rural life styles. To maximize the efficiency of the recommended systems, the systems must be able to function over the entire urbanized area rather than within individual municipal or county boundaries. This will require the close coordination of service among all of the four counties which contain portions of the Milwaukee urbanized area. Between Ozaukee, Washington, and Milwaukee Counties such coordination efforts should be relatively straight forward, due to the intergovernmental agreements recommended in the plan as the basis of providing the user-side subsidy program within Washington and Ozaukee Counties. However, special efforts toward program coordination will be needed between Milwaukee County and Waukesha County, since these two counties will be operating separate systems which inherently possess the greatest possibilities for operational isolation from the other systems within the area.

Vehicle Operations: In all the urbanized area of  $\overline{Waukesha}$  County except the City of Waukesha the taxicab systems use metered fares determined by

the mileage traveled. The operations in the City of Waukesha have a zone system to determine fares. Furthermore, only the City of Waukesha has shared-ride services. All other taxi services in the urbanized area are exclusive rider service under which no additional passengers can be picked up unless the first passenger in the taxicab grants permission to do so. The user-side subsidy program in Waukesha County would initially operate on the same basis as the existing taxicab and chair car services with shared-ride taxi service in the City of Waukesha and exclusive ride in other areas. Exclusive ride service precludes federal operating subsidies for a system. Chair car carriers currently operate on a shared-ride basis. They would continue in this mode under the program.

Contracts would have to be negotiated between the private transportation providers and the public administrative agency responsible for the conduct of the user-side subsidy program services. Each provider operating in the urbanized area of the County should be contacted and those willing to participate in the project should be certified. Certification would involve insuring that a fleet is safe, that drivers have or are planning to take handicapped sensitivity training, and that an operator has adequate fiscal accountability. The actual contract between the counties and the providers would specify the duties of the provider, provider reporting requirements, and the reimbursement formula for each provider (see Appendix G).

Refinement of System Design: A critical element in the initial process of establishing a user-side subsidy program is the refinement of the program design. The program design presented in this report is based on assumptions about such factors as funding levels and revenues. Once the program becomes operational, some of these assumptions may be negated by more knowledge about how the system works or by the acquisition of a different amount of monies than that assumed in the initial program design. The development of program administrative procedures and data gathering techniques should also be regarded as an evolving process which should provide input for the refinement of the initial recommended program design. Consequently, the initial period of providing transportation service to the transportation handicapped should be viewed as a demonstration period during which valuable experience and knowledge about operating such a program is gained which can be used to improve the program in subsequent years.

The only firm guidelines offered herein are that the program be administered by an existing County agency or department and that the data gathering operations required for monitoring the program be carefully designed to provide the data required for updating the plan in subsequent years as part of a continuing transportation planning process for the transportation handicapped. Such data should include: trip origins and destinations, particularly major travel destinations served; number of persons served; number of trips; fare charge per trip; user complaints and suggestions; and costs per trip.

Marketing: A marketing program should be undertaken to promote utilization of the program. Pamphlets explaining the program should be distributed through social service agencies and through various organizations for the handicapped. Newspaper advertising copy and public service announcements for use on radio and television should be prepared which describe the program to potential users. This advertising should explain that the user-side subsidy program consists of reduced taxi and chair car fares, that persons who cannot board an accessible transit vehicle are eligible for the subsidy, that a person must register and be certified as eligible to use the program, and that further information is obtainable from the County.

Another facet of the marketing program should involve training sessions on use of the services. Such sessions could be conducted in Waukesha by social service agencies serving clients who would be eligible for the user-side subsidy program. It is recommended that the marketing and training programs to be utilized as part of the user-side subsidy program be developed by contracting with the University of Wisconsin-Extension for such services.

Registration: A person would need a valid identification card to use the user-side subsidy program. Eligibility criteria and certification forms are discussed in Appendix F. The Waukesha County Highway and Transportation Committee staff should be assigned the responsibility of providing the necessary identification cards for the user-side subsidy program in Waukesha County. If sufficient coverage of the Waukesha County population can be obtained, Waukesha County may consider entering into an agreement with Milwaukee County for provision of the identification cards in Waukesha County.

Fare Structure and Fare Collection: As described in Appendix G, under the recommended user-side subsidy program, a passenger would pay a specified percentage of the total taxi or chair car carrier trip cost at the time of the trip. Required attendants would be permitted to ride free on both taxis and chair car carriers. The driver would complete a trip voucher which would be subsequently filed by the firm providing the service for payment by the public agency responsible for the program.

In Chapter VIII a user fare level of 50 percent of the normal taxi metered or zone fare for a trip by taxi or chair car carrier was recommended. The passenger would not pay any gratuity to the driver. Instead, the taxi firm, in seeking reimbursement from the designated public agency responsible for administering the program, would add a 15 percent special service subsidy to the normal full fare charge for the trip and receive payment for this amount in addition to the remaining 50 percent of the full user fare for the trip not paid by the user, from the public administrative agency for the program. The taxi firm would then pay the 15 percent special service subsidy to the driver in addition to his regular wage for each transportation handicapped person trip he services. This special service subsidy would be guaranteed to the driver to compensate for any passenger assistance the driver may be required to provide to transportation handicapped persons.

The fare for persons using chair car carriers should be the same as for those using taxi services. However, since almost all chair car service is in response to advance notice or immediate telephone requestas opposed to hail-and-ride service-a passenger can be informed in advance what the fare will be. The chair car carrier service provider will, like the taxi operator, submit trip vouchers for reimbursement. However, in this case, the reimbursement for the trip by the designated public agency responsible for administering the user-side subsidy program will be based on the pre-established fares ordinarily charged by chair car carriers for their services. In other words, if a chair car carrier firm has an approved fare rate that includes a minimum fare of \$12.00 for the first 30 blocks traveled, the firm would be reimbursed by the program administrative agency for the difference between a taxi fare for a trip of similar length and the customary \$12.00 charge for the trip. The rider under the user-side subsidy program would be charged a fare based on the taxi fare for a trip of similar length. Since this customary charge is already much higher than the charge for the same trip by taxi and includes customer service charges or gratuity, no payment for a gratuity will be made to chair car carrier firms. Also, because the public subsidy costs per trip for persons using chair car carrier services will be considerably higher than the same trip made by a transportation handicapped person traveling by taxi, chair car carrier trips should be restricted to only the most severely disabled.

In Chapter VI, the recommended one-way fare policy is 50 percent of the actual fare to a maximum of \$2.50. Since an upper fare can encourage longer trips than necessary, it is recommended that the maximum \$2.50 apply for intracounty trips while no fare limit be set on intercounty trips. Regularly scheduled long trips can be handled on a case-by-case basis. For example, a regular commuting work trip of 10 miles could be arranged at a lower fare, especially with the use of chair car carriers who already have subscription rates.

Cost of Initial Establishment of the User-Side Subsidy Program: The cost of the initial work required to establish a user-side subsidy program in Waukesha County is estimated to total \$3,500much of this to be absorbed in the salary and fringe benefits of a staff person who should be assigned to this program part time during its initial three month period of implementation. About \$1,000 would be required for program design; about \$900 would be required for registration including costs of cards, supplies, and personnel; about \$600 would be required for development of administrative and data handling procedures; about \$700 would be required for marketing; and about \$300 would be allowed for miscellaneous expenses.

Annual Ongoing Program Administration Costs: Experience elsewhere, specifically in Danville, Illinois, has indicated that once a user-side subsidy program is established, the administrative duties and functions are minimal. Furthermore, given the low level of anticipated ridership in Waukesha, very little administrative time is expected to be required for ongoing program administration. It is anticipated that one staff management person could administer the user-side subsidy program by devoting 10 percent of his or her time supplemented with 10 percent of the time of a clerical person. Thus, while the program may require the hiring of an additional full time staff person to help administer the program and that person should have sufficient time to assume other responsibilities as well.

The annual ongoing program administrative costs are estimated to be about \$4,000. About \$2,400 would be expended on wages and attendant fringe benefits; about \$400 would be provided for office space and telephone; about \$200 would be required for materials and supplies; about \$800 would be required for advertising; and, about \$200 would be allowed for miscellaneous expenses.

<u>Total Operating Costs</u>: The initial and continuing program implementation costs set forth in this chapter are somewhat higher than the original cost estimates utilized in the analyses of the alternative plans presented in Chapter VIII. Furthermore, at the direction of the Advisory Committee, the cost of 1978 operations have been adjusted to reflect the potential impact of a start-up period on program costs and revenues. Reflecting this input are the 1978 operating statistics shown in Table 219.

The ridership cost and revenue projections are all based on assumptions drawn from actual, though limited, experience in other communities. Therefore, during the first year of program operation, data should be collected on such factors as: trip origins and destinations, particularly major travel destinations served; number of persons served; number of trips; fare charge per trip; user complaints or suggestions; and cost per trip. These data should then be used to revise forecasts of ridership, revenue, and costs for future years. Since such data are not now available, preliminary estimates for

# Table 219

# ANTICIPATED FIRST-YEAR (1978) OPERATING STATISTICS FOR THE USER-SIDE SUBSIDY PROGRAM WAUKESHA COUNTY

Operating Statistics	Year: 1978
Estimated Ridership	5,300 Trips
Annual Trip Cost	\$16,500
Annual Administrative Cost	4,000
Implementation Cost	3,500
Total First Year Costs	\$24,000
Total Revenue	\$ 6,600
Net First Year Cost	\$17,400

Source: Applied Resource Integration, Ltd.

future years are based on an estimated 14 percent average growth per year in ridership, an 8 percent rate of general price inflation, and an increase in taxi fares due to inflation. The resulting preliminary forecast of program costs and revenues through 1982 are shown in Table 220. For comparative purposes the data are also shown in constant 1978 dollars.

Funding: Recent state legislation has made Waukesha County eligible for approximately \$37,000 per year to assist in operating transportation services for the elderly and handicapped. This is an amount in excess of the estimated 1978 net annual program costs shown above. As stated in Chapter VIII, however, the estimates of potential ridership are based on assumptions concerning the effects of fare constraints and actual ridership may vary significantly from the estimates. Therefore, any surplus monies should be used as a contingency fund for the user-side subsidy program and then, if available, applied to assist in the coordination and operation of social service agency vehicles.

Establishment of Demand Responsive System in the Nonurbanized Area of Waukesha County: Waukesha County is currently involved in providing transportation through the Waukesha County Program on Aging which operates two vehicles five

### Table 220

# BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-WAUKESHA COUNTY

Projected Annual Passenger Trips and Implementation Costs ^a for Each Proposed Transportation System										
	1	978	1	979	1980		1981		1982	
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
User-side Subsidy Program Passenger Trips. Revenue. Operating Cost Net Operating Cost	5 \$ 6,600 24,000 17,400	,300 \$ 6,600 24,000 17,400	6 \$ 8,600 26,500 17,900	,400 \$ 8,600 24,500 15,900	7, \$ 10,800 33,000 22,200	,400 \$ 10,800 28,300 17,500	8, \$ 12,900 39,000 26,100	200 \$ 12,900 31,000 18,100	9 \$ 15,300 45,800 30,500	,000 \$ 15,300 33,700 18,400
Rural Demand Responsive System Passenger Trips	5 \$ 5,000 24,000 19,000 20,000	,000 \$ 5,000 24,000 19,000 20,000	10 \$10,000 60,000 50,000 20,000	0,000 \$10,000 55,600 45,600 20,000	18 \$ 9,000 98,000 89,000 20,000	8,000 \$ 9,000 84,000 75,000 20,000	22 \$ 11,000 106,000 95,000 	2,000 \$ 11,000 84,100 73,100 	26 \$ 13,000 114,000 101,000 	3,000 \$ 13,000 83,800 70,800 
User-Side Subsidy Program and Rural Demand Responsive System Passenger Trips . Revenue. Operating Cost . Net Operating Cost . Capital Cost.	11,600 48,000 36,400 20,000	0,300 \$11,600 48,000 36,400 20,000	1 \$18,600 86,500 67,900 20,000	6,400 \$18,600 80,100 61,500 20,000	2 \$ 19,800 131,000 111,200 20,000	5,400 \$ 19,800 112,300 92,500 20,000	3( \$ 23,900 145,000 121,100 	0,200 \$ 23,900 115,100 91,200 	3 \$ 28,300 159,800 131,500 	5,000 \$ 28,300 117,500 89,200

		Estimated An	inual Total Exp	penditures by Ex	pected Sources	of Revenues				
	1978		1979		1980		1981		1982	
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
Funding Sources for Operating Costs State 85.08(5)	\$32,760 3,640 \$36,400	\$32,760 3,640 \$36,400	\$37,030 ^b 30,870 \$67,900	\$37,030 ^b 24,470 \$61,500	\$100,080 ^C 11,120 \$111,200	\$ 83,250 ^c 9,250 \$ 92,500	\$108,990 ^c 12,110 \$121,100	\$ 82,080 ^c 9,120 \$ 91,200	\$118,350 ^c 13,150 \$131,500	\$ 80,280 ^c 8,920 \$ 89,200
Funding Sources for Capital Costs Federal UMTA Section 16(b)(1) or 16(b)(2) County Total	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$ 16,000 4,000 \$ 20,000	\$ 16,000 4,000 \$ 20,000	  			

^a Costs shown are in addition to costs incurred in operating the existing programs. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b Maximum state allocation to Waukesha County for fiscal year 1979.

^C Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years, the County would have to assume these costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration Ltd., and SEWRPC.

days per week. The vehicles are generally scheduled to operate in the western, rural portion of the County on Tuesday and Wednesday, and in the eastern, urbanized section of the County on Monday, Thursday, and Friday. Although the program was originally funded by the Area Agency on Aging (AAA), operating funds for the program now are provided from the general fund of the County. The system currently is prohibited from charging a fare to persons 60 years of age or older because the vehicles were purchased with Area Agency on Aging funds.

The proposed demand responsive system for the transportation handicapped would be an extension of the existing program. Initially, in 1978, it is recommended that the program be expanded to allow transportation handicapped in the rural areas to use the existing service with no fare levied.

In the latter part of 1978 the program would be expanded with the addition of one 19- to 25-passenger vehicle operating five days per week in the rural areas with a fare of \$1.00 being charged all passengers. An alternative exists, however, which would involve having the elderly and transportation handicapped both eligible for the userside subsidy program in the urbanized area and having the county vehicles only operate in the rural areas, again with a \$1.00 fare. This alternative should be explored during 1978; however, the proposed schedule assumes conservatively that this combination of services will not be implemented.

The estimated ridership of the transportation handicapped on this system is expected to be about 5,000 trips per year. The cost of expanded service in 1978 is projected to be about \$24,000 based on an eight-hour-day operation and a \$12.00 per hour cost. Use of a small bus which can transport 19 to 25 passengers and is equipped with a wheelchair lift is recommended. The cost of such a vehicle is estimated at about \$20,000 if the County elects to purchase a vehicle rather than lease a vehicle or contract for services with a private transportation provider. A capital grant under Section 16(b)(1) of the Urban Mass Transportation Act of 1964, as amended, could provide up to 80 percent of the cost of rhe required vehicle, making the local share about \$4,000. This vehicle would be used to transport both elderly and handicapped. The \$4,000 capital costs would have to be paid by the County while funds for the operating costs would be available from the state, if the County chooses to use the funds in this manner.

During the five-year plan period a number of demand responsive transportation service improvements are recommended for implementation. In 1979 it is recommended that one additional vehicle be purchased, leased, or contracted for service. By this time the Waukesha County Program on Aging would have a fleet of four vehicles. At such time it is recommended that the transportation service be expanded to include two vehicles operating on Saturdays. It is also recommended that subscription transportation service be implemented on a five-day-per-week basis for work and educational trips. By 1980 it is anticipated that increased funding under newly developing state and federal aid programs will become available to further financially assist local units of government in the provision of transportation services for the elderly and handicapped. Should these additional monies become available it is proposed that the user fare be lowered to a flat fare of \$0.50 per one-way trip. To serve an expected higher level of travel demand among the transportation handicapped at this lower fare it is further recommended that in 1980 an additional vehicle be purchased, leased, or contracted for service. In 1981 and 1982 the plan recommends a continuation of demand responsive transportation services with possible service expansion as user demand warrants.

Coordinated Agency Transportation: Most social service agencies would probably agree that coordinated agency transportation is a good concept that has the potential for improving the delivery of social services as well as for reducing the costs thereof. In actual practice, however, the barriers to coordination can be formidable. Given the existing institutional structure, voluntary cooperation at the local level is probably the best means available for achieving coordinated transportation services. However, if such voluntary cooperation is lacking, other means to achieve the desired coordination are available. The state and the county provide funding for various social service agency transportation programs and, consequently, are in a position to encourage coordination. It is accordingly recommended that an agency such as the County Highway and Transportation Committee take the lead role in seeking better coordination of social service agency transportation, with
the state becoming active only if no action is taken at the local level. It must also be noted that it is feasible for the responsibility for coordination to be delegated by the County Board to another county agency, with the Highway and Transportation Committee remaining the policymaking body for these activities.

Until a supplemental social service agency coordi-nation strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agency transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds-such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amended—for new facilities or equipment through the agency designated by the County Board as being responsible for achieving coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the County's designated responsible agency or the County Board itself should disapprove of capital grant applications for a use of public funds which would enable existing county- or state-supported social service agency transportation providers to do anything more than replace existing transportation-related equipment or facilities. Similarly, except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by social service transportation providers not supported by county or state funds for use of public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

As indicated in Chapter VIII, coordination of agency transportation is not considered feasible at the present time in Waukesha County. The following information is presented as guidelines in the development of coordinated programs at such time as coordination efforts would be beneficial.

Methods of Coordination: There are numerous alternative means of achieving coordinated agency transportation services as previously described in Chapter VIII. A more detailed description of the alternative methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operations, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county and developing a coordinated social service agency transportation plan is the service performance inventory described in Appendix I. Under the service performance inventory an agency monitors its vehicle operations for a minimum period of two weeks and provides such information on type of service, number of vehicles, service area, hours of service ridership, vehicle utilization, productivity, and annual transportation program budget. The service performance inventory could be used voluntarily by agencies interested in coordination. It is, however, recommended that each agency in southeastern Wisconsin applying for county- or state-administered funds be required to complete a service performance inventory as part of its application process. The service performance inventory obtained from the various agencies in each county would be analyzed to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a social service agency coordinated transportation plan. Where coordination is feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken to effect coordination. Once recommendations are made, either by the County or by the state, an agency such as the County Highway and Transportation Committee, would be responsible for overseeing the coordination efforts.

Development Schedule: A five-year transportation system development schedule for Waukesha County is presented in Table 221. In its policymaking role, an agency such as the County Highway and Transportation Committee is ultimately responsible for all tasks. The other key agencies are the Waukesha County Program on Aging and the County Board which has authority over the Highway and Transportation Committee. A detailed program is proposed for the first two years, 1978 and 1979, with less detail provided in the third, fourth, and fifth years, 1980 to 1982. This was done because planning for the transportation needs of the transportation handi-

## REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN DEVELOPMENT SCHEDULE FOR WAUKESHA COUNTY

Staging Year	Recommended Action	Implementing Agency
1978	Finalize design of user-side subsidy program	Agency designated by the
	Initiate contract negotiations with existing taxicab	Agency designated by the
	and chair car operators	County Board
	Make appropriate changes in the operations of the	Waukesha County
	Waukesha County Program on Aging to allow the transportation handicapped to ride	Program on Aging
	Prepare a small-scale marketing plan for user-side	Agency designated by the
	subsidy program and demand responsive service	County Board/Waukesha County Program on Aging
	Establish registration procedures for user-side	Agency designated by the
	subsidy program and demand-responsive service	County Board/Waukesha
	Require agencies to complete a service performance inventory	Agency designated by the County Board
	Contract with private taxi and chair car operators	Agency designated by the
	for operations of a user-side subsidy program	County Board
	Conduct community registration program for	Agency designated by the
	user-side subsidy program and demand	County Board/Waukesha
	responsive service	County Program on Aging
	Purchase, lease, or contract for services and operate one additional vehicle. Implement demand	County Board/Agency designated by the
	Recommend agency procedures for coordination	Agency designated by the County Board
	Implement \$1.00 fare on demand responsive transportation system	Agency designated by the County Board
	Expand demand responsive service to Saturday with two vehicles operating	Waukesha County Program on Aging
1979	Implement five-day-per-week subscription service for	Waukesha County
	Purchase lesse or contract for services and operate	County Board/Agency
	one additional vehicle in demand responsive	designated by the
	service	County Board
1980	Purchase, lease, or contract for service and operate one	County Board/Agency
	additional vehicle for demand responsive service	designated by the
		County Board/
		Waukesha County
		Program on Aging
	Lower fares to \$0.50 on demand reponsive service	Waukesha County Program on Aging
1981	Continue operations (possible expansion)	All agencies
1982	Continue operations (possible expansion)	All agencies

Source: Applied Resource Integration, Ltd.

capped is a relatively new field with minimal data upon which good planning standards can be developed. Experience during the early years of service expansion will determine specific activities in the latter years.

<u>Budget</u>: A five-year budget for the user-side subsidy program and the rural demand responsive system is set forth in Table 220. The user-side subsidy program is anticipated to have a demand of about 5,300 annual trips in 1978 which will expand gradually to about 9,000 annual trips by 1982. Net operating costs over this period almost double from about \$17,400 in 1978 to about \$30,500 by 1982.

In 1978, it is anticipated that 5,000 annual trips will be made by the transportation handicapped using the nonurbanized area demand responsive service. These trips along with all data on the service, represent new ridership additions to the current operations of the Waukesha County Program on Aging. The ridership is expected to jump in 1979 with the addition of a new vehicle and again increase substantially in 1980 with reduced fares and increased levels of service. The next two years, 1981 and 1982, show a steady growth in ridership. The incremental increases in ridership during the last four years represent both able-bodied elderly and transportation handicapped. These incremental increases are divided evenly between the two groups.

The combined net operating costs of the two services increase from \$36,400 in 1979 to \$131,500 in 1982. Funding during the first two years represents anticipated monies from the new Section 85.08(5) of the Wisconsin State Statutes legislation and from the County general funds. In the last three years state funding is estimated to meet two-thirds of net operating costs if current funding trends continue; however, it is conceivable that a portion of these latter year costs could be funded through future federal programs.

Costs for coordinated agency services are not included. Although certain administrative costs would be associated with this service, they should be offset by the cost savings of coordination.

## Racine County

In the recommended regional plan for the transportation handicapped, an accessible transit system, a user-side subsidy program, a demand-responsive system, and coordinated agency transportation services are proposed to be implemented in Racine County.

Administrative Agencies: An agency designated by the County Board, such as the Racine County Human Services Board, should be assigned responsibility for implementing the proposed transportation services for the transportation handicapped. This central authority is needed to coordinate the operations of the various transportation services and ensure the best delivery of service. However, in exercising its responsibility it is recommended that the Human Services Board delegate actual operating authority to various agencies and governmental units within the County. The operating and policy responsibility for accessible transit would rest with the City of Racine Transit and Parking Commission, which operates the transit system. The role of the County Human Services Board would be to coordinate other transportation services with the operation of the transit system to maximize the effectiveness of the relatively low-cost accessible transit service. In terms of the user-side subsidy program, the City of Racine Transit and Parking Commission and the County Human Services Board would both share responsibility for the program through an intergovernmental agreement. The County would provide the local share funds to subsidize the program and establish program policy and the City through the Transit and Parking Commission and its staff would be responsible for the administrative details of operating the program since almost all the urbanized area is within the City. The rural demand responsive transportation program would be administered by Lincoln Lutheran Specialized Transportation with the Human Services Board in a policymaking position. At the same time, however, the plan provides sufficient flexibility to allow the County's designated administrative agency responsible for implementing the recommended plan to undertake further economic analyses to determine the cost/benefit of using other potential public or private transportation service providers which are found to be more cost-effective.

The coordinated social service agency transportation program would have the Human Services Board in both a policymaking role and in an active role in implementation of policy. The Human Services Board would propose methods of coordination and recommend that the County Board make funding of social service agency transportation programs contingent on coordination efforts.

Advisory Committee: The U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) require the formation of advisory groups which include transportation handicapped to assist in the planning and implementation of transportation services. An advisory committee can greatly assist the County Human Services Board in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County level advisory committee including not less than seven transportation handicapped persons be appointed by the County Human Services Board.

Establishment of the Accessible Transit System: The fleet of buses operating in the City of Racine are all relatively new and under normal conditions should operate 10 or more years before being replaced. Therefore, to make the fleet accessible, retrofitting of the buses with wheelchair lifts or ramps is required. In Chapter VIII it was determined that a total of 13 accessible buses would be required to make one-half of the fleet accessible. However, four routes in Racine have three buses assigned to them. To equip only six of these buses would result in 90-minute headways for the accessible buses on two routes-an unacceptable level of service. Therefore, the recommended plan was revised to incorporate 13 operating accessible buses and two spare accessible buses for a total of 15 buses. The suggested procedures for retrofitting a bus are presented in Appendix E. As noted therein, the City of Racine should coordinate efforts with the City of Kenosha to reduce costs and increase overall effectiveness.

Since the anticipated timetable for retrofitting a bus is one month, a 15-month schedule is planned for Racine, although less time may be required if Racine can retrofit at a rate greater than one bus per month. Since Racine currently operates with four spare vehicles, the retrofit process is not expected to deter scheduled transit service.

Routes of Accessible Buses: As soon as a bus is retrofitted and tested it should be put into service. The suggested phasing of the 15 accessible buses is presented in Table 222.

The route priority for providing accessible transit service is based on existing ridership and the types of major trip generators served by each route. Since the transportation handicapped are dispersed throughout the community, it is anticipated that the routes with the highest patronage can be expected to have the highest number of transporta-

#### Table 222

## PRIORITY TRANSIT ROUTE ASSIGNMENT SCHEDULE FOR ACCESSIBLE BUSES RACINE COUNTY

Bus Priority Number	Transit Route Assignment			
1	Route 3 Boute 3			
3	Spare Bus			
4	Route 6			
5	Route 7			
6	Route 4			
7	Route 4			
8	Route 2			
9	Route 2			
10	Route 5			
11	Route 5			
12	Spare Bus			
13	Route 8			
14	Route 1			
15	Route 9			

Source: Applied Resource Integration, Ltd.

tion handicapped riders.³ Further, because Route 3 serves a medical center, three convalescent homes, and the County Home, it is selected first. Route 6 is next, due to the fact that it serves other longterm care facilities and a hospital. Route 7 is then to be provided with retrofitted buses due to the shopping areas along this route. The high ridership on Routes 4 and 2 make them the next most preferable routes. Finally, Routes 5, 8, 1, and 9 complete the list. Note that the third and twelfth buses are designated as spare vehicles. This is proposed to insure that ample spares are available to maintain dependable service.

All routes except Routes 2, 3, 4, and 5 will have 60-minute accessible bus headways throughout the day. Routes 2, 3, 4, and 5 will have varying headways of 30 and 60 minutes. Those areas of Racine which will have accessible service are shown on Map 5.

Identification of Accessible Buses: In addition to the purchase of accessible buses several ancillary

³Ridership by route from highest to lowest is: Routes 4, 3, 2, 7, 5, 1, 8, 6, and 9.

#### Map 5



#### ROUTES AND AREA OF COVERAGE FOR 15 ACCESSIBLE BUSES IN THE RACINE URBANIZED AREA

Retrofitting 15 buses in the City of Racine's 25-bus fleet with wheelchair lifts will be sufficient to ensure that all nine bus routes served by the public transit system have accessible bus service operating at no more than 60 minute headways on all routes.

steps should be taken to assure the accessibility of the system. A well-known symbol such as the universal accessibility decal should be placed in a readily visible location on the outside of each accessible bus indicating that the bus is accessible. In addition, it is desirable that the retrofitted buses be painted in a distinctive livery or carry other highly visible distinctive markers such as pendants or flags so that the retrofitted buses can be recognized as being accessible from a distance of at least one city block.

Public timetables and transit maps should be changed to indicate the routes and the buses that are accessible. The public timetable should indicate that the nonpeak period service on certain routes is fully accessible as well as indicating which buses are accessible during peak periods. Such indications can be easily achieved through the use of italicized print or different colored letterings.

Driver Training: A very important step in assuring the effectiveness of the accessible transit system is special driver instruction on the use of wheelchair lifts or ramps and on appropriate operating procedures when a transportation handicapped person is traveling. A driver must be able to position a bus in order to effectively activate the lift or ramp and enable a transportation handicapped person to use the lift or ramp. Additionally, although a driver will not be required to assist a passenger in any way except to raise and lower a lift or ramp, the driver must not put a bus in motion until the transportation handicapped person is seated or, in the case of a person in a wheelchair, has been secured in a tiedown. Drivers should not be expected to assist in the use of a tiedown. A transportation handicapped person in a wheelchair must be able to board and secure himself in the wheelchair tiedown.

<u>Costs</u>: The costs of equipping a bus with a wheelchair lift or ramp and attendant accessibility features are estimated to be about \$9,000 per bus. The provision of accessibility features on the buses, therefore, has an incremental capital cost of about \$135,000. To cover 80 percent of the anticipated \$135,000 cost, a federal capital grant funding proposal under Section 3 or Section 5 of the Urban Mass Transportation Act of 1964, as amended, can be prepared and submitted to UMTA. The retrofit process should not begin until this funding is secured. It is anticipated that the preparation, submittal, and approval of this funding proposal should result in initial retrofitting no later than July 1978, with completion in September 1979.

As shown in the prior chapter the operation of accessible buses is anticipated to add approximately \$9,800 to the annual operating costs of the system. One-half of these costs are eligible expenditures for reimbursement under Section 5 of the Urban Mass Transportation Act of 1964, as amended, which provides transit operating assistance, and two-thirds of the remainder can be funded through state operating assistance.

Establishment of the User-Side Subsidy Program: In Chapter VIII the plan recommends the establishment of a user-side subsidy program in the Racine urbanized area to serve the transportation handicapped living farther than two blocks from an accessible transit route and for those living within two blocks of such a route but who cannot use accessible transit due to their disability. Of the various types of user-side subsidy programs that could be implemented, a user-side subsidy program involving user payment of a part of the cost at the time of the trip is recommended with subsequent reimbursement of the remaining cost of the service provided by the public agency responsible for the program. The different types of programs, the reasons for selecting a program that involves partial payment by the user at the time of the trip, and the operating procedures for this type of program are discussed in Appendix G.

Administrative Agency: The Racine urbanized area is larger than the City of Racine yet smaller than the County. Therefore, a county agency would have the geographical scope for an operation serving the entire urbanized area. However, the County is not directly involved in public transportation, whereas the City owns and operates a transit system. It is recommended, therefore, that the City and the County jointly implement the user-side subsidy program through an intergovernmental agreement between the two units of government. Moreover, since the City of Racine Transit and Parking Commission has direct transit operating experience, it is recommended that this department be the lead agency of the two units of government in terms of administration with the City Transit and Parking Commission and the Racine County Human Services Board jointly responsible for policymaking. The County would provide the local share of funds to subsidize the program and establish program policy and the City through the Transit and Parking Commission

and its staff would be responsible for the administrative details of operating the program.

Vehicle Operations: The City of Racine was without taxi services during the spring of 1977. In June of 1977 taxi services were resumed in the City with two taxicabs in operation. The system operates on a metered basis and is an exclusive ride service so that no additional passengers can be picked up unless the first passenger in the taxicab grants permission. Because the system is newly established, changes in the system may be possible without serious operational repercussions. Therefore, it is recommended that the City consider implementing a zone fare system which would make shared riding feasible. Concurrently, the local statute prohibiting shared riding should be abolished. These changes would enable the userside subsidy program and the total taxi system to be eligible for partial funding through federal transit operating assistance.

It is recommended that the user-side subsidy program be implemented regardless of whether a change is made in the overall taxi system. If a shared-ride, zone fare taxi system is not introduced, the user-side subsidy program should be implemented under the current taxi operating procedures (metered fare, exclusive ride). Costs developed herein reflect an assumption of no changes in the taxi system. Due to the limited number of taxicabs in operation, it is further recommended that service be restricted to the urbanized area.

The user-side subsidy program should give impetus to service improvements among private service providers as demand for accessible services will increase with the user's ability to afford the service. Consequently, it is anticipated that in those areas not currently served by chair car carriers either new private chair car services may be instituted or certain taxicab companies may become interested in providing some forms of chair car service. This stimulation of the private sector is expected only after sufficient time has elapsed to establish the potential demand under the user-side subsidy program. In the interim, since no chair car carriers currently operate within the Racine urbanized area, special provisions would have to be made for such service. Four possible means of obtaining chair car services are: 1) induce a chair car carrier operating in another city within the Region to provide service; 2) contract for such service with a private carrier such as a school bus operator having the required specially equipped vans; 3) contract with a social service agency; or 4) purchase and operate a chair car carrier vehicle. The vehicle could be purchased by either the City or the County. It is recommended that the Racine userside subsidy program provide demand responsive. chair car-type services through a contractor who would agree to transport passengers upon request at a negotiated per trip cost which would be arranged with the program administrative agency and approved by the County. It is anticipated that a private contractor or social service agency could best provide this service. Such service could also be provided through a joint agreement with two or more agencies or contractors providing service during different hours of the day. Lincoln Lutheran Specialized Transportation currently provides some services for the transportation handicapped and is a candidate for consideration as a program service provider as are local school bus operators.

A user-side subsidy program depends upon the existence of private transportation providers in an area. Contracts should be negotiated between these providers and the designated program administrative agency. Each existing provider of transportation services in the area should be contacted and those willing to participate in the project should be certified. Certification should involve insuring that a fleet is safe, that drivers have or are planning to take handicapped sensitivity training, and that an operator has adequate financial accountability. The contract between the county and the providers should describe the duties of the provider, specify provider reporting requirements, and state the reimbursement formula for each provider (see Appendix G).

Refinement of the System Design: The critical element in the initial process of establishing a userside subsidy program is the refinement of the program recommended herein. Upon actual implementation of the recommended program some of the assumptions underlying the design of the program may change based on additional knowledge and experience with such programs elsewhere. The development of the program should be regarded as an evolutionary process in which actual experience properly monitored provides input for the successive refinement of the program. Consequently, the initial period of providing transportation service to the transportation handicapped should be viewed as a demonstration period during which valuable experience and knowledge about

operating such a program is gained which can be used to improve the program in subsequent years. The only firm guidelines offered herein are that the program be administered by an existing County agency or department and that the data gathering operations required for monitoring the program be carefully designed to provide the data required for updating the plan in subsequent years as part of a continuing transportation planning process for the transportation handicapped. Such data should include: trip origins and destinations, particularly major travel destinations served: number of persons served; number of trips; fare charge per trip; user complaints or suggestions; and cost per trip.

Marketing: A marketing program should be undertaken to promote utilization of the program. Pamphlets explaining the program should be distributed through social service agencies and through various organizations for the handicapped. Newspaper advertising copy and public service announcements for use on radio and television should be prepared which describe the program to potential users. This advertising should explain that the user-side subsidy program consists of reduced taxi and chair car fares, that persons who cannot board an accessible transit vehicle are eligible for the subsidy, that a person must register and be certified as eligible to use the program. and that further information is obtainable from the County.

Another facet of the marketing program should involve training sessions on use of the services. Such sessions could be conducted by social service agencies serving clients who would be eligible for the user-side subsidy program.

The Belle Urban System—the transit system in Racine—currently conducts marketing activities by contracting for marketing services. It is recommended that the development of these advertising and training programs to be used by interested social service agencies be included as part of the marketing activities of the Belle Urban System under the direction of the City of Racine Department of Transportation.

<u>Registration</u>: A valid identification card should be required for use of the user-side subsidy program. Since the Belle Urban System in Racine already has established procedures for obtaining photoidentification cards for the elderly and handicapped half-fare program, it is recommended that the equipment be made available for use in registration of potential users of the user-side subsidy program. Once the program is operating, an eligible person would be required to secure an identification card from a central location or the program administrative offices. However, during the initial three months of operation of the program, it is recommended that a community registration program be mounted under which eligible transportation handicapped persons could register and obtain an identification card at various sites conveniently located throughout the urbanized area. Eligibility criteria and certification forms are discussed in Appendix F.

Fare Structure and Fare Collection: As described in Appendix G, under the recommended user-side subsidy program, a passenger would pay a specified percentage of the total taxi or chair car carrier trip cost at the time of the trip. Required attendants would be permitted to ride free on both taxis and chair car carriers. The driver would complete a trip voucher which would be subsequently filed by the firm providing the service for payment by the public agency responsible for administering the program.

In Chapter VIII a user fare level of 50 percent of the normal taxi metered or zone fare for a trip by taxi or chair car carrier was recommended. The passenger would not pay any gratuity to the driver. Instead, the taxi firm, in seeking reimbursement from the designated public agency responsible for administering the program would add a 15 percent special service subsidy to the normal full fare charge for the trip and receive payment for this amount in addition to the remaining 50 percent of the full user fare for the trip not paid by the user, from the public administrative agency for the program. The taxi firm would then pay the 15 percent special service subsidy to the driver in addition to his regular wage for each transportation handicapped person trip he services. This special service subsidy would be guaranteed to the driver to compensate for any passenger assistance the driver may be required to provide to transportation handicapped persons.

The fare for persons using chair car carriers should be the same as for those using taxi services. However, since almost all chair car service is in response to advance notice or immediate telephone request as opposed to hail-and-ride service—a passenger can be informed in advance what the fare will be. The chair car carrier service provider will, like the taxi operator, submit trip vouchers for reimbursement. However, in this case, the reimbursement for the trip by the designated public agency responsible for administering the user-side subsidy program will be based on the pre-established fares ordinarily charged by chair car carriers for their services. In other words, if a chair car carrier firm has an approved fare rate that includes a minimum fare of \$12.00 for the first 30 blocks traveled, the firm would be reimbursed by the program administrative agency for the difference between a taxi fare for a trip of similar length and the customary \$12.00 charge for the trip. The rider under the user-side subsidy program would be charged a fare based on the taxi fare for a trip of similar length. Since this customary charge is already much higher than the charge for the same trip by taxi and includes customer service charges or gratuity, no payment for a gratuity will be made to chair car carrier firms. Also, because the public subsidy costs per trip for persons using chair car carrier services will be considerably higher than the same trip made by a transportation handicapped person traveling by taxi, chair car carrier trips should be restricted to only the most severely disabled.

In Chapter VI the recommended one-way fare policy is 50 percent of the actual fare to a maximum of \$2.50. Since an upper fare limit can encourage longer trips than necessary, it is recommended that for trips totally within the County the maximum fare would be \$2.50. It is also recommended that no fare limit be set for intercounty trips but that regularly scheduled long trips be handled on a case-by-case basis. For example, a regular commuting work trip of 10 miles could be arranged at a lower fare, especially with the use of chair car carriers who already have subscription rates. Other persons making long trips would be forced to pay higher fares or more preferably arrange for a combination user-side subsidy/ accessible bus trip.

Cost of Initial Establishment of the User-Side Subsidy Program: The cost of the initial work required to establish a user-side subsidy program is estimated to total about \$3,000, much of this to be absorbed in the salary and fringe benefits of a staff person who should be assigned to this program part time during its initial three month period of implementation. About \$1,000 would be required for program design; about \$800 would be required for registration including costs of cards, supplies, and personnel; about \$400 would be data handling procedures; about \$600 would be required for marketing; and about \$200 would be allowed for miscellaneous expenses.

Annual Ongoing Program Administrative Costs: Experience elsewhere, specifically in Danville, Illinois, has indicated that once a user-side subsidy program is established, the administrative duties and functions are minimal. Furthermore, given the low level of anticipated ridership in Racine, very little administrative time is expected to be required for ongoing program operation. It is anticipated that one staff management person could administer the user-side subsidy program by devoting 10 percent of his time supplemented with 5 percent of the time of a clerical person. Thus, the program should be able to be absorbed into current transit operations with no costs for additional personnel.

The annual ongoing program administrative costs are estimated to be about \$2,800. About \$2,000 would be expended on wages and attendant fringe benefits; about \$200 would provide for office space and telephone; about \$100 would be required for materials and supplies; about \$400 would be required for advertising, and about \$100 would be allowed for miscellaneous expenses. This cost figure is approximately \$2,000 higher than originally estimated in Chapter VIII.

Total Operating Costs: The initial and continuing program implementation costs set forth in this chapter are somewhat higher than the original cost estimates utilized in the analyses of the alternative plans presented in Chapter VIII. Furthermore, at the direction of the Advisory Committee, costs of 1978 operations have been adjusted to reflect the potential impact of a start-up period on program costs and revenues. Reflecting this input are the 1978 operating statistics shown in Table 223.

The ridership, cost, and revenue projections are all based on assumptions drawn from actual, though limited experience in other communities. Therefore, during the first year of program operation, data should be collected on such factors as: trip origins and destinations, particularly major travel destinations served; number of persons served; number of trips; fare charge per trip; user complaints or suggestions; and cost per trip. These data should then be used to revise forecasts of ridership, revenue, and costs for future years. Since such data are not now available, preliminary estimates for future years are based on an estimated 13 percent average growth per year in ridership,

## ANTICIPATED FIRST-YEAR (1978) OPERATING STATISTICS FOR THE USER-SIDE SUBSIDY PROGRAM RACINE COUNTY

Operating Statistics	Year : 1978
Estimated Ridership	3,500 Trips
Annual Trip Cost	\$11,400
Annual Administrative Cost	2,800
Implementation Cost	3,000
Total First Year Costs	\$17,200
Total Revenue	\$ 4,600
Net First Year Cost	\$12,600

Source: Applied Resource Integration, Ltd.

an 8 percent rate of general price inflation, and an increase in taxi fares due to inflation. The resulting preliminary forecast of program costs and revenues through 1982 are shown in Table 224. For comparative purposes the data are also shown in constant 1978 dollars.

Funding: If the recommendations for shared ride taxi service as discussed under the vehicle operations subsection are implemented, the user-side subsidy program would be eligible for federal transit operating assistance. If such changes are not made, the user-side subsidy program would have to be funded through state and local monies. Recent state legislation has made Racine County eligible for approximately \$32,800 per year to assist in operating transportation services for the elderly and handicapped. This is an amount in excess of the estimated net annual program costs shown in Table 224. As stated in Chapter VIII, however, the estimates of potential ridership are based on assumptions concerning the effects of fare constraints, and actual ridership may vary significantly from the estimates. Therefore, any surplus monies should be used as a contingency fund for the userside subsidy program and then, if available, applied to assist in the coordination and operation of social service agency vehicles or rural operations.

Establishment of Demand Responsive System in the Nonurbanized Area of Racine County: A demand responsive transportation system currently serves the transportation handicapped in the nonurbanized areas of Racine County. Lincoln Lutheran Specialized Transportation contracts for the services of one lift-equipped vehicle five days per week in the area of Racine County west of IH 94. The service is free with 24-hour advance notice, but due to the high demand for the service, a person may have to request service a week or more in advance. The Lincoln Lutheran Specialized Transportation Service, which also includes two contracted vehicles operating in the Racine urbanized area, is funded through several sources, including the Southeastern Wisconsin Area Agency on Aging (AAA), Racine Community Disabilities Services Board, and the City of Racine.

It is, therefore, recommended that Racine County provide funding to increase the number of vehicles and the amount of service provided by Lincoln Lutheran Specialized Transportation in the nonurbanized areas of Racine County. One additional 19- to 25-passenger vehicle is recommended to begin operations in 1978 in the nonurbanized area of Racine County. Service would be provided in this area of the County five days a week on the same advance notice basis as the existing service. The additional vehicle may not have to be purchased if: a) a contractor can provide the vehicle, or b) a user-side subsidy program is implemented in the Racine urbanized area which would obviate the need for Lincoln Lutheran Specialized Transportation to provide service in the Racine urbanized area. Lincoln Lutheran Specialized Transportation currently receives funding through the Older Americans Act of 1965, as amended. Although programs currently operated through these funds are prohibited from levying fares to persons 60 years of age or older, this funding is scheduled to cease shortly. At such time, a flat fare of \$1.00 per trip should be levied.

The estimated ridership increase with the addition of one vehicle operating in the nonurbanized area of the County is about 6,000 trips per year, and annual operating costs are estimated to be about 27,000, based on 12-per-hour vehicle operating costs. One additional vehicle will be required for use in providing demand responsive transportation service in 1978. If the County should choose to purchase the recommended additional vehicle rather than lease or contract for the services of a vehicle, the County should apply for a capital grant under Section 16(b)(1) of the Urban Mass Transportation Act, as amended, to assist in the vehicle purchase. Funding under this federal grant

#### BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-RACINE COUNTY

Projected Annual Passenger Trips and Implementation Costs ^a for Each Proposed Transportation System											
	1	978	•	1979		1980		1981		1982	
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	
Accessible Transit Systems Passenger Trips	1	,000	9	,000	11,000		12.000		13,000		
Revenue Operating Cost Net Operating Cost Capital Cost	\$ 150 1,300 1,150 54,000	\$ 150 1,300 1,150 54,000	\$ 1,200 10,300 9,100 81,000	\$ 1,200 9,500 8,300 81,000	\$ 1,500 12,900 11,400 	\$ 1,500 11,100 9,600 	\$ 1,600 14,100 12,500 	\$ 1,600 11,200 9,600	\$ 1,800 15,300 13,500 	\$ 1,800 11,200 9,400 	
User-Side Subsidy Program Passenger Trips	3, \$ 4,600 17,200 12,600	,500 \$ 4,600 17,200 12,600	4 \$ 5,900 17,800 11,900	,200 \$ 5,900 16,500 10,600	4 \$ 7,300 21,500 \$4,200	,800 \$ 7,300 18,400 11,100	5, \$ 8,700 25,300 16,600	300 \$ 8,700 20,100 11,400	5, \$ 10,300 29,500 19,200	,800   \$ 10,300   21,700   11,400	
Rural Demand-Responsive Systems   Passenger Trips.   Revenue.   Operating Cost   Net Operating Cost   Capital Cost.	 27,000 27,000 20,000	000 27,000 27,000 20,000	12 \$ 12,000 87,600 75,600 40,000	2,000 \$ 12,000 81,100 69,100 40,000	16 \$ 8,000 94,500 86,500	5,000 \$ 8,000 81,000 73,000	18 \$ 9,000 102,000 93,000 	,000 \$ 9,000 81,000 72,000	20 \$ 10,000 110,000 100,000 	),000 \$ 10,000 80,900 70,900 	
Accessible Transit System, User-Side Subsidy Program, and Rural Demand-Responsive System Passenger Trips	10 \$ 4,750 45,500 40,750 74,000	9,500 \$ 4,750 45,500 40,750 74,000	25 \$ 19,100 115,700 96,600 121,000	5,200 \$ 19,100 107,100 88,000 121,000	31 \$ 16,800 128,900 112,100 	,800 \$ 16,800 110,500 93,700 	35 \$ 19,300 141,400 122,100 	,300 \$ 19,300 112,300 93,000	38 \$ 22,100 154,800 132,700 	;,800 \$ 22,100 113,800 91,700 	

Estimated Annual Total Expenditures by Expected Sources of Revenues										
	1	978	1	979	1980		1981		1982	
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
Funding Sources for Operating Costs Federal UMTA Section 5	\$ 580 380 32,800 ^C 6,800 190 \$40,750	\$ 580 380 32,800 ^c 6,800 190 \$40,750	\$ 4,550 3,030 32,800 ^C 54,700 1,520 \$ 96,600	\$ 4,150 2,770 32,800 ^c 46,900 1,380 \$ 88,000	\$ 5,700 3,800 90,630 ^d 10,070 1,900 \$112,100	\$ 4,800 3,200 75,690 ^d 8,410 1,600 \$ 93,700	\$ 6,250 4,170 98,640 ^d 10,960 2,080 \$122,100	\$ 4,800 3,200 75,060 ^d 8,340 1,600 \$ 93,000	\$ 6,750 4,500 107,280 ^d 11,920 2,250 \$132,700	\$ 4,700 3,130 74,070d 8,230 1,570 \$ 91,700
Funding Sources for Capital Costs   Federal UMTA Section 3 or 5   Federal UMTA Section 16(b)(1)   or 16(b)(2)   County   City of Racine ^b	\$43,200 16,000 4,000 10,800	\$43,200 16,000 4,000 10,800	\$ 64,800 32,000 8,000 16,200	\$ 64,800 32,000 8,000 16,200				  		
Total	\$74,000	\$74,000	\$121,000	\$121,000						

Costs shown are in addition to costs incurred in operating the existing transit and demand responsive systems. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b The City of Racine being the designated eligible recipient of federal funds under Sections 3 and 5 of the Urban Mass Transportation Assistance Act of 1964 as amended would be expected to pay only the local one-sixth and one-fifth matching shares of the federal operating and capital assistance funds for their publicly owned bus system. All other local share matching funds for the user-side subsidy program and the Demand Responsive Transportation System would be paid by the County.

^c Maximum state allocation to Racine County for fiscal years 1978 and 1979.

d Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years, the County would have to assume these costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration, Ltd., and SEWRPC.

would cover 80 percent of the \$20,000 capital cost, and thus require the County to fund the remaining 20 percent or \$4,000. Unlike the nonurbanized areas in other counties of the Region,

existing demand responsive service in the nonurbanized area of Racine County has been operating for almost two years. Operating procedures and an identification of transportation needs have been made. Therefore, the key factor in planning services for the second through the fourth years is simply expanding services to meet the demand.

During the five-year plan period specific transportation service improvements are only indicated for 1978 and 1979.

By 1979, two additional vehicles should be added to the demand responsive transportation program for a total of three new vehicles during the five year period. Since demand projections have a wide variance, it is possible that in the years 1980 through 1982 additional vehicles may be necessary. At the end of 1978 after a year of operations, an improved, updated projection can be made concerning the need for additional vehicles during the 1980 through 1982 period.

Coordinated Agency Transportation: Most social service agencies appear to be in agreement that coordinated agency transportation is a good concept that has the potential for improving the delivery of social service agency transportation services and reducing the costs attendant thereto. In actual practice, however, the barriers to coordination are formidable. Given the existing institutional structure, voluntary cooperation is probably the best means for achieving coordinated services. However, if such voluntary cooperation is lacking, other means could be utilized to achieve coordination. The state and the county provide funding for various programs and, consequently, are in a position to require as well as encourage coordination. The plan recommends that the Racine County Human Services Board take the lead role in obtaining coordination, with the state becoming active only if no action is taken at the local level. Responsibility for the coordination effort could also be delegated to another County agency with the Human Services Board remaining the policymaking body for these activities.

Until a supplemental social service agency coordination strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agencies furnishing transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds—such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amended—for new facilities or equipment through the agency designated by the County Board as

being responsible for coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the County's designated responsible agency or the County Board itself should disapprove of capital grant applications for use of public funds which would enable existing county- or statesupported social service agency's transportation providers to do anything more than replace existing transportation-related equipment or facilities. Similarly, except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by social service transportation providers not supported by county or state funds for use of public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

In Racine County, there are presently nine social service agency transportation programs of which two are school special education programs using contracted service. The remaining agencies provide approximately 6,000 trips per month, over threequarters of which are provided by two agencies: 1) Lincoln Lutheran Specialized Transportation and 2) Careers for Retarded Adults. Inc. Lincoln Lutheran Specialized Transportation provides service to both elderly and handicapped persons and was created by the consolidation of the client service population of the Racine Senior Citizen Transportation program and the Lincoln Lutheran of Racine "Pick-me-up" program. The service was developed through a multiparty contract between the Southeastern Wisconsin Area Agency on Aging, the Racine Community Developmental Disabilities Service Board, the City of Racine, and Lincoln Lutheran Specialized Transportation of Racine. Every effort is made to coordinate this service with the needs of other agencies and programs. Under these circumstances, the potential for further improvement through increased coordination appears limited, since the utilization is already fairly high. Careers for Retarded Adults, Inc. has also reported a current utilization rate of its contracted vehicles that is approaching 100 percent. Based on a realistically achievable utilization of 80 percent of available hours, the maximum savings are not likely to exceed 15 percent. Therefore, the data presented below concerning means of establishing coordinated transportation systems are intended for use by the Racine implementing agencies simply as potential aids in expansion of the existing efforts to coordinate agency transportation services.

Methods of Coordination: There are numerous alternative means of achieving coordinated agency transportation services as previously described in Chapter VIII. A more detailed description of the alternative methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operations, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county and developing a coordinated social service agency transportation plan is the service performance inventory described in Appendix I. Under the service performance inventory an agency monitors its vehicle operations for a minimum period of two weeks and provides such information as: type of service, number of vehicles, service area, hours of service, ridership, vehicle utilization, productivity, and annual transportation program budget. The service performance inventory could be used voluntarily by agencies interested in coordination. It is, however, recommended that each agency in southeastern Wisconsin applying for county- or state-administered funds be required to complete a service performance inventory as part of its application process. The service performance inventory data obtained from the various agencies in each county would be examined to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a social service agency coordinated transportation plan. Where coordination is feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken to effect coordination. Once recommendations are made, either by the County or by the state, the Racine County Human Services Board would be responsible for overseeing the coordination efforts.

Development Schedule: A five-year transportation system development schedule encompassing all special handicapped transportation services proposed for Racine County is set forth in Table 225. The responsibility for the various implementation activities is shared by several parties. An agency appointed by the County Board, such as the County Human Services Board, would be involved in many of the activities; however, the City of Racine Transit and Parking Commission through the City of Racine Department of Transportation, will be primarily responsible for administering services within the City.

For 1978 and 1979 specific activities to be performed have been cited. In the last three years the program is not as detailed. Planning for the transportation needs of the elderly and handicapped is a relatively new field in which minimal data exist upon which good planning standards can be developed. Therefore, based on data obtained from the first two years of operation, the plan should be updated and refined to indicate the specific activities to be undertaken in subsequent years of the program.

Budget: Table 224 presents a five-year budget for the services proposed for Racine County. The accessible transit service is projected to only increase transit ridership slightly in 1978, because not all retrofitting will be completed by the end of the year. In 1979, when the entire base period fleet will be equipped, transit patronage is projected to increase by 9,000 rides per year with further steady increases thereafter.

The user-side subsidy program may be expected to experience a steady growth over the five-year planning period. First-year ridership is estimated to be about 3,500 passenger trips. By 1982 the ridership is anticipated to approximate 5,800 trips per year. In 1979, although total operating costs increase, net operating costs decrease slightly due to increased revenue and due to the absence of the one-time additional costs of implementation in the first year of the program.

The rural demand responsive service represents the operation with the greatest number of passengers and the highest operating deficit. The patronage shown for 1978 is projected incremental new patronage and does not include existing ridership using Lincoln Lutheran Specialized Transportation. After the first year the incremental ridership increases are projected to approximate 6,000 additional annual trips in 1979, 4,000 in 1980, 2,000 in 1981, and 2,000 in 1982. An estimated one-half of these trips are transportation handicapped, while the remainder are elderly and other client groups serviced by Lincoln Lutheran Specialized Transportation.

# REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN DEVELOPMENT SCHEDULE FOR RACINE COUNTY

Starting Year	Recommended Action	Implementing Agency
1070		
1978	Prepare and submit a UMIA Section 3 capital grant application to retrofit buses	City of Racine Transit
	Purchase, contract, or lease and operate one additional	Agency designated by the Bacine
	vehicle in demand responsive service	County Board/Lincoln Lutheran
	Finalize design of user-side subsidy program	City of Racine Transit and Parking Commission
	Begin contract negotiations with existing taxi operators	City of Racine Transit and Parking Commission
	Design marketing program for all services	Agency designated by the County Board/City of Racine Transit and Parking Commission
	Appoint Transportation Handicapped Advisory Committee	Agency designated by the County Board
	Require agencies to complete a service performance inventory	Agency designated by the County Board
	Establish and implement registration procedure for user-side subsidy program and demand responsive service	Agency designated by the County Board/Lincoln Lutheran Specialized Transportation
	Contact private operators and social service agencies that could provide chair car type services	City of Racine Transit and Parking Commission
	Contact Lincoln Lutheran Specialized Transportation concerning expansion of services and prepare for such changes	Agency designated by the County Board
	Implement \$1.00 fare on demand responsive transportation system	Agency designated by the County Board
	Contract with private taxi operators and other operators to implement user-side subsidy program in areas	City of Racine Transit and Parking Commission
	Begin retrofitting buses and training drivers	City of Basing Transit
	begin recontang bases and training drivers	and Parking Commission
1979	Change public timetables to reflect addition of lift-equipped vehicles	City of Racine Transit and Parking Commission
	Continue registration procedures for coordination	City of Racine Transit and Parking Commission/ Lincoln Lutheran Specialized Transportation
	Recommend agency procedures for coordination	Agency designated by the County Board
	Mandate coordination implementation	County Board
	Complete implementation of accessible transit service	City of Racine Transit and Parking Commission
	Purchase, lease, or contract for service and operate two additional vehicles in demand-responsive service	Agency designated by the County Board/Lincoln Lutheran Specialized
	Review agency coordination efforts and recommend further actions	Agency designated by the County Board
	Implement subscription services on rural demand-	Lincoln Lutheran
	responsive system for work and educational trips	Specialized Transportation
1980	Lower fare on demand responsive service to \$0.50	Lincoln Lutheran Specialized Transportation
1981 and 1982	Continue operations	All agencies

Source: Applied Resource Integration, Ltd.

Over the five-year plan period the number of transportation handicapped trips made on the proposed services is expected to increase from about 10,500 trips per year to about 38,800 trips per year. Net operating costs are expected to increase from approximately \$40,750 to approximately \$132,700. The local funding requirements during the plan period vary. During the first year required local funding (funds from the City and the County), is anticipated to be \$7,000 for operating costs and \$14,800 for capital expenses. In the second year local funding requirements for operating costs increase to \$56,200 while local funding for capital increases to \$24,200. In 1980 the local operating subsidy required is projected to decrease as increased federal and state funding becomes available. During the last two years of the plan the local funding again increases but gradually. No capital funding requirement is projected for these three years.

The budget does not reflect a cost for coordinating agency transportation. Administrative cost will be associated with this service; however, the savings resulting from increased efficiency should offset these costs.

## Kenosha County

In the recommended plan, an accessible transit system, a user-side subsidy program, a rural demand responsive transportation system, and coordinated agency transportation services are proposed for Kenosha County.

Administrative Agencies: To coordinate the activities of these services and to establish Countywide policies for transportation programs serving the transportation handicapped, it is recommended that an agency of the County Board such as the Kenosha County Highway Committee be designated as the lead agency in Kenosha County. Further, to assist in the implementation and operation of the services, it is recommended that the County Highway Committee delegate responsibility for the operation of individual services to appropriate public or private agencies. The responsible agency for providing accessible transit should continue to be the Kenosha Parking and Transit Commission of the City of Kenosha. Additionally, since the City of Kenosha comprises most of the Kenosha urbanized area, it is proposed that the Kenosha Parking and Transit Commission also be responsible for the user-side subsidy program.

The rural demand responsive transportation system should be the responsibility of the Kenosha

Achievement Center (KAC) as discussed earlier in the chapter. The coordination of agency transportation services would be carried out by the designated agency of the County board which would be responsible for coordinating activities of the local agency transportation providers and keeping the appropriate federal and state agencies informed as to plan implementation progress.

Advisory Committee: The U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) require the formation of advisory groups which include transportation handicapped to assist in transportation plan formulation and implementation. An advisory group can assist the administrative agencies in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County-level advisory committee including not less than seven transportation handicapped persons be appointed by the program administrative agency designated by the County Board.

Establishment of the Accessible Transit System: The 24 buses used to provide regular transit service in the City of Kenosha were purchased in 1975. Since the average life of a bus is between 12 and 15 years and no immediate fleet expansion is planned, the buses will require retrofitting with a wheelchair lift or ramp to make the base period fleet accessible. Suggested procedures for retrofitting a bus are discussed in Appendix E. As noted in Appendix E, the City of Kenosha should coordinate the retrofit efforts with the City of Racine to reduce costs and increase overall effectiveness.

Eleven buses are recommended to be retrofitted. Since the time required for retrofitting one bus should be approximately one month given the facilities available, an 11-month schedule is proposed for Kenosha. If the City of Kenosha can retrofit buses more quickly, an accelerated schedule is recommended. Since the City of Kenosha currently has six older buses that are used as spare vehicles and these vehicles could be used in service during the retrofitting, the retrofit process should not interfere with regularly scheduled transit service.

Routes of Accessible Buses: As soon as a bus is retrofitted and tested it should be put into service. A suggested priority for the assignment of the retrofitted buses by route is set forth in Table 226.

#### PRIORITY TRANSIT ROUTE ASSIGNMENT SCHEDULE FOR ACCESSIBLE BUSES KENOSHA COUNTY

Bus Priority Number	Transit Route Assignment
1	Route 4
2	Route 4
3	Spare Bus
4	Route 5
5	Route 2
6	Route 2
7	Route 3
8	Route 3
9	Route 1
10	Route 1
11	Spare Bus

Source: Applied Resource Integration, Ltd.

The priority suggested in Table 226 is based on existing ridership and the types of major generators served by each route. Since the transportation handicapped are scattered throughout the community, it is anticipated that the routes with the highest patronage can be expected to have the highest number of transportation handicapped riders.⁴ Further, because Route 4 serves an elderly housing project and a nursing home and Route 5 serves the hospital, a nursing home, and the Kenosha Achievement Center, these two routes were given a high priority. The third bus retrofitted is recommended to be used as a spare vehicle, and therefore, not assigned to any route. The third vehicle retrofitted was selected for this purpose in order to insure a high quality of service and dependability of accessible transit service in the very early stages of initiation.

The accessible buses should be scheduled to operate during the base service period which has hourly headways on all routes. This scheduling will also result in hourly headways during both the morning and afternoon peak periods. Those areas of Kenosha which would be provided with accessible service under the plan recommendations are shown on Map 6. Identification of Accessible Buses: In addition to the provision of accessible buses certain ancillary steps should be taken to assure the ready use of the accessible buses. The first step involves the placement of a readily visible universal accessibility symbol decal on the retrofitted buses. In addition, it is desirable that the retrofitted buses be painted in a distinctive livery, or carry other highly visible distinctive markers, such as pennants or flags, so that the retrofitted buses can be recognized as being accessible from a distance of at least one city block. Timetables and transit maps should also be changed to clearly indicate the routes and the buses that are accessible.

Driver Training: A very important step in assuring the effectiveness of the accessible transit system is special driver instruction on the use of a wheelchair lift or ramp and on appropriate operating procedures when a transportation handicapped person is traveling. A driver must be able to position a bus in order to effectively activate the lift or ramp and enable a transportation handicapped person to use the lift or ramp. Additionally, although a driver will not be required to assist a passenger in any way except to raise and lower the lift or ramp, the driver must not put a bus in motion until the transportation handicapped person is seated or, in the case of a person in a wheelchair, has been secured in a tiedown. Drivers should not be expected to assist in the use of a tiedown. A transportation handicapped person in a wheelchair must be able to board and secure himself in the wheelchair tiedown.

<u>Costs</u>: The retrofit procedure in Kenosha is estimated to cost about \$9,000 per bus or a total of \$99,000. Eighty percent of this cost can be provided by a federal grant under Section 3 or Section 5 of the Federal Urban Mass Transportation Act of 1964, as amended. Timely preparation, submittal, and approval of a federal funding request should permit the retrofit process to begin no later than July 1978 and be completed no later than June 1979.

The operation of the accessible buses is anticipated to add approximately \$9,400 to the annual operating costs of the system. One-half of these costs are eligible expenditures that can be reimbused under Section 5 of the Urban Mass Transportation Act of 1964, as amended, which provides transit operating assistance, and two-thirds of the remainder can be reimbursed through state operating assistance.

⁴Ridership by route from highest to lowest in 1977 was: Routes 4, 2, 3, 1, and 5.

Map 6



ROUTES AND AREA OF COVERAGE FOR 11 ACCESSIBLE BUSES IN THE KENOSHA URBANIZED AREA

Retrofitting 11 buses in the City of Kenosha's 24-bus fleet with wheelchair lifts will be sufficient to ensure that all five bus routes served by the public transit system have accessible bus service operating at no more than 60 minute headways on all routes.

Source: Kenosha Parking and Transit Commission and SEWRPC.

Establishment of the User-Side Subsidy Program: A user-side subsidy program is recommended in the Kenosha urbanized area to serve those transportation handicapped living farther than two blocks from a transit route and those living within two blocks of a route, but who cannot use accessible transit due to their particular disability. Of the various types of user-side subsidy programs that could be implemented, a user-side subsidy program involving user payment at the time of the trip is recommended. Reimbursement for the service of a pre-established proportion of the cost would be provided by the public agency responsible for administering the program. The different types of programs, the reasons for selecting a program that involves payment at the time of a trip, and the operating procedures for this type of program are discussed in Appendix G.

Administrative Agency: It is recommended that the City and County jointly implement the userside subsidy program in Kenosha through an intergovernmental agreement between the two units of government. The County would provide the local share of the funds required to subsidize the program and establish program policy and the City, through the Parking and Transit Commission, would be responsible for the operation of the program.

Vehicle Operations: The City of Kenosha has a zone fare taxi system with three operating taxi companies. Although City ordinances currently prohibit shared riding, the provision of the recommended service by the existing taxicab operators should be relatively simple given the existing zone fare system. It is recommended that the prohibition against shared riding be abolished, thus making the system eligible for federal transit operating assistance. If the system provides shared riding, a potential also exists for lowering fares.

The user-side subsidy program should serve as an impetus to the institution of service improvements by private service providers. Consequently, it is anticipated that in areas not currently served by chair car carriers either new private chair car services will be instituted or the taxicab companies will become interested in providing some form of chair car service. This stimulation of the private sector is expected only after sufficient time has elapsed to establish the potential demand under the user-side subsidy program.

In the interim, since no chair car carriers currently operate within the Kenosha urbanized area, special provisions will have to be made for such service. Four possible means of obtaining interim chair car services are: 1) induce a chair car carrier operating in another city within the Region to provide service; 2) contract for such service with a private carrier such as a school bus operator having the required specially equipped vans; 3) contract with a social service agency; or 4) purchase and operate a chair car vehicle. The vehicle could be obtained by either the City or the County. It is recommended that the Kenosha user-side subsidy program provide chair car-type services through a contractor who would agree to transport passengers upon request at a negotiated per trip cost which would be arranged with the program administrative agency and approved by the County. It is anticipated that a private contractor or social service agency could best provide this service. Such service could also be provided through a joint arrangement with two or more agencies or contractors providing service during different hours of the day. The Kenosha Achievement Center currently provides some services for the transportation handicapped and is a candidate for consideration as are local school bus operators.

Contracts should be negotiated between the private transportation providers in the area and the designated administrative agency. Each existing provider of services in the area should be contacted and those willing to participate in the project should be certified. Certification should involve insuring that a fleet is safe, that drivers have or are planning to take handicapped sensitivity training, and that an operator has adequate financial accountability. The contract between the County and the providers should describe the duties of the provider, specify provider reporting requirements, and state the reimbursement formula for each provider (see Appendix G).

Refinement of System Design: A critical element in the initial process of establishing a user-side subsidy program is refinement of the program recommended herein. Upon actual implementation of the recommended program some of the assumptions underlying the design of the program may change based on additional knowledge and experience with such programs elsewhere. The development of the program should be regarded as an evolutionary process in which actual experience properly monitored provides input for the successive refinement of the program. Consequently, the initial program of providing transportation service to the transportation handicapped should be viewed as a demonstration program from which valuable experience and knowledge about operating such a program is gained and used to improve the program in subsequent years. The only firm guidelines offered herein are that the program be administered by an existing County agency or department and that the operations required for monitoring the program be carefully designed to provide the data required for updating the plan in subsequent years as part of a continuing transportation planning process for the transportation handicapped. Such data should include: trip origins and destinations, particularly major travel destinations served; number of persons served; number of trips; fare charge per trip; user complaints or suggestions; and cost per trip.

Marketing: A marketing program should be undertaken to promote utilization of a user-side subsidy program. Pamphlets explaining the program should be distributed through several social service agencies and through various organizations for the handicapped. Newspaper advertising copy and public service announcements for radio and television use should be prepared which describe the program to potential users. This advertising should explain that the user-side subsidy program consists of reduced taxi and chair car fares, that persons who cannot board an accessible transit vehicle are eligible for the subsidy, that a person must register and be certified as eligible to use the program, and that further information is obtainable from the Kenosha Parking and Transit Commission.

The marketing program should also include training sessions for potential users. Such sessions could be conducted by social service agencies which have been specifically selected by the public agency responsible for the marketing program. Since the Kenosha Parking and Transit Commission currently has an established marketing program for its regular transit service, it is recommended that the development of the overall marketing program for the user-side subsidy program, including both the advertising and the training segments, be delegated to the Kenosha Parking and Transit Commission.

<u>Registration</u>: Possession of a valid identification card should be made a prerequisite to use of the user-side subsidy program. Since the transit system in Kenosha already has established procedures and equipment for providing photo-identification cards for the elderly and handicapped half-fare program, it is recommended that this equipment be made available for registration of potential users of the user-side subsidy program. Once the program is operating, an eligible person would be required to secure an identification card from a central location. However, during the initial three months of program operation, it is recommended that a community registration program be developed through which eligible transportation handicapped persons can register and obtain an identification card at various sites throughout the urbanized area. Possible eligibility criteria and certification forms are discussed in Appendix F.

Fare Structure and Fare Collection: As described in Appendix G under the recommended user-side subsidy program, a passenger would pay a predetermined percentage of the total taxi or chair car carrier trip cost at the time of the trip. Any necessary attendants would be permitted to ride free on both taxi and chair car trips. The driver would complete a trip voucher, which is subsequently submitted by the company providing the service for payment by the public agency responsible for administering the program.

Unlike a metered fare system where fare calculations and appropriate discounts are required to be made at the time of a trip, a zone fare system can have a fare schedule that reflects reduced fares under a user-side subsidy program. In Chapter VIII a user-cost fare level of 15 percent was recommended for Kenosha. However, after reviewing the proposed alternatives the study advisory groups recommended that the recovery rate be set at 50 percent of the zone fare charge to be consistent with the discount rate recommended for the userside subsidy programs proposed for the Milwaukee and Racine urbanized areas. Proposed zone fares for the user-side subsidy program are accordingly set forth in Table 227.

#### Table 227

## PROPOSED ZONE FARES PER RIDE FOR ELIGIBLE TRANSPORTATION HANDICAPPED PERSONS UNDER THE USER-SIDE SUBSIDY PROGRAM KENOSHA COUNTY

Zone	Present Normal Fare	User Fare Under the User-Side Subsidy Program
1	\$1.00	\$0.50
2	\$1.40	\$0.70
3	\$2.00	\$1.00
4	\$2.40	\$1.20

Source: Applied Resource Integration, Ltd.

Thus the passenger would only be expected to pay 50 percent of the normal zone fare charge for the trip by taxi. The passenger would not pay any gratuity to the driver. Instead, the taxi firm, in seeking reimbursement from the designated public agency responsible for administering the program, would add a 15 percent special service subsidy to the normal full fare charge for the trip and would receive payment for this amount in addition to the remaining 50 percent of the full user fare for the trip not paid by the user. The taxi firm would then pay the 15 percent special service subsidy to the driver in addition to his regular wage for each transportation handicapped person trip he services. This special service subsidy would be guaranteed to the driver to compensate for any passenger assistance the driver may be required to provide.

The fare for persons using chair car carriers should be the same as for those using taxi services. However, since almost all chair car service is in response to prescheduled or immediate telephone requestas opposed to hail-and-ride service-a passenger can be informed in advance what the fare will be. The chair car carrier service provider will, like the taxi operator, submit trip vouchers for reimbursement. However, in this case, the reimbursement for the trip by the designated public agency responsible for administering the user-side subsidy program will be based on the pre-established fares ordinarily charged by chair car carriers for their services. In other words, if a chair car carrier firm has an approved fare rate that includes a minimum fare of \$12 for the first 30 blocks traveled, the firm would be reimbursed by the program administrative agency for the difference between a taxi fare for a trip of similar length and the customary \$12 charge for the trip. The rider under the userside subsidy program would be charged a fare based on the taxi fare for a trip of similar length. Since this customary charge is already much higher than the charge for the same trip by taxi and includes customer service charges or gratuity, no payment for a gratuity will be made to chair car carrier firms. Also because the public subsidy costs per trip for persons using chair car carrier services will be considerably higher than the same trip made by a transportation handicapped person traveling by taxi, chair car carrier trips should be restricted to only the most severely disabled.

In Chapter VI the recommended one-way fare was assumed to be set at 50 percent of actual fare up to a maximum of \$2.50. Since an upper fare limit can encourage longer trips than necessary, it is recommended that the maximum \$2.50 apply only to intracounty trips with no fare limit for intercounty trips. Regularly scheduled long trips can be handled on a case-by-case basis. For example, a regular commuting work trip of 10 miles could be arranged at a lower fare with chair car carriers who already utilize subscription rates. Other persons making long trips would either have to pay higher fares or arrange for a combination user-side subsidy/accessible bus trip.

Cost of Initial Establishment of the User-Side Subsidy Program: The cost of the initial establishment of the user-side subsidy program is estimated to be about \$3,000—much of this to be absorbed in the salary and fringe benefits of a staff person who should be assigned to this program part time during its initial three month period of implementation. About \$1,000 would be required for program design; about \$800 would be required for registration including costs of cards, supplies, and personnel; about \$400 would be required for development of administrative and data-handling procedures; about \$600 would be required for marketing; and about \$200 would be allowed for miscellaneous expenses.

Annual Ongoing Program Administrative Costs: Experience elsewhere, specifically in Danville, Illinois, has indicated that once a user-side subsidy program is established, the administrative duties and functions are minimal. Furthermore, given the low level of anticipated ridership in Kenosha very little administrative time is expected to be required for ongoing program operation. It is anticipated that one staff management person could administer the user-side subsidy program by devoting 5 percent of his or her time supplemented with 5 percent of the time of a clerical person. Thus, the program should be able to be absorbed into current transit operations with no costs for additional personnel.

The annual ongoing program administrative costs are estimated to be about \$2,000. About \$1,200 would be expended on wages and attendant fringe benefits; about \$200 would provide for office space and telephone; about \$100 would be required for materials and supplies; about \$400 would be required for advertising; and, about \$100 would be allowed for miscellaneous expenses. This cost figure is approximately \$1,400 higher than originally indicated in Chapter VIII.

<u>Total Operating Costs</u>: The initial and continuing program implementation costs set forth in this chapter are somewhat higher than the original cost estimates utilized in the analyses of the alternative plans presented in Chapter VIII. Furthermore, at the direction of the Advisory Committee, costs of 1978 operations have been adjusted to reflect the potential impact of a start-up period on program costs and revenues. Reflecting this input are the first year operating statistics shown in Table 228.

The ridership, cost, and revenue projections are all based on assumptions derived from actual, though limited, experience in other communities. Therefore, as previously discussed, during the first year of program operation, data should be collected on such factors as trip origins and destinations, particularly major travel destinations served, number of persons served, number of trips, fare charge per trip, user complaints or suggestions, and cost per trip. Such data should be used to forecast ridership, revenue, and costs for the future years.

<u>Funding</u>: If a shared ride taxi system is implemented the user-side subsidy program would be eligible for federal transit operating assistance. If such a change is not made, the program would have to be funded entirely with state and local monies. Recent state legislation has made Kenosha County eligible for approximately 24,400 per year to assist in operating transportation services for the elderly and handicapped. This is an amount in excess of the estimated 1978 net annual program costs shown in Table 229. As stated in Chapter VIII, however, the potential ridership estimates

#### Table 228

## ANTICIPATED FIRST-YEAR (1978) OPERATING STATISTICS FOR THE USER-SIDE SUBSIDY PROGRAM KENOSHA COUNTY

Operating Statistics	Year: 1978
Estimated Ridership	2,200
Annual Trip Cost	(one-way trips) \$4,800
Annual Administrative Cost	\$2,000 \$3,000
Total First Year Costs	\$9,800
Total Revenue	\$1,000
Net First Year Cost	\$8,800

Source: Applied Resource Integration, Ltd.

are based on assumptions including the effects of fare constraints and could be low or high by a factor of two. Therefore, any surplus monies should be used as a contingency fund for the userside subsidy program and then, if available, applied to assist in the coordination and operation of social service agency vehicles or demand responsive transportation service operations.

Establishment of Demand Responsive System in the Nonurbanized Area of Kenosha County: The Kenosha Achievement Center has received a demonstration grant from the Area Agency on Aging to operate transportation services for the elderly in the nonurbanized area of Kenosha County. Under this program, service is currently provided by one vehicle operating four days per week. No fare is charged, although donations are encouraged.

It is, therefore, recommended that Kenosha County contract with the Kenosha Achievement Center for the provision of expanded services for the transportation handicapped in the nonurbanized area of the County. The County would provide funds to increase the days of service from four to six and service would be open to both the elderly and the nonelderly transportation handicapped. The service would be demand responsive and, if necessary, trip priorities would be given to the transportation handicapped. However, the establishment of trip priorities should be avoided if possible, since the goal is to provide six-day-per-week service for both the elderly and transportation handicapped, constrained only by fare. Under this proposal, only the number of days on which service is offered would be expanded; therefore, no additional vehicles would be necessary.

The demonstration program began in 1977 and is expected to continue to the summer of 1978. Thus, in the first half of 1978 when the expansion is proposed, the demonstration will have had substantial operating experience. Since under the demonstration program no fare will be charged to persons 60 years of age or older during the first half of 1978, no fare should be charged to the transportation handicapped under 60 years of age. However, in mid-1978 a \$1.00 fare is proposed for both elderly and transportation handicapped to provide additional monies for expanded services. With only one vehicle operating in the nonurbanized area six days per week, it appears likely that demand for service will exceed supply, especially at the free fare level. Moreover, at a \$1.00 fare demand is still expected to exceed supply.

#### BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-KENOSHA COUNTY

Projected Annual Passenger Trips and Implementation Costs ⁸ for Each Proposed Transportation System											
	1978		1	1979		1980		1981		1982	
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	in flated Dollars	Noninflated Dollars	inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	
Accessible Transit Systems Passenger Trips	1,	400	9,0	9,000		11,000		12,000		13,000	
Revenue. Operating Cost Net Operationg Cost Capital Cost	\$200 1,600 1,400 54,000	\$200 1,600 1,400 54,000	\$ 1,200 9,900 8,700 45,000	\$ 1,200 9,200 8,000 45,000	\$ 1,500 12,300 10,800 	\$ 1,500 10,500 9,000 	\$ 1,600 13,500 11,900 	\$ 1,600 10,700 9,100 	\$ 1,800 14,800 13,000 	\$ 1,800 10,900 9,100 	
User-side Subsidy Program Passenger Trips	2 \$ 1,000 9,800 8,800	,200 \$ 1,000 9,800 8,800	2 \$ 1,200 8,300 7,100	,600   \$ 1,200   7,700   6,500	3, \$ 1,400 9,900 8,500	,000 \$ 1,400 8,500 7,100	3, \$ 1,500 11,500 10,000	300 \$ 1,500 9,100 7,600	3,1 \$ 1,600 13,300 11,700	600 \$ 1,600 9,800 8,200	
Rural Demand-Responsive Systems   Passenger Trips   Revenue.   Operating Cost   Net Operating Cost   Capital Cost	1, \$ 1,800 6,000 4,200	800 \$ 1,800 6,000 4,200 	6, \$ 6,000 34,600 28,600 20,000	000 \$ 6,000 32,000 26,000 20,000	12 \$ 6,000 67,000 61,000 20,000	,000 \$ 6,000 57,400 51,400 20,000	14 \$ 7,000 72,000 65,000 	,000 \$ 7,000 57,200 50,200	16,( \$ 8,000 78,000 70,000 	000 \$ 8,000 57,300 49,300 	
Accessible Transit System, User-Side Subsidy Program, and Rural Demand-Responsive System Passenger Trips. Revenue. Operating Cost. Net Operating Cost. Capital Cost.	5, \$ 3,000 17,400 14,400 54,000	400 \$ 3,000 17,400 14,400 54,000	17 \$ 8,400 52,800 44,400 65,000	7,600 \$ 8,400 48,900 40,500 65,000	26 \$ 8,900 89,200 80,300 20,000	5,000 \$ 8,900 76,400 67,500 20,000	29 \$10,100 97,000 86,900	,300 \$10,100 77,000 66,900	32 \$ 11,400 106,100 94,700	,600 \$11,400 78,000 66,600	

		Estimated An	nual Total Exp	enditures by Exp	ected Sources	of Revenues				
	1	978	1	979	1980		1981		1982	
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	In flated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
Funding Sources for Operating Costs Federal UMTA Section 5	\$ 700 470 11,700 1,300 230 \$14,400	\$ 700 470 11,700 1,300 230 \$14,400	\$ 4,350 2,900 24,420 ^c 11,280 1,450 \$44,400	\$ 4,000 2,670 24,420 ^c 8,080 1,330 \$40,500	\$ 5,400 3,600 62,550 ^d 6,950 1,800 \$80,300	\$ 4,500 3,000 52,650 ^d 5,850 1,500 \$67,500	\$ 5,950 3,970 67,500 ^d 7,500 1,980 \$86,900	\$ 4,550 3,030 52,020 ^d 5,780 1,520 \$66,900	\$ 6,500 4,330 73,530 ^d 8,170 2,170 \$ 94,700	\$ 4,550 3,030 51,750 5,750 1,520 \$66,600
Funding Sources for Capital Costs Federal UMTA Section 3 or 5 Federal UMTA Section 16(b)(1) or 16(b)(2)	\$43,200  10,800 \$54,000	\$43,200   10,800 \$54,000	\$36,000 16,000 4,000 9,000 \$65,000	\$36,000 16,000 4,000 9,000 \$65,000	 16,000 4,000  \$20,000	16,000 4,000 				

^a Costs shown are in addition to costs incurred in operating the existing transit and demand responsive systems. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b The City of Kenosha being the designated eligible recipient of federal funds under Sections 3 and 5 of the Urban Mass Transportation Assistance Act of 1964 as amended would be expected to pay only the local one-sixth and one-fifth matching shares of the federal operating and capital assistance funds for their publicly owned bus system. All other local share matching funds for the user-side subsidy program and the Demand Responsive Transportation System would be paid by the County.

^C Maximum state allocation to Kenosha County for fiscal year 1979.

d Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years, the County would have to assume these costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration, Ltd., and SEWRPC.

The projected ridership for the transportation handicapped on the system is 1,800 trips in 1978 while total ridership is expected to approximate 5,400 trips.⁵ Therefore, at a \$1.00 fare revenues should approximate \$5,400 per year, of

⁵Actual travel demand is anticipated to be around 6,000 annual trips. However, with the elderly also using the service, probably not all trips can be served.

which \$1,800 would be attributable to the expansion of services. Under the demonstration program, the Kenosha Achievement Center estimates the costs of providing the service to be approximately \$20,000 annually. The incremental costs of adding the additional two days of operation is estimated to be \$6,000. Funds to meet this operating deficit are available from the state, if the County chooses to use these monies for this purpose.

Service over the next four years would be dependent upon the actual ridership. However, initial projections indicate that an unsatisfied demand by elderly and transportation handicapped will exist and service should be expanded.

During the five-year plan period a number of demand responsive transportation service improvements are recommended for implementation. In 1979, it is recommended that one additional vehicle be purchased, leased, or contracted for service and placed in demand responsive transportation service. It is also recommended that in 1979 five-day-per-week subscription service for work and educational trip purposes be implemented. In 1980, it is recommended that another additional vehicle be purchased, leased, or contracted for service and placed in demand responsive transportation service. It is also recommended that in 1980 fares be lowered to \$0.50 per one-way trip. Lastly, in 1981 and 1982 the plan recommends a continuation of demand responsive transportation services with possible fleet expansion as user demand warrants.

In the second year of the demand responsive transportation program, 1979, a new vehicle would be put into six-day-per-week service by the agency designated by the County Board as responsible for providing demand responsive transportation. Should this agency elect to purchase a new vehicle rather than lease a vehicle or contract for transportation service through an existing provider, Section 16(b)(1) or 16(b)(2) funds available under the Urban Mass Transportation Act of 1964 as amended could be used to fund 80 percent of the cost of the vehicle. The availability of this additional vehicle should enable subscription transportation service for work and educational trips to be implemented.

By 1980 the demand responsive transportation program should have accrued two years of operating experience. In addition, it is anticipated that increased funding under newly developing state and federal aid programs will become available to further financially assist local units of government in the provision of transportation services for the elderly and handicapped. Should these additional monies become available, it is proposed that the user fare be lowered to a flat fare of \$0.50 per ride to serve an expected higher level of travel demand among the transportation handicapped at this lower fare. In 1981 and 1982 operations would continue with purchases, leases, or contracts for the services of additional vehicles being pursued as needed.

Coordinated Agency Transportation: Most social service agencies appear to be in agreement that coordinated agency transportation is a good concept that has the potential for improving the delivery of social service agency transportation services and reducing the costs attendant thereto. In actual practice, however, the barriers to coordination are formidable. Given the existing institutional structure, voluntary cooperation is probably the best means for achieving coordinated services. However, if such voluntary cooperation is lacking, other means could be utilized to achieve coordination. The state and the county provide funding for various programs and, consequently, are in a position to require as well as encourage coordination. The plan recommends that an agency designated by the County Board, such as the Kenosha County Highway Committee, take the lead role in obtaining coordination, with the state becoming active only if no action is taken at the local level. Responsibility for the coordination effort could also be delegated to another county agency with, for example, the Highway Committee remaining the policymaking body for these activities.

Until a supplemental social service agency coordination strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agencies furnishing transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds-such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amended-for new facilities or equipment through the agency designated by the County Board as being responsible for achieving coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the County's designated responsible agency or the County Board itself should disapprove of capital grant applications for a use of public funds by county- or state-supported social service agency transportation providers to do anything more replace existing transportation-related equipment or facilities. Similarly, except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by any social service transportation provider not supported by county or state funds for use of public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

In Kenosha County there are presently three social service agency transportation programs. These programs are administered by the Department of Social Services, Cooperative Educational Service Agency (CESA) Number 18, and the Kenosha Achievement Center (KAC). These latter two agencies which deal with the handicapped appear to afford the only fruitful area for coordination. The reported hours of operation by CESA (9:00 A.M.-2:45 P.M.) are within those of KAC which are 7:00 A.M.-5:30 P.M. The possibilities of coordination should, therefore, be explored although substantial savings are unlikely. Since the Department of Social Services uses volunteer drivers, it is unlikely that any cost reduction can be accorded by using vehicles from other programs unless special features such as lifts are required by the client.

Methods of Coordination: There are numerous alternative means of achieving coordinated agency transportation services as described in Chapter VIII. A more detailed description of the alternative methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operations, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county and developing a coordinated social service agency transportation plan is the service performance inventory described in Appendix I. Under the service performance inventory an agency monitors its vehicle operations for a minimum period of two weeks and provides the resulting information on: type of service, number of vehicles, service area, hours of service, ridership, vehicle utilization, productivity, and annual transportation budget to the administrative agency for analyses. The service performance inventory could be used voluntarily by agencies interested in coordination. It is, however, recommended that each agency in southeastern Wisconsin applying for county- or state-administered funds be required to complete a service performance inventory as part of its application process. The service performance inventory data obtained from the various agencies in each county would be analyzed to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a coordinated social service agency transportation plan. Where coordination is feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken to effect coordination. Once recommendations are made, either by the County or by the state, the designated county agency would be responsible for overseeing the coordination efforts.

Development Schedule: A five-year transportation system development schedule for Kenosha County is set forth in Table 230. Under this schedule the major agencies responsible for establishing the services would be an agency designated by the county board, such as the County Highway Committee; the Kenosha Parking and Transit Commission; and the Kenosha Achievement Center with the County Board designated agency taking the lead role as coordinator.

The schedule for 1978 lists activities necessary to initiate service in 1978. The retrofit of the transit buses would not be completed until 1979. Expansion of service is proposed for 1979 and beyond. In 1980 fares are anticipated to be reduced assuming additional funding sources are available. As in other counties, the schedule for 1980, 1981, and 1982 is not detailed, since planning for the transportation needs of the transportation handicapped is a relatively new field with minimal data available upon which good planning standards can be developed. Experience in the first two years should provide the data necessary to update or refine the program design in the latter years.

<u>Budget:</u> A five-year budget for the transportation handicapped transportation services proposed for Kenosha County is presented in Table 229. During

# REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM DEVELOPMENT SCHEDULE FOR KENOSHA COUNTY

Staging		
Year	Recommended Action	Implementing Agency
1978	Prepare and submit a UMTA Section 3 capital grant application to retrofit buses Begin user-side subsidy contract negotiations with existing taxicab operators and other private transportation providers and social service	Kenosha/Kenosha Parking and Transit Commission Kenosha Parking and Transit Commission
	agencies that operate chair car vehicles Contact Kenosha Achievement Center concerning expansion of its demonstration program in the nonurbanized area of the County and prepare for such changes	Agency designated by the Kenosha County Board
	Implement \$1.00 fare on demand responsive transportation system	Agency designated by the Kenosha County Board
	Appoint Transportation Handicapped Advisory Committee	Agency designated by the County Board
	Design marketing program for all services	Agency designated by the County Board/Kenosha Parking and Transit Commission ^C
	Require agencies to complete a service performance inventory	Agency designated by the County Board
	Establish registration procedures for user-side subsidy program and demand-responsive transportation service	Kenosha Parking and Transit Commission/Kenosha Achievement Center
	Conduct community registration program for user-side subsidy program and demand-responsive transportation service	Kenosha Parking and Transit Commission/Kenosha Achievement Center
	Implement demand-responsive transportation service by expanding the Kenosha Achievement Center demonstration project	Kenosha Achievement Center
	Contract with private taxi operators and other private transportation providers or social service agencies and implement user-side subsidy program	Kenosha Parking and Transit Commission
	Begin retrofitting buses and training drivers	Kenosha Parking and Transit Commission
	Change public timetables to indicate accessible transit routes	Kenosha Parking and Transit Commission
	Recommend agency procedures for coordination	Agency designated by the County Board
	with OMTA Sections To(D)(1) or To(D)(2) funds, purchase, lease, or contract for the services of one additional vehicle for demand-responsive transportation service	Agency designated by the County Board/Kenosha Achievement Center
1979	Mandate coordination implementation Complete implementation of accessible transit service	County Board Kenosha Park and and Transit Commission
	Purchase, contract, or lease and operate one additional vehicle in demand-responsive transportation service	Agency designated by the County Board/Kenosha Achievement Center
	Implement subscription service on demand-responsive transportation system for work and educational trips	Kenosha Achievement Center
	further actions	Agency designated by the County Board/County Board
1980	Purchase, contract, or lease and operate one additional vehicle in demand-responsive transportation service	Agency designated by the County Board/Kenosha Achievement Center
	Lower fare on demand-responsive transportation service to \$0.50	Kenosha Achievement Center
1981 and 1982	Continue operations (possible vehicle purchase, contract, or lease)	All agencies

Source: Applied Resource Integration, Ltd.

the first year, ridership on the accessible transit service may be expected to be low—approximately only 1,400 trips—since not all vehicles will be wheelchair lift-equipped. Before 1979, however, the base period fleet should be completely accessible and ridership may be expected to increase to about 9,000 trips per year and to continue to increase over the next three years.

The user-side subsidy program may be expected to experience a steady increase in utilization over the five-year planning period. First year ridership is projected to be about 2,200 passenger trips. By 1982, the ridership is anticipated to approximate 3,600 trips.

As stated earlier in the text, the demand responsive transportation service for the transportation handicapped in the nonurbanized area of the County is proposed to be provided by the Kenosha Achievement Center. It is recommended that this service be provided by the Achievement Center as an expansion of the transportation service they are presently providing in the nonurbanized area of the County as an elderly transportation service demonstration project, supported with Title III funds provided under the Older Americans Act of 1965, as amended through the Southeastern Wisconsin Area Agency on Aging. These existing programs will be phasing out during the first two years of the plan period and, therefore, the operating costs for 1978 and 1979 represent only the additional passenger trips, revenues, and costs attributable to transportation handicapped persons under 60 years of age who would, under this proposed plan, also be eligible to use this elderly demand responsive transportation system. The operating costs presented for 1980, 1981, and 1982 under the nonurbanized area demand responsive service category represent the combined operating statistics for the expanded service to both the elderly and the transportation handicapped who would be eligible to use this service.

The number of trips estimated to be made on all of the recommended services in the County may be expected to increase from 5,400 in 1978 to 32,600 in 1982. Over the same period net operating costs may be expected to increase from \$14,400 to \$94,700. In the first two years the local share of these costs is low due to the available state and federal funding. In 1980, however, local sources must bear the greatest proportion of the overall increase in net operating costs resulting primarily from the increase in the nonurbanized area demand responsive service. This increase in local costs may be expected to occur even though additional funding sources are assumed to be available by 1980.

Capital costs in the first year consist solely of retrofitting costs for the accessible transit system. Second year capital costs include both retrofitting and the purchase, lease, or contract for the services of a new vehicle for nonurbanized area demand responsive service. Third year capital costs include provision of another vehicle for this service. The local share of these capital costs for the three years are about \$10,800, about \$13,000, and about \$4,000, respectively.

The budget does not include a cost for coordinated agency transportation. Administrative costs associated with this service should be relatively minor and capable of absorption in existing agency budgets.

# Walworth County

In the recommended regional plan for the transportation handicapped, a demand responsive transportation system and coordinated social service agency transportation are recommended for implementation in Walworth County.

Administrative Agency: In Walworth County it is recommended that an agency such as the Walworth County Senior Citizens' Services (WCSCS), be responsible for implementing the proposed demand responsive transportation service at the discretion of the County Board. WCSCS would be responsible for establishing policy, implementing the recommendations, and operating the service. Since the WCSCS has been recommended as the agency to be responsible for administering the demand responsive transportation service, rather than delegate responsibility for coordinating social service agency transportation services to another County agency, it is recommended that WCSCS also be responsible for coordinating social service agency transportation services. WCSCS would be responsible for analyzing the service performance inventories (see Appendix I) prepared by social service agency transportation providers and making recommendations to the County Board concerning the method for achieving improved coordination of agency transportation services. WCSCS would also apprise the state as to its actions and plans concerning coordinated services.

Advisory Committee: The U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and the Federal Highway Administration (FHWA) require the formation of advisory groups which include the transportation handicapped to assist in the planning and implementation of transportation services. An advisory committee can assist in establishing policy by bringing the perspective of the consumer into the decisionmaking process. Therefore, it is recommended that a County level advisory group including not less than seven transportation handicapped persons be appointed by WCSCS.

Establishment of Demand Responsive System in Walworth County: Two vans operated by the Walworth County Senior Citizens Services currently provide advance reservation, demand responsive transportation services for elderly residents. These vans operate throughout the week providing oneday-per-week service in five different sections of the County. In the past these two vehicles were operated with funding under the Older Americans Act of 1965, as amended. Under this funding program, fares were prohibited. As of July 1977 the operation is being financed through general funds by the County; as a result fares could now be instituted. At the present time, however, the County is maintaining free-fare operation.

As discussed in Chapter VIII, with the limited availability of local funds, fares should be charged to enable the transportation services to be expanded. The initial fare should be \$0.50, with the proposed fare eventually increasing to \$1.00. A lower fare of \$0.50 is recommended initially to stimulate demand, and verify demand projections. The \$0.50 fare would be in effect for a six-month period before implementing the \$1.00 fare. As funds become available either from fare revenues or other sources, it is proposed that an additional 19- to 25-passenger, lift-equipped small bus be purchased and utilized along with the two vans currently in operation. For a fully operational year, elderly patronage is expected to be 16,000 trips (current ridership), and new nonelderly transportation handicapped patronage of 5,000 trips is expected. Although total demand for services at a \$0,50 and \$1.00 fare level will be less than at no fare. the projected demand is still expected to exceed the number of trips that three vehicles can supply.

Under this proposal, the County will be divided into three operating districts. Service would be provided two days per week in each district, resulting in a six-day-per-week operation. Patronage estimates are based on an estimated vehicle productivity of three trips per hour for a service operating eight hours per day. The costs have been derived using an \$8.00 per hour vehicle operating rate. The estimated cost of operating this service is \$60,000. Of this amount, approximately \$20,000 is estimated to be the new incremental costs resulting from the expansion of the present Walworth County Senior Citizens Services to include nonelderly transportation handicapped persons. With an estimated revenue of \$4,000, the required operating subsidy for this additional increment of service would be about \$16,000 in 1978.

Funding to provide this additional increment of service in 1978 would require approximately \$1,600 in county funds and about \$14,400 in state funds. Capital costs to purchase a third vehicle are estimated to be \$20,000. A capital grant under Section 16(b)(1) of the Urban Mass Transportation Act of 1964, as amended, could be used to cover 80 percent, or \$16,000 of this cost. The County would provide the remaining \$4,000. The total program cost to the County for 1978 would be about \$5,600.

Future-year transportation service improvements should be dictated by actual user demand. Based on a preliminary analysis of potential elderly and transportation handicapped transportation service user demand, it is recommended that the Walworth County Senior Citizens Services agency consider purchasing, leasing, or contracting for the services of one additional vehicle in 1979. In 1980, it is recommended that two more vehicles be purchased. leased, or contracted for service and also at this time that the fares be lowered to \$0.50 per one-way trip. By this time the WCSCS will be operating a fleet of six vehicles and user demand can be expected to significantly increase as fares are reduced from \$1.00 to \$0.50. For these reasons, it is further recommended that the WCSCS divide the County into two districts, expanding general transportation service to three days per week and implementing subscription transportation services on a five-day-per-week basis for work and educational trips. In 1981 and 1982, the plan recommends a continuation of demand responsive transportation services with possible service expansion as user demand warrants.

This schedule assumes gradual transportation service expansion during the first two years while additional funding sources are identified or existing resources are expanded. The additional funding will permit expanded operations with a lower fare to begin in 1980. In 1981 and 1982 operations will continue with additional vehicle acquisitions possible. Coordinated Agency Transportation: Most social service agencies would probably agree that coordinated agency transportation is a good concept that has the potential for improving the delivery of social services as well as for reducing the costs thereof. In actual practice, however, the barriers to coordination can be formidable. Given the existing institutional structure, voluntary cooperation at the local level, is probably the best means available for achieving coordinated services. However, if such voluntary cooperation is lacking, other means to achieve the desired coordination are available. The state and the county provide funding for various social service transportation programs and, consequently, are in a position to encourage coordination. Accordingly, it is recommended that an agency designated by Walworth County such as the Walworth County Senior Citizens Service undertake a study to improve agency transportation service coordination with the state becoming active only if no action is taken at the local level.

Until a supplemental social service agency coordination strategy is developed that addresses the manner in which existing social service agency transportation services should be coordinated within the County, social service agency furnishing transportation services which are in part supported by either county or state funds should be required to submit any capital grant application for public funds-such as those monies available under Section 16(b)(2) of the 1964 UMTA Act as amendedfor new facilities or equipment through the agency designated by the County Board as being responsible for coordination. Except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the County's designated responsible agency or the County Board itself should disapprove of capital grant applications for a use of public funds which would enable existing county- or state-supported social service agency's transportation providers to do anything more than replace existing transportation-related equipment or facilities. Similarly, except for those new vehicle acquisitions for use in demand responsive transportation service identified in this plan, the Regional Planning Commission recommends disapproval of all capital grant applications submitted by social service transportation providers not supported by county or state funds for use of public funds for facilities and equipment to do anything more than replace existing facilities and equipment.

Methods of Coordination: There are numerous alternative means of achieving coordinated agency

transportation services as previously described in Chapter VIII. A more detailed description of the alternative methods is presented in Appendix H. The methods of coordination discussed in the appendix include: outreach coordination, maintenance coordination, purchasing coordination, billing and accounting coordination, volunteer driver coordination, ride sharing and time sharing, clearinghouse for vehicle operations, centralized dispatching, and total consolidation of services.

Service Performance Inventory: The proposed basis for determining the feasibility of coordinated agency transportation in each county and developing a coordinated social service agency transportation plan is the service performance inventory described in Appendix I. Under the service performance inventory, an agency monitors its vehicle operations for a minimum period of two weeks and provides such information on: type of service, number of vehicles, service area, hours of service, ridership, vehicle utilization, productivity, and annual transportation budget. The service performance inventory could be used voluntarily by agencies interested in coordination. It is, however, recommended that each agency in southeastern Wisconsin applying for county- or state-administered funds be required to complete a service performance inventory as part of its application process. The service performance inventory data obtained from the various agencies in each county would be analyzed to determine the feasibility of coordinated agency transportation. Should the County so desire, the staff of the Regional Planning Commission would be available to assist in the development of a social service agency coordinated transportation plan. Where coordination is feasible, an agency would be given funding approval only after agreeing to cooperate in the implementation of coordinated services. Moreover, funding for subsequent years would then depend upon steps taken to effect coordination. Once recommendations are made, either by the County or by the state, Walworth County Senior Citizens Services would be responsible for overseeing the coordination of efforts.

Development Schedule: A five-year transportation system development schedule for Walworth County is set forth in Table 231. Since the WCSCS is designated both operator and coordinator for services in the County, it is responsible for almost all activities except where the County Board should be directly involved. The activities listed are required to initiate or expand services in 1978. In 1978, the demand responsive service now operating is to be

## REGIONAL ELDERLY AND HANDICAPPED TRANSPORTATION SYSTEM PLAN DEVELOPMENT SCHEDULE FOR WALWORTH COUNTY

Staging Year	Recommended Action	Implementing Agency
1978	Arrange for the expansion of Walworth County Senior	Walworth County Senior
	Citizens Services transportation service	Citizens Services
	Design small-scale marketing program	Walworth County Senior Citizens Services
	Establish registration procedure for transportation service	Walworth County Senior Citizens Services
	Appoint Transportation Handicapped Advisory Committee	Walworth County Senior Citizens Services
	Require agencies to complete a service performance	Walworth County Senior
	Purchase lesse or contract for convice, and operate an	County Board Malworth
	additional vehicle. Implement demand responsive	County Board/Walworth
	sorvice, with \$0.50 fore	Citizens Services
	service with \$0.50 rate	Welworth County Serier
	increase rare to \$1.00 at mid-year	Citizens Services
	Conduct registration program for transportation carving	Walworth County Senior
	conduct registration program for transportation service	Citizens Services
1979	Recommend agency procedures for coordination	Walworth County Senior
	• • • •	Citizens Services
	Mandate coordination implementation	County Board
	Purchase, lease, or contract for service, and operate	County Board/Walworth
[ ]	one additional vehicle	County Senior
		Citizens Services
	Review agency coordination efforts and recommend	Walworth County Senior
	further actions	Citizens Services
1980	Purchase, lease, or contract for service and operate	County Board/Walworth
	two additional vehicles	County Senior
		Citizens Services
	Lower fare to \$0.50	Walworth County Senior
		Citizens Services
	Divide County into two districts and expand service	Walworth County Senior
	to three days per week	Citizens Services
	Implement five-day-per-week subscription service for	Walworth County Senior
	work and educational trips	Citizens Services
1981 and 1982	Continue operations	All agencies

Source: Applied Resource Integration, Ltd.

expanded and coordination efforts mandated. Over the next two years, both program elements are to be reviewed and the demand responsive service is expected to expand to four vehicles. Activities for 1981 and 1982 are not detailed, since planning for the transportation needs of the elderly and handicapped is a relatively new field with minimal data upon which good planning standards can be developed. Experience gained during the first years of the extension of service will determine specific actions in the latter years.

Budget: A five-year budget for the demand responsive system proposed in Walworth County is presented in Table 232. Ridership in the first year represents anticipated ridership by the transportation handicapped and does not include existing tripmaking. In subsequent years, the incremental increases are composed of both elderly and transportation handicapped, equally divided between the two groups. All costs represent new costs and do not include the approximately \$40,000 now being spent by WCSCS on transportation.

During the five years, four vehicles are to be added to the existing service and by 1982 the net cost of operating these vehicles will reach almost \$95,000. Funding over the period will consist of state and local monies during the first two years, with the assumption being that the County allocates state monies available under Wisconsin State Statute 85.08(5) to this program. In the latter three years, funding is assumed to be derived from state and local sources; however, it is conceivable that a portion of these latter-year costs could be funded through future federal programs. Capital funding throughout the project will be federal and local.

The budget does not include a cost for coordinated agency transportation. Administrative costs will be associated with this service, but the savings resulting from increased efficiency should offset these costs.

#### SUMMARY

Any functional planning process should terminate in the adoption of a general plan that best meets the particular needs under consideration. In the elderly and handicapped transportation planning process, alternative transportation systems for each of the study subareas delineated within the seven-county Region were analyzed and evaluated, and the most effective system within each subarea identified. The systems so identified for each of the subareas constitute the recommended regional

#### Table 232

#### BUDGET SUMMARY OF SERVICES FOR THE TRANSPORTATION HANDICAPPED-WALWORTH COUNTY

Projected Annual Passenger Trips and Implementation Costs ^a for Each Proposed Transportation System										
	1978		1979		1980		1981		1982	
Transportation System Cost Classifications	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
Rural Demand-Responsive Systems Passenger Trips	5,000		12,000		24,000		26,000		28,000	
Revenue. Operating Cost Net Operating Cost Capital Cost.	\$ 4,000 20,000 16,000 20,000	\$ 4,000 20,000 16,000 20,000	\$12,000 43,000 31,000 20,000	\$12,000 39,800 27,800 20,000	\$12,000 93,000 81,000 40,000	\$12,000 79,700 67,700 40,000	\$ 13,000 100,700 87,700 	\$13,000 79,900 66,900 	\$ 14,000 108,900 94,900 	\$14,000 80,000 66,000 

Estimated Annual Total Expenditures by Expected Sources of Revenues										
	1978		1979		1980		1981		1982	
Federal, State, and Local Program Funding Sources	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars	Inflated Dollars	Noninflated Dollars
Funding Sources for Operating Costs State 85.08(5)	\$14,400 1,600 \$16,000	\$14,400 1,600 \$16,000	\$15,800 ^b 15,200 \$31,000	\$15,800 ^b 12,000 \$27,800	\$72,900 ^c 8,100 \$81,000	\$60,930 ^c 6,770 \$67,700	\$ 78,930 ^c 8,770 \$ 87,700	\$60,210 ^c 6,690 \$66,900	\$ 85,410 ^c 9,490 \$ 94,900	\$59,400 ^c 6,600 \$66,000
Funding Sources for Capital Costs Federal UMTA Section 16(b)(1) or 16(b)(2) County Total	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$16,000 4,000 \$20,000	\$32,000 8,000 \$40,000	\$32,000 8,000 \$40,000				

^a Costs shown are in addition to costs incurred in operating the existing demand responsive system. Operating expenditures plus local and state funding sources incorporate a compounded 8 percent inflation factor for the years 1979 through 1982 in the inflated dollars columns. Also shown are 1978 noninflated dollars.

^b Maximum state allocation to Walworth County for fiscal year 1979.

^C Assumes continued and increased state funding under Section 85.08(5). Should this not occur in future years, the County would have to assume these costs or modify the transportation services in such a way as to make them eligible for federal funds under the National Mass Transportation Assistance Act of 1964 as amended.

Source: Applied Resource Integration Ltd., and SEWRPC.

plan. For each of the study subareas, a five-year schedule of service improvements was prepared which included necessary capital investment. To aid in the implementation of the recommended plan, proposals were also made concerning initial implementation procedures, such as refinement of the program design, data gathering techniques, marketing techniques, and registration procedures; ongoing program administration procedures such as fare structure and fare collection, together with annual administrative cost estimates; vehicle operation and routing procedures, including priority route assignments of accessible buses, ancillary procedures for ensuring the accessibility of the transit systems, and contractual agreements between the implementing agencies and the service providers: funding sources applicable to the systems within each subarea; and data relevant to methods for instituting and maintaining coordinated agency transportation services.

The recommended plans for the regional transportation handicapped transportation system may be summarized on a county-by-county basis as follows:

- 1. For the Milwaukee urbanized area,⁶ a combination of an accessible transit system and a user-side subsidy program complemented by the coordination of transportation services provided by social service agencies operating in the Milwaukee urbanized area.
- 2. For those parts of Ozaukee, Washington, and Waukesha Counties beyond the Milwaukee urbanized area, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by social service agencies operating in each of the three counties concerned.
- 3. For the Racine urbanized area, the establishment of a combination of an accessible transit system and a user-side subsidy program complemented by the coordination of transportation services provided by social service agencies operating in the Racine urbanized area.

- 4. For that part of Racine County beyond the Racine urbanized area, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by social service agencies operating in Racine County.
- 5. For the Kenosha urbanized area, the establishment of a combination of an accessible transit system and a user-side subsidy program complemented by the coordination of transportation services provided by social service agencies operating in the Kenosha urbanized area.
- 6. For that part of Kenosha County beyond the urbanized area, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by the social service agencies operating in Kenosha County beyond the urbanized area.
- 7. For Walworth County, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by social service agencies operating in Walworth County.

In summary, the recommended plan for the provision of transportation services and facilities to the transportation handicapped in southeastern Wisconsin consists of the combination of an accessible transit system and user-side subsidy transportation program in the three urbanized areas of the Region, the establishment of demand responsive transportation systems to serve the nonurbanized areas, and the establishment of county programs to coordinate the transportation services provided by the social service agencies in each county.

Financial assistance is available to local units of government to partially fund the implementation of the recommended regional transportation plan for the transportation handicapped. These funds can be obtained from the federal government through the U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA), and from the state through the Wisconsin Department of Transportation. Federal revenue sharing monies distributed each year to local units of government are also a potential source of program implementation funds.

⁶As noted in Chapter III of this report, the three urbanized areas in the Region-Kenosha, Milwaukee, and Racine-have for data analysis and planning purposes been approximated by SEWRPC planning analysis areas.

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#### PLAN IMPLEMENTATION

#### INTRODUCTION

The recommended elderly and handicapped transportation system plan for the seven-county Southeastern Wisconsin Region, as described in Chapter IX of this report, consists of four major elements: 1) an accessible transit element in the urbanized areas of the Region; 2) a supplementary user-side subsidy program element which would provide service to transportation handicapped persons living more than two blocks from an accessible bus route or those persons who are unable to use an accessible bus in the urbanized areas: 3) the establishment of a demand responsive transportation system to provide transportation service for the transportation handicapped residing in the nonurbanized areas of the Region; and 4) the immediate establishment of separately functioning but complementary coordinated agency transportation services in Milwaukee, Racine, Kenosha, Ozaukee, and Walworth Counties as well as the establishment of coordinated agency transportation in Washington and Waukesha Counties as it becomes feasible. These recommendations, as presented fully in Chapter IX, were accepted and approved by the Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped. The recommended regional elderly and handicapped transportation system plan is not complete, however, until the steps required to implement that planthat is, to convert the plan into action plans and policies-are specified.

This chapter is, therefore, presented as a guide for use in the implementation of the recommended regional elderly and handicapped transportation system plan. Basically, it outlines the actions which must be taken by the various levels and agencies of government and private parties concerned if the recommended regional elderly and handicapped transportation system plan is to be fully carried out over the next five years. Those units and agencies of government which have plan adoption and plan implementation powers applicable to the regional elderly and handicapped transportation system plan are identified; necessary or desirable formal plan adoption actions specified; and specific implementation actions are recommended to each of these units and agencies of government and private parties with respect to program administration and operation. Furthermore, financial assistance programs available to aid in the implementation of the regional elderly and handicapped transportation system plan are discussed in summary form.

The plan implementation recommendations contained in this chapter are, to the maximum extent practicable, based upon and related to existing governmental structure and governmental programs and, further, are largely predicated upon existing enabling legislation. Because of the ever present possibility of unforeseen changes in economic conditions, state and federal legislation, case law decisions, governmental organization, and tax and fiscal policy, it is not possible to declare once and for all time exactly how a process as complex as a transportation system plan implementation for the transportation handicapped should be administered and financed. In the continuing regional planning program for southeastern Wisconsin, therefore, it will be necessary to periodically update not only the regional elderly and handicapped transportation system plan elements and the data on which these plan elements are based, but also the elements recommended herein for plan implementation. This process of periodic review and update is recommended to be incorporated into the continuing planning process of the Transportation Systems Management (TSM) Plan and the annual element of the Transportation Improvement Program (TIP) as needed.

#### BASIC CONCEPTS AND PRINCIPLES

It is important to recognize that plan implementation measures should not only grow out of formally adopted plans, but should also be based upon a full understanding of the objectives underlying the recommendations contained in those plans. Thus, action policies and programs should not only be preceded by formal plan adoption, and following such adoption, be consistent with the adopted plans, but should also emphasize the implementation of the most important and essential elements of the plan and those areas of action which will have the greatest impact on guiding and shaping development in accordance with the objectives underlying the plan.

Substantial implementation of the regional elderly and handicapped transportation system plan will be achieved if the three urban transit systems identified in the recommended plan maintain or improve current public transit service levels and retrofit existing buses or acquire new buses which are equipped with accessibility features for the transportation handicapped; if the private service providers such as taxicab companies and chair car carriers provide efficient and cooperative transportation to the transportation handicapped under the user-side subsidy program; if the funding and implementation procedures necessary can be achieved to provide a demand responsive transportation service for the transportation handicapped in the nonurbanized areas of the Region; and, if appropriate action can be initiated among social service agency transportation providers to arrive at a coordination of agency transportation services. In addition, since the regional elderly and handicapped transportation system plan for southeastern Wisconsin has been prepared within the framework of a comprehensive planning program, it is also important to implementation of the regional elderly and handicapped transportation system plan that certain other regional plan elements, in particular the regional land use and surface transportation plans and the transportation systems management plan as well as the transportation improvement program, be substantially implemented.

It is extremely important to implementation of the elderly and handicapped transportation system plan that all public officials and concerned citizens recognize that development of a coordinated regional elderly and handicapped transportation system is important to meeting the transportation needs of the resident transportation handicapped population. In addition, citizens and officials must realize that improved mobility of the transportation handicapped is most efficiently accomplished through a coordinated regional approach which will, by its nature, provide for effective consolidation of services, thus eliminating unnecessary overlap or duplication of systems and services. Such recognition is particularly important because plan implementation will require not only action by the units and agencies of government directly involved in transportation system management, but

cooperative and related actions by many other units and agencies of government. Failure of one unit of government to implement a major element of the recommended system plan may adversely affect many other units and agencies of government and thereby detract from the ability of the entire Region to accommodate the estimated latent travel demand of the transportation handicapped in a safe, cost-effective manner. It is essential, too, that the state and federal implementing agencies recognize the needs of southeastern Wisconsin, particularly when the funds are apportioned for the needed transportation improvements. For within the Region resides the largest concentration of population in the state and, similarly, the largest concentration of transportation handicapped population in Wisconsin.

# PLAN IMPLEMENTATION AGENCIES

Although the Regional Planning Commission can promote and encourage plan implementation in various ways, the completely advisory role of the Commission makes actual implementation of the recommended regional elderly and handicapped transportation system plan entirely dependent upon action by local, state, and federal units and agencies of government, and by certain private concerns. These agencies include general purpose local units of government, such as cities, villages, towns, and counties; state agencies, such as the Wisconsin Department of Transportation; and federal agencies, such as the U.S. Department of Transportation, Urban Mass Transportation Administration (UMTA). Because of the many varied governmental agencies concerned with providing transportation services for the transportation handicapped, it becomes exceedingly important to identify those agencies having the legal authority and financial capability to most effectively implement the recommended plan.

Accordingly, those agencies whose actions will have a significant effect either directly or indirectly upon the successful implementation of the recommended regional elderly and handicapped transportation system plan and whose full cooperation in plan implementation will be essential are listed and discussed below. The agencies are, for convenience, discussed by level of government; however, the interdependence between the various levels, as well as between agencies of government, and the need for close intergovernmental coordination cannot be overemphasized. In addition to identifying and discussing those agencies needed for implementation of the recommended regional elderly and handicapped transportation system plan which are already in existence within the Region, the following discussion includes consideration of possible new agencies in order to provide a basis for comparison of the advantages and disadvantages of each in securing full implementation of the recommended plan.

Technical Coordinating and Advisory Committee Since planning at its best is a continuing function, a public body should remain on the scene to coordinate and advise on the execution of the regional elderly and handicapped transportation system plan and should undertake plan updating and renovation as necessitated by changing events. Although the Regional Planning Commission is charged by State Statute with, and will perform. this continuing areawide planning function as a part of the Commission continuing regional land use-transportation study, it cannot properly do so without the active participation and support of county, state, and federal officials concerned with urban development in the Region. It is, therefore, recommended that separate county-wide Technical Coordinating and Citizens Advisory Committees on Transportation Planning for the Elderly and Handicapped-one for each of the seven counties in the Southeastern Wisconsin Region-be created. This recommendation is consistent with the U. S. Department of Transportation-Urban Mass Transportation Administration rules and regulations concerning transportation planning and the programming of projects which will result in improved public transportation services and facilities for the elderly and handicapped including wheelchair users and those persons with semiambulatory capabilities. Each of these Committees should be comprised of elected officials; affected local units of government; representatives of local transportation system funding and implementing agencies; public and private transportation service operators, including taxi, chair car carrier, and social service agency transportation providers; and transportation handicapped persons.

The Cities of Kenosha and Racine as the owners and operators of major public transit systems should be duly represented on these committees. These two cities are the eligible recipients of federal transit capital and operating assistance under Sections 3 and 5 of the Urban Mass Transportation Act. In order for these cities to maintain their eligibility for these federal funds, "special efforts" required by the U. S. Department of Transportation and Urban Mass Transportation Administration must be undertaken to provide public transportation facilities and services which can effectively be utilized by elderly and handicapped persons, particularly wheelchair users and those with semiambulatory capabilities. These two cities, therefore, have a substantial interest in working cooperatively with their County governments to implement the regional transportation handicapped transportation plan elements recommended for the Kenosha and Racine urbanized areas.

These seven newly constituted county level Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped would be appointed by the plan implementation agency designated by each county board subject to the approval of the county board. With the creation of these new committees the present three existing SEWRPC Advisory Committees on Transportation Planning for the Elderly and Handicapped would be dissolved. All public agencies, however, currently represented on these three existing committees should be offered the opportunity to be represented on appropriate county level committees along with representatives of other interested agencies and potential users of elderly and handicapped transportation services. The purposes and functions of these committees would be to assist the designated implementation agency in carrying out the recommended plan; to help monitor the results of plan implementation: to help coordinate social service agency transportation services; and to recommend changes in and extensions to the plan as experience may indicate are necessary or desirable. The committees would also provide a basis for the active participation of elected and appointed officials, concerned private interests, and citizens-particularly elderly and handicapped citizens-in the continuing planning and plan implementation process.

## Local Level Implementing Agencies

<u>Counties:</u> The basic level or unit of government for implementing the elderly and handicapped transportation system plan is the county. Even in Racine and Kenosha Counties, where the transit systems are operated by the Cities of Racine and Kenosha, respectively, the county must have an important role to insure efficient and coordinated operation of the other elderly and handicapped transportation services recommended to be implemented. In view of the important coordination aspect of the designated county implementing agencies, the study advisory groups all advocated a strong role for the counties. Currently, only Milwaukee County has an agency responsible solely for the provision of public mass transportation services. In the other six counties it is recommended that the county boards designate an agency, such as the County Highway Committee, to be responsible for implementing the recommended plan. Some County Highway Committees are already involved in the provision of mass transportation services, and it is accordingly recommended that the Milwaukee County Transit Board in Milwaukee County, the county highway and transportation committees in Kenosha, Ozaukee, Washington, and Waukesha Counties, the Racine County Human Services Board in Racine County and the Walworth County Department of Social Services in Walworth County take the lead role in implementing the proposals presented in the report, all under the direction of the respective county boards.

A number of other agencies or departments may be expected to be involved in the plan implementation including municipal transit departments, social service agencies, and county commissions on aging. There are two major reasons for selecting the County Highway Committees in the majority of the counties as the basic implementation agencies instead of one of the other agencies identified above. First, since the highway committees are not expected to be involved in the direct provision of transportation services, the committees can play a neutral, third-party role in coordinating operations and establishing policies for all transportation services provided to the transportation handicapped in each county. Second, the focus of these committees is on transportation, and not on the provision of social services to a specific client group. Although the proposed transportation facilities and services are designed for the transportation handicapped, those facilities and services are in fact, integral parts of a total mass transportation system and, as such, are an important part of the total transportation system within each county and the Region.

In their deliberations, the Technical and Citizen Advisory Committees also considered the proposal that new agencies or boards be established, such as special committees reporting to the county boards to oversee the plan implementation, and the proposal that new areawide transportation agencies be established, either single or multipurpose. It was concluded, however, that using an existing body or agency would avoid further undesirable proliferation of public agencies and would permit more rapid improvement of transportation services under an existing administrative structure. Indeed, given the abnormally long time required to carry out any major institutional changes in the public sector, the five-year design period of the plan virtually precluded the formation of any new implementing agencies such as an areawide transportation authority. Thus, it was recommended that plan implementation be facilitated by working within the existing administrative framework rather than creating a new administrative body if at all possible. The specific implementing agencies recommended within each county are:

- 1. In Kenosha County, the County Highway Committee, the Kenosha Parking and Transit Commission of the City of Kenosha, and the Kenosha Achievement Center should act as implementing agencies to institute a combination of services consisting of an accessible transit service, a user-side subsidy program, a demand responsive transportation system in the nonurbanized areas of the County, and coordinated agency transportation services.
- 2. In Milwaukee County, the Milwaukee County Transit Board should act as an implementing agency to institute a combination of services consisting of an accessible transit service, a user-side subsidy program, and coordinated agency transportation.
- 3. In Ozaukee County, the Ozaukee County Highway Committee should act as the implementing agency to institute a combination of services consisting of a userside subsidy program, a demand responsive transportation system in the nonurbanized areas of the County, and coordinated agency transportation.
- 4. In Racine County, the Racine County Human Services Board, the City of Racine Department of Transportation, the City of Racine Transit and Parking Commission, and Lincoln Lutheran Specialized Transportation should act to implement a combination of services consisting of an accessible transit service, a user-side subsidy program, a demand responsive transportation system in the nonurbanized areas of the County, and coordinated agency transportation.
- 5. In Walworth County, the Walworth County Department of Social Services through its Senior Citizens Services Agency should act as the implementing agency to institute a combination demand responsive system and coordinated agency transportation.
- 6. In Washington County, the County Highway Committee should act as the implementing agency to institute a combination of services consisting of a user-side subsidy program, a demand responsive transportation system in the nonurbanized areas of the County, and coordinated agency transportation.
- 7. In Waukesha County, the County Highway and Transportation Committee should act as the implementing agency to institute a combination of a user-side subsidy program, a demand responsive transportation system in the nonurbanized areas of the County, and coordinated agency transportation.

Cities, Villages, and Towns: Depending on the size of the community, it is not uncommon for local units of government to be either directly or indirectly involved in the provision of public transportation services which are used by elderly and handicapped persons. The Cities of Kenosha and Racine, for example, are the operators of public transit systems and as such are directly involved in providing a public transportation service. A number of communities in the Region are served by privately owned taxi and chair car carrier operators. These services are an important transportation resource to many elderly and handicapped persons. Through licensing and regulation, cities, villages, and towns indirectly affect the way in which these transportation services operate and the user fares they create and adopt. The proposed regional transportation plan for the elderly and handicapped recommends actions which would somewhat modify the current operation of public transit, taxi, and chair car carrier transportation services in communities in which these services are provided. Certain cities, villages, and towns in the Region, therefore, have plan implementation responsibilities.

County Aging and Physically and Mentally Handicapped Commissions and Boards: These agencies are involved in the provision of a broad range of social services to the elderly and handicapped. One of these services is the provision of transportation for such prioritized travel needs as medical, nutrition, rehabilitation, and educational purposes. These agencies either provide transportation services themselves or assist in funding other public, private, and private nonprofit agency transportation service providers. The manner in which these transportation services are coordinated and funded as recommended in the plan could improve the delivery of transportation services to elderly and handicapped persons.

Area Agencies on Aging: These agencies are involved in the funding of a broad range of social services for the elderly. One of these is transportation services for such prioritized travel needs as medical, nutritional, and shopping trip purposes. The availability of funding through these agencies for transportation services for the elderly and the manner in which these monies are allocated could financially assist in implementing the regional elderly and handicapped transportation system plan.

Public, Quasi Public, and Private Transportation Service Providers: The development and implementation of the regional elderly and handicapped transportation system plan in southeastern Wisconsin involves not only the aforementioned units and agencies of government, but also a number of public and private social service agencies, private individuals, partnerships, and corporations that historically have been involved in the provision of transportation services to the elderly and handicapped as well as to the general population. Indeed, in order to achieve full implementation of the plan, active involvement is required from taxicab operators, private chair car carriers, existing specialized transportation services, and numerous private social service agencies. In addition, it is anticipated that the owners and operators of future transportation services-either mass transit, taxicab, or demand responsive service-may benefit from and desire to participate in the provision of transportation services to the transportation handicapped. Therefore, it may be expected that private enterprise will play a significant role in meeting the travel demands of the transportation handicapped, and will, consequently, benefit from an understanding of the significance and impact of the recommended plan. Accordingly, it is important that these private interests become cognizant of the recommended elderly and handicapped transportation system plan.

Regional Planning Commission: Although not a plan implementation agency itself, the Regional Planning Commission warrants comment. As noted earlier, the Commission has no statutory plan implementation powers. In its role as a coordinating agency for planning and development activities within the Southeastern Wisconsin Region, however, the Commission through community assistance planning services and through the review of federal and state grants-in-aid may be able to help promote the implementation of the elderly and handicapped transportation system plan. In addition the Commission provides a basis for the creation and continued functioning of county level Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped, which Committees are recommended to be created as important continuing public planning organizations in the Region.

#### State Level Agencies

At the state level the following agencies exist that have either general or specific planning authority and certain plan implementation powers important to the adoption and implementation of the regional elderly and handicapped transportation system plan.

Wisconsin Department of Transportation: Responsibility for the planning and development of all modes of transportation in Wisconsin is centered in the Wisconsin Department of Transportation. Of particular importance to implementation of the regional elderly and handicapped transportation system plan within the Department of Transportation are the Division of Planning, headed by an administrator responsible to the Secretary of Transportation, and the Division of Highways, also headed by an administrator responsible to the Secretary.

The Mass Transit Assistance Section of the Division of Planning represents the State in financially assisting, promoting, and developing a statewide system of publicly owned mass transportation facilities and services, and acts as the local transit owner's agent in all projects involving state and federal aid. The State Mass Transit Assistance Section assists transit operators in soundly managing their facilities, conducts safety and training programs, and coordinates the state's transit improvement interests with those of other states and the federal government. As such, the Mass Transit Assistance Section of the Division of Planning is the key state agency in implementation of the regional elderly and handicapped transportation system plan.

Wisconsin Department of Administration: The Wisconsin Department of Administration provides for the integration of state level functional planning and serves as the state clearinghouse under the U. S. Office of Management and Budget Circular A-95. Accordingly, the Department performs an important function with respect to review of all applications for federal transportation system development grants and, as such, becomes an important plan implementation agency with respect to the regional elderly and handicapped transportation system plan.

Wisconsin Department of Health and Social Services: The Wisconsin Department of Health and Social Services has authority over a broad range of responsibilities related to providing services for the elderly and handicapped and in the administration and approval of certain federal and state grant-inaid programs which directly affect many social service agency transportation providers. Further, this agency could provide technical assistance of value to efforts aimed at coordination of social service agency transportation services. As such, this Department also performs an important function in implementation of the regional elderly and handicapped transportation system plan.

## Federal Level Agencies

At the federal level, the following agencies exist that administer federal programs that can have important effects upon implementation of the regional elderly and handicapped transportation system plan.

U. S. Department of Transportation: Within the U. S. Department of Transportation, the Urban Mass Transportation Administration represents a key implementation agency with respect to the regional elderly and handicapped transportation system plan. The Urban Mass Transportation Administration has issued jointly with the Federal Highway Administration a series of rules and regulations regarding planning for and provision of transportation services for the elderly and handicapped. These regulations provide important guidelines for improved services as well as criteria which affect the funding eligibility of a transportation provider. The Federal Urban Mass Transportation Administration also provides capital grants and operating subsidies to approved local agencies providing urban public mass transit services. To assure that the local units and agencies of government concerned with the provision of public transportation in the Region remain eligible for future federal planning, capital, and operating assistance for mass transportation improvements, it is important that this agency be cognizant of and endorse the elderly and handicapped transportation system plan recommendations.

U. S. Department of Housing and Urban Development: Under Section 701 of the Housing Act of

1954, as amended, this Department administers a comprehensive planning grant program for community development. The Department also administers a community development block grant program which can be used to fund local projects and programs providing transportation services to the elderly and handicapped. In addition, the Department administers numerous federal programs which have developed standards designed to enhance the quality of life of elderly and handicapped persons including guidelines concerning the construction of barrier-free housing and public structures. Accordingly, such improvements in the quality of life may result in greater trip generation by the transportation handicapped, thereby bearing important implications for future extended development of transportation services for the transportation handicapped and for the regional elderly and handicapped transportation system plan. Consequently, it is important that this Department review and endorse the regional elderly and handicapped transportation plan.

U. S. Department of Health, Education, and Welfare: The U.S. Department of Health, Education, and Welfare through such agencies as the Office of Human Development Services, provides financial support and technical assistance and establishes guidelines covering a broad range of programs and services which directly concern the elderly and handicapped in numerous facets of their lives. Thereby, this Department administers and approves numerous federal grant-in-aid programs which may directly affect many agency social service transportation providers and may be of significant influence to the achievement of coordinated agency transportation in this Region. Accordingly, it is important that this agency review and endorse the recommended regional elderly and handicapped transportation system plan.

## PLAN ADOPTION AND INTEGRATION

Upon adoption of the regional elderly and handicapped transportation system plan by formal resolution of the Southeastern Wisconsin Regional Planning Commission, in accordance with Section 66.945(10) of the Wisconsin Statutes, the Commission will transmit a certified copy of the resolution adopting the plan, together with a copy of the plan itself, to all of the existing local, state, and federal agencies and to certain private concerns that have potential plan implementation functions. Adoption, endorsement, or formal acknowledgement of the regional elderly and handicapped transportation system plan by the existing local, areawide, state, and federal level agencies concerned is highly desirable to assure a common understanding between the public and private sector and between the several governmental levels, and to enable the programming of the necessary plan implementation work. In addition, formal plan adoption may also be required for state and federal financial aid eligibility. It is extremely important to understand that adoption of the recommended regional elderly and handicapped transportation system plan by any unit or agency of government pertains only to the statutory duties and functions of the adopting agencies, and such adoption does not, and cannot, in any way preempt or commit action by another unit or agency of government acting within its own area of functional and geographical jurisdiction.

Upon adoption or endorsement of the regional elderly and handicapped transportation system plan by a unit or agency of government, it is recommended that the policymaking body of the unit or agency direct its staff to review in detail the elements of the plan. Once such review is completed, the staff can propose to the policymaking body for its consideration and approval the steps necessary to fully integrate the regional elderly and handicapped transportation system plan elements into the plans and programs of the unit or agency of government.

Local Agencies Counties:

- 1. It is recommended that the seven county boards formally adopt the recommended regional elderly and handicapped transportation system plan as it affects each county, as authorized by Section 66.945(12) of the Wisconsin Statutes, after recommendation by the respective county transportation or highway agencies as a guide to future provision of transit services to the transportation handicapped. (A model resolution for this purpose is provided in Appendix J.)
- 2. It is recommended that the Milwaukee County Transit Board and the County Highway Committees of the other six counties comprising the Region adopt the recom-

mended regional elderly and handicapped transportation system plan as a guide to future transit facility development within the respective counties and integrate the plan recommendations into the programs of these agencies.

- 3. It is recommended that the Racine County Human Services Board adopt the recommended regional elderly and handicapped transportation system plan as a guide to future transportation service development for the transportation handicapped within the County.
- 4. It is recommended that the Walworth County Department of Social Services through its Senior Citizens Services agency adopt the recommended regional elderly and handicapped transportation system plan as a guide to future transportation service development for the transportation handicapped within the County.

## Cities, Villages, and Towns:

- 1. It is recommended that communities which currently have regulated private taxi and chair car carrier transportation services, and such other communities which may in the future be provided with these services, particularly the Cities of Kenosha and Racine, which operate public transit systems, adopt the recommended regional elderly and handicapped transportation system plan as it affects their area of jurisdiction.
- 2. It is recommended that local taxi and chair car carrier regulatory ordinances be reviewed and, as warranted, amended to permit shared riding in the vehicles by unrelated passengers, zone fares, and reduced fares for qualifying elderly and handicapped persons.
- 3. It is recommended that these communities cooperate with the agency designated by their county as responsible for implementing the plan recommendations and also with the proposed county level Technical Coordinating and Citizens Advisory Committee on transportation planning for the elderly and handicapped to achieve orderly coordination and implementation of the variety of transportation services recommended in the plan for the county.

- 4. It is recommended that these communities assume implementation responsibilities for those elements set forth in the plan which have or may be delegated to the city, village, or town.
- 5. It is recommended that these communities provide the information, as may be necessary, to assist plan implementing agencies in the ongoing process of plan refinement and updating.

# County Aging and Physically and Mentally Handicapped Commissions and Boards:

- 1. It is recommended that these agencies adopt the recommended regional elderly and handicapped transportation system plan.
- 2. It is recommended that these agencies promote and encourage their clients to utilize the elderly and handicapped transportation services proposed to be implemented under the plan.
- 3. It is recommended that these agencies encourage providers of elderly and handicapped transportation services which they currently fund to coordinate their transportation services with all other elderly and handicapped transportation service providers identified in the plan so that these transportation services may be provided more cost effectively.

## Area Agencies on Aging:

- 1. It is recommended that these agencies adopt the recommended regional elderly and handicapped transportation system plan.
- 2. It is recommended that these agencies promote and encourage their clients to utilize the elderly and handicapped transportation services proposed to be implemented under the plan.
- 3. It is recommended that these agencies encourage providers of elderly and handicapped transportation services to coordinate their transportation services with all other elderly and handicapped transportation service providers identified in the plan so that these transportation services may be provided more cost effectively.

<u>Public, Quasi Public, and Private Transportation</u> <u>Service Providers:</u> It is recommended that those private individuals, agencies, partnerships, and corporations currently owning and operating transportation services and facilities in the Region that would be directly affected by the plan recommendations formally acknowledge the regional elderly and handicapped transportation system plan and cooperate with the units and agencies of government concerned in securing successful longterm implementation of the plan.

## State Level Agencies

- 1. It is recommended that the Wisconsin Department of Transportation endorse the recommended plan as an integral part of the State transit development program, and certify such plan to the U.S. Department of Transportation, Federal Highway Administration, and Urban Mass Transportation Administration. It is further recommended that the staff of the Wisconsin Department of Transportation, Division of Planning, integrate the recommended regional elderly and handicapped transportation system plan elements into their broad range of transportation planning and development responsibilities as part of a functional guide to transit system development within the Region.
- 2. It is recommended that the Wisconsin Department of Administration endorse the recommended regional elderly and handicapped transportation system plan and utilize the plan recommendations, as appropriate, in the exercise of its state planning and State A-95 Clearinghouse functions.
- 3. It is recommended that the Wisconsin Department of Health and Social Services endorse the recommended regional elderly and handicapped transportation system plan and integrate the plan into its activities regarding the elderly and handicapped, particularly in respect to provision of technical assistance in the coordination of agency transportation services and the review and administration of certain federal and state grant-in-aid programs.

## Federal Level Agencies

1. It is recommended that the U.S. Department of Transportation Urban Mass Transportation and Federal Highway Administration formally acknowledge the recommended regional elderly and handicapped transportation system plan upon certification of the plan by the Wisconsin Department of Transportation, and through the Federal Highway Administration (FHWA) and Federal Urban Mass Transportation Administration (UMTA) utilize the plan recommendations in its broad range of agency responsibilities relating to highway and transit development as well as in the administration and granting of federal aids for transit improvement and development within the Region.

- 2. It is recommended that the U.S. Department of Housing and Urban Development (HUD) formally acknowledge the recommended elderly and handicapped transportation system plan and utilize the plan recommendations, as appropriate, in the administration of its broad range of grant and loan programs and in its areawide plan certification process.
- 3. It is recommended that the U.S. Department of Health, Education, and Welfare (HEW), through such agencies as the Office of Human Development services, formally acknowledge the recommended regional elderly and handicapped transportation system plan and utilize the plan recommendations, as appropriate, in the administration of its broad range of responsibilities and grant and loan programs.

## FINANCIAL RESOURCES

Upon adoption of the regional elderly and handicapped transportation plan it becomes necessary for the governmental units and agencies concerned to effectively utilize all sources of financial and technical assistance available for the timely execution of the recommended plan. In addition to current tax revenues, the local agencies and units of government concerned with development of special transportation systems to meet the needs of the transportation handicapped can make use of state and federal grants-in-aid. Briefly described below are five programs which offer potential funding sources for the recommended elderly and handicapped transportation system plan.

#### Section 3 of the Urban Mass Transportation Act of 1964, as Amended

Money is available under this program to fund 80 percent of the cost of facilities and equipment capital costs—of public transit operators in urban areas. Although private operators and private nonprofit operators are excluded from direct Section 3 eligibility, such operators can contract to provide service for public transit operators who can then provide the private operators with equipment under Section 3 of the 1964 Urban Mass Transportation Act, as amended. This program, which is discretionary at the federal level, requires that the southeastern Wisconsin transit operators compete for these funds with other transit systems nationwide.

#### Section 5 of the Urban Mass Transportation Act of 1964, As Amended

Under Section 5, funding is available to cover 80 percent of the cost of facilities and equipment capital costs—and/or 50 percent of the operating deficit of public transit operators in urbanized areas. Funds are allocated to each urbanized area across the country through a formula based half on population and half on population density. In Federal Fiscal Year 1977, the Milwaukee urbanized area allocation was \$5.6 million, and in 1978 it is \$6.7 million. Kenosha's allocations for these two years are \$496,000 and \$591,000, while Racine's are \$641,000 and \$764,000.

Section 16(b)(1) and Section 16(b)(2) of the Urban Mass Transportation Act of 1964, as Amended Funds under Section 16(b)(1) and Section 16(b)(2)are available to fund 80 percent of the cost of vehicles and ancillary equipment for public and private nonprofit providers of transportation for elderly and handicapped people. These program funds are administered through the Wisconsin Department of Transportation.

## Wisconsin State Statute 85.05

Under Wisconsin State Statute 85.05, transit operating assistance of \$17.5 million is available statewide in the 1977-79 biennium to fund twothirds of the nonfederal share of public transit operating deficits in the urbanized areas of the Region and up to two-thirds of the total public transit operating deficits in the nonurbanized areas of the Region. Beginning in 1979, the allocation of some of this money will be tied to ridership. If a shortfall occurs in the appropriation, the shortfall will be prorated according to statewide demand for these public transit assistance funds.

# Wisconsin State Statute 85.08

handicapped people.

Under a Newly Enacted Program Under Wisconsin State Statute 85.08 about \$1,000,000 annually is available in the 1977-79 state budget to fund up to 90 percent of the cost of specialized transportation services for elderly and handicapped people. The money is allocated to each county, based on the county's

proportion of the state population of elderly and

Each county is responsible for determining which services in that county will be funded through this program within the limitation that under this program subsidizations of regular transit services eligible under Statute 85.05, described above, are specifically excluded. Some additional money is available under this program to help local and private nonprofit transportation providers match federal Section 16(b)(2) funds, and to assist them in "starting up" private nonprofit elderly and handicapped transportation services.

# SUBSEQUENT ADJUSTMENT OF THE PLAN

No plan can be permanent in all of its aspects or precise in all of its elements. The very definition and characteristics of "regional planning" suggest that a regional plan, to be viable and of use to local, state, and federal units and agencies of government, must be continually adjusted through formal amendments, extensions, additions, and refinements to reflect changing conditions. The Wisconsin Legislature clearly foresaw this when it gave to regional planning commissions the power to "amend, extend, or add to the master plan or carry any part or subject matter into greater detail" under Section 66.945(9) of the Wisconsin Statutes.

Amendments, extensions, and additions to the regional plan will be forthcoming not only from the work of the Commission under the continuing regional transportation study but also from state agencies as they adjust and refine state plans and plan implementation programs and from federal agencies as national policies are established or modified, new programs created, or existing programs expanded or curtailed. Adjustments in the regional plan recommendations may come from local planning programs which, of necessity, must be prepared in greater detail and should result in greater refinement of the regional plans. Areawide adjustments may come from regional or state planning programs which may include additional comprehensive or special-purpose planning efforts.

All of these adjustments and refinements will require cooperation between local, areawide, state, and federal agencies, as well as coordination by the Southeastern Wisconsin Regional Planning Commission, which has been empowered under Section 66.934(8) of the Wisconsin Statutes to act as a coordinating agency for programs and activities of the local units of government. To most effectively and efficiently achieve this coordination between local, state, and federal programs and, therefore, assure the timely adjustment of the regional plans, it is recommended that all of the aforesaid state and local agencies having various plan and plan implementation powers advise and transmit all subsequent planning studies, plan proposals and amendments, and plan implementation devices to the Southeastern Wisconsin Regional Planning Commission for consideration as to integration into, and adjustment to, the recommended regional elderly and handicapped transportation system plan.

## SUMMARY

The recommended regional elderly and handicapped transportation system plan is not complete until the steps required to implement that planthat is, to convert the plan into action programs and policies-are specified. Accordingly, in this chapter those units and agencies of government which have plan adoption and implementation powers applicable to the regional elderly and handicapped transportation plan were identified and specific implementation actions were recommended to each of these units and agencies of government and private parties. These specific implementation actions include-following the formal adoption of the plan by the Regional Planning Commission-certification of the plan to each of the seven county boards, subsequent adoption of the plan by the county boards, and by certain agencies of these boards, and approval or acceptance of the plan by the appropriate state and federal agencies. In addition, this chapter identified five programs which offer potential funding sources for the recommended elderly and handicapped transportation system plan. The most important recommended plan implementation actions are summarized in the following paragraphs by level and responsible agency or unit of government.

#### Local Level

County Boards of Supervisors: It is recommended that the county boards of supervisors of the seven counties in the Region, upon recommendation of the appropriate agencies and committees:

- 1. Adopt the regional elderly and handicapped transportation system plan as it applies to each county as a guide to development of transportation services to the handicapped in the community, and certify such adoption to the local governing body.
- 2. Designate and direct an agency such as the county highway committee to assume responsibility for, and to initiate, plan implementation.
- 3. Cooperate in the process of refinement of the plan.

County Highway Committees: It is recommended that the county highway committees:

- 1. Adopt the recommended regional elderly and handicapped transportation system plan as a guide to the future development of transportation services for the transportation handicapped as that plan affects each county.
- 2. In the Counties of Kenosha, Ozaukee, Washington, and Waukesha, initiate as the primary implementing agency, the implementation procedures which include both the refinement of the recommended programs and the development of local data gathering, marketing, and registration procedures, utilizing as a guide the material presented in the appendices attached to this text.
- 3. In the Counties of Kenosha, Ozaukee, Washington, and Waukesha, coordinate plan implementation activities of other agencies recommended to actively assist in the implementation of the planned system, as appropriate under the current plan design or as recommended under the refinement of the planned system in the counties.
- 4. In the Counties of Kenosha, Ozaukee, Washington, and Waukesha, conduct the ongoing program administration, and note, recommend, and obtain adjustment to the plan as the desirability of such adjustment or improvement becomes evident.

Social Service Agencies: It is recommended that all social service agencies in the Region which provide for some part of the transportation needs of their clients:

- 1. Endorse the recommended regional elderly and handicapped transportation system plan.
- 2. Utilize the plan recommendations, as appropriate, in the provision of improved coordinated agency services.
- 3. Cooperate with the county boards, agencies designated by the county board such as the county highway committees, and other social service agencies in the preparation of detailed scheduling, routing, and other implementation planning in order to realize full implementation of coordinated agency transportation as rapidly as possible.
- 4. Provide implementation of value to the local implementing agencies to aid in the process of refinement of the adopted plan and the ongoing process of program administration.
- 5. If so specified in the plan or in refinements thereto, act to coordinate, centralize, and/or provide major assistance in the implementation and ongoing administration of the regional elderly and handicapped transportation system plan.

Social services agencies presently identified in the plan as having key implementing roles are: in Kenosha County, the Kenosha Achievement Center; in Racine County, Lincoln Lutheran Specialized Transportation and the Racine County Human Services Board; and in Walworth County, the Walworth County Department of Social Services through its Senior Citizens Services agency.

Transit Systems: It is recommended that the Common Councils of the Cities of Kenosha and Racine and their transit agencies, and that the Milwaukee County Transit Board:

- 1. Endorse or adopt, as appropriate, the recommended elderly and handicapped transportation system plan.
- 2. Cooperate with the local public agencies to assure an orderly transition of the present systems to accessible transit systems and to secure full implementation of the plan recommendations over the next five years.

- 3. As appropriate, participate in the process of refinement of the planned system design and provide input of value to the ongoing process of program administration.
- 4. In the case of the Milwaukee County Transit Board, the Kenosha Parking and Transit Commission of the City of Kenosha, and the City of Racine Department of Transportation, Transit and Parking Commission, as principal implementing agencies, coordinate and centralize the implementation of the elderly and handicapped transportation system plan in Milwaukee, Racine, and Kenosha Counties.

Other Private Transportation Operators: It is recommended that all other transportation service providers in the Region such as taxicabs, chair car carriers, and other demand responsive services:

- 1. Become familiar with the regional elderly and handicapped transportation system plan recommendations and, as appropriate, coordinate development of their facilities and services with the proposed programs in the given area.
- 2. Cooperate with the local implementing agencies by obtaining certification to provide service for the transportation handicapped under the user-side subsidy program, as appropriate.
- 3. Provide information of value to the local implementing agencies to aid in the process of refinement of the planned system design and the ongoing process of program administration.
- 4. In cities, villages, and towns which currently have regulated private taxi and chair car carrier transportation service, such as Kenosha and Racine, seek the establishment of a system for shared taxicab riding among the transportation handicapped, thereby making the user-side subsidy program eligible for federal funding.¹

¹In Kenosha such a system was instituted shortly prior to publication of this report.

Regional Planning Commission: It is recommended that the Southeastern Wisconsin Regional Planning Commission:

- 1. Provide for a periodic assessment of regional elderly and handicapped transportation system plan implementation as a part of the ongoing transportation planning program in the Region.
- 2. Reconstitute the present three Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped into seven separate county level continuing advisory committees under Section 66.945(7) of the Wisconsin Statutes.
- 3. Assist, upon request, the county implementing agencies in the process of refinement of the planned system design and provide data, as needed, to aid in the ongoing program administration.

#### State Level

Wisconsin Department of Transportation: It is recommended that the Wisconsin Department of Transportation:

- 1. Endorse the recommended regional elderly and handicapped transportation system plan, include the plan as an integral part of the State of Wisconsin transit development plan, and certify the plan to the U. S. Department of Transportation, Urban Mass Transportation Administration, and Federal Highway Administration.
- 2. Utilize the plan recommendations, as appropriate, in the Department's broad range of responsibilities relating to transit development.
- 3. Direct all available state aids toward projects found to be in accordance with the regional elderly and handicapped transportation system plan.

<u>Wisconsin Department of Administration:</u> It is recommended that the Wisconsin Department of Administration:

1. Endorse the recommended regional elderly and handicapped transportation system plan. 2. Utilize the plan recommendations, as appropriate, in the exercise of its state planning and state clearinghouse functions.

Wisconsin Department of Health and Social Services: It is recommended that the Wisconsin Department of Health and Social Services:

- 1. Endorse the recommended regional elderly and handicapped transportation system plan.
- 2. Utilize the plan recommendations, as appropriate, in this agency's broad range of responsibilities related to providing services for the elderly and handicapped.
- 3. Utilize the plan recommendations, as appropriate, in the provision of technical assistance to local units of government, and in administering any federal and state grant-inaid programs.

#### Federal Level

U. S. Department of Transportation, Urban Mass Transportation Administration: It is recommended that the U.S. Department of Transportation, Urban Mass Transportation Administration:

- 1. Formally acknowledge the recommended regional elderly and handicapped transportation system plan.
- 2. Utilize the plan recommendations, as appropriate, in the discharge of this agency's broad range of responsibilities relating to transit system development and particularly to the development of improved mass transportation options for the transportation handicapped.
- 3. Direct all available federal aid toward projects in this Region which are found to be in accordance with the regional elderly and handicapped transportation system plan.

U. S. Department of Housing and Urban Development: It is recommended that the U.S. Department of Housing and Urban Development:

1. Formally acknowledge the regional elderly and handicapped transportation system plan. 2. Utilize the plan recommendations, as appropriate, in the administration of its broad range of grant and loan programs and in its areawide plan certification process.

U. S. Department of Health, Education, and Welfare: It is recommended that the U. S. Department of Health, Education, and Welfare through such agencies as the Office of Human Development:

1. Formally acknowledge the regional elderly and handicapped transportation system plan.

- 2. Utilize the plan recommendations, as appropriate, in this agency's broad range of responsibilities related to providing services for the elderly and handicapped.
- 3. Direct all available federal aids toward projects in this Region which are found to be in accordance with the regional elderly and handicapped transportation system plan.

#### SUMMARY AND CONCLUSIONS

#### INTRODUCTION

In August 1975, the Milwaukee County Transit Board requested that the Southeastern Wisconsin Regional Planning Commission undertake a special study of the transportation needs of the elderly and handicapped. The Commission, upon consideration of this request, determined that such a special study would contribute to the Commission's function of areawide research by facilitating the collection and analysis of basic planning data not then available for the Region: would produce transportation service and facility plans which, if implemented, could effectively enhance the mobility of elderly and handicapped persons, particularly the semiambulatory and those confined to wheelchairs; would provide findings and recommendations that would assist decisionmaking within local, state, and federal governmental agencies, private agencies, and interested citizen groups responsible for or concerned about the transportation needs of the elderly and handicapped; would contribute to the better coordination of special transportation programs, services, and facilities for the elderly and handicapped within the Region, and would contribute a new element to the evolving regional transportation plan. The Commission also determined that such a special study would provide a necessary element of the urban transportation plan and program required in rules and regulations issued jointly by the Federal Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA) as a pre-requisite for federal funding of public transit operations and improvements within the Region. Accordingly, the Commission agreed to mount the requested special study.

Prior to mounting the special study in August 1976, the Commission with the aid of an ad hoc advisory committee¹ prepared a study design for this specialized transportation planning effort. Based upon recommendations in the study design, the Commission directed that a qualified consultant be retained to help undertake the necessary basic inventories and analyses, formulate alternative plans, and recommend the best plan for meeting the transportation needs of the transportation handicapped population of the Region. Applied Resource Integration, Ltd., Boston, Massachusetts was selected by the ad hoc committee which was assigned this task by the Commission. A contract was entered into with the consultant in July 1976 stipulating that the consultant and the Commission staff would cooperatively conduct the study.

The study design identified four major factors contributing to the need for a study of the transportation needs of the transportation handicapped: 1) the lack of timely, uniform data on the number and residential location of the transportation handicapped in the Region and their need for transportation services, as well as on the barriers to the use of public mass transportation services and facilities presented to these residents; 2) the lack of timely, uniform data on the current levels of transportation services provided to the transportation handicapped by a large number of public and private transportation and social service agencies within the Region; 3) the need to utilize the limited public funds available to better coordinate existing services and improve the mobility of the transportation handicapped in the most costeffective manner possible; and 4) the need to meet federal transit planning requirements in order to continue to qualify-particularly Milwaukee County and the Cities of Kenosha and Racine-for federal grants for transit operation and improvement.

¹The membership of the ad hoc Committee consisted of: Robert W. Brannan, Transportation Director-Transportation Division, Milwaukee County Department of Public Works; Keith W. Graham, Assistant Director-SEWRPC; Jean Logan, Director of Public Relations-Curative Workshop of Milwaukee; Henry M. Mayer, President and Manager of Operations-Milwaukee Transport Services, Inc.; Edward jj Olson, Chairperson-Milwaukee County Commission on Aging; Frank Schleicher, Milwaukee County Transit Coordinator-Milwaukee County Transit Board; and Dennis C. Vierra, Transit Planner-Division of Planning, Wisconsin Department of Transportation.

The planning program was cooperatively funded by the Federal Urban Mass Transportation Administration, the Wisconsin Department of Transportation, and Milwaukee County. The planning program was conducted cooperatively by the consultant and the staff of the Regional Planning Commission, under the guidance of three advisory committees: one for the four-county Milwaukee Standard Metropolitan Statistical Area (SMSA), composed of Ozaukee, Washington, Waukesha, and Milwaukee Counties; one for the Racine SMSA, composed of Racine County; and one for Walworth County and the Kenosha SMSA, composed of Kenosha County. The Committee memberships, which are set forth in Appendix A, included elected and appointed public officials, knowledgeable private citizens, representatives of organizations for the elderly and the handicapped, representatives of both public and privately owned transportation agencies, and representatives of social service agencies. Each of the three Committees met a total of nine times during the approximate one-year planning period to guide the conduct of the necessary inventories and analyses and the preparation of the recommended plan.

Five basic principles were formulated which provided the basis for the planning process applied in the regional elderly and handicapped transportation study:

- 1. Transportation planning must be regional in scope. Travel patterns develop over an entire urban region without regard to corporate limits, and thus, transportation planning cannot be accomplished successfully within the confines of a single municipality or even a single county if the municipality or county is part of a larger urban complex. The entire elderly and handicapped transportation system, composed of accessible public transportation, special public systems, taxis, chair car services, and agency services, must form a fully coordinated but nonduplicating system over the entire Region, and a system which can adequately serve existing and growing elderly and handicapped needs.
- 2. Elderly and handicapped transportation planning must consider the existing and future social needs of the target populations. The number and needs of the elderly and the handicapped and the capabilities of the current transportation system to serve those

needs combine to determine the purpose of any recommendations for future services. In turn, future services will determine whether some elderly and the handicapped will gain increased independence and improve their quality of life.

- 3. Fixed route and demand responsive mass transit systems must be planned together in an integrated and unified fashion. Each mode must be assigned that part of the total elderly and handicapped travel which it is best suited to carry. To be most effective, demand responsive service areas, transfer/ terminal points, and operating procedures should complement fixed route transit services which are accessible to the transportation handicapped and should function in a coordinated rather than competitive manner.
- 4. Elderly and handicapped transportation systems must meet certain legal and regulatory standards arising from current federal and state legislation. Elderly and handicapped transportation plans must be capable, in particular, of meeting UMTA's new "special efforts" requirement for the elderly and handicapped. Furthermore, these plans should recognize a social and moral responsibility to free the handicapped from the mobility barriers which have restrained them in the past.
- 5. Elderly and handicapped transportation planning must recognize the existence of a limited financial resource base within which all existing and future services must operate and within which optimization of the various competing modes, ideas, and projects must be carried out. Ineffective coordination or fiscal irresponsibility can lead to serious funding, operational, or legal problems which may take years to correct.

The major findings and recommendations of the regional elderly and handicapped transportation planning program are discussed and presented in this report. This report is intended to allow careful, critical review of the alternative plans by public officials, agency staff personnel, and citizen leaders within the Region, and to provide the basis for plan adoption and implementation by the local, areawide, state, and federal agencies of government concerned. This report can only summarize the information assembled in the extensive data collection, analysis, and plan design phases of the program. Although the reproduction of all information assembled in the study in report form is impractical due to its magnitude and complexity, all of the basic data are on file in the Commission offices and are available to member units and agencies of government and to the general public upon specific request.

## INVENTORY AND ANALYSIS FINDINGS

Three basic inventories were conducted as part of the study. The first of these was the determination of the number, socioeconomic characteristics, and residential location of the transportation handicapped and of the able-bodied elderly resident populations within the Region. The second was an inventory of the travel habits and patterns of the transportation handicapped. The third major inventory was a survey of local transportation agencies in the Region that provide service to the elderly and handicapped.

## Population

Sound data relevant to the size, composition, and spatial distribution of the transportation handicapped and the able-bodied elderly is essential to any study of the transportation needs of the elderly and handicapped. In this study, two distinct independent estimates of these population subgroups were obtained through utilization of two contrasting methodologies, namely: 1) estimation of these populations through application to the total population of incidence rates obtained from secondary source data; and 2) estimation of these populations through expansion of primary source data obtained in a random sample survey of households and institutions in the Region.² By compar-

ing these two estimates, an understanding of the ranges within which these estimates are encompassed was enhanced, and the possibility of severely overstating or understating the number of persons in these population subgroups was diminished. Comparison of these two data sets indicated that, the estimates of the number of elderly and of transportation handicapped obtained through application to the total resident population of incidence rates derived from secondary sources should be adequate for planning purposes. More specifically, the estimates obtained through such application were used in the planning process since: 1) they could be utilized with confidence that the estimates were within acceptable limits of reliability; and 2) the definitions on which the estimates were based were sufficiently broad so as to avoid unintentionally eliminating any eligible elderly and handicapped population segment from the plan design process.

The estimates obtained through the application of incidence rates indicate that in the Southeastern Wisconsin Region about 73,300 persons, or about 4 percent of the resident population of the Region, are transportation handicapped-that is, are hampered in using public transportation facilities and services without specialized features because of age, illness, injury, congenital malfunction, or other permanent or temporary incapacity or disability, including both nonambulatory wheelchairbound persons and semiambulatory persons who can walk with the aid of devices such as canes and crutches-and about 138,900, or about 8 percent of the resident population are able-bodied elderly (see Figure 30 and Table 233). Of the 73,300 transportation handicapped persons in the Region, it was estimated that almost 68,300, or about 93 percent, are chronically disabled, while the remaining 5,000, or about 7 percent, are acutely disabled. A total of about 51,000, or about 75 percent, of the chronically disabled persons live in private households and about 17,300, or 25 percent, are institutionalized. Of the chronically disabled transportation handicapped persons living in private households, about 21,400, or 42 percent, have trouble getting around; about 9,800, or 19 percent, use aids other than a wheelchair; about 4,900, or 10 percent, need help from other persons; about 3,400, or 7 percent, use wheelchairs; and about 11,400, or 22 percent, are confined to the house most or all of the time. Of the total transportation handicapped in the Region, about 4 percent are under 17 years of age; about 40 percent are between 17 and 64 years of age; and about 56 percent are 65 years of age or older. It was

 $^{^{2}}$ The data on the elderly and transportation handicapped included in this summary chapter under the subheading "Population" are based on secondary source data rather than the random sample telephone survey of households, because the secondary source data produced somewhat higher estimates of the transportation handicapped (73,300 persons compared to 62,400 persons) than the household telephone survey. These higher population estimates were used as the basis for the transportation system plan and are the estimates shown in Figure 30 and Table 233. For a more detailed explanation of the two methodologies used to estimate the transportation handicapped population in the Region refer to Chapter III of this report.



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# DISTRIBUTION WITHIN THE REGIONAL POPULATION OF THE ELDERLY, HANDICAPPED, TRANSPORTATION HANDICAPPED, AND LOCATIONALLY AND ECONOMICALLY

Source: U. S. Department of Health, Education and Welfare, and SEWRPC.

further estimated that about 26,000, or 51 percent, of the chronically disabled transportation handicapped living in private households can use the existing public transit services within the Region, although such use may be difficult; and about 41 percent, or 24,900, are precluded from using the existing public transit services as a result of their disability.

In addition it was estimated that, within the Region, about 32,100 transportation handicapped persons, or 44 percent of the total, and about 50,300 able-bodied elderly persons, or about 36 percent of the total, live more than two blocks from a public transit route, making them locationally disadvantaged from the standpoint of using the existing public transit facilities. About 62 percent of the transportation handicapped and about 66 percent of the able-bodied elderly live in households having an annual income of less than \$8,000 a year and, as such, may be considered to be economically disadvantaged.

#### **Travel Habits and Patterns**

Identification and quantification of the travel habits, demands, needs, and attitudes of the transportation handicapped and elderly are essential to an accurate appraisal of the effectiveness of existing public and private transportation services in accommodating the needs of the elderly and handicapped, as well as to the preparation of a workable and cost-effective transportation plan design to meet the current and future needs of the transportation handicapped in the Region. The Commission obtained the necessary data on travel habits and patterns through telephone and personal interview surveys of the transportation handicapped and elderly residing in private households and in nursing homes and residential treatment centers within the Region,³ and through

0.91

0.66

22.24

16.10

³In the household telephone survey, a total of 6.482 occupied households, representing about 1 percent of the estimated 566,800 occupied households in the Region and housing a population in excess of 20,400, were sampled. These contacts resulted in a total of 503 telephone interviews with transportation handicapped persons and 1,370 telephone interviews with able-bodied elderly persons. Personal interviews were conducted with 526, or about 3.2 percent of the residents of institutions in the Region. The collected samples were expanded by a factoring process to represent the population from which they were drawn.

POPULATION (73,290)

#### Table 233

ESTIMATED NUMBERS OF TRANSPORTATION HANDICAPPED, ABLE-BODIED ELDERLY,
AND TOTAL POPULATION IN THE REGION BY GEOGRAPHIC AREA: 1975

	Transpo Handio	ortation capped	Able-E Elde (65 Ye Age and	Bodied erly ars of I Over)	Able-Bo (Under 65 of Ag	odied 5 Years 1e)	Total Population ^a		
Geographic Study Area	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Milwaukee Standard Metropolitan Statistical Area (SMSA) Counties									
Milwaukee	46,147	4.6	92,613	9.2	870,475	86.2	1,009,235	100.0	
Ozaukee	1,875	2,9	3,642	5.5	60,356	91.6	65,873	100.0	
	2,655	3.4	4,447	5.8	70,055	90.8	77,157	100.0	
Waukesha	8,237	3.1	12,326	4.6	245,659	92.3	266,222	100.0	
Urbanized Area	52,791	4.2	102,500	8.2	1,095,663	87.6	1,250,954	100.0	
Nonurbanized Area	6,123	3.7	10,528	6.3	150,882	90.0	167,533	100.0	
Total SMSA	58,914	4.2	113,028	8.0	1,246,545	87.8	1,418,487	100.0	
Racine County									
Urbanized Area	4,540	3.7	7,550	6.2	109,918	90.1	122,008	100,0	
Nonurbanized Area	1,994	3.4	2,756	4.7	53,594	91.9	58,344	100.0	
Total County	6,534	<b>3.6</b>	10,306	5.7	163,512	90.7	180,352	100.0	
Kenosha and Walworth Counties									
Kenosha	4,593	3.6	9,328	7.3	113,772	89.1	127,693	100.0	
Walworth	3,249	4.8	6,219	9.1	58,540	86.1	68,008	100.0	
Kenosha Urbanized Area	3,244	3.6	6,835	7.5	80,649	88.9	90,728	100.0	
Kenosha Nonurbanized Area	1,349	3.6	2,493	6.7	33,123	89.6	36,965	100.0	
Total Study Area	7,842	4.0	15,547	7.9	172,312	88.1	195,701	100.0	
Region	73,290	4.1	138,881	7.7	1,582,369	88.2	1,794,540	100.0	

^aBased on 1975 Wisconsin Department of Administration Estimates.

Source: Wisconsin Department of Administration, Applied Resource Integration, Ltd., and SEWRPC.

an on-board survey of users of two special transportation services in the Region.

Tripmaking by Transportation Handicapped Persons Living in Private Households: On an average day, approximately 44,700 trips are made by the approximately 46,000 transportation handicapped persons living in private households in the Region,⁴ such trips accounting for about 1 percent of total weekday travel as established in the 1972 inventory of travel conducted by the SEWRPC as part of the continuing regional land use-transportation study. This approximates one trip per person per day. In contrast, the trip generation rate for the regional population as a whole is approximately 2.5 trips per person per day. Approximately ⁴ The population data used in this summary chapter to describe the travel habits and patterns of the elderly and transportation handicapped are based on the population estimates obtained from the random sample telephone survey. The household telephone survey was the data source used to obtain information about the travel habits and patterns of the elderly and transportation handicapped. These population estimates are somewhat lower (62,400 persons compared to 73,300 persons) than those obtained from the secondary source data and presented in Figure 30 and Table 233. For a more detailed explanation of the two methodologies used to estimate the transportation handicapped population in the Region refer to Chapter III of this report.

three-fourths of the trips made by noninstitutionalized transportation handicapped persons are for social, recreational, personal business, and shopping purposes. Of the 44,700 trips made on an average weekday by these transportation handicapped persons, about 49 percent were made as an auto passenger, about 22 percent as an auto driver, about 10 percent as a passenger on a special transportation service, and about 6 percent as a public transit passenger, with the remaining 13 percent of trips made by other modes, predominantly walking. Importantly, it was determined that on an average week day, approximately 62 percent of the transportation handicapped living in private households in the Region do not make a trip at all.

Tripmaking by Institutionalized Transportation Handicapped Persons: During an average weekday, approximately 2,600 trips are made by the 16,400 institutionalized transportation handicapped residents of the Region. This approximates only 0.2 trip per person per day. Almost 76 percent of these trips are made for social, recreational, school, and work purposes. Survey data indicates that institutionalized transportation handicapped persons travel primarily on special transportation services. About 43 percent of the trips of institutionalized transportation handicapped persons were made on a special transportation service, about 21 percent in autos as passengers, and about 18 percent on a public bus, with the remaining 18 percent being made by other modes, predominantly walking. Again it is significant to note that during an average weekday, about 78 percent of the institutionalized transportation handicapped persons in the Region make no trips at all.

Tripmaking by Able-Bodied Elderly Persons: On an average weekday, approximately 211,400 trips are made by the 125,200 able-bodied elderly residents of the Region, such trips accounting for about 5 percent of total weekday travel as established by the Commission in the 1972 inventory of travel. This approximates a trip generation rate of about 1.7 trips per person per day. About 87 percent of such trips are made for social, recreational, shopping, and personal business purposes. About 58 percent of able-bodied elderly trips are made as auto drivers, about 27 percent are made as auto passengers, and almost 7 percent are made as bus passengers, with the remaining 8 percent of trips made by a variety of modes, predominantly walking.

Vehicle Availability: The able-bodied elderly population has significantly more vehicles available for their use than persons who are transportation handicapped. About 41 percent of the able-bodied elderly in the Region indicated that they do not have an auto available to drive. Of these elderly individuals, about 12 percent never have an auto available to ride in as a passenger. In contrast, about 85 percent of the transportation handicapped in the Region do not have an auto available to drive and, in addition, about 19 percent of these persons never have an auto available to rider in as a passenger.

The survey data indicated that in the Region, about 39 percent of the able-bodied elderly and about 42 percent of the transportation handicapped live more than two blocks from a bus stop. Of the transportation handicapped living in private households in the Region, the survey data indicated that about 59 percent are able to use the existing public transit service, although such use is difficult; and about 41 percent are entirely prevented from using the existing transit service as a result of their disabilities. About 47 percent of the transportation handicapped indicated that it is impossible for them to reach a bus stop without assistance by a personal attendant; about 18 percent indicated that they could do so only if the bus stopped directly in front of their house; and about 35 percent indicated that they could go one or two blocks to board the bus. The four severest barriers to use of a public bus as perceived by transportation handicapped persons are in descending order of importance: standing when a seat is unavailable, going out in bad weather, standing for any period of time at a bus stop, and waiting a long period of time for a bus.

About 57 percent of the transportation handicapped residents of the Region and about 75 percent of the able-bodied elderly residents do not know of any special transportation services that are available for their use. The on-board survey revealed that those persons who do use special transportation services find, in general, that the service is comfortable, convenient, easy-to-use, safe, and reliable.

## Local Transportation Service Providers

An inventory of existing local elderly and handicapped transportation service providers within the seven-county Southeastern Wisconsin Region was conducted to provide data essential to the study effort. These local service providers which include local public transit agencies, social service agencies, taxicab operators, private chair car carriers, and nursing homes represent primary suppliers of transportation services to the elderly and transportation handicapped. The inventory of service providers found that there are in the Region:

- Three urban public transit systems.
- One rural public transit system.
- 54 quasi-public or private agency providers of transportation services.
- 24 taxicab operators
- Six licensed and three operating private chair car carriers.
- 79 long-term care facilities (nursing homes) that are known to provide transportation services to their residents.

School bus operators in the Region could also be viewed as potential primary providers of transportation service to the transportation handicapped due to their experience in the provision of specialized services.

#### Public Transit Systems

According to the inventory, three urban public transit systems provide service in the Region—one in Milwaukee County and one each in the Racine and Kenosha urban areas; and one rural public transit system provides service in Walworth County. The Milwaukee County Transit System (MCTS) owns 523 buses and operates 480 buses during the peak period. A reduced fare program allows eligible elderly or transportation handicapped persons to use the bus system for \$0.25, one-half of the regular fare of \$0.50, during nonpeak hours of operation and all day on Saturdays and Sundays.

The City of Racine owns 25 buses and operates 21 buses during the peak period. The City not only provides a reduced fare program where eligible elderly and transportation handicapped ride during nonpeak hours for \$0.10, but it also subsidizes free specialized transportation services for the elderly and handicapped, such service being operated by Lincoln Lutheran Specialized Transportation of Racine. The Racine Bus System operates Monday through Saturday.

The City of Kenosha owns 30 buses and operates 24 buses during the peak period. The regular fare is \$0.25 but eligible elderly and transportation handicapped persons ride for a reduced fare of \$0.10 during nonpeak hours. Like the Racine system, the Kenosha bus system operates Monday through Saturday.

The Geneva Lake Area Joint Transit Commission (GLAJTC) owns five buses, one limousine, and one van. The primary function of this transit service is to provide service to the local commuter rail stations.

#### Social Service Agencies

In the Region, a total of 54 quasi-public or private agencies (such as Goodwill Industries) currently provide transportation services to their clientele. The services provided are determined by the providing agency and typically include restrictions on eligibility, service area, trip purpose, type of service, and operating hours. The vehicles utilized are automobiles, station wagons, vans, buses, or contracted vehicles and are driven either by volunteers, paid drivers, or agency outreach workers. For those agencies reporting the requested information the inventory indicated that: social service agencies serve about 11,900 clients during an average month; clients make about 5,000 trips during an average weekday, 109,800 trips during an average month, or about 1,317,600 trips per year; and the agencies reporting costs spend about \$2,122,000 per year.

#### **Taxicab Services**

The inventory also found that 24 privately owned taxicab firms exist in the Region, operating a total fleet of 429 taxicabs. A significant number of their present ridership are elderly and/or handicapped. A general willingness and expressed desire exist among these firms to participate actively in any program to improve transportation services for the elderly and the handicapped. These firms represent a potentially valuable and efficient existing resource for accommodating the elderly and the handicapped.

#### Private Chair Car Carriers

Six private chair car carriers are licensed by the City of Milwaukee including—Handicabs, Care Cabs, Quality Care, Inc., Emergency Care Service, Ray Transit, and Limited Care. Of these, the first three are presently operating.⁵ The fourth (Emergency

⁵Handicabs suspended operations on November 1, 1977, for an indefinite period of time.

Care Service) has ceased operations due to a recent state decision concerning funding under Title XIX of the Federal Older Americans Act, and the fifth and sixth had not yet begun operating at the time of the inventory.

#### Nursing Homes

Seventy-nine nursing homes in the Region provide transportation services on a monthly basis to more than 4,100 elderly persons. These services are provided with vehicles (buses, vans, station wagons) owned by the nursing home itself, with contract vehicles supplied by a private chair car carrier or a social service agency and by volunteer drivers using their own private automobiles. Transportation service generally is limited to residents of the nursing home.

#### ELDERLY AND HANDICAPPED TRANSPORTATION STUDY DEVELOPMENT OBJECTIVES

The task of formulating objectives and standards to be used in plan design and evaluation is a difficult but important part of the planning process. Regional plan elements must advance development proposals which are physically feasible, economically sound, and aesthetically pleasing, and which are conducive to the promotion of public health and safety. Because the formulation of objectives involves a formal definition of a desirable physical/ operational system and a list of the broad needs which the system aims to satisfy, the objectives reflect an underlying value system. The diverse and often conflicting nature of value systems in a complex urban society complicates this process of goal formulation-particularly in the case of planning for the transportation handicapped-and makes it one of the most difficult tasks in the planning process. Nevertheless, it is essential to state specific objectives for the development of transportation plans for the transportation handicapped and to support and clarify them insofar as possible through principles and standards in order to provide a basis for the design, test, and evaluation of alternative transportation handicapped transportation system plans.

Moreover, the transportation handicapped transportation system plans must be compatible with previously adopted regional development objectives as established under the regional land use and transportation planning programs. The series of broad regional development objectives and specific transportation system development objectives under the regional land use-transportation study begun in 1963 are documented in SEWRPC Planning Report No. 25, <u>A Regional Land Use Plan</u> and <u>A Regional Transportation Plan for Southeastern Wisconsin: 2000, Volume Two, Alternative and Recommended Plans. The regional transportation handicapped transportation plan development objectives and supporting principles and standards set forth in Chapter VI of this report represent supplements to the previously adopted regional development objectives as established under the regional land use and transportation planning programs.</u>

Three new development objectives, together with supporting principles and standards, were formulated under the transportation handicapped transportation planning program. The three new development objectives are:

- 1. Integration of transportation handicapped people as fully as possible as functioning, participating, and contributing members of urban and rural society through improved transportation facilities and services.
- 2. Conformance to the national policy, enunciated in the Urban Mass Transportation Act of 1964, as amended, and to similar state policies, that transportation handicapped people have the same right as other people to utilize mass transportation facilities and services.
- 3. Formulation of a transportation system for transportation handicapped people which is economical and efficient, satisfying all other objectives at the lowest possible cost.

Together with the land use and transportation facility development objectives previously established under related Commission work programs, these new development objectives and their supporting principles and standards, set forth in Table 145 of Chapter VI, provided the basic framework within which alternative transportation handicapped transportation plans were formulated and evaluated, and the recommended plans selected.

#### TRANSPORTATION HANDICAPPED LATENT TRAVEL DEMAND ANALYSES

Another major element of the transportation handicapped planning program involved the determination of latent travel demand. Unlike other Commission planning programs, the transportation handicapped planning program is not a long-range program; therefore, it was not necessary to develop long-range forecasts of the travel demand by transportation handicapped persons in the Region. It was necessary, however, to determine the estimated number of additional trips likely to be made if public or private transit services were made more accessible to the transportation handicapped. High and low estimates of latent travel demand were accordingly prepared for each of the four study subareas, as well as for the basic modes of transportation for the transportation handicapped: namely, accessible transit and some form of demand responsive transportation system provided by taxi and chair car carrier companies, or social service agencies.

Two estimates of latent demand were made, one derived by the consultant from national data, the other derived by the Commission staff from the Commission survey data as a check on the estimates made from national data. The latent travel demand by the transportation handicapped for an accessible transit system in the Milwaukee urbanized area, configured as shown on Map 4 in Chapter IX, was estimated to range from a low of 376 trips per average day, or 137,200 trips per year, to a high of 771 trips per average day, or 281,400 trips per year. For the Racine urbanized area, the range was 38 trips per average day, or 13,900 trips per year, to 66 trips per average day, or 24,100 trips per year. For the Kenosha urbanized area, the range was 30 trips per average day, or 11,000 trips per year, to 50 trips per average day, or 18,300 trips per year. Total latent travel demand for accessible transit systems among the transportation handicapped residing in the Region was thus estimated to range from 444 trips per average day, or 162,000 trips per year, to 887 trips per average day, or 323,800 trips per year. These estimates assumed fares would be one-half of existing fares of \$0.50 in Milwaukee County and two-fifths of the existing fare of \$0.25 per ride in the Racine and Kenosha areas.

In contrast, the latent travel demand of the total transportation handicapped population for a demand responsive transportation system as provided by existing taxi, chair car carrier, and social service agencies at free fare was estimated for the Milwaukee urbanized area at between 285,900 and 803,100 trips per year (783 to 2,200 trips per average day); for the Racine urbanized area, between 13,500 and 57,100 trips per year

(37 to 156 trips per average day); and for the Kenosha urbanized area, between 15,700 and 49,200 trips per year (43 to 135 trips per average day). For the nonurbanized or rural areas of the Region, the expected demand was estimated to range between 43,700 and 163,700 trips per year (120 to 448 trips per average day). It should be noted that these higher estimates assume provision of a very high level of transportation service, one in which the system has sufficient capacity to accommodate peak travel demand with little or no waiting time delay. Fares, advance notice requirements, and restrictions on operating hours and capacity limitations would all reduce the amount of latent travel demand. It should also be noted that the estimates of the latent travel demand were made without benefit of adequate experience with the actual use of accessible transit systems. At the beginning of this planning program, no accessible transit systems were operating in the United States. Consequently, at this point, little is known about the actual use of accessible transit by the transportation handicapped population. Thus, plan implementation should be approached with caution and actual use monitored very closely, and adjustments should be made to the plan as actual experience may dictate. Making transit more accessible may indeed change the lifestyles of transportation handicapped persons not now as mobile as the general public. As more accessible transportation services are provided and buildings and walkways are made more barrier-free to the transportation handicapped, the mobility and therefore quality of life of these persons should be improved. The response to these changes, however, is not certain.

## ALTERNATIVE TRANSPORTATION SYSTEM PLANS OF THE ELDERLY AND HANDICAPPED STUDY

Under the elderly and handicapped transportation planning program, eight alternative transportation systems were designed and evaluated. Each of these eight alternative systems was further reviewed in conjunction with the additional transportation option which could be provided through complementary coordinated social service agency transportation services. Of the initial eight alternative systems, five were considered to be viable options within the urbanized areas of the Region, while two were found to be applicable in the nonurbanized areas of the Region. The viable alternative transportation systems evaluated for the urbanized areas included: 1) institution of an accessible transit system⁶ only; 2) institution of a demand responsive system⁷ only; 3) institution of a user-side subsidy  $program^8$  only; 4) institution of an accessible transit system coordinated with a demand responsive system; and 5) institution of an accessible transit system coordinated with a user-side subsidy program. As already noted, each of these alternative systems was also considered in terms of the additional service which could be provided through coordinated agency transportation⁹ in the urbanized areas. Due to the absence of any extensive local transit systems in the nonurbanized areas of the Region, only two viable alternative systems were analyzed and evaluated in depth: 1) institution of a demand responsive system only; and 2) institution of a user-side subsidy program only. These two alternative systems were further evaluated in terms of the additional service which could be provided through coordinated agency transportation.

The analysis approach to each alternative transportation system consisted of consideration of certain critical factors, namely: ridership, costs, revenue, and management and operating characteristics.

⁷A demand responsive transportation system offers more personalized transportation than does public transit. It consists of services utilizing taxicabs, chair car carrier vans, or minibuses that will respond to the user's needs and offer pickup and dropoff at the user's point of departure and return. Under a demand responsive transportation system, the transportation provider or sponsoring unit or agency of government is subsidized through federal, state, or local transportation assistance programs to enable it to provide the specialized service. Each system was examined in light of various ridership and funding levels. Furthermore, because of the difficulties inherent in expressing certain factors in quantitative terms, both quantitative and qualitative measures were considered in the analysis and evaluation of the alternative systems. The evaluation techniques employed comparison of the alternative transportation systems against three sets of criteria: the agreed-upon objectives and standards of the elderly and handicapped study, the UMTA suggested guidelines for providing service to the transportation handicapped in terms of accessible fleet size or proportion of transit operating deficits, and comparisons in terms of allocation of total transportation subsidies to specialized programs proportionately to the percentage of the transportation handicapped in the general population.

## PLAN SELECTION

Based upon the evaluation of the alternatives, the following plans were approved by the Advisory Committees as the recommended plans:

⁹Coordinated social service agency transportation refers to a variety of ways that several social service agencies in a county can make more efficient use of their transportation facilities and services by mutually cooperating in the provision of transportation services to all transportation handicapped clients of participating agencies. Coordination efforts under the recommended regional transportation handicapped transportation plan are proposed to be undertaken by an agency of the counties. Besides improving the availability and delivery of social service agency transportation services to the transportation handicapped, coordination of such services makes more efficient use of existing equipment, dispatchers, and administrative personnel.

⁶An accessible bus has the following characteristics: 1) floor height of no more than 22 inches with an effective 18 inches available through a mechanical "kneeling" mechanism; 2) wheelchair access device installed in the front door; 3) entryways of sufficient width to accommodate wheelchairs; 4) tiedown for at least two wheelchairs; 5) reserved seats for elderly and handicapped; and 6) more handrails and stanchions than are currently found on standard transit vehicles. These characteristics are consistent with the Secretary of Transportation's ruling of May 19, 1977 with respect to buses manufactured after September 30, 1979. With the exception of the floor height, however, existing buses may be modified to these characteristics.

⁸A user-side subsidy program is a subsidy given to a transportation user in the form of a ticket, token, or other credential for purchasing specialized transportation of the user's choice at less than the actual cost. The passenger can use any specialized service—such as taxicab, chair car carrier van, or minibus—that is participating in the program. Under the user-side subsidy transportation system, the user is subsidized directly by one of several methods, allowing the user to purchase transportation services from any participating provider at some fraction of the actual cost.

- 1. For the Milwaukee urbanized area, as delineated on Map 7, a combination of an accessible transit system and a user-side subsidy program complemented by the coordination of transportation services provided by social service agencies operating in the Milwaukee urbanized area.
- 2. For those parts of Ozaukee, Washington, and Waukesha Counties beyond the delineated Milwaukee urbanized area, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by social service agencies operating in each of the three counties concerned.
- 3. For the Racine urbanized area, as delineated on Map 7, the establishment of a combination of an accessible transit system and a user-side subsidy program complemented by the coordination of transportation services provided by social service agencies operating in the Racine urbanized area.
- 4. For that part of Racine County beyond the delineated Racine urbanized area, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by social service agencies operating in Racine County.
- 5. For the Kenosha urbanized area, as delineated on Map 7, the establishment of a combination of an accessible transit system and a user-side subsidy program complemented by the coordination of transportation services provided by social service agencies operating in the Kenosha urbanized area.
- 6. For that part of Kenosha County beyond the delineated urbanized area, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by the social service agencies operating in Kenosha County beyond the urbanized area.
- 7. For Walworth County, the establishment of a demand responsive transportation system complemented by the coordination of transportation services provided by social service agencies operating in Walworth County.

Costs of implementing each specific system proposal in each county are set forth in Table 234. It should be noted that the net operating and capital costs shown in the table are in addition to the monies currently being spent by all agencies funding transportation services for the elderly and handicapped. It should also be noted that the net operating costs for each program presented in the table include an assumed 8 percent average rate of inflation over the five-year plan period, while the capital costs are presented in constant 1978 dollars. For comparative purposes Tables 211, 215, 218, 220, 224, 229, and 232 in Chapter IX provide the operating costs and funding requirements for each program by county in both noninflated 1978 dollars and in inflated (assuming an average 8 percent-per-year inflation rate) dollars for the five-year plan period. As shown in the table, a total of \$2,520,000 in additional capital costs, will be required to provide accessible transit in the Milwaukee urbanized area. In addition, approximately \$234,000 more will be required in capital costs to make existing buses accessible in the Cities of Kenosha and Racine. Other capital costs would include the provision of a total of 15 new vehicles to be contracted for or purchased by county agencies to provide demand responsive service in the nonurbanized areas of the Region. The additional capital cost of providing such service would be approximately \$300,000 for the new vehicles.

In addition to these capital costs to provide additional services to the transportation handicapped within the urbanized and nonurbanized areas of the Region, approximately \$1,181,000 will be required over the five-year period to operate the accessible transit vehicles; approximately \$1,180,000 will be required to operate or contract for the operation of a user-side subsidy program in the Region; and about \$1,584,000 will be required to operate the demand responsive system within the Region.

Total capital expenditures in the Region are expected to be about \$3,054,000 for the fiveyear period, or approximately \$611,000 per year. As shown in Table 234, about \$122,000 of the average annual capital costs, or about 20 percent, would be provided through local funding, with the remaining 80 percent being provided through federal funding assistance. Operating expenditures for all three major primary transit programs (accessible transit, user-side subsidy, and demand responsive transportation programs) would total about \$3,944,500, or



The recommended plan for the provision of transportation services and facilities to the transportation handicapped in southeastern Wisconsin consists of a combination of accessible transit system operations (dark green shaded areas) and user-side subsidy transportation programs provided throughout the grey shaded areas of the three delineated urbanized areas of the Region (approximated by the urban service area included in the black outlined boundaries). The plan also recommends the establishment of demand responsive transportation systems operating in the light green shaded areas to serve the nonurbanized areas of the Region, and the establishment of county programs to coordinate the transportation services provided by the social service agencies in each county.

Source: SEWRPC.

#### Table 234

#### TABULAR SUMMARY OF THE RECOMMENDED PLAN TO PROVIDE EXPANDED SERVICES TO THE TRANSPORTATION HANDICAPPED POPULATION OF SOUTHEASTERN WISCONSIN, BY COUNTY FOR THE FIVE-YEAR PERIOD 1978-1982

							Urbaniz	ed Areas ^e		1									Nonurbani	zed Areas																
	<u> </u>			Acces	sible Tran	isit Syster	n				User-	Side Sub	osidy Syst	em I				De	mand Resp	onsive Sys	tem			Estimated Tatal Europetitizes ^C By Europeted Source of Boursey (000)						т	otal					
	Pur	chase lew	Retr	ofit	Net Op	perating cre ^C	Est	imated		Net Op	perating	Est	imated		Purc	hase	Evi	tina	Net Op	perating	Est	imated					undres D	V Expected	a source o	T rievenue	ation of		Estimated Ridorshin ⁸			
	В	uses	Bu	ses	ĩõ	00)	(	000)	Primary	(0)	00)	(	000)		Veh	icles	Veh	icles	(0	00}		000)	Brimani			Expendi	ures			Operati	ing cxpen	onures		(0	-00)	
		Cost ^C		Cost ^C		Average	•	Average	Operating		Average		Average	Operating		Cost ^C		Cost		Average		Average	Operating	5-Year	Annual	Ave	erage A	nnual	5-Year	Average	Av	erage Anr	nual	5-Year	Average	
County	Number	(000)	Number	(000)	Total	Annual	Total	Annual	Authority	Total	Annual	Total	Annual	Authority	Number	(000)	Number	(000)	Total	Annual	Total	Annual	Authority	Total	Total	Local	State	Federal	Total	Total	Locai	State	Federal	Total	Annual	
Kenosha	-	-	11	\$ 99.0	\$ 45.8	\$ 9.2	46.4	9.3	Kenosha	\$ 46.1	\$ 9.2	14.7	2.9	Kenosha	2	\$ 40.0	1 ^e		\$ 228.8	\$ 45.8	49.8	10.0	Agency to be	\$ 139.0	\$ 27.8	\$ 5.6		\$ 22.2	\$ 320.7	\$ 64.1	\$ 18.2	\$ 41.3	\$ 4.6	110.9	22.2	
	1								Transit Commission					Transit									County Board				1						'		1	
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																							Achievement				ſ						1	1	l I	
Milwaukee	280	\$2,520.0	••		\$1,087.1	\$217.4	728.3	145.7	Milwaukee	\$ 914.0	\$182.8	317.1	63.4	Milwaukee	-		~						Center	\$2 520 0	\$504.0	\$100.8		\$403.2	\$2.001.1	\$400.2	\$ 54 5	\$737.0	\$109.7	1 045 4	209.1	
		i							County					County																4700.2	• • •	4207.0		1,010.1	1	
									Board					Board						1													1 '		i i	
Ozaukee									-	\$ 24.7	\$ 4.9	8.4	1.7	Agency to be	!	.1	1 ^e		\$ 84.6	\$ 16.9	23.7	4.7	Agency to be						\$ 109.3	\$ 21.9	\$ 8,1	\$ 13.8		32.1	6.4	
														County Board							1		Designated By							1						
	ļ													Milwaukee									County Board										· ۱		1	
														County Transit Board										1									· ۱		1	
Racine			15	\$135.0	\$ 47.7	\$ 9.5	46.0	9.2	City of Racine,	\$ 74.5	\$ 14.9	23.6	4,7	City of Racine,	3	\$ 60.0	3 ^e		\$ 382.1	\$ 76.4	72.0	14,4	Agency to be	\$ 195.0	\$ 39.0	\$ 7.8		\$ 31.2	\$ 504,3	\$100.9	\$ 34.3	\$ 61,8	\$ 4.8	141.6	28.3	
									Transit and Parking			1		Transit and Parking						· ·			County Board										1 I		1	
									Commission	ļ				Commission									Lincoln	1									· ۱		1	
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Walworth					-	-				-					4	\$ 80.0	2		\$ 310,6	\$ 62.1	95.0	19.0	Agency to be	\$ 80.0	\$ 16.0	\$ 3.2	·	\$ 12.8	\$ 310.6	\$ 62.1	\$ 20.1	\$ 420	s	95.0	19.0	
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^a See Maps 1 and 2.

^b Equipping existing buses with wheelchair lifts or ramps and necessary tiedowns, handholds, and stanchions.

^C It should be noted that the net operating and capital costs shown in the table are in addition to the monies currently being spent by all agencies funding transportation services for the elderly and handicapped. It should also be noted that the net operating costs for each program include an assumed 8 percent average rate of inflation over the five-year plan period. The capital costs are in constant 1978 dollars.

d Ridership is the number of trips made by transportation handicapped persons on the given mode of transit in addition to present trips made on that mode, if any.

e Contracted vehicle(s).

^f These vehicles are recommended to be leased and therefore no capital costs are incurred.

Source: Applied Resource Integration, Ltd. and SEWRPC.

about \$789,000 annually over the five-year period. Again, as shown in Table 234, the local share of these average annual operation costs would be about \$182,000, or about 23 percent of the costs, with state funding assistance expected to cover about \$489,000 per year, or about 62 percent, and federal funding assistance providing about \$118,000, or about 15 percent, of the total operational costs. It is expected that a total of about 1,612,000 individual additional trips would be made over the five-year period on the various accessible systems.

In summary, the recommended plan for the provision of transportation services and facilities to the transportation handicapped in southeastern Wisconsin consists of the combination of an accessible transit system and user-side subsidy transportation program in the three delineated urbanized areas of the Region, the establishment of demand responsive transportation systems to serve the nonurbanized areas, and the establishment of county programs to coordinate the transportation services provided by the social service agencies in each county.

Financial assistance is available to local units of government to partially fund the implementation of the recommended regional transportation plan for the transportation handicapped. These funds can be obtained from the federal government through the U. S. Department of Transportation, Urban Mass Transportation Administration (UMTA) and from the State through the Wisconsin Department of Transportation. Federal revenue sharing monies distributed each year to local units of government are also a potential source of program implementation funds.

#### COUNTY SUMMARY OF RECOMMENDED PLAN

A county-by-county summary of the recommended elderly and handicapped transportation system plan is presented below. Specific recommendations for implementation of the recommended plan are given for each county.

## Milwaukee County

The Milwaukee County Transit Board should act as the implementing agency to institute a combination of services consisting of an accessible transit system, a user-side subsidy program, and coordinated agency transportation.

It is recommended that the Milwaukee County transit system replace 250 regular "full size" buses

with accessible buses over the next two years and purchase 30 additional smaller accessible buses of 25- to 30-passenger capacity. It is recommended that the schedule of vehicle purchases be 100 accessible buses to be delivered in 1978, with the remaining 150 large accessible buses and 30 smaller accessible buses ordered in 1978 and delivered either in late 1978 or in 1979. Further, it is recommended that 88 of the first 100 accessible buses be assigned to 11 routes in the Milwaukee area as shown on Map 4 in Chapter IX. These routes include Route No. 10, Wells Street; Route No. 11, Vliet Street and Howell Avenue; Route No. 14, Holton Avenue and Mitchell Street; Route No. 18, National Avenue; Route No. 21, North Avenue; Route No. 23, Fond du Lac Avenue-Wisconsin Avenue; Route No. 27, 27th Street; Route No. 62, Capitol Drive; Route No. 71, State Street; Route No. 76, N. 60th Street to S. 71st Street; and Route No. 80, 6th Street to Teutonia Avenue. If, indeed, all 100 buses are delivered at approximately the same time, 88 can be put into service on these routes concurrently with the remaining 12 accessible buses to be used as spare vehicles. Assignment of the initial 88 accessible buses will result in all buses on the above 11 routes being accessible during the nonpeak travel period and operating on headways of from 12 to 30 minutes with approximately one-half the buses during the peak periods being accessible and operating on headways of seven to 15 minutes. All buses on these routes on Saturdays and Sundays would also be fully accessible. The purchase in 1978 of the additional 180 buses will result in a completely accessible base period fleet (all routes) and a partially accessible peak period fleet. Addition of the 180 accessible buses is not expected to require any additional measures except appropriate changes to the public timetables and transit maps.

In addition to making public transit vehicles more accessible to the transportation handicapped, accessible buses would have to be able to be identified from a distance of one block both night and day. Identification measures should include the use of the universal symbol of accessibility. Also required would be a change in the public timetables and transit maps to reflect any route changes. Finally, possibly the most important supplemental provision is the institution of a special driver instruction program for training in the proper use of wheelchair lifts or ramps and appropriate operating procedures.

The additional costs of providing accessible buses over the cost of regular buses in the Milwaukee area is expected to be \$900,000 for the first 100 buses and \$1,620,000 for the additional 180 accessible buses proposed. A federal capital grant under Section 3 of the Urban Mass Transportation Act of 1964, as amended, would offset 80 percent of these costs. The additional cost of operating accessible buses is anticipated to be \$217,400. One-half of these operational costs are eligible for reimbursement under Section 5 of the Urban Mass Transportation Act of 1964, as amended, and one-third of the remainder can be funded through state operating assistance.

Also recommended in the Milwaukee urbanized area is institution of a user-side subsidy program to serve primarily those transportation handicapped persons living farther than one-quarter of a mile from a transit route and those transportation handicapped persons living within the transit service area who because of their particular disability would be unable to use an accessible bus (see Map 7). Since there is no transit operating authority in the Milwaukee urbanized area to administer the user-side subsidy program, it is recommended that the individual counties of the urbanized area take action to institute this program. Milwaukee County would provide basic administration of such a program, and the Ozaukee and Washington County Boards would enter into an agreement with the Milwaukee County Board to administer the user-side subsidy program for those portions of the Milwaukee urbanized area within those two counties. It is recommended that the Waukesha County Board administer the user-side subsidy program in the Waukesha County portion of the Milwaukee urbanized area. Contracts would be negotiated between private transportation providers and the administrator of the user-side subsidy program. The administering agency also would be required to refine the user-side subsidy program, design and market the program, and provide some form of registration for persons eligible for the user-side subsidy program. The cost of these initial implementation procedures is estimated at about \$17,200. It is recommended that the fare for intracounty trips under the userside subsidy program be half of the normal fare as indicated on the taxi meter or determined by zone boundary schedule. In no case should the one-way fare within the county be greater than \$2.50. It is estimated that the additional annual operation cost for the user-side subsidy program would range from \$145,300 in 1979 to \$248,800 in 1982.

Milwaukee County has no nonurbanized or rural areas. It is proposed, however, that the nonurbanized and rural areas of Ozaukee, Washington, and Waukesha Counties within the Milwaukee SMSA be provided with a demand responsive system. It is further recommended that the system be initiated and administered by an agency of the county board of each of the three counties.

An estimated total of \$2,001,000 for the five-year plan period, or an annual average of \$400,200 per year, will be required for the net operating costs associated with the accessible transit and user-side subsidy programs in Milwaukee County. It is assumed that over the five-year period an average of 86.4 percent of these costs can be funded through a combination of state and federal transit operating assistance and Wisconsin Statute Section 85.08(5) funds for elderly and handicapped transportation programs.

#### Ozaukee County

An agency designated by the County Board such as the Ozaukee County Highway Committee should act as the implementing agency to institute a combination of services consisting of a user-side subsidy program, a rural demand responsive system, and coordinated agency transportation. It is recommended that the user-side subsidy program for the transportation handicapped be implemented in that part of Ozaukee County included in the Milwaukee urbanized area. The program administrative agency designated by the County Board would be required to refine the user-side subsidy program design and market the program, and to provide some form of registration for persons eligible for the program. The cost of these initial implementation procedures is estimated at about \$500. It has also been recommended that the user pay one-half of the actual cost of the trip based on distances traveled but no more than \$2.50 for each one-way intracounty trip at the time the trip is made. It is expected that the additional annual operation costs for the user-side subsidy program would range from \$3,900 in 1979 to \$6,700 in 1982.

It is further recommended that a demand responsive system be instituted in Ozaukee County in the rural areas of the County. It is recommended that this service be provided by Ozaukee County through an agency, such as Catholic Social Services. It is recommended that a flat fare of \$0.50 per one-way trip be charged the user of such a service. The net operating costs for a demand responsive system in Ozaukee County are expected to range from \$13,650 in 1978 to \$19,750 in 1982. These costs would be added to any current expenditures for the provision of transit services. An estimated total of \$109,300 for the five-year plan period, or an annual average of \$21,900 per year, will be required for the net operating costs associated with the user-side subsidy and demand responsive transportation programs in Ozaukee County. It is assumed that over the five-year period an average of 63 percent of these costs can be funded with monies available under Wisconsin Statute Section 85.08(5) which provides financial assistance for elderly and handicapped transportation programs.

## Washington County

An agency designated by the County Board such as the County Highway Committee should act as the implementing agency with the assistance of the City of Hartford Department of Recreation which administers the Older Adult Transportation (OAT) program to institute a combination of services consisting of a user-side subsidy program, a rural demand responsive system, and coordinated agency transportation. It is recommended that the userside subsidy program for the transportation handicapped be implemented in that part of Washington County included in the Milwaukee urbanized area. The program administrative agency designated by the County Board would be required to refine the user-side subsidy program design and market the program, and to provide some form of registration for persons eligible for the program. The cost of these initial implementation procedures is estimated at about \$300. It has also been recommended that the user pay one-half of the actual cost of the trip based on distance traveled but no more than \$2.50 for each one-way intracounty trip at the time the trip is made. It is expected that the additional annual operation costs for the userside subsidy program would range from \$1,000 in 1979 to \$1,500 in 1982.

It is further recommended that the County Older Adult Transportation program provided by the City of Hartford Department of Recreation be expanded into a full demand responsive service for the handicapped as well as the elderly. In addition, it is recommended that a flat fare of \$1.00 per oneway trip be charged the user of such a service. This would require the purchase in Washington County of three additional vehicles over the five-year period of 1978 through 1982 at a total estimated cost of \$60,000. The annual net costs over the five-year period to operate the rural demand responsive system are expected to range from \$18,000 in 1978 to \$63,000 in 1982. An estimated total of \$230,400 for the five-year plan period, or an annual average of \$46,100 per year, will be required for the net operating costs associated with the user-side subsidy and demand responsive transportation programs in Washington County. It is assumed that over the five-year period an average of 64.4 percent of these costs can be funded with monies available under Wisconsin Statute Section 85.08(5) which provides financial assistance for elderly and handicapped transportation programs.

## Waukesha County

An agency designated by the County Board such as the County Highway and Transportation Committee should act as the implementing agency with the assistance of the Waukesha County Commission on Aging, which administers the Waukesha County Program on Aging Transportation service, to institute a combination of services consisting of a user-side subsidy program, a rural demand responsive system, and coordinated agency transportation. It is recommended that the userside subsidy program for the transportation handicapped be implemented in that part of Waukesha County included in the Milwaukee urbanized area. The program administrative agency designated by the County Board would be required to refine the user-side subsidy program, design and market the program, and provide some form of registration for persons eligible for the program. The cost of these initial implementation procedures is estimated at about \$3,500. It has also been recommended that the user pay one-half of the actual cost of the trip based on distance traveled but no more than \$2.50 for each one-way intracounty trip at the time the trip is made. It is expected that the additional annual operation costs for the user-side subsidy program would range from \$17,900 in 1979 to \$30,500 in 1982.

It is further recommended that the County Program on Aging transportation operation be expanded to allow handicapped persons to ride in addition to the elderly. In addition, it is recommended that a flat fare of \$1.00 per one-way trip be charged to the user of such a service. Over the five-year implementation period, this expansion to a full demand responsive system within the County would require the purchase of three vehicles at an estimated capital cost of \$60,000. The additional net operating costs for the demand responsive system are expected to range from \$19,000 in 1978 to \$101,000 in 1982. An estimated total of \$468,100 for the five-year plan period, or an annual average of \$93,600 per year, will be required for the net operating costs associated with the user-side subsidy and demand responsive transportation programs in Waukesha County. It is assumed that over the five-year period an average of 67.4 percent of these costs can be funded with monies available under Wisconsin Statute Section 85.08(5) which provides financial assistance for elderly and handicapped transportation programs.

## **Racine County**

An agency designated by the County Board, such as the Racine County Human Services Board in cooperation with the City of Racine Transit and Parking Commission and Lincoln Lutheran Specialized Transportation, should act to implement a combination of services consisting of an accessible transit service, a user-side subsidy program, a rural demand responsive system, and coordinated agency transportation.

The fleet of buses operated by the City of Racine is relatively new and, under normal conditions, could operate 10 or more years before being replaced. It is recommended, therefore, to make the entire fleet of buses accessible by retrofitting the buses with wheelchair lifts or ramps. This improvement would include retrofitting a total of 13 operating buses and two spare vehicles. Such a retrofitting operation would provide accessible buses for Routes 2, 3, 4, and 5 in the City on 30- to 60-minute headways throughout the day and would provide accessible buses on Routes 1, 6, 7, 8, and 9 on 60-minute headways throughout the day (see Map 5 in Chapter IX). It is recommended that, because retrofitting requires approximately one month per bus, provisions be made immediately for the implementation of this recommendation so that all 15 buses can be retrofitted and in operation by September 1979.

In addition to making public transit more accessible to the transportation handicapped, accessible buses in the City of Racine would have to be able to be identified from a distance of one block both day and night. Identification measures should include the use of the universal accessibility symbol. Also required would be a change in public timetables and transit maps, and special driver instructions.

The estimated cost of retrofitting the buses would be \$9,000 per bus. Eighty percent of the anticipated \$135,000 cost to retrofit the buses in the City of Racine could be offset by funding from either Section 3 or Section 5 of the Urban Mass Transportation Act of 1964, as amended. In addition, it is expected that approximately \$9,500 would be added to the annual operating cost of the transit system in Racine. One-half of these operational costs are eligible expenditures for reimbursement under Section 5 of the Urban Mass Transportation Act of 1964, as amended, and an additional one-third of the remainder can be funded through state operating assistance.

In addition to providing accessible buses in the City of Racine, it is recommended that a user-side subsidy program be implemented in the urbanized area of Racine County to serve transportation handicapped living farther than one-quarter of a mile from a transit route and those transportation handicapped persons living within the transit service area who, because of their particular disability would be unable to use an accessible bus (see Map 7). It is recommended that the City of Racine Department of Transportation be the lead agency to work with the appropriate county agency in instituting the user-side subsidy program. The initial cost of implementing the user-side subsidy program in the Racine urbanized area would be \$3,000. It is recommended that the fare for intracounty trips for the user-side subsidy program be half of the normal fare as indicated on the taxi meter or determined by zone boundary schedule. In no case should the one-way fare within the County be greater than \$2.50. It is expected that the net operating costs for the user-side subsidy program will range from \$11,900 in 1979 to \$19,200 in 1982.

Also recommended is institution of a demand responsive service in the rural areas of Racine County. This service will be administered by the County and would require the purchase of more vehicles than those now being utilized by Lincoln Lutheran Specialized Transportation for these services under agreement with the City of Racine. It is recommended that the appropriate County agency enter an agreement with Lincoln Lutheran to provide for demand responsive services throughout the County. It is recommended that a flat fare of \$1.00 per one-way trip be charged the user of such a service. Capital costs for acquiring three additional buses for the demand responsive service area are estimated to be \$60,000, while the additional net operating costs over the five-year period would range from \$27,000 in 1978 to \$110,000 in 1982.

An estimated total of \$504,300 for the five-year plan period, or an annual average of \$100,900 per year, will be required for the net operating costs associated with the accessible transit user-side subsidy and demand responsive transportation programs in Racine County. It is assumed that over the five-year period an average of 66 percent of these costs can be funded through a combination of state and federal transit operating assistance and Wisconsin Statute Section 85.08(5) funds for elderly and handicapped transportation programs.

## Kenosha County

An agency designated by the County Board such as the County Highway Committee, the Kenosha Parking and Transit Commission of the City of Kenosha, and the Kenosha Achievement Center should act as implementing agencies to institute a combination of services consisting of an accessible transit system, a user-side subsidy program, a rural demand responsive system, and coordinated agency transportation services.

The 24 buses presently used by the City of Kenosha in regular transit service were purchased in 1975 and no new buses will be needed within the fiveyear planning period. It is, therefore, recommended that 11 buses be retrofitted for accessible transit service in the Kenosha urbanized area. Such retrofitting would require approximately 11 months. It is recommended that nine of the retrofitted buses be placed in service on the five routes and two be used as spares. These accessible buses would be placed on such a schedule that the entire base period fleet and all accessible buses during peak periods would be operated on headways of 60 minutes (see Map 6 in Chapter IX). The cost for retrofitting the 11 buses in the City of Kenosha would be approximately \$99,000. Eighty percent of these costs will be offset by capital grants under Section 3 or Section 5 of the Urban Mass Transportation Act of 1964, as amended. It is expected that the retrofitting of all buses could be completed by the summer of 1979 with each bus being placed in service immediately after it has been retrofitted and tested. The additional cost of operating accessible buses is anticipated to be \$92,000 annually. One-half of these operational costs are eligible for reimbursement under Section 5 of the Urban Mass Transportation Act of 1964, as amended, with an additional one-third of the remainder funded through state operating assistance. Accessible transit vehicles would have to be able to be identified from a distance of one block both day and night. Identification measures should include the use of the universal accessibility symbol. Also required would be changes in public timetables and transit maps. Importantly, special driver instruction would be required on the use of the wheelchair lifts or ramps.

It is also recommended that in Kenosha County a user-side subsidy program be instituted to serve primarily those handicapped persons living farther than a quarter-mile from a transit route but also to serve those persons within the transit service area who, because of their particular disability, would be unable to use an accessible bus. It is recommended that the City and County jointly implement the user-side subsidy program through an intergovernmental agreement. Policy would be made jointly by City and County, and the City, which is already in the transit business, would operate the program. It is recommended that the primary user-side subsidy service be provided by the existing taxicab operation, supplemented with other types of services as available or feasible. The Kenosha Achievement Center currently provides some chair car service and would also be a logical candidate for consideration for a user-side subsidy program. It is expected that the initial implementation costs for the user-side subsidy program would be \$3,000. In Kenosha, it is recommended that the fare charge be 50 percent of the normal zone fare charge; under current fees, the fare would range from \$0.50 to \$1.20. In no case should a fare be greater than \$2.50 for a one-way trip within the County. It is expected that the additional annual operation costs for the user-side subsidy program would range from \$7,100 in 1979 to \$11,700 in 1982.

It also is recommended that a demand responsive system be instituted in Kenosha in the rural areas of the County. The Kenosha Achievement Center is presently providing some demand responsive service under a demonstration program, and it is proposed that that program be continued and expanded to provide continuing demand responsive services in the rural areas of the County. It is recommended that a flat fare of \$1.00 per one-way trip be charged the user of such a service. The program would require the purchase of two additional vehicles at an estimated cost of \$40,000 for the planning period. The net operating costs for such demand responsive service, which would be expected to be fully instituted in 1978, would range from \$4,200 in 1979 to \$70,000 in 1982.

An estimated total of \$320,700 for the five-year plan period, or an annual average of \$64,100 per year, will be required for the net operating costs associated with the accessible transit, user-side subsidy and demand responsive transportation programs in Kenosha County. It is assumed that over the five-year period an average of 71.6 percent of these costs can be funded through a combination of state and federal transit operating assistance and Wisconsin Statute Section 85.08(5) funds for elderly and handicapped transportation programs.

#### Walworth County

An agency designated by the County Board such as the Walworth County Department of Social Services should act as the implementing agency to institute a combination demand responsive and coordinated agency transportation system.

Because no urban public transit system exists and none is either required or recommended, it is proposed that a rural demand responsive service be instituted throughout the County. The Walworth County Senior Citizens Services within the Walworth County Department of Social Services now provides some transportation service to senior citizens. It is suggested that this program be expanded to include handicapped individuals and to respond to requests for services throughout the County. It is recommended that an initial flat fare of \$0.50 per one-way trip be charged the user of such a service and that this one-way fare be eventually raised to \$1.00. It is further recommended that four additional vehicles be purchased over the five-year planning period at an estimated cost of \$80,000. Additional net operating costs for the demand responsive system in the County is expected to range from \$16,000 in 1978 to \$94,900 in 1982. It is expected that 80 percent of the cost of purchasing the four vehicles would be offset by funds from Section 3 or Section 5 of the Urban Mass Transportation Act of 1964, as amended.

An estimated total of \$310,600 for the five-year plan period, or an annual average of \$62,100 per year, will be required for the net operating costs associated with the demand responsive transportation program in Walworth County. It is assumed that over the five-year period an average of 67.6 pecent of these costs can be funded with monies available under Wisconsin Statute Section 85.08(5) which provides financial assistance for elderly and handicapped transportation programs.

## All Counties

In addition to the foregoing specific recommendations, it is proposed that each county develop a county-wide social service agency transportation coordination plan. To assist the counties in preparing these plans, all social service agency transportation providers receiving federal, state, or local funds to provide elderly and handicapped transportation service would be required to complete a service performance inventory questionnaire (see Appendix I). These service performance inventories would provide the primary data source for the preparation of a social service agency transportation plan for each county. Upon local adoption of these plans, funding of social service agency transportation providers by local and state agencies responsible for administering federal, state, and local funds for elderly and handicapped transportation services would be contingent upon each agency's cooperation in achieving transportation service coordination.

#### TECHNICAL COORDINATING AND ADVISORY COMMITTEES

Since planning at its best is a continuing function, the regional transportation handicapped transportation plan recommends that separate county-wide Technical Coordinating and Citizens Advisory Committees on Transportation Planning for the Elderly and Handicapped-one for each of the seven counties in the Southeastern Wisconsin Region-be created. This recommendation is consistent with the U.S. Department of Transportation, Urban Mass Transportation Administration rules and regulations concerning transportation planning and the programming of projects which will result in improved public transportation services and facilities for the elderly and handicapped including wheelchair users and those persons with semiambulatory capabilities. Each of these Committees should be comprised of elected officials; affected local units of government; representatives of local transportation system funding and implementing agencies; public and private transportation service operators, including taxi, chair car carrier, and social service agency transportation providers; and transportation handicapped persons.

The Cities of Kenosha and Racine, as the owners and operators of major public transit systems should be duly represented on these committees. These two cities are the eligible recipients of federal transit capital and operating assistance under Sections 3 and 5 of the Urban Mass Transportation Act. In order for these cities to maintain their eligibility for these federal funds, "special efforts" required by the U. S. Department of Transportation and Urban Mass Transportation Administration must be undertaken to provide public transportation facilities and services which can effectively be utilized by elderly and handicapped persons, particularly wheelchair users and those with semiambulatory capabilities. These two cities, therefore, have a substantial interest in working cooperatively with their County governments to implement the regional transportation handicapped transportation plan elements recommended for the Kenosha and Racine urbanized areas.

These seven newly constituted county level Technical Coordinating and Advisory Committees on Transportation Planning for the elderly and handicapped would be appointed by the plan implementation agency designated by each county board and subject to the approval of the County Board. With the creation of these new committees the present three existing SEWRPC Advisory Committees on Transportation Planning for the Elderly and Handicapped would be dissolved. All public agencies, however, currently represented on these three existing committees should be offered the opportunity to be represented on appropriate county level committees along with representatives of other interested agencies and potential users of elderly and handicapped transportation services. The purposes and functions of these committees would be to assist the designated implementation agency in carrying out the recommended plan; to help monitor the results of plan implementation; to help coordinate social service agency transportation services; and to recommend changes in extensions to the plan as experience may indicate are necessary or desirable. The committees would also provide a basis for the active participation of elected and appointed officials, concerned private interests, and citizens-particularly elderly and handicapped citizens-in the continuing planning and plan implementation process. Although the Regional Planning Commission is charged by State Statute with, and will perform, this continuing areawide planning function as a part of the Commission continuing regional land use-transportation study, it cannot properly do so without the active participation and support of county, state, and federal officials concerned with urban development in the Region.

## FUNDING SOURCES

Briefly described below are the five primary programs which are potential funding sources for the recommended transportation handicapped transportation system plan.

## Section 3 of the Urban Mass

#### Transportation Act of 1964, As Amended

Money is available under this program to fund 80 percent of the cost of facilities and equipment capital costs—of public transit operators in urban areas. Although private operators and private nonprofit operators are excluded from direct Section 3 and Section 5 funding eligibility, such operators can contract to provide service for public transit operators who can then provide the private operators with equipment under Section 3 and subsidize their operations under Section 5. This program, which is discretionary at the federal level, requires that transit operators in the Region compete for these funds with other transit systems nationwide.

#### Section 5 of the Urban Mass

#### Transportation Act of 1964, As Amended

Under Section 5, funding is available to cover 80 percent of the cost of facilities and equipment capital costs—and/or 50 percent of the operating deficits of public transit operators in urbanized areas. Funds are allocated to each urbanized area across the country through a formula based half on population and half on population density. In Federal Fiscal Year 1977, the Milwaukee urbanized area allocation was \$5.6 million, and in 1978 it is \$6.7 million. Kenosha's allocations for the two years are \$496,000 and \$591,000, while Racine's are \$641,000 and \$764,000.

Section 16(b)(1) and Section 16(b)(2) of the Urban Mass Transportation Act of 1964, As Amended Funds under Section 16(b)(1) and Section 16(b)(2)are available to fund 80 percent of the cost of vehicles and ancillary equipment for public and private nonprofit providers of transportation for elderly and handicapped people. These program funds are administered through the Wisconsin Department of Transportation.

Wisconsin State Statute 85.05: Under Wisconsin State Statute 85.05, transit operating assistance of \$17.5 million is available statewide in the 1977-79 biennium to fund two-thirds of the nonfederal share of public transit operating deficits in the urbanized areas of the Region and up to two-thirds of the total public transit operating deficits in the nonurbanized areas of the Region. Beginning in 1979, the allocation of some of this money will be tied to ridership. If a shortfall occurs in the appropriation, the shortfall will be prorated according to statewide demand for funds.

# Wisconsin State Statute 85.08

Under a Newly Enacted Program Under Wisconsin State Statute 85.08, about \$1,000,000 annually is available in the 1977-79 state budget to fund up to 90 percent of the cost of specialized transportation services for elderly and handicapped people. The money is allocated to each county, based on the county's proportion of the state population of elderly and handicapped people.

Each county is responsible for determining which services in that county will be funded through this program within the limitation that under this program subsidizations of regular transit services eligible under Statute 85.05, described above, are specifically excluded. Some additional money is available under this program to help local private nonprofit transportation providers match federal Section 16(b)(2) funds, and to assist them in "starting up" private nonprofit elderly and handicapped transportation services.

# PUBLIC REACTION TO RECOMMENDED PLAN

As outlined in Chapter II of this report, the general approach used by the Commission in selecting a recommended plan from among alternatives is to proceed through the use of advisory committees. interagency meetings, public informational meetings, and public hearings to a final decision and plan adoption by the Commission. Because plan selection and adoption necessarily involve both technical and nontechnical policy determinations, such selection and adoption must actively involve the various governmental bodies, technical agencies, and private interest groups concerned. Such active involvement is particularly important in light of the advisory role of the Commission in shaping regional development. The use of advisory committees, public informational meetings, and public hearings appears to be the most practical and effective procedure available for obtaining the necessary involvement of elected and appointed public officials and interested citizens in the planning process and for eventually arriving at agreement on development plans which can be jointly adopted and cooperatively implemented.

As an integral part of the elderly and handicapped transportation planning program, three informational meetings and two formal public hearings were held within the Region. In addition, seven

special meetings were held with representatives of the county boards and county agencies responsible for transportation policy formulation and implementation to discuss in some detail the tentative plan recommendations and implications thereof for county government. The purpose of these meetings and hearings was to more fully inform public officials, existing and prospective elderly and handicapped transportation service providers, agencies that administer to the needs of the elderly and handicapped, and interested citizens about the findings and preliminary recommendations of the regional transportation plan for the transportation handicapped formulated by the Commission staff, the consultant, and the three Technical and Citizens Advisory Committees on Transportation Planning for the Elderly and Handicapped. The meetings and hearings were widely announced. Special letters of invitation were sent to concerned local. state, and federal public officials, to owners and operators of transportation services throughout the Region's public transportation system, to interested citizen groups, and to more than 2,000 individuals and organizations included on the Commission newsletter mailing list. Also, news releases were issued to all daily and weekly newspapers and radio and television stations servicing the Region. In addition, a summary of the inventory, analysis, and latent travel demand estimates; of the elderly and handicapped transportation planning program development objectives and supporting standards; of the alternative transportation system elements considered; and of the recommended preliminary regional transportation plan for the transportation handicapped was presented in the SEWRPC Newsletter, Volume 17, No. 6, which was widely disseminated throughout the Region prior to and at the meetings and hearings. An extensive verbal briefing on the findings and preliminary recommendations of the regional transportation plan for the transportation handicapped was given at each of the informational meetings, together with data on the costs and means of implementing the recommended preliminary plan.

The two formal public hearings were held on January 24, 1978 and February 6, 1978 in Racine and Milwaukee Counties, respectively. Each hearing immediately followed a public informational meeting at which the preliminary plan was presented and discussed in detail and at which questions about the plan from the public attending these meetings were addressed. The first of the two public hearings emphasized those elements of the recommended transportation handicapped transportation system plan which would apply to Kenosha, Racine, and Walworth Counties. The second public hearing emphasized those elements of the plan which would apply to Milwaukee, Ozaukee, Washington, and Waukesha Counties. With the aid of Commission funds, specialized transportation services and interpreters for the deaf were made available in connection with each of the combined informational meetings and public hearings in an effort to insure that as many interested elderly and handicapped persons as possible could attend and participate in these meetings and hearings. The third informational meeting was held in Milwaukee County on April 5, 1978 at the special request of the Regional Planning Commission. The purpose of this meeting was to provide a detailed briefing on the recommendations contained in the preliminary transportation handicapped transportation plan and to provide a final opportunity before plan adoption for concerned local, state, and federal officials and operators of public transit systems in the Region to become informed, raise questions, and offer comments concerning the preliminary plan recommendations. Minutes of both the informational meetings and the public hearings together with documentation of the notification procedures utilized by the Commission, totaling 143 pages in length, were published in April 1978¹⁰ and transmitted to the Technical and Citizens Advisory Committees and to the Commission for review and consideration prior to final adoption of the recommended plan.

Nearly 200 persons attended the general public informational meetings, the special informational meeting, and the public hearings. The record of the proceedings indicates that reaction to the plan was generally favorable with critical reaction centered on certain elements of the proposed plan. Specific reactions to the proposed elements of the preliminary regional transportation handicapped plan together with Committee and Commission response thereto are summarized below.

#### Accessible Transit Element

The preliminary regional transportation plan for the transportation handicapped recommended that the Cities of Kenosha and Racine and the County of Milwaukee, as operators of public transit systems, either purchase new buses or retrofit existing buses with wheelchair lift devices and other accessibility features until their base-period bus fleets or a minimum of one-half of their total transit fleet is accessible to wheelchair users and those persons with semiambulatory capabilities.

Public reaction to these recommendations was mixed. As indicated by the record of the proceedings, transportation handicapped persons and agencies and organizations representing or directly serving the transportation handicapped-including Society's Assets, Inc., Racine, Wisconsin: Abolish Barriers for Lifetime Efficiency (ABLE, Inc.), Kenosha, Wisconsin; Racine and Kenosha Club of the Deaf; and Wisconsin Coalition of Citizens with Disabilities-were generally supportive of these preliminary plan recommendations. Others, including the local public transit operators and private providers of specialized transportation services, expressed doubts that the majority of wheelchair users and semiambulatory persons would be able to effectively utilize accessible public transit vehicles. The concerns most frequently expressed by those troubled by these recommendations were that many wheelchair users and semiambulatory persons will continue to be confronted by other significant barriers which will limit or restrict their ability to travelbarriers that will not be eliminated by making the local public transit systems accessible. These barriers include: the Region's weather conditions and particularly the severe winters; the distances transportation handicapped persons will have to travel from their trip origins to the accessible bus routes and then from these routes to their destinations; crowding; and prolonged periods of standing and/or waiting at transit stops.

The Commission, in considering this matter, agreed that barriers in addition to the physical design of the transit vehicle exist which will continue to limit or restrict the ability of elderly and handicapped persons to travel as freely as the general public. At the same time, however, very limited and inconclusive data are currently available on the effects accessible public transit systems may have on improving the mobility of elderly and handicapped persons. In addition the Commission has determined, based on an evaluation of all other practical transportation system alternatives, that the accessible transit element of the plan is the least costly alternative available to local public transit operators that satisfies the "special efforts" requirements set forth by the U.S. Department

¹⁰ See SEWRPC Report: Minutes of Public Hearings—A Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin: 1978-1982.

of Transportation, Urban Mass Transportation Administration (UMTA) and thereby ensures that local public transit operators will continue to be eligible for federal transit capital and operating assistance. The Commission, therefore, adopted these preliminary accessible public transit system recommendations without change.

In a letter dated March 22, 1978, the U.S. Department of Transportation, Urban Mass Transportation Administration indicated that, contrary to earlier expectations, Ozaukee and Waukesha Counties, as public operators of limited commuter bus service between their respective counties and the Milwaukee central business district would have to meet the UMTA "special efforts" requirements to maintain continued eligibility for federal funds in support of these operations. In response to this letter, the Commission staff developed a series of eight alternative actions that could be taken by these two counties to deal with the UMTA "special efforts" requirements (see Table 235). Meetings were then held with officials of these two counties to present the various alternatives for their consideration. As a result of these meetings and preliminary approval by appropriate staff members and committees of the Ozaukee and Waukesha County Boards, the Commission acted to modify the preliminary regional transportation handicapped transportation plan recommendations to meet the UMTA "special efforts" requirements for Ozaukee and Waukesha Counties.

In effect, these modifications expand upon and further clarify the preliminary plan recommendations for each county. The regional transportation plan for the transportation handicapped recommends that if commuter bus service to the Milwaukee central business district is to be continued in these two counties, it should ultimately be provided with wheelchair lift equipment installed on at least half the vehicles used to provide the service. This could be accomplished either by retrofitting the appropriate number of buses in the existing Wisconsin Coach Lines (WCL), Inc. fleet, purchasing new wheelchair lift-equipped buses, or contracting for the service with an operator who currently has or will have a wheelchair lift-equipped bus fleet, such as Milwaukee County. However, because of practical difficulties attendant to implementing any of these alternatives in the immediate future, the plan recommends that unless, and until, wheelchair lift-equipped buses are put into service, and so long as Ozaukee and Waukesha Counties wish to continue to utilize UMTA Section 5 funds to help finance their respective bus operations, these counties in the interim provide an accessible door-to-door demand responsive transportation service for all semiambulatory and wheelchair-bound people within the urbanized area portions of these counties, and between the urbanized area portions of these counties and downtown Milwaukee. The fares on this interim service should be comparable to the fares charged for trips of similar length on the subsidized WCL service, and the interim service should, to the degree possible, be coordinated with the plan-recommended demand responsive service for handicapped people in the nonurbanized portions of these counties. The plan further recommends that these two counties also implement a user-side subsidy program for transportation handicapped people in the urbanized portions of Ozaukee and Waukesha Counties.

## User-Side Subsidy Element

The preliminary regional transportation plan for the transportation handicapped recommended that user-side subsidy programs be established which would allow transportation handicapped persons residing in the Kenosha, Milwaukee, and Racine urbanized areas to purchase transportation services from any program certified taxi, chair car carrier, or other private transportation provider at less than the normal full user fare. This program is intended to supplement the accessible transit systems by serving those transportation handicapped persons in the urbanized areas of the Region who live beyond the transit service areas as well as those persons living within the transit service areas who, due to their particular disability would be unable to use an "accessible" public bus.

Under the user-side subsidy program, the preliminary plan recommended that the fare charged a transportation handicapped person utilizing any certified private transportation service in the Milwaukee and Racine urbanized areas for any trip purpose be 50 percent of the full metered or zone fare charge for a similar trip made by taxi, up to a maximum one-way fare of \$2.50 for an intracounty trip. In the Kenosha urbanized area the preliminary plan recommended that a transportation handicapped person utilizing any certified private transportation service for any trip purpose pay 25 percent of the full metered or zone fare charged for a similar trip made by taxi, up to a maximum one-way fare of \$2.50 for an intracounty trip. In none of the three urbanized areas did the preliminary plan recommend a fare for intercounty trips. Instead, the preliminary plan recommended that the program administrative

# Table 235

# "SPECIAL EFFORTS" ALTERNATIVES FOR OZAUKEE AND WAUKESHA COUNTIES

Alternative	Ozaukee County	Waukesha County	Issues
1. Retrofit existing Wisconsin Coach Lines, Inc. buses	Two buses (one for service and one spare) at \$20,000- \$25,000 = \$40,000-\$50,000; with UMTA support, county cost = \$8,000-\$10,000	Six-seven buses (four-five for service and two spares) at \$175,000; with UMTA support, county cost = \$24,000-\$35,000	<ul> <li>A. Can intercity coaches be lift-equipped?</li> <li>B. Can UMTA assistance be used to make improve- ments to privately owned equipment?</li> <li>C. Can Wisconsin Coach Lines, Inc. take lift- equipping into account when assigning vehicles?</li> <li>D. Will Wisconsin Coach Lines, Inc. accept the lifts, and will it charge more for operating/maintaining lift-equipped buses?</li> </ul>
2. Purchase or lease enough lift-equipped buses to equip half the fleet and lease to Wisconsin Coach Lines, Inc.	Purchase: two standard buses at \$100,000 = \$200,000; with UMTA support, county cost = \$40,000. Lease: cost unknown	Purchase: six-seven standard buses at \$100,000 = \$600,000- \$700,000; with UMTA support, county cost = \$120,000- \$140,000. Lease: cost unknown	<ul> <li>A. Would Wisconsin Coach Lines, Inc. accept such an arrangement?</li> <li>B. Could smaller buses be used?</li> <li>C. Are lift-equipped buses available for lease?</li> </ul>
3. Provide specialized door-to- door service through subscription, demand responsive, user-side subsidy	Cost: unknown. Demand: unknown.	Cost: unknown Demand: unknown	<ul> <li>A. Such service would have to meet UMTA "special efforts" guidelines including comparable (equal) fare and service to urbanized area.</li> <li>B. Would such service distort the recommended user-side subsidy program in each county?</li> </ul>
<ol> <li>Contract with an operator with lift-equipped buses to:         <ul> <li>a. replace half of existing</li> <li>Wisconsin Coach Lines,</li> <li>Inc. service</li> <li>b. double existing Wisconsin</li> <li>Coach Lines, Inc. service</li> </ul> </li> </ol>	a. local cost would be approximately the same as at present (\$7,000) b. local cost could approximately double (\$15,000)	a. local cost would be approximately the same as at present (\$23,000) b. local cost would approximately double (\$45,000)	<ul> <li>A. Are there currently any such operators in the area?</li> <li>B. How would Wisconsin Coach Lines, Inc. accept either option?</li> </ul>

#### Table 235 (continued)

Alternative	Ozaukee County	Waukesha County	Issues
5. Contract with Milwaukee County to provide the service	Local cost approximately the same (\$7,000)	Local cost approximately the same (\$23,000)	<ul> <li>A. Would Milwaukee County be willing to enter into such a contract?</li> <li>B. How would Wisconsin Coach Lines, Inc. react? What are Section 13-C implications?^a</li> </ul>
6. Convince UMTA that urban area transit system exists	Probably requires an agreement between Ozaukee and Milwaukee Counties and a single Section 5 application, with Ozaukee County providing a share of local match. Local cost probably about the same as at present (\$7,000)	Probably requires an agreement between Waukesha and Milwaukee Counties and a single Section 5 application, with Waukesha County providing a share of local match. Local cost probably about the same as at present (\$23,000)	<ul> <li>A. Why would Milwaukee County want to get involved?</li> <li>1. Waukesha and Ozaukee using Section 5 money that Milwaukee could use.</li> <li>2. Possible liability to Wisconsin Coach Lines, Inc. claims later.</li> <li>3. Extra paperwork and administration.</li> </ul>
7. "Stonewall"	If accepted by UMTA, would force Ozaukee County to implement user-side subsidy plan recommendations at approximate total cost of \$5,000 (urbanized area only)	If accepted by UMTA, would force Waukesha County to implement user-side subsidy plan recommendations at approximate cost of \$23,000 (urbanized area only)	<ul> <li>A. Would UMTA attempt to require modifications in recommendations to meet "special efforts" guidelines?</li> <li>B. Would UMTA withhold approval of all or part of 1978-1982 Transportation Improvement Program?</li> <li>C. Would SEWRPC and county officials be subject to criticism of "not knowing" federal requirements?</li> </ul>
8. Abandon UMTA money	Depending on state reaction, County would have to pick up \$7,000-\$20,000 extra	Depending on state reaction, County would have to pick up \$23,000-\$68,000 extra	<ul> <li>A. Would state pick up two-thirds difference?</li> <li>B. Would UMTA really make the "special efforts" requirement stick?</li> <li>C. Would service have to be cut back or discontinued?</li> </ul>

^a Section 13-C of the Urban Mass Transportation Act of 1964, as amended, stipulates that, in the event of acquisition, construction, reconstruction, and/or improvement of facilities and equipment for use in mass transportation service, arrangements will be provided to ensure that the rights, privileges, and benefits and collective bargaining rights of employees of public transit systems are protected.

Source: SEWRPC.

agency designated by each of the county boards concerned establish its own fare system for intercounty trips after it has been determined that there is adequate demand and vehicle capacity to serve such trips. The preliminary plan also recommended that contrary to the customary practice of tipping the taxi driver as part of the payment for a trip, transportation handicapped persons would not be expected to tip. Instead, a 20 percent "special service subsidy allowance" would be added to the regular full fare for a trip by taxi which would be reimbursed by the public agency administering the program along with the unpaid portion of the fare and paid to the driver as an incentive to provide the necessary level of personalized attention and good service transportation handicapped persons will require.

Once again, public reaction to these preliminary recommendations was mixed. As indicated by the record of the proceedings, transportation handicapped persons and agencies and organizations representing or directly serving the transportation handicapped were generally supportive of these preliminary plan recommendations. Several persons appreciated the fact that under the user-side subsidy program more affordable privately owned transportation services would be available for them to use, particularly in the evening and on weekends, in the Cities of Racine and Kenosha when the public transit system is not operating.

At the public informational meeting in Racine, Mr. Al Buss of Racine, Wisconsin questioned how persons confined to wheelchairs and living in the Kenosha and Racine urbanized areas would benefit from a user-side subsidy program if certification as a transportation service provider under this program was limited to only privately owned transportation firms. He pointed out that taxis are not equipped to handle a person in a wheelchair; there are no private chair car carrier firms in the Kenosha and Racine urbanized areas; and few if any, other privately owned and operated transportation services such as school bus companies have vehicles that are wheelchair lift-equipped.

In response to these comments, the Commission directed that the adopted plan permit public and private nonprofit social service agencies that provide specialized transportation services to the elderly and handicapped to become certified transportation providers under the user-side subsidy program. The Commission also recommended, however, that certified social service agency transportation providers establish the same user fare system as that recommended for private transportation providers, charging a percentage of a similar metered or zone fare trip by taxi up to a maximum of \$2.50 for intracounty trips.

Ms. Edith Simons of Kenosha, Wisconsin pointed out at the public informational meeting held in Racine that in order for deaf people to participate in the user-side subsidy or demand responsive transportation programs a Teletype (TTY) communication system would have to be installed in the office of the agency receiving call-in requests for transportation. This was a technical point that was not addressed in the preliminary plan recommendations. In response to Ms. Simons' comment the Commission recommends that as the user-side subsidy and demand responsive transportation program elements of the plan are further refined during the processs of plan implementation, the designated local agencies responsible for these programs give due consideration to the special communication needs of the deaf.

During comments made by Ms. Virginia Finnegan of Burlington, Wisconsin at the Racine public informational meeting it was pointed out that private transportation firms, particularly taxicab companies, exist in urban areas of the Region outside of the Kenosha, Milwaukee, and Racine urbanized areas. These firms may also be interested in participating in a user-side subsidy program within their own immediate service areas. It was proposed that the plan be flexible enough to allow the creation of user-side subsidy programs outside the three urbanized areas of the Region. The Commission agreed with this suggestion and modified the proposed regional transportation plan for the transportation handicapped to accommodate the establishment of user-side subsidy programs as needed outside of the Kenosha, Milwaukee, and Racine urbanized areas.

An inconsistency was raised by Mr. Edward A. Jenkins, Director of Transportation for the City of Kenosha, in a letter to the Commission on January 28, 1978 concerning the preliminary plan recommendation that under the user-side subsidy program transportation handicapped persons residing in the Kenosha urbanized area would pay 25 percent of the normal full-metered or zone fare of a similar trip by taxi, while transportation handicapped persons in the Milwaukee and Racine urbanized areas would pay 50 percent of the fare. He felt the proportion of the normal full fare for
a trip of similar length by taxi to be paid by the transportation handicapped under the user-side subsidy program should be the same throughout the Region.

In a careful review of the preliminary plan recommendations concerning the user-side subsidy program, the Commission acted to increase the recommended proportion of the fare to be paid by the transportation handicapped residing in the Kenosha urbanized area to 50 percent of the normal full fare for a trip of similar length made by taxi, thus making the basis of determining the user fare the same throughout the Region. The Commission also acted to reduce the "special service subsidy" allowance to be paid to taxi drivers from the preliminary plan recommendation of 20 percent of the regular full fare to 15 percent, which more closely approximates the generally accepted percentage of fare paid to taxi drivers as a tip by the public.

At the combined Milwaukee public informational meeting and public hearing held on February 6, 1978, a number of individuals expressed concern that the sources and estimated amounts of state and local funds to annually support the user-side subsidy program identified in the preliminary plan may not be adequate to meet the full range of travel demand of all of the transportation handicapped persons that could potentially be eligible for this program. It was also pointed out that existing private chair car carriers and public and private nonprofit agency transportation providers may not have sufficient fleet capacity to handle potential user demand. It was suggested by concerned citizens and public officials alike that the early stages of implementing the user-side subsidy program be considered a demonstration period with sufficient flexibility provided in the plan to allow changes to be made in the program based on actual operating experience.

The Commission, after considering these comments, concurred that sufficient flexibility should exist in the user-side subsidy program to not only allow this element of the plan to be implemented gradually over the five-year plan period, but to permit adjustments in the program based on actual operating experience. The desired flexibility would permit local implementing agencies to restrict, as necessary, the eligible user market and/or the trip purposes the program will serve, and to vary the user fares to keep user demand in balance with available service capacity until such time as it can be demonstrated through actual program experience that adequate local funds are available to fully implement the recommended program.

## **Demand Responsive**

Transportation System Element

The preliminary regional transportation plan for the transportation handicapped recommended that a demand responsive transportation system be implemented for transportation handicapped persons living in the nonurbanized areas of the Region. The preliminary fare recommendations for transportation handicapped persons using this service ranged between \$0.50 and \$1.00 per one-way trip. The preliminary plan recommended that the demand responsive transportation system utilize either private or existing social service agency specialized transportation providers.

Public reaction to this preliminary plan recommendation was generally favorable. However, Mr. Thomas C. Goodwin, Assistant to the Racine County Executive, expressed concern on behalf of the County Executive that the plan was too specific in its recommendations and that, as such, it provided insufficient flexibility within which the County could act to implement the plan. He noted, for example, that the plan recommends that any additional vehicles required to provide the demand responsive transportation service in Racine County should be purchased. He felt the plan should also allow the County to lease additional vehicles or contract for the provision of demand responsive transportation service through a private operator. He also noted that the plan identifies a specific social service agency in each county to be assigned the responsibility of operating the demand responsive transportation service. Mr. Goodwin suggested that the plan permit more local level flexibility implementing the plan recommendations. in Mr. Frank B. Miezio, Administrator of Lincoln Lutheran Specialized Transportation, supported Mr. Goodwin's suggestion that there be greater flexibility in the plan recommendations. Mr. Miezio reiterated his strong desire for greater plan flexibility in a letter to the Commission staff on March 14, 1978 and at a second informational meeting held in Milwaukee on April 5, 1978.

As a result of these comments, the Commission directed its staff to incorporate necessary changes in the plan that would allow as much local flexibility in implementing the plan recommendations as possible without adversely affecting the plan design objectives. For example, in those counties where a need for additional vehicles has been projected over the five-year plan period, the plan now recommends that at local discretion these vehicles either be purchased, leased, or provided through a purchase of service agreement with a private contractor. Where specific agencies had been identified for administration of various services, the plan has been changed to identify only examples of the types of agencies which have the necessary and demonstrated expertise and could, therefore, be involved in plan implementation.

Reaction to the preliminary recommended user fares for both the demand responsive transportation service and the user-side subsidy program from some individuals attending the public informational meetings and public hearings was that the proposed user fares were too high and would thus discriminate against the low-income transportation handicapped person who may need the service the most. In considering these comments, however, the Commission held that over the long term the continuation and perpetuation of free or unrealistically low fares for these specialized and oftentimes door-through-door transportation services would work to the disadvantage of the transportation handicapped in the Region. Public financial resources are limited and the already substantial amount of public funds which have been committed to the support of specialized transportation services are inadequate to supply the necessary level of service to satisfy all of the current latent demand for these existing free or low-fare elderly and handicapped transportation services. Consequently, agencies providing these services have had to restrict the clientele they serve, require reservations several days in advance, and limit the trip purposes for which their vehicles can be used to only the more essential medical, nutritional, shopping, and personal business needs of the elderly and handicapped on a prioritized basis. Consequently, the Commission reaffirmed its support of the preliminary fare recommendations for the proposed demand responsive transportation system and the user-side subsidy program because it believes these plan elements should be designed to provide general transportation services for any eligible transportation handicapped person and for any trip purpose, including work, school, and social-recreational trip purposes. To provide this expanded level of transportation service, additional capital operating funds will be required. The Commission believes some of these additional funds should come from revenues generated by user fares. Not only will a system of user fares provide

an additional source of funds for expanding and operating these services, but they will assist in avoiding frivolous travel that could develop with institution of a free or unrealistically low-fare transportation service.

At the same time, however, the Commission recognizes that many transportation handicapped persons must exist on low and often fixed incomes. The Commission, therefore, recommends that federal, state, and local social welfare agencies, through supplemental security income (SSI) payments and other public assistance programs, consider the need to increase the monthly stipend paid to low-income elderly and handicapped persons in order that these persons may purchase the transportation services proposed to be made available to them under the newly developing user-side subsidy and demand responsive transportation programs and continue to live independently outside of institutions. The Commission also recommends that agencies and organizations representing or directly serving the transportation handicapped consider the need to purchase transportation services for its low- and fixed-income elderly and handicapped clients who otherwise could not afford the proposed user fares recommended as part of the user-side subsidy and demand responsive transportation programs.

## Coordinated Social Service Agency Transportation Element

The preliminary regional transportation plan for the transportation handicapped recommended that social service agency transportation coordination plans be developed for each of the seven counties in the Southeastern Wisconsin Region. To obtain the data necessary for the preparation of such plans, the preliminary plan recommends that a service performance inventory questionnaire be developed for distribution to the various agencies that either operate or arrange for transportation services for elderly or handicapped persons. The plan further recommends that each county board designate an agency to assume the lead role in undertaking the development of a county-wide social service agency transportation coordination plan and that, subject to the request of each individual county, the Regional Planning Commission staff be available to assist in the plan development process.

Public reaction to this preliminary plan recommendation was entirely favorable. General agreement exists among state and local agencies involved in reviewing agency plans and approving funds to provide transportation services for elderly and handicapped persons that there is a need to examine and better coordinate the provision of social service agency transportation to the elderly and handicapped. Most agencies themselves also perceive this need because as demand for these transportation services and costs to provide them continue to increase, the provision of transportation as an agency service is claiming an increasingly greater share of their limited staffs and general programming financial resources. The Commission, therefore, adopted these preliminary social service agency transportation coordination recommendations without charge.

## **Advisory Committee Element**

The preliminary regional transportation plan for the transportation handicapped recommended that county level technical and citizens advisory committees be created for each of the seven counties in the Region. This recommendation is consistent with the U.S. Department of Transportation, Urban Mass Transportation Administration rules and regulations concerning transportation planning and the programming of projects which will result in improved public transportation services and facilities for the elderly and handicapped including wheelchair users and those persons with semiambulatory capabilities. The preliminary plan also recommended that each of these committees should be comprised of elected officials of affected local units of government; representatives of local transportation system funding and implementing agencies; public and private transportation service operators, including taxi, chair car carrier, and social service agency transportation providers; and at least seven transportation handicapped persons.

As recommended in the preliminary plan, these seven newly constituted county level Technical Coordinating and Advisory Committees on Transportation Planning for the Elderly and Handicapped would be appointed by the plan implementation agency designated by each county board and, with the creation of these new committees, the present three existing SEWRPC Advisory Committees on Transportation Planning for the Elderly and Handicapped would be dissolved. However, all public agencies currently represented on these three existing committees would, as part of the preliminary plan recommendations, be offered the opportunity to be represented on appropriate county level committees along with representatives of other interested agencies and potential users of elderly and handicapped transportation services. The purposes and functions of these committees would be to assist the designated implementation agency in carrying out the recommended plan; to help monitor the results of plan implementation; to help coordinate social service agency transportation services; and to recommend changes in and extensions to the plan as experience may indicate are necessary or desirable. The committees would also provide a basis for the active participation of elected and appointed officials, concerned private interests, and citizens—particularly elderly and handicapped citizens—in the continuing planning and plan implementation process.

Public reaction to this preliminary plan recommendation was generally very favorable. Mr. Michael J. Glasheen, Transit Planner for the City of Racine and Chairman of the Technical and Advisory Committee on Transportation Planning for the Transportation Handicapped in Racine County, suggested that the membership composition of the county technical coordinating and citizens advisory committees for Kenosha and Racine Counties specifically include the Cities of Kenosha and Racine as the owners and operators of major public transit systems. The Commission directed that the plan be accordingly modified. The Commission further directed that the recommendation concerning the composition of the advisory committees be modified to leave to local discretion the number of elderly and transportation handicapped persons appointed to the committees.

## Concluding Remarks: Public Reaction

In summary, it may be concluded that public reaction to the preliminary regional transportation plan for the transportation handicapped was quite favorable. Based on constructive criticisms offered at the informational meetings and public hearings held on the plan, the Commission decided to change certain recommendations in the plan. These changes are not anticipated to significantly affect the costs of implementing the plan.

## PLAN IMPLEMENTATION

The recommended regional transportation handicapped transportation plan is not complete until the steps required to implement that plan—that is, to convert the plan into action plans and policies are specified. The legal and governmental framework existing in the Southeastern Wisconsin Region is such that the existing local, county, and state units and agencies of government can readily implement all of the major recommendations contained in the regional transportation handicapped transportation plan. In Chapter X of this report, a comprehensive, cooperative, intergovernmental plan implementation program is set forth which indicates the specific actions which will be required by each level, agency, and unit of government if the recommended regional transportation handicapped transportation plan is to be fully implemented.

## SUBSEQUENT ADJUSTMENT OF THE PLAN AND CONTINUING PLANNING PROCESS

No plan can be permanent in all of its aspects or precise in all of its elements. The very definition and characteristics of areawide planning suggest that, to be viable and of use to local, state, and federal units and agencies of government and to private interests, an areawide plan such as the regional transportation handicapped transportation plan must continually be adjusted through formal amendments, extensions, additions, and refinements to reflect changing conditions. The Wisconsin Legislature clearly foresaw this when it gave the regional planning commissions the power to "... amend, extend, or add to the master plan or carry any part or subject matter into greater detail . . ." in Section 66.945(9) of the Wisconsin Statutes.

Amendments, extensions, and additions to the regional transportation handicapped transportation plan will be forthcoming not only from the work of the Commission under the continuing regional planning programs, the Transportation Systems Management (TSM) plan, and the annual element of the Transportation Improvement Program (TIP), but also from local and areawide agencies as they prepare more detailed master plans for elderly and handicapped transportation facility improvements; from state agencies as they adjust and refine statewide plans; and from federal agencies as new policies are established or modified, as new programs are created, and as existing programs are expanded or curtailed.

## CONCLUSION

The regional transportation handicapped transportation plan provides another important element of the evolving comprehensive plan for transportation facilities and services in the seven-county Southeastern Wisconsin Region. Together with the regional transportation plan for highways and transit, the regional plan provides the Region, its public officials, and its citizens with a sound, coordinated guide to improved transportation facility and service development for the transportation handicapped. The plan is based upon extensive inventories and analyses of the existing regional elderly and handicapped populations; their travel habits and patterns, and transportation service providers which serve the elderly and handicapped. The plan has been carefully selected from among many alternatives considered. The plan has been endorsed by three advisory committees comprised of knowledgeable and experienced surface transportation system operators, social service agency personnel, and other individuals representing elderly and handicapped interests throughout the Region. The recommended plan and the alternatives thereto were, moreover, subject to extensive public review at formal public hearings and public informational meetings, the results of which are documented in a published transcript.

The plan makes maximum use of existing, available transportation facilities and service providers and includes definitive recommendations for the improvements to these systems so as to provide improved service to the transportation handicapped. The plan, as refined on the basis of local financial resource analyses and information obtained through a series of public informational meetings and a public hearing, should furnish a sound basis for future public capital investment and operating subsidies for systems which provide improved transportation services for the transportation handicapped. Within the context of the overall regional planning program, the recommended regional transportation handicapped transportation plan should meet all applicable federal and state planning requirements for system level planning. As such, it should provide a sound basis for the approval of state and federal grants-in-aid.

APPENDICES

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## Appendix A

## MEMBERS

# TECHNICAL COORDINATING AND ADVISORY COMMITTEES ON TRANSPORTATION PLANNING FOR THE TRANSPORTATION HANDICAPPED

## Kenosha and Walworth Counties

Gunnar Bergersen	Executive Director, Geneva Lake
Chairman	Area Joint Transit Commission
James C. Van De Loo	Assistant Executive Director,
Vice-Chairman	Kenosha Achievement Center
Harlan E. Clinkenbeard	Assistant Director, Southeastern
Secretary	Wisconsin Regional Planning Commission
Robert A. Barbee	Supervisor, Division of Vocational Rehabilitation,
	Wisconsin Department of Health and Social Services
Edward Buttera	
Nicholas D. Carso	
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Carl Hahn	
Helen Hahn	
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Dale Jensen	Vice-Chairman Kenosha County Comprehensive Board
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Paul C. Stiles	
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Dennis C. Vierra	Transit Planner, Division of Planning,
<b>-</b>	Wisconsin Department of Transportation, Madison
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## Chairman Milwaukee County Commission on Aging Vice-Chairman Secretary Wisconsin Regional Planning Commission Urban Mass Transportation Administration, U. S. Department of Transportation Community Relations Social Development Commission District 2, Division of Highways, Wisconsin Department of Transportation **Ozaukee County Comprehensive Services** Lawrence M. Koeppin ..... Executive Director, Portal Programs Department of Health and Social Services Wisconsin Area Agency on Aging, District 2B and SEWRPC Commissioner Wisconsin Department of Transportation Betty Voss..... City of Milwaukee Alderman Margaret T. Wilcox ..... Citizen Member, Milwaukee Christine D. Wilson ..... Program Coordinator, Waukesha County Program on Aging Thomas A. Winkel.....District Chief Planning Engineer, District 9, Division of Highways, Wisconsin Department of Transportation

## Milwaukee, Ozaukee, Washington, and Waukesha Counties

## **Racine County**

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Harland E. Clinkenbeard	Assistant Director, Southeastern
Secretary	Wisconsin Regional Planning Commission
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Dan C. Johnson.	Executive Director, Society's Assets, Inc.
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Appendix B

## FRIDAY, APRIL 30, 1976



PART II:

# DEPARTMENT OF TRANSPORTATION

Urban Mass Transportation Administration Federal Highway Administration

TRANSPORTATION FOR ELDERLY AND HANDICAPPED PERSONS

#### Title 49—Transportation

CHAPTER VI—URBAN MASS TRANSPOR-TATION ADMINISTRATION, DEPART-MENT OF TRANSPORTATION

#### PART 613—PLANNING ASSISTANCE AND STANDARDS

#### Urban Transportation Programing for Elderly and Handicapped Persons

The purpose of this document is to issue a final regulation which states additional criteria for the Urban Mass Transportation Administrator's project approvals under 23 CFR 450.320 and to issue advisory information on that regulation.

Also being issued today are the Urban Mass Transportation Administration's elderly and handicapped regulations (41 FR 18236) and a joint UMTA-Federal Highway Administration issuance providing advisory information on urban transportation planning for elderly and handicapped persons (41 FR 18236). Since the programing regulation and advisory information being issued by this document have a close relationship to the joint UMTA-FHWA issuance described above, the preamble to the latter material, published at page 18235 of this edition of the FEDERAL REGISTER, is incorporated into this preamble.

In consideration of the foregoing and under the authority of section 16 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1612), section 165 (b) of the Federal-Aid Highway Act of 1973, as amended (23 U.S.C. 142 nt.), section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), and delegation of authority by the Secretary of Transportation.at 49 CFR 1.51, chapter VI of the Code of Federal Regulations is hereby amended by adding a new section as set forth below, and the advisory information also set forth below is added to 49 CFR Part 613, Subpart B, as an appendix.

*Effective Date:* This regulation and advisory information are effective on May 31, 1976.

Issued on April 27, 1976.

#### ROBERT E. PATRICELLI, Urban Mass Transportation Administrator.

Section 613.204 and an appendix to 49 CFR Part 613, Subpart B, are added as set forth below:

§ 613.204 Additional criteria for Urban Mass Transportation Administrator's approvals under 23 CFR 450.320.

The Urban Mass Transportation Administrator will grant project approvals pursuant to 23 CFR 450.320(a)(3) only if:

(a) The urban transportation planning process exhibits satisfactory special efforts in planning public mass transportation facilities and services that can be utilized by elderly and handicapped persons; and

(b) The annual element of the transportation improvement program developed pursuant to 23 CFR 450.118 and submitted after September 30, 1976, contains projects or project elements designed to benefit elderly and handicapped persons, specifically including wheelchair users and those with semiambulatory capabilities: and

capabilities; and (c) After September 30, 1977, reasonable progress has been demonstrated in implementing previously programed projects.

#### APPENDIX

ADVISORY INFORMATION ON THE URBAN MASS TRANSFORTATION ADMINISTRATION'S REQUIRE-MENTS ON PROGRAMING FOR ELDERLY AND HANDICAPPED PERSONS UNDER 49 CFR 613.204

Pursuant to the planning requirements established for urbanized areas in title 23 and the Urban Mass Transportation Act of 1964, as amended, the Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA) have previously jointly issued regulations (23 CFR Part 450 and 49 CFR Part 613) that require the urban transportation planning process to include special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons. They have also issued a supplementary statement which provides advisory information on the special efforts planning requirements (appendix to 23 CFR Part 450, Subpart A, published in this edition of the FEDERAL REGISTER). The Urban Mass Transportation Administration has also issued a regulation (49 CFR 613.204) which requires special efforts in the programing of projects. The purpose of this statement is to provide advisory information on that programing regulation.

As a result of special efforts in planning, projects designed to benefit elderly and handicapped persons, including projects designed specifically to benefit wheelchair users and those with semiambulatory capabilities, should appear in the annual element of transportation improvement programs submitted to UMTA after September 30, 1976. The term "projects" is meant to include significant features of larger projects (e.g., level-change mechanisms on full-size buses) as well as specially designed services and improvements in the coordination of existing services and resources. "Projects" includes payment of current operating costs of previously purchased wheelchair-accessible equipment and includes payment of expenses associated with indirect methods of providing service, such as subsidies to reduce taxi fares for wheelchair users or trip coupons provided directly to wheelchair users.

Projects funded by UMTA under section 16(b)(2) may be identified as deriving from local special efforts to meet the needs of wheelchair users and semiambulatory persons only to the extent that the following four conditions are met: (1) the service and vehicles serve wheelchair users and semiambulatory persons; (2) the service meets a priority need identified in this planning process; (3) the service is not restricted to a particularized organizational or institutional clientele; and (4) any fares charged are comparable to those which are charged on standard transit buses for trips of similar length.

The coordination of existing transportation available for wheelchair users and semiambulatory persons, and funds which support the provision or purchase of such transportation, provided by the transit operators, governmental health and welfare agencies, and private nonprofit organizations may be identified as a project deriving from local special efforts. If the service and resources thus coordinated meet the four conditions for eligible section 16(b)(2) services (see above) and appear in the transportation improvement program, then those services and resources themselves may be identified as deriving from local special efforts.

Transportation improvement programs submitted to UMTA should identify those projects that result from the wheelchair user aspect of the elderly and handicapped special efforts requirement. Compliance with the fixed facilities section of the UMTA elderly and handicapped regulations (49 CFR 609.13) should not be identified as deriving from local special efforts. On the other hand, efforts which go beyond what the fixed facilities section requires (e.g., making an existing subway station wheelchair accessible when the fixed facility regulation does not so require) may be part of the local special effort.

UMTA will not specify a program design to meet the "special efforts" requirement. However, the following examples are illustrative of a level of effort that will be deemed to satisfy this requirement with respect to wheelchair users and semiambulatory persons:

1. A program for wheelchair users and semiambulatory handicapped persons that will involve the expenditure of an average annual dollar amount equivalent to a minimum of five percent of the section 5 appor-tionment to the urbanized area. These "five percent funds" may be derived from sources other than section 5. The term "average" permits lower expenditure years to be balanced by higher expenditure years but does not permit an initial delay in implementing projects. The term "section 5 apportionment" refers to UMTA's formula apportionment for areas with a population of 200,000 or more and to the Governor's apportionment for areas with a population under 200,000. Projects that qualify as local "special efforts" for wheelchair users and other semiambulatory persons under the initial paragraphs of this advisory information would be counted in computing the five percent.

2. Purchase of only wheelchair-accessible new fixed route equipment until one-half of the fleet is accessible, or, in the alternative, provision of a substitute service that would provide comparable coverage and service levels.

3. A system, of any design, that would assure that every wheelchair user or semiambulatory person in the urbanized area would have public transportation available if requested for 10 round-trips per week at fares comparable to those which are charged on standard transit buses for trips of similar length, within the service area of the public transportation authority. The system could, for example, provide trip coupons to individuals who would then purchase the needed service.

These examples are illustrative of a level of effort that will satisfy the "special efforts" requirement. They are not regulatory standards or minimums, neither do they exhaust all valid approaches. They are meant to guide the development of local public transportation opportunities for wheelchair users and semiambulatory persons that in fact meet a significant fraction of the identified need within a reasonable time.

[FR Doc.76-12679 Filed 4-29-76;8:45 am]

#### Title 23—Highways

CHAPTER I—FEDERAL HIGHWAY ADMIN-ISTRATION, DEPARTMENT OF TRANS-PORTATION

#### PART 450—PLANNING ASSISTANCE AND STANDARDS

#### Urban Transportation Planning for Elderly and Handicapped Persons

The purpose of this document is to add a new section to the appendix to 23 CFR Part 450, Subpart A. This new section provides advisory information on urban transportation planning for elderly and handicapped persons. (Other material on transportation for elderly and handicapped persons, issued by the Urban Mass Transportation Administration (UMTA), is being published today at 41 FR 18234 and 41 FR 18236.)

On February 26, 1975, UMTA published proposed regulations regarding transportation for elderly and handicapped persons in the FEDERAL REGISTER (40 FR 8314). The proposed regulations included a planning section on which UMTA received extensive comments. Generally, there was concern over the level of detail that seemed to be implied. Many of the comments from the planning community expressed the fear that the cost of carrying out the planning regulations would exceed the UMTA resources available to support such activity. Several comments from the handicapped community expressed the concern that carrying out a highly detailed planning process might have the effect of delaying the institution of service.

Many comments received both at the public hearings and on the docket indicated that elderly consumer organizations are principally concerned with general improvements in public transportation service and with minor equipment modifications that will make use of standard transit equipment easier for persons with physical impairments associated with aging. UMTA's own human factors evaluation carried on in connection with the TRANSBUS project supports this view. For the next generation of buses, expected to be deliverable within the next one to two years, UMTA is mandating, in regulations being issued today amending 49 CFR Chapter VI, step risers that do not exceed eight inches (approximately the architectural standard used in buildings). In addition, those regulations will mandate a variety of other vehicle features designed to make transit more accessible to ambulatory elderly and handicapped persons.

The planning requirements themselves have been recast in the form of a joint UMTA/FHWA issuance providing advisory information on the scope and objectives of the elderly and handicapped requirement of the joint planning regulations, and a program implementation regulation that states additional criteria for the Urban Mass Transportation Administrator's approvals under 23 CFR 450.320. Section 450.120 of the joint planning regulations requires that the planning process "Include special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons pursuant to section 16 of the UMT Act (49 U.S.C. 1612) and section 165(b) of the Federal-Aid Highway Act of 1973, as amended." This format is somewhat similar to the Transportation System Management requirements imposed on UMTA projects.

While special efforts are due on behalf of all ambulatory elderly and handicapped persons, service for wheelchair users and semiambulatory persons is the area requiring the most specific guidance. The dominant focus of the planning guidance, therefore, is on service to wheelchair users and the semiambulatory handicapped (persons who cannot negotiate steps or who can do so only with difficulty).

The supplemental statement to the FHWA/UMTA joint planning regulations makes it clear that primary emphasis in the planning process is to be placed on techniques of self-identification, i.e., asking the handicapped to identify themselves and report their transportation needs to the planning body, as opposed to elaborate search techniques. It is expected that the applicants in cooperation with the MPO will produce projects susceptible of early implementation.

The planning guidance further instructs the planning process to pay particular attention to the service needs of concentrations of the elderly, and notes that the service provided to such areas must be shown by the applicant in UMTA grant applications.

Another change from the planning section of the proposed UMTA elderly and handicapped regulations is that a presumption is now stated in the planning guidelines that the participation of elderly and handicapped consumers in the planning and programming process is needed for effective project development.

Criteria in this area by which the Urban Mass Transportation Administrator will make project approvals pursuant to 23 CFR 450.320 are stated in 49 CFR 613.204, which is published in this edition of the FEDERAL REGISTER.

In consideration of the foregoing and under the authority of section 16 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1612), section 165 (b) of the Federal-Aid Highway Act of 1973, as amended (23 U.S.C. 142 nt.), section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), and delegations of authority by the Secretary of Transportation at 49 CFR 1.48 and 1.51, the following advisory information is added to the appendix to 23 CFR Part 450, Subpart A.

Effective date: This advisory information is effective upon issuance.

Issued on April 27, 1976.

ROBERT E. PATRICELLI, Urban Mass Transportation Administrator.

Norbert T. TIEMANN, Federal Highway Administrator.

Act * * * * * * * * * * * at is advisory information on planning for el-

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DERLY AND HANDICAPPED PERSONS UNDER UMTA AND FHWA JOINT REGULATIONS, 23 CFR 450, SUEPARTS A AND C, AND 49 CFR 613, SUE-PARTS A AND B.

The following material is added to the

appendix to 23 CFR Part 450, Subpart

APPENDIX

1. Background, Section 16(a) of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1612), declares the national policy that elderly and handicapped persons have the same right as other persons to utilize mass transportation facilities and services; directs that special efforts be made in the planning and design of mass transportation facilities and services so that the availability of mass transportation which elderly and handicapped persons can effectively utilize will be assured; and directs that all federal programs offering assistance in the field of mass transportation contain provisions implementing this policy. Section 165(b) of the Federal-Aid Highway Act of 1973, as amended, contains a similar provision applicable to title 23 mass transportation assistance.

Pursuant to the planning requirements established for urbanized areas in title 23 and the Urban Mass Transportation Act of 1964, as amended, UMTA and FHWA have jointly issued regulations (23 CFR Part 450 and 49 CFR Part 613) that require the urban transportation planning process to include special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons. The purpose of this supplementary statement is to provide additional guidance on the special efforts requirement.

2. General. Elderly persons and the ambulatory handicapped constitute a significant fraction of present transit ridership. General improvement to transit service can thus be expected to improve conditions for these groups. UMTA's equipment design requirements are meant to ensure that transit equipment is made comfortable and attractive for these users.

Particular care should be directed toward serving the travel needs generated by concentrations of the elderly. The service provided to areas with a high proportion of elderly residents is required to be shown in applications to UMTA for capital or operating assistance.

The focus of this guidance is on service to persons who, because of age or disability, are unable to utilize present transit service and facilities effectively, particularly those who use wheelchairs or other mobility aids which are not accommodated by current bus design. In many communities, persons who use wheelchairs or who otherwise have considerable difficulty negotiating steps find public transportation impossible to use for physical reasons, and private transportation-for-hire (e.g., special taxicab service, medicab, etc.) prohibitively expensive. Specific planning for this group is central to meeting the special efforts requirement.

3. Consumer representation. Section 450.-120 of the joint planning regulations requires that the planning process include provisions to ensure involvement of the public. Elderly and handicapped persons, including wheelchair users and semiambulatory persons, are a part of the public and should be appropriately involved in the planning process to meet the special efforts requirement. The MPO must describe in what ways such persons, including wheelchair users and semiambulatory persons, were involved in the planning and programing process. Further, it is presumed to be unlikely that effective project development to meet the needs of these users can occur without the assistance and cooperation of such persons, including

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wheelchair users and semiambulatory persons, and of public and private health and welfare agencies and handicapped consumer groups.

4. Special efforts, urban transportation planning process. The urban transportation planning process must include special efforts to plan public mass transportation facilities and service that can effectively be utilized by elderly and handicapped persons. As used in this guidance, the term "special efforts" refers both to service for elderly and handicapped persons in general and specifically to service for wheelchair users and semiambulatory persons. With regard to transportation for wheelchair users and others who cannot negotiate steps, "special efforts" in planning means genuine, good-faith progress in planning service for wheelchair users and semiambulatory handicapped persons that is reasonable by comparison with the service provided to the general public and that meets a significant fraction of the actual transportation needs of such persons within a reasonable time period. Particular attention should be given to those handicapped persons who are employed or for whom the lack of adequate transportation constitutes the major barrier to employment or job training.

In order to fulfill the special efforts requirement in planning it will be necessary to identify the location and transportation needs of wheelchair users and semiambulatory handicapped persons within the urbanized area. To the extent possible this information should be derived from existing and secondary sources. Primary consideration should be given to self-identification techniques, i.e., asking the handicapped to identify themselves and report, their transportation needs to the planning body, as opposed to elaborate search techniques.

In carrying out planning for wheelchair users and semiambulatory persons, a range of alternative service improvements should be evaluated as to coverage, cost, and benefit. Maximum feasible opportunity should be given to private carriers, whether or not they are presently providing mass transportation services, to provide some or all of the services selected.

Considerable short-term benefit can be derived from the coordination and rationalization of existing resources and services to meet the needs of the elderly and handicapped, including wheelchair users and semiambulatory handicapped persons. Governmental health and welfare agencies and private nonprofit organizations spend substantial sums each year to provide or purchase transportation for their clients, and these resources as well as any reduced fare local taxi service should be considered for inclusion in a local coordinated plan.

Finally, the planning process should produce a discussion of the process under which the alternatives were evaluated and the rationale for selection of the service improvement or improvements.

[FR Doc.76-12678 Filed 4-29-76;8:45 am]

#### Title 49-Transportation

CHAPTER VI—URBAN MASS TRANSPOR-TATION ADMINISTRATION, DEPART-MENT OF TRANSPORTATION [Docket No. 74-03]

PART 609—TRANSPORTATION FOR ELDERLY AND HANDICAPPED PERSONS Transportation for Elderly and Handicapped Persons

On February 26, 1975, the Urban Mass Transportation Administration published proposed regulations regarding transportation for elderly and handicapped persons in the FEDERAL REGISTER (40 FR 8314). These proposed regulations codified existing requirements and established new requirements.

Interested persons were invited to submit written comments on the proposed regulations, and 324 such comments were received. In addition, hearings on the proposed regulations were held in April 1975 in Los Angeles, Denver, Chicago, St. Petersburg, Boston, and Washington. A great deal of thoughtful although sometimes conflicting advice was received, and the proposed regulations have in many cases been revised to reflect that advice.

The regulations being issued today are final regulations. However, we will be reviewing how well they work in practice, and we welcome comments on these regulations as well as the companion planning and programing material. Comments should be addressed to the Administrator, Urban Mass Transportation Administration, Department of Transportation, Washington, D.C. 20590.

One intention of the final regulations is to make regular transit service more accessible to the large number of ambulatory elderly and handicapped persons. This goal is widely supported by the individuals and organizations that commented, in writing or in person, on the proposed regulations.

In addition to the above goal, the final elderly and handicapped regulations and the companion planning and programing guidance have the goal of increasing significantly the level of service for wheelchair users and other persons who cannot negotiate steps. In this area, the comments on the proposed regulations revealed substantial disagreement over the best type of service for wheelchair users-accessible fixed route service, with or without accessible feeder service, demand-responsive van or small-bus service, subscription service, subsidized shared-ride taxi service, or some combination of these or other services. Given present knowledge, we cannot say that one of these services or even one combination is best for all communities. In fact, it is likely that site-specific planning and tailoring of appropriate services will always be necessary. We say this with full appreciation of the psychological and rehabilitation advantages of integrating wheel chair users into regular as oposed to specialized transit service.

While UMTA considers that particular approaches must be determined locally (with significant participation by local wheelchair users), we also feel that concrete examples of appropriate levels of effort are helpful. Accordingly, the companion planning and programing documents to these regulations contain supplementary guidance on the planning and programing which must be accomplished in order to continue receiving UMTA assistance. By way of example the guidance includes specific quantitative measures of satisfactory local efforts to serve wheelchair users.

One of the examples in that guidance posed regulations and the public involves equipping new buses with level ments on the proposed regulations.

change mechanisms to permit access by wheelchair users. Through our Transbus program, important research and demonstrations on wheelchair access to fullsize buses have already been conducted, and we are making available additional research and development funds to American transit bus manufacturers to develop the wheelchair accessibility package for their respective buses. Although no manufacturer of full-size transit buses presently offers a lift or ramp option for its buses, the new bus designs that are about to come on the market could offer that technology.

At least one major transit operator wants to buy wheelchair-accessible buses, and UMTA feels that it is important that competition among manufacturers not be influenced by the presence or absence of a wheelchair option in different buses. Accordingly, for these new bus designs, PMTA will insist that manufacturers offer as an option a wheelchair accessibility package consisting of a level-change mechanism, sufficient front or rear door and passageway clearances to permit the wheelchair to reach a securement location in the bus. and at least one wheelchair securement device.

Although the wheelchair accessibility option requirement is settled, the issue of whether UMTA should mandate a lowfloor bus is not settled. The floors of current transit buses are approximately 34 inches above street level. After testing prototypes, the Transbus program produced a specification calling for a 22-inch floor. However, substantial questions have arisen about the costs and benefits of a mandated 22-inch floor height requirement. One bus manufacturer wants to discuss the possibility of a 29-inch floor, with a kneeling feature to lower the floor five additional inches. In order to receive advice on the floor-height issue, and on the question of when to make the wheelchair accessibility option and the 8-inch architectural steps requirements effective, UMTA will hold a public hearing on May 5, 1976, and accept written comments submitted before May 14, 1976. UMTA intends to issue a decision on the above issues within 30 days after the time period for submitting comments has elapsed. These matters are difficult, and we would like to receive a full presentation by the interested parties before a decision is made.

Details on the time and place of the hearing, the precise issues to be discussed, the availability of background documents, and advance registration were published at 41 Federal Register 15735, April 14, 1976. A copy of the notice is available by writing the Director, Office of Public Affairs, the Urban Mass Transportation Administration, Department of Transportation, Washington, D.C. 20590, or by calling that office at (202) 426-4043.

In the context of the above presentation of our general policies, specific provisions of the final regulations can be addressed. The following comments concern particularly changes from the proposed regulations and the public comments on the proposed regulations.

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Definitions, UMTA received many thoughtful public comments on the definition of "handicapped persons" as it appeared in the proposed regulation. Some commentators thought that we should adopt subclassifications of handicapped people in order to specify the service to be provided to each classification; others thought that the definition should conform to the usage of other agencies concerned with the disabled. The definition is, however, drawn directly from section 165(b) of the Féderal-Aid Highway Act of 1973, as amended (23 U.S.C. 142 nt.) and section 16(d) of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1612(d)). We see no basis on which to tamper with the statutory definition. On the other hand, it is clear that the focus of section 16 is on providing service to those elderly and handicapped persons who cannot now effectively utilize mass transportation, so we have joined the definitions of "elderly" and "handicapped" into a single category of persons who, because of age or disability, are unable without special facilities or special planning or design to utilize mass transportation facilities and services as effectively as persons who are not so affected.

The definitions of "level-entry" and "step-entry" vehicles have been deleted since the final regulation speaks in terms of the conventional categories of buses, rapid rail vehicles, and light rail vehicles.

Applicability. The regulations are applicable to nonhighway mass transportation capital, operating, and planning asisstance projects approved on or after May 31, 1976, under the Urban Mass Transportation Act of 1964, as amended, or title 23, United States Code (highways). These constitute the vast majority of federally-funded mass transportation projects.

Some comments suggested expanding this coverage to research, development, and demonstration projects and to facilities and equipment in projects that have been approved but which have not yet resulted in contracts for procurement of equipment or construction of facilities.

We believe that fixed standards based on the state of the art are inappropriate for research and development projects, which are frequently undertaken in order to advance the state of the art and to which the general public will not have access. However, UMTA does sponsor some research and demonstration projects that are intended to bring new technology and techniques to regular revenue transit service. We will evaluate such projects on a case-by-case basis with a view toward applying these regulations where such application is consistent with the purpose of the project.

We agree with the commentators who suggested that those equipment and facility standards that are within the state of the art should become effective as rapidly as possible after publication of the rule. Therefore, except where UMTA has already concurred in specifications,

both the equipment and facility design standards will become effective with the first procurements carried out under UMTA-assisted projects on or after May 31, 1976. Even before issuance of this regulation it has been UMTA policy not to concur in specifications for new rail rapid transit facilities unless the facilities are accessible to wheelchair users.

The applicability section has been revised to make it clear that only title 23 projects requiring the approval of the Urban Mass Transportation Administrator are covered by these regulations.

Planning. The planning process for urbanized areas is subject to joint **UMTA-Federal Highway Administration** regulations (23 CFR Part 450, 49 CFR Part 613). UMTA's policies on planning and programing for elderly and handicapped persons are expressed in material being published simultaneously with the elderly and handicapped regulations. That material consists of joint UMTA-FHWA advisory information on planning for elderly and handicapped persons, a new regulation on additional criteria for project approvals by the Urban Mass Transportation Administrator under 23 CFR 450.320(a)(3), and advisory information on the latter programing regulation.

Fixed facilities. A number of commentators took issue with paragraphs 609.15 (a) through (c) of the draft regulations; however, the language of the proposed rules followed the language of the General Services Administration implementing P.L. 90-480, and we have continued to follow that language in the final regulation. The paragraphs have been renumbered in the final rule. Paragraph (b) in the final regulation includes the special requirements that UMTA has imposed on rail facilities because the NASI standards are not tailored to transportation facilities. We have augmented these requirements in the final rule in response to comments received.

Section 609.13(b) (1) is a new provision which directs that careful attention be given to the location and number of elevators or other vertical circulation devices in designing new underground or elevated transit stations in order to minimize the extra distance which wheelchair users and other persons who cannot negotiate steps may have to travel compared to nonhandicapped persons. Because of the variety of possible station designs, we are unprepared to specify a definite extra distance beyond which the wheelchair user must not be made to travel.

Although paragraph 609.13(b)(2) is slightly revised from the proposed version, this paragraph continues to require that the fare collection system have a clear opening sufficient for wheelchair users. New words make coverage of the fare vending system clear.

Paragraph 609.13(b)(3) is unchanged except that the specific maximum gap between boarding platform and vehicle in the proposed rule has been replaced with a more general requirement. The very narrow gap allowed by the proposed

regulations proved too narrow within current technology to allow for safe movement of trains within the station area. Our research and development office is looking into this matter of the gap, which at present is 3 to 4 inches on the most advanced systems being built.

The proposed requirement for automobile stopping areas for handicapped persons has been deleted because the ANSI standards provide reserved parking places for handicapped persons. The benefit associated with the UMTA requirement appeared marginal.

The proposed requirement for station information systems has been deleted because of the variety of station configurations and possible methods of conveying information. Nevertheless, station builders are encouraged to give particular attention to the information needs of blind persons and deaf persons. Many very fine comments that we received on passenger information systems are properly addressed in the context of an aggressive marketing program and will be pursued in UMTA's transit management program.

Many comments concerned the applicability of the regulations to the renovation of existing facilities. The regulations cover renovations, but careful attention should be paid to section 609.13(c) (2), which describes the scope of renovation coverage. More than one comment expressed concern that a renovation like repainting would require that an elevator be added to an old station. Clearly the regulations contain no such requirement.

Vehicles. The proposed rules set out a series of specific hardware and design requirements that were included primarily to promote discussion about their feasibility and reliability. In the preamble to the proposed rules, we recognized that some of the equipment was not yet available commercially, and we wanted to solicit comment on "appropriate effective dates" for some hardware requirements "in view of the product development process that would be required."

We received voluminous comments on the proposed vehicle features from manufacturers, transit operators, elderly and handicapped users, governmental agencies, providers of service and other interested parties. In the proposed rules we had deliberately suggested vehicle modifications that we understood to be beyond the state of the art, or that we thought might be beneficial to elderly and handicapped users without knowing their effect on other users and on operations. The comments that we received were thoughtful and helpful. Many comments suggested further bus design features that would unquestionably improve passenger comfort for a wide range of individuals, but the cumulative inclusion of which would excessively increase the price of buses. The final rule has therefore sought to focus on those features of bus design that are more than marginally important to the ability of elderly and handicapped persons to utilize the equipment effectively.

Similarly, since most of these rules are to be effective immediately with respect to the current generation of buses, we generally decided against the inclusion in the final rule of design requirements that require extensive redesign or engineering modifications that would result in large cost increases or delays in availability.

The organization of the vehicle requirements has been changed to reflect standard mass transit terminology rather than the "level-entry" and "step-entry" categories used in the proposed rule. The categories now are: bus, rapid rail, light rail, and "other vehicles." The "rapid rail" category does not include commuter rail vehicles. Commuter rail operations occupy a unique and financially precarious position in urban transportation, and are entering a particularly difficult period of transition as a result of the restructuring of the railroads in the Northeast and Midwest. The future of these systems is unsure, and few new rail cars are being built solely for commuter rail service. Therefore, any new commuter rail vehicles will be included in the "other vehicles" category, and requirements will be determined on a case-by-case basis. Because of the great variety of equipment in the small bus (22 feet and shorter) and van category, such vehicles will also be included in the "other vehicles" section.

(1) Applicability of vehicle requirements. Several comments on the proposed regulations expressed confusion over the effective date of the vehicle requirements. The effective date provisions have been rewritten to indicate clearly that the vehicle requirements apply to all vehicles for which an UMTA grantee issues, on or after May 31, 1976, a formal procurement solicitation containing vehicle specifications approved by UMTA.

(2) Wheelchair accessibility option. As discussed earlier, the regulations include a requirement that manufacturers of new design transit buses offer a wheelchair accessibility option. The latter option consists of a level-change mechanism (e.g., lift or ramp), sufficient clearances to permit a wheelchair user to reach a securement location, and at least one wheelchair securement device. UMTA intends to determine the effective date for this requirement after the May 5, 1976, hearing described above. The option requirement is not meant to require retrofitting of existing buses or retooling of production machinery which will be used to continue to produce existing bus designs.

(3) Doorways and steps. The proposed rule suggested interlock systems at both front and rear doors of buses. Many comments objected to the proposed front door interlock system for buses because such a system would prevent the present useful practice of opening the door as the bus comes to a stop. Because that argument has merit and because the bus driver can easily see the front door area, we have deleted the front door interlock requirement. We have also deleted the rear door interlock requirement because we find that requirement only marginally related to making vehicles more accessible to elderly and handicapped persons.

#### **RULES AND REGULATIONS**

The proposed rule would have required devices that prevent closure on any person or object in the doorway (sensitiveedge or elevator-type doors). Many comments objected to this requirement for buses on the grounds that such doors are unnecessary, expensive, and subject to frequent breakdowns. Because of the merit in these arguments and because we ultimately decided that sensitive-edge doors make only a marginal contribution to utilization of the vehicle by elderly and handicapped persons, we have deleted any suggestion that the regulations require sensitive-edge doors for buses.

Door control mechanism requirements for rail vehicles have been deleted entirely in deference to the research directly on this issue currently being conducted by the Federal Railroad Administration. The results of this research may form the basis for an amendment to the regulations.

The proposed regulations called for a redesign of the stepwell of the current bus so that, with the addition of a retractable step, the maximum height of each step from street level to vehicle floor level would be uniform and no more than eight inches. We invited comment on an appropriate effective date for this requirement in view of the product development that would be required.

The comments were not encouraging. The retractable step at the front of the bus would interfere with ground clearance and was thought to be unreliable in bad weather. Moreover, information developed in the Transbus program indicated that transit buses will pull up to curbs roughly 80 percent of the time, and the average curb is six inches, reducing the need for the retractable step. While there are vastly different operating circumstances in various cities, any national rule should be geared to the typical situation, and we have thus receded from our requirement of a retractable step.

Eight-inch risers proved equally discouraging on the current coach. The distance from the floor of the bus to the lowest step is currently between 19 and 21 inches, which necessitates two steps. Although three rather than two steps could be designed within this height, the stairwell would have to be extended another 11 inches toward the driver in order to accommodate the tread of the extra step. Such an additional intrusion would increase the already-substantial hazard created by the long, narrow stairwell of current design, and would reduce safe standing space within the vestibule. We have been forced to conclude that the provision of eight-inch risers inside the current bus is inconsistent with other safety features that are of equal importance to the elderly and the handicapped (transit safety statistics indicate that the typical accident occurs in the front of the bus to a female passenger over age 50).

Therefore, the final regulations do not include the proposed step height requirements for current generation buses. However, we feel that substantial improvements in the front stepwell can be made on the next generation of buses, and we have required that those buses have front step risers which do not exceed 8 inches in height—approximately the same accessibility standards as are applied to buildings. We have yet to determine the proper effective date for the requirement, and, therefore, section 609.15(c) of the regulation leaves open the effective date, subject to resolution after the public hearing described earlier.

The door width requirement for rail cars has been changed to 32 inches, which is the standard for barrier-free buildings. The rail door width requirement has also been changed to apply only to side doors. We learned that since rail car doors are built with vertical collision posts next to the end doors, increasing the width between these points could decrease a car's ability to withstand a collision.

The warning signal requirement for level-entry vehicle doors has been retained for rapid rail and light rail vehicles, but the regulations require only an audible signal. Such a signal will aid visually impaired persons.

For level-entry rail systems, the specific maximum gap between vehicle and boarding platform has been replaced with a more general requirement. The very narrow gap allowed by the proposed regulations proved too narrow, given present technology, to allow safe movement of trains within the station area. Our research and development office is looking into this issue.

(4) Priority seating signs. The requirement for priority seating signs for elderly and handicapped passengers was one of the more controversial parts of the original proposed regulations. Many comments, both from elderly and handicapped groups and from transit operators, argued that priority seating constituted a form of segregation that detracted from the dignity of elderly and handicapped passengers. On the other hand, several comments stated that priority seating was a good concept and that elderly and handicapped patrons should be given priority on any seat in the vehicle.

We feel that priority seating serves a useful purpose by promoting the safety of elderly and handicapped persons. The act of claiming a priority seat is voluntary, and a person entitled to do so is also free to sit anywhere else on the vehicle. We have improved the phrasing of the requirement in order to allow signs which encourage but do not require the yielding of priority seats to elderly and handicapped persons. The regulation is not intended to prohibit more strongly worded signs.

(5) Interior handrails and stanchions. Because of vandalism, cleanliness, and maintenance problems, many comments strongly opposed the proposed requirement that all handrails and stanchions be padded. Because we are not certain that the safety benefits of padded handrails and stanchions outweigh these problems, and because some have suggested that such stanchions may actually be more difficult to grasp, we have deleted the padding requirement. However, we encourage transit operators to consider modest padding on stanchions and handrails at the front of the bus, where a disproportionate number of injuries occur and where the driver's proximity may reduce vandalism.

The requirements for ample stanchions and handrails, particularly in the entrance area, have been significantly strengthened. This revision includes a new requirement for buses and stepentry light rail vehicles that a system of continuous passenger assists be provided which will allow elderly and handicapped persons to make use of such assists throughout the boarding and fare collection process. The key element of this system would be a handrail or stanchion reachable from outside the vehicle to aid elderly and handicapped passengers at the boarding point. It is also required that this system include a "leaning rail" adjacent to the farebox which a passenger can lean against to remain stable while paying the fare. We find that providing such assists in proper locations is very important in making vehicles more accessible to elderly and handicapped persons.

(6) Floor and step surfaces. We continue to require slip-resistant floors and step surfaces, and in addition we now require that all step edges have a band of bright contrasting color(s) running the full width of the step. Most present floors and step surfaces meet the slip-resistant requirement, and we have included the requirement primarily to emphasize the importance of slip-resistant surfaces as safety factors for elderly and handicapped persons.

capped persons. . (7) Lighting. The proposed regulations' general interior illumination requirement has been deleted because we find that, from a safety viewpoint, buses being manufactured today provide satisfactory general interior illumination.

However, we believe that lighting standards for stepwells and for street surfaces outside vehicle doorways are appropriate, and the final regulations contain such standards. The problem we seek to correct is too little light, and thus our lighting standards are minimums.

(8) Fare collection. The fare collection requirement for buses has been rewritten to emphasize that the farebox should be located as far forward in the vestibule of the bus as possible. Because of the number of different fare payment methods in use on existing light rail systems, we have not included any farebox location requirement for light rail vehicles.

(9) Other proposed requirements. We have deleted the requirement for a public address system because of our doubts about our ability to require drivers to utilize such systems as well as uncertainty about the wisdom of the requirement, particularly for exterior public address systems. We have also changed the destination and route sign provisions. We received a great number of comments regarding the sign provisions, especially regarding the appropriate size for sign characters. Most of the controversy con-

cerned whether the size requirement should be written in terms of a specific height requirement, as in the proposed regulations, or as a readability, performance standard. While a performance standard appears to be more acceptable because it would allow greater local choice on sign questions as well as allow technological innovation, we do not feel that enough study has been done on the development of a reasonable standard. UMTA may conduct research on this issue, and, if possible, adopt future standards based on such research.

Waiver. Comments on the waiver section fell generally into two distinct groupings. One group feared that the waiver section would negate the positive effect of the regulations and, therefore, wanted the waiver section deleted or severely restricted. Because of possible unforeseen consequences of particular provisions of these new regulations, we have retained the broad waiver capability. However, we intend to make very sparing use of the waiver provision, as indicated by the standard in the regulation which provides that the waiver must be "clearly necessary" and consistent with the intent of the laws authorizing this rule.

The second group of comments argued that the waiver provision was too strict because of the requirement that the waiver request be presented at a public hearing. These comments recommended that the requirement of presentation at a public hearing be made optional at UMTA's discretion since the need for a waiver may not develop until after submission of the project application and after the public hearing. As a result of this second group of comments we have indicated that submission at the hearing is the norm, and that the UMTA Administrator may require a new public hearing for discussion of the waiver request if he finds that it is substantial.

Finally, we have moved the waiver section to a more logical location after the positive requirements, and we have added a new sentence to reflect the need for the Administrator of General Services' approval for any waiver of paragraph 609.13(a).

Accordingly, 49 CFR Chapter VI is amended by adding a new Part 609, to read as set forth below.

*Effective date.* This part becomes effective on May 31, 1976.

Issued in Washington, D.C., on April 27, 1976.

#### ROBERT E. PATRICELLI, Urban Mass Transportation Administrator.

Sec.

- 609.1 Purpose.
- 609.3 Definitions. 609.5 Applicability
- 609.5 Applicability.609.7 Transportation planning in urban-
- ized areas. 609.9 Transportation planning in non-
- urbanized areas. 609.11 Applications for capital or operating
- assistance. 609.13 Fixed facilities.
- 609.15 Buses.
- 609.17 Rapid rail vehicles.

- Sec. 609.19 Light rail vehicles.
- 609.21 Other vehicles.
- 609.23 Reduced fare.
- 609.25 Waiver.

AUTHORITY: Secs. 5 and 16, Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1604, 1612); sec. 165(b), Federal-Aid Highway Act of 1973, as amended (23 U.S.C. 142 nt.); sec. 504, Rehabilitation Act of 1973 (29 U.S.C. 794); 49 CFR 1.51.

#### § 609.1 Purpose.

The purpose of this part is to establish formally the requirements of the Urban Mass Transportation Administration, (UMTA) on transportation for elderly and handicapped persons.

#### § 609.3 Definitions.

As used herein:

"Elderly and handicapped persons" means those individuals who, by reason of illness, injury, age, congenital malfunction, or other permanent or temporary incapacity or disability, including those who are nonambulatory wheelchair-bound and those with semiambulatory capabilities, are unable without special facilities or special planning or design to utilize mass transportation facilities and services as effectively as persons who are not so affected.

#### § 609.5 Applicability.

(a) This part, which applies to projects approved by the Urban Mass Transportation Administrator on or after May 31, 1976, applies to all planning, capital, and operating assistance projects receiving Federal financial assistance under sections 3, 5, or 9 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1602, 1604, or 1607a), and nonhighway public mass transportation projects receiving Federal financial assistance under: (1) subsection (a) or (c) of section 142 of title 23. United States Code; and (2) paragraph (4) of sub-section (e) of section 103, title 23, United States Code. However, under certain circumstances evident in sections 609.13 through 609.21, the latter sections apply to fixed facilities and vehicles included in projects approved before May 31, 1976. Sections in this part on capital assistance applications, fixed facilities, and vehicles apply expressly to capital assistance projects receiving Federal financial assistance under any of the above statutes.

#### § 609.7 Transportation planning in urbanized areas.

General requirements for transportation planning in urbanized areas are found in joint UMTA-Federal Highway Administration regulations (23 CFR Part 450 and 49 CFR Part 613). These regulations require the urban transportation planning process to include special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons. UMTA and FHWA have added a supplementary statement on the special efforts requirement as an appendix to the joint planning regulations. Satisfactory special efforts in this area is an express condition (49 CFR 613.204) for UMTA project approvals required by 23 CFR 450.320, and UMTA has added a supplementary statement on that requirement as an appendix to 49 CFR Part 613.

#### § 609.9 Transportation planning in nonurbanized areas.

Before a capital assistance project can be approved in a nonurbanized area, the local planning process must include special efforts to plan public mass transportation facilities and services that can effectively be utilized by elderly and handicapped persons.

§ 609.11 Applications for capital or operating assistance.

Applications for capital or operating assistance shall include assurance(s) and descriptive material on transportation for elderly and handicapped persons in accordance with current application instructions.

## § 609.13 Fixed facilities.

(a) Except as otherwise provided in paragraph (c) of this section, every fixed facility-including every station, terminal, building or other facility-designed, constructed, or altered on or after May 31, 1976, with UMTA assistance, the intended use for which will require either that such fixed facility be accessible to the public or may result in the employment therein of physically handicapped persons, shall be designed, constructed, or altered in accordance with the minimum standards in the "American Standard Specifications for Making Building and Facilities Accessible to, and Usable by, the Physically Handicapped, Number A117.1—R 1971," approved by the Amer-ican Standards Association, Inc. (subsequently changed to American National Standards Institute, Inc.) (ANSI).

(b) In addition to the ANSI standards of paragraph (a) of this section, the following standards apply to rail facilities covered by that paragraph:

(1) Travel distance for wheelchair users: In designing new underground or elevated transit stations, careful attention should be given to the location and number of elevators or other vertical circulation devices in order to minimize the extra distance which wheelchair users and other persons who cannot negotiate steps may have to travel compared to nonhandicapped persons.

(2) International accessibility symbol: The international accessibility symbol shall be displayed at wheelchair accessible entrance(s) to buildings that meet the ANSI standards.

(3) Fare vending and collection systems: Transit fare vending and collection systems shall be designed so as not to prevent effective utilization of the transportation system by elderly and handicapped persons. Each station shall include a fare control area with at least one entrance with a clear opening at least 32 inches wide when open.

(4) Boarding platforms: All boarding platform edges bordering a drop-off or other dangerous condition shall be marked with a warning device consisting of a strip of floor material differing in color and texture from the remaining floor surface. The design of boarding platforms for level-entry vehicles shall be coordinated with the vehicle design in order to minimize the gap between platform and vehicle doorway and to permit safe passage by wheelchair users and other elderly and handicapped persons.

(c) The standards established in paragraphs (a) and (b) of this section do not apply to:

(1) The design, construction, or alteration of any portion of a fixed facility which need not, because of its intended use, be made accessible to, or usable by, the public or by physically handicapped persons;

(2) The alteration of an existing fixed facility to the extent that the alteration does not involve the installation of, or work on, existing stairs, doors, elevators, toilets, entrances, drinking fountains, floors, telephone locations, curbs, parking areas, or any other facilities susceptible of installation or improvements to accommodate the physically handicapped (the standards do not apply to the unaltered portions or items of an existing fixed facility);

(3) The alteration of an existing fixed facility, or of such portions thereof, to which application of the standards is not structurally possible; and

(4) The construction or alteration of a fixed facility for which a grantee has, prior to May 31, 1976, issued a formal invitation for bids to perform such construction or alteration.

(d) The final project application for any project that includes the design, construction, or alteration of a fixed facility subject to paragraph (a) of this section shall contain one of the following: (1) an assurance that the standards of paragraph (a) of this section will be adhered to in the design, construction, or alteration of such facility: (2) a request for a finding that the project is within one of the exceptions set out in paragraph (c) of this section (the specific exception being identified), with appropriate supporting material; or (3) a request pursuant to section 609.25 for waiver of the standards of paragraphs (a) and (b) of this section, with appropriate supporting material.

#### § 609.15 Buses.

(a) The requirements of this section apply to all new transit buses with a length exceeding 22 feet for which an UMTA grantee issues, on or after May 31, 1976 (unless otherwise noted), a formal procurement solicitation containing vehicle specifications approved by PMTA.

(b) Wheelchair accessibility option: Effective [date reserved for later completion], UMTA will concur in transit bus bid packages only if the technical specifications provide for a bus design which permits the addition of a wheelchair accessibility option and if the bid documents require an assurance from each bidder that it offers a wheelchair accessibility option for its buses. The term "wheelchair accessibility option" means a level-change mechanism (e.g., lift or ramp), sufficient clearances to permit a wheelchair user to reach a securement location, and at least one wheelchair securement device.

(c) Steps: The following standards are effective with procurement solicitations issued after [date reserved for later completion]: the vertical distance from a standard 6-inch curb to the first front door step shall not exceed 8 inches; the riser height for each front door step after the first step up from the curb or street level shall also not exceed 8 inches; and the tread depth of steps at both front and rear doors shall be no less than 12 inches.

(d) Priority seating signs: In order to maximize the safety of elderly and handicapped persons, each vehicle shall contain clearly legible sign(s) which indicate that seats in the front of the vehicle are priority seats for elderly and handicapped persons, and which encourage other passengers to make such seats available to elderly and handicapped persons who wish to use them.

(e) Interior handrails and stanchions: (1) Handrails and stanchions shall be provided in the entranceway to the vehicle in a configuration which allows elderly and handicapped persons to grasp such assists from outside the vehicle while starting to board, and to continue using such assists throughout the boarding and fare collection processes. The configuration of the passenger assist system shall include a rail across the front of the interior of the vehicle which shall serve both as an assist and as a barrier to reduce the possibility of passengers sustaining injuries on the fare collection device or windshield in the event of sudden deceleration. The rail shall be located to allow passengers to lean against it for security while paying fares.

(2) Overhead handrail(s) shall be provided which shall be continuous except for a gap at the rear doorway.

(3) Handrails and stanchions shall be sufficient to permit safe on-board circulation, seating and standing assistance, and unboarding by elderly and handicapped persons.

(f) Floor and step surfaces: (1) All floors and steps shall have slip-resistant surfaces.

(2) All step edges shall have a band of bright contrasting color(s) running the full width of the step.

(g) Lighting: (1) Any stepwell immediately adjacent to the driver shall have, when the door is open, at least 2 footcandles of illumination measured on the step tread.

(2) Other stepwells shall have, at all times, at least 2 footcandles of illumination measured on the step tread.

(3) The vehicle doorways shall have outside light(s) which provide at least 1 footcandle of illumination on the street surface for a distance of 3 feet from all points on the bottom step tread edge. Such light(s) shall be located below window level and shielded to protect the eyes of entering and exiting passengers.

(h) Fare collection: The farebox shall be located as far forward as practicable and shall not obstruct traffic in the vestibule.

(i) Destination and route signs: Each vehicle shall have illuminated signs on the front and boarding side of the vehicle.

#### § 609.17 Rapid rail vehicles.

(a) The requirements of this section apply to all new rapid rail vehicles for which an UMTA grantee issues, on or after May 31, 1976, a formal procurement solicitation containing vehicle specifications approved by UMTA.

(b) Doorways: (1) Passenger doorways on vehicle sides shall have clear openings at least 32 inches wide when open.

(2) The international accessibility symbol shall be displayed on the exterior of each vehicle operating on a wheelchair accessible rapid rail system.

(3) Audible warning signals shall be provided to alert elderly and handicapped persons of closing doors.

(4) Where the vehicle will operate in a wheelchair accessible station, the design of vehicles shall be coordinated with the boarding platform design in order to minimize the gap between the vehicle doorway and the platform and to permit safe passage by wheelchair users and other elderly and handicapped persons.

(c) Priority seating signs: In order to maximize the safety of elderly and handicapped persons, each vehicle shall contain clearly legible sign(s) which indicate that certain seats are priority seats for elderly and handicapped persons, and which encourage other passengers to make such seats available to elderly and handicapped persons who wish to use them.

(d) Interior handrails and stanchions: (1) Handrails and stanchions shall be sufficient to permit safe boarding, onboard circulation, seating and standing assistance, and unboarding by elderly and handicapped persons.

(2) Handrails, stanchions, and seats shall be located so as to allow a wheelchair user to enter the vehicle and position the wheelchair in a location which does not obstruct the movement of other passengers.

(e) Floor surfaces: All floors shall have slip-resistant surfaces.

#### § 609.19 Light rail vehicles.

(a) The requirements of this section apply to all new light rail vehicles for which an UMTA grantee issues, on or after May 31, 1976, a formal procurement solicitation containing vehicle specifications approved by UMTA.

(b) Doorways: (1) Passenger doorways on vehicle sides shall have clear openings at least 32 inches wide when open.

(2) The international accessibility symbol shall be displayed on the exterior of each vehicle operating on a wheelchair accessible light rail system.

(3) Audible warning signals shall be provided to alert elderly and handicapped persons of closing doors.

(4) The design of level-entry vehicles shall be coordinated with the boarding platform design in order to minimize the gap between the vehicle doorway and the platform and to permit safe passage by wheelchair users and other elderly and handicapped persons.

(c) Priority seating signs: In order to maximize the safety of elderly and handicapped persons, each vehicle shall contain clearly legible sign(s) which indicate that certain seats are prioriy seats for elderly and handicapped persons, and which encourage other passengers to make such seats available to elderly and handicapped persons who wish to use them.

(d) Interior handrails and stanchions: (1) On vehicles which require use of steps in the boarding process, handrails and stanchions shall be provided in the entranceway to the vehicle in a configuration which allows elderly and handicapped persons to grasp such assists from outside the vehicle while starting to board, and to continue using such assists throughout the boarding process.

(2) On level-entry vehicles, handrails. stanchions, and seats shall be located so as to allow a wheelchair user to enter the vehicle and position the wheelchair in a location which does not obstruct the movement of other passengers.

(3) On all vehicles, handrails and stanchions shall be sufficient to permit safe boarding, on-board circulation, seating and standing assistance, and unboarding by elderly and handicapped persons.

(e) Floor and step surfaces: (1) All floors and steps shall have slip-resistant surfaces.

(2) Any step edges shall have a band of bright contrasting color(s) running the full width of the step.

(f) Lighting in step-entry vehicles: (1) Any stepwell immediately adjacent to the driver shall have, when the door is open, at least 2 footcandles of illumination measured on the step tread.

(2) Other stepwells shall have, at all times, at least 2 footcandles of illumination measured on the step tread.

(3) The vehicle doorways shall have outside lights which provide at least 1 footcandle of illumination on the street surface for a distance of 3 feet from all points on the bottom step tread edge. Such lights shall be located below window level and shielded to protect the eyes of entering and exiting passengers. § 609.21 Other vehicles.

Requirements for vehicles not covered by sections 609.15, 609.17, or 609.19 will be determined by UMTA on a case-bycase basis as part of the project approval process.

#### § 609.23 Reduced fare.

Applicants for financial assistance under section 5 of the Urban Mass Transportation Act of 1964, as amended (49 U.S.C. 1604), must, as a condition to receiving such assistance, give satisfactory assurances, in such manner and form as may be required by the Urban Mass Transportation Administrator and in accordance with such terms and conditions as the Urban Mass Transportation Administrator may prescribe, that the rates charged elderly and handicapped persons during non-peak hours for transportation utilizing or involving the facilities and equipment of the project financed with assistance under this section will not exceed one-half of the rates generally applicable to other persons at peak hours, whether the operation of such facilities and equipment is by the applicant or is by another entity under lease or otherwise.

#### § 609.25 Waiver.

The requirements set forth in this part may be modified or waived on a case-by-case basis upon application to the Urban Mass Transportation Administrator if the Administrator determines that such modification or waiver is clearly necessary and is consistent with the intent of the laws cited under "Authority." However, a modification or waiver of paragraph 609.13(a) for a building covered by P.L. 90-480 will also require the approval of the Administrator of General Services. Any request for modification or waiver should be presented for comment at the public hearing required prior to submission of a project application to UMTA. In the event that the waiver is not presented at the hearing, the Urban Mass Transportation Administrator may require a new public hearing if he finds that the requested waiver would have a substantial effect on the accessibility of the facility or equipment to elderly and handicapped persons.

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#### Appendix C

## DEFINITIONS OF CERTAIN TERMS USED IN U. S. PUBLIC HEALTH SERVICE DISABILITY CLASSIFICATIONS REPORT

## **Terms Relating to Conditions**

Condition.-A morbidity condition, or simply a condition, is any entry on the questionnaire which describes a departure from a state of physical or mental well-being. It results from a positive response to one of a series of "medicaldisability impact" or "illness-recall" questions. In the coding and tabulating process conditions are selected or classified according to a number of different criteria such as whether they were medically attended, whether they resulted in disability, or whether they were acute or chronic; or according to the type of disease, injury, impairment, or symptom reported. For the purposes of each published report or set of tables, only those conditions recorded on the questionnaire which satisfy certain stated criteria are included.

Conditions except impairments are classified by type according to the Eighth Revision International Classification of Diseases, Adapted for Use in the United States,¹³ with certain modifications adopted to make the code more suitable for a household interview survey.

Chronic condition.—A condition is considered chronic if (1) the condition is described by the respondent as having been first noticed more than 3 months before the week of the interview or (2) it is one of the conditions listed below which are always considered chronic regardless of the date of onset.

Allergy, any Arthritis or rheumatism Asthma Cancer Cleft palate Club foot Condition present since birth Deafness or serious trouble with hearing Diabetes Epilepsy Hardening of the arteries Hay fever Heart trouble Hemorrhoids or piles Hernia or rupture High blood pressure Kidney stones Mental illness Missing fingers, hand, or arm-toes, foot, or leg Palsy Paralysis of any kind Permanent stiffness or deformity of the foot, leg, fingers, arm, or back Prostate trouble Repeated trouble with back or spine **Rheumatic fever** Serious trouble with seeing, even when wearing glasses Sinus trouble, repeated attacks of Speech defect, any Stomach ulcer Stroke Thyroid trouble or goiter Tuberculosis Tumor, cyst, or growth Varicose veins, trouble with

¹³National Center for Health Statistics: Eighth Revision International Classification of Diseases, Adapted for Use in the United States. PHS Pub. No. 1693. Public Health Service. Washington. U.S. Government Printing Office, 1967.

Condition Causing Activity Limitation	International Classification Code Number
Tuberculosis, all forms	010-018
Malignant neoplasms	140-209
Benign and unspecified neoplasms	210-239
Diabetes	250
Mental and nervous conditions	290-304 305.0 305.3 305.5 305.6 306-309 780.6 781.5
	785.6 786.2 790.0 790.2
Heart conditions	390-398 402 404 410-429 782 1 782 2 782 4
Cerebrovascular disease	430-438
Hypertension without heart involvement	400, 401, 403
Varicose veins	454, 456
Hemorrhoids	455
Other conditions of circulatory system	440-453, 457, 458, 782.0, 782.3, 782.59
Chronic bronchitis	490 491
Emphysema	492
Asthma, with or without hay fever	493
Hay fever, without asthma	507
Chronic sinusitis	503
Other conditions of respiratory system	470-486, 500-502, 504-506, 508-519, 783
Peptic ulcer	531-534
Hernia	550-553
Other conditions of digestive system	520.3, 520.4, 520.6-521.5, 521.7-523, 525-530, 535-543, 560-
	577, 784, 785,0-785,5, 785,7, 785,8
Diseases of kidney and ureter	581-584, 590-593
Other conditions of genitourinary system	594-611, 613-629, 786.0, 786.1, 786.3-786.7, 789
Arthritis and rheumatism	710-716, 717.0, 717.1, 717.9, 718
Other musculoskeletal disorders	720-723, 725, 728-732, 733.0, 733.2, 733.3, 733.6, 733.9, 734
Visual impairments	
Hearing impairments	
Paralysis, complete or partial	
Impairments (except paralysis) of back or spine	See definition of impairment.
Impairments (except paralysis and absence) of upper extremities and shoulders	
Impairments (except paralysis and absence) of lower extremities	
and hips	
Condition not specified:	
Old age	
Other	

## Figure 1.

Impairment.-Impairments are chronic or permanent defects, usually static in nature, resulting from disease, injury, or congenital malformation. They represent decrease or loss of ability to perform various functions, particularly those of the musculoskeletal system and the sense organs. All impairments are classified by means of a special supplementary code for impairments. Hence code numbers for impairments in the International Classification of Diseases are not used. In the Supplementary Code, impairments are grouped according to type of functional impairment and etiology. The impairment classification is shown in *Vital and Health Statistics*, Series 10, No. 48.

Persons with chronic conditions.—The estimated number of persons with chronic conditions is based on the number of persons who at the time of the interview were reported to have one or more chronic conditions.

Chronic condition groups.—The 30 condition groups shown in this report and the International Classification code numbers used are listed in figure I. Prevalence of conditions.-In general, prevalence of conditions is the estimated number of conditions of a specified type existing at a specified time or the average number existing during a specified interval of time. The prevalence of chronic conditions is defined as the number of chronic cases reported to be present or assumed to be present at the time of the interview. Those assumed to be present at the time of the interview are cases described by the respondent in terms of one of the diseases on the list of conditions always considered chronic (see definition of chronic condition above) and reported to have been present at some time during the 12-month period prior to the interview.

## **Terms Relating to Disability**

Disability.-Disability is the general term used to describe any temporary or long-term reduction of a person's activity as a result of an acute or chronic condition.

Chronic activity limitation.-Persons are classified into four categories according to the extent to which their activities are limited at present as a result of chronic conditions. Since the usual activities of preschool children, school-age children, housewives, and workers and other persons differ, a different set of criteria is used for each group. There is a general similarity between them, however, as will be seen in the following descriptions of the four categories:

1. Persons unable to carry on major activity for their group (major activity refers to ability to work, keep house, or engage in school or preschool activities)

Preschool children: Inability to take part in ordinary play with other children.

School-age children: Inability to go to school.

Housewives: Inability to do any housework.

Workers and all other persons: Inability to work at a job or business. 2. Persons limited in amount or kind of major activity performed (major activity refers to ability to work, keep house, or engage in school or preschool activities)

## Preschool children:

Limited in amount or kind of play with other children, e.g., need special rest periods, cannot play strenuous games, or cannot play for long periods at a time.

## School-age children:

Limited to certain types of schools or in school attendance, e.g., need special schools or special teaching or cannot go to school full time or for long periods at a time.

Housewives:

Limited in amount or kind of housework, e.g., cannot lift children, wash or iron, or do housework for long periods at a time.

## Workers and all other persons:

Limited in amount or kind of work, e.g., need special working aids or special rest periods at work, cannot work full time or for long periods at a time, or cannot do strenuous work.

3. Persons not limited in major activity but otherwise limited (major activity refers to ability to work, keep house, or engage in school or preschool activities)

Preschool children:

Not classified in this category.

School-age children:

Not limited in going to school but limited in participation in athletics or other extracurricular activities.

Housewives:

Not limited in housework but limited in other activities such as church, clubs, hobbies, civic projects, or shopping.

Workers and all other persons:

Not limited in regular work activities but limited in other activities such as church, clubs, hobbies, civic projects, sports, or games. 4. Persons not limited in activities (includes persons whose activities are not limited in any of the ways described above)

Chronic mobility limitation.-Persons are classified into five categories according to the extent to which their mobility is limited at present as a result of chronic conditions. The categories are as follows:

Stays in bed.-Must stay in bed all or most of the time.

Stays in the house.-Must stay in the house, but not in bed, all or most of the time.

Needs help getting around.—Able to go outside but needs the help of another person or of a special aid such as a cane or wheelchair in getting around.

Has trouble getting around freely.-Does not need the help of another person or a special aid but has trouble in getting around freely.

Is not limited in mobility.-Not limited in any of the ways described above.

## Appendix D

## TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY INSTRUMENTS AND NEEDS FORMS

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Form I

## TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY

Phone N Home Ad	umber Idress		Contact Attempts
Municipa	lity/County		<u>Day or Date</u> Morning
Verify Pł Introduc	none Number; tion:		Afternoon Evening
I If zeros → [ go to II → [ II II	<ol> <li>How many persons are liv</li> <li>How many persons who a</li> <li>How many of these handi</li> <li>How many of these handi</li> <li>How many other persons</li> <li>Interviewer: If elderly or ha listed above in order to find service.</li> <li>If the person cannot respond If the person is not home, Call back time</li> <li>Conduct Form 2 interviews a</li> <li>In order to determine that we the following information. T</li> <li>How many automobiles an Other vehicles (trucks, model)</li> </ol>	ing in your household? re living in your household are hand capped persons would find it difficu- in your household are 65 or older? ndicapped are present go to Form 2 lout about the types of trips they ond to the questionnaire, ask if some make arrangements to call back.	licapped or disabled? If to use a public bus if one was available? Indicate that you would like to speak to each of the persons make and the types of problems they have using public bus eone can speak for them. If this form. portion of the whole population, it is desirable that we obtain istical analysis only and will remain confidential. ?
[	<ul> <li>2. What type of housing units</li> <li>5-19 apt. = 4; 20+ apt. = 5</li> <li>3. For the next question, 1 y give me a specific dollar and</li> </ul>	t do you live in? (Circle one-ente ; rooming house = 6; hotel/motel = will read the question and the catego mount.	er code in box) (single family = 1; duplex = 2; 3-4 apt. = 3; 7; mobile home = 8; institution = 9) pries. When I say the correct category, please stop me. Do not
	ls your approximate gross	household income (before taxes) (I	nterviewer: This includes nontaxable income.)
	1. under \$4,000 2. \$4,000 to \$8,000	3. \$8,000 to \$12,000 4. \$12,000 to \$15,000	5. \$15,000 to \$25,000 6. \$25,000 to \$50,000 7. \$50,000 or more
	Closing Statement:		523

## Form 2

## TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY

Phone No.	
Person No.	
Interviewer: E provided in fo	Enter phone number from Form 1 in space provided. Enter person number in space pllowing manner:
If person is TI	H enter 1 in first box.
If person is E	enter 2 in first box.
If person is fi	rst TH or E interviewed enter a 1 in second box; second person interviewed, a 2; and
so forth sec	quentially,
т []1	What is your age?
2	. Sex (male = 1; female = 2).
f "3" <b>——</b> 3	. Please indicate which of the following three statements best describes you (her/him):
go to П	1. You have a physical or mental problem which would make it impossible for you to
T	use public buses if they were available.
	2. You have a physical or mental problem which would make it difficult for you to
	use public buses although you could still use them if they were available.
	3. You have no difficulty using public buses if they were available.
4	. How would you describe your disability or handicap? (Interviewer probe)
	Type of Disability (describe):
	. If you need an aid, what type is it? (cane, wheelchair, guide dog, etc.)
6	. Have you had this difficulty for longer than 3 months: No = 0 Yes = 1
	Lam going to read five statements. Please tall me which one best describes your
	condition.
	1. You are home bound or bedridden and cannot get out at all.
	2. You must use a wheelchair when you go out.
	3. You need the personal assistance of someone to help you whenever you go out.
	orthopedic device when you go out. (Includes guide dog.)
¥	5. Even though you do not need any mechanical aid or personal assistance, you still
1	have trouble getting around when you go out.

**I** Now, I'd like to ask you some questions about the trips you made yesterday. Where was the first place you went yesterday?

_____ Date ______ Day ______

Interviewer: Record all one-way trips made the previous day. Remember to record trips made to return home. Help respondent remember by recording trips in sequence.

A Trip Line Number	A B Trip Line Why did you Number make the trip? (enter purpose		C this start ome?	D How did you make this trip? (enter mode	E What time of day?
	code)	No (0)	Yes (1)	code)	
1					a.m.
2					a.m. p.m
3					a.m. p.m
4					a.m. p.m.
5					a.m. p.m
6					a.m. p.m.
7					a.m. p.m.
8					a.m. p.m.
9					a.m. p.m.
10					a.m. p.m.
11					a.m. p.m.
12					a.m. p.m.

= Total Number of Trips

Trip Purpose Codes

- 0 = Home
- 1 = Work
- 2 = School (attend classes, receive instruction)
- 3 = Shopping
- 4 = Social recreation (out to eat, visiting, entertainment, etc.)
- 5 = Personal business (to financial matters, church, see social worker, etc.)
- 6 = Medical

## Mode of Travel Codes

- 1 = Auto driver (includes truck)
- 2 = Auto passenger (includes truck)
- 3 = Regular bus service
- 4 = Special transportation service (includes Handicabs, Care Cab, the Red Bus, etc.)
- 5 = Taxi
- 6 = Walk or bicycle
- 7 = Other (specify)

Ш	Now I'll ask some questions about the availability of transportation.				
lf yes — go to		Do you usually have a ca	r available that you can dr	rive? No = 0	Yes = 1
4		ls there generally a privat 1 = Never 2 = Operationally	te auto available for you (	her/him) to ride in? 3 = Most of the tim	ne
	<b>[</b> ]	2 = Occasionally	ito is available. How wou	4 = Always	ur (his/hor obility
		to get in and ride in it as	a passenger?		
		2 = Difficult, do need as	istance	<ul> <li>3 = Some diffic need assistance</li> <li>4 = No problem</li> </ul>	ulty, but don't
	<b>-&gt;</b>	Do you know of a regula (Interviewer: This does <u>n</u>	r taxi service available in v ot include special transpo	your neighborhood ortation service.)	0 = No 1 = Yes
		We are interested in wh taxicab.	ich statement best descr	ibes your ability to	afford a regular
		<ul> <li>1 = I cannot afford taxis</li> <li>2 = I can only afford to a</li> <li>3 = I can afford as much</li> </ul>	at all. nake very important trips taxi travel as I want.	in a taxicab.	
If "no – service" no to 9	<b>~</b>	If bus service exists in house? (seven blocks or r	your area, how close is nore equals "no service")	the nearest public	bus stop to your
		No. of block	s No servi	ice (8)	_ Don't know (9)
		Does the regular bus in y	our area come:	0 5 4 4 5	
		2 = Infrequently		3 = Rush hour only 4 = Don't know	4
		How many places that y nearest your house?	ou regularly go to could	you get to by start	ing out in the bus
		1 = None		3 = Most of them	
		2 = Hardly any		4 = All of them 5 = Don't know	
	<b>[</b> ]				
	-▶[_]	How would you describ near you)?	e your own ability to re	each a bus stop (if	one were located
		1 = I could not go to a b	us stop at all	3 = I could go only	1 block
		2 = I could only go to a l front of my house	ous stop right in	4 = 1  could go  2  bl	ocks
If no	► <u></u> 1	Do you know of any s	pecial transportation serv	vice for the elderly	and handicapped
		Interviewer: If responde vice agency such as Def volunteer groups.	nt doesn't understand, gi Paul, Curative Workshop,	ve examples: A soc Goodwill, Handica	ial or human ser- bs, Care Cabs, or
	1	Do you ever use this spec	cial transportation service	?	
		0 = No If	no, why not?	1 = Not eligible	
¥		1 = Yes		2 = Cost too much 3 = Other (specify)	
	1	How much does this serv	ice cost you per ride?		
	1	Which of the following t	nree statements best descr	ribes you?	
		1 = 1 can not afford this service at all.			
		3 = 1 can afford as much	travel by this service as I	want.	

## IV Barriers

Now, think as if you/he/she wanted to use a public bus. There may be some problems and we want you to tell us which things you find to be problems as we read the list.

	(1)	(2)	(3)
	Severe	Some	No
	Difficulty	Difficulty	Difficulty
Reading schedules and maps. Getting information over phone. Walking on uneven ground and slopes. Crossing streets and curbs. Going out in bad weather. Waiting for the bus to come. Standing at the bus stop. Climbing the bus steps. Negotiating crowds on buses. Handling change and transfers. Getting a seat before the bus starts. Standing up when a seat is not available. Affording the bus fare. Using the seats. Beaching the buzzer cord.			

#### ▼ Improved Service

1. Now, think about the trips that you/he/she might make if public transit buses were available which were improved so that they had wheelchair lifts, lower front steps, wider doors, better handholds, and reserved seats for the elderly and the handicapped. How many round trips/week would you make on such buses at a fare of:

\$.25 ____ \$.50 ____ \$1.00 ____ No Cost _____

2. Now, suppose a new type of public service, like a mini-bus, were provided that would pick you up at your door and take you wherever you wanted to go, whenever you requested such service. We want to ask you about how often (round trips a week) you would want to use such a service, at different fare levels.

\$.50 ____ \$.75 ____ \$1.00 ____ No Cost _____

3. Assuming the fare was \$.50, how often a week would you use this new service if you had to call in and reserve a ride at least:

Reserve at Least	Round Trips/Week
24 hours in advance	<u> </u>
2 hours in advance	
20 minutes in advance	

(Interviewer: Return to Section II of Form 1. If TH or E currently being interviewed appears unable to answer the socioeconomic questions or feels reluctant, ask if he/she would prefer that you speak to the primary wage earner or spouse. Reassure the individual that the data is added together with a lot of other numbers for statistical analysis only, and that it is strictly confidential. If he wishes to verify, he may call the Commission at 547-6721 and ask for John Zastrow or Jean Lusk.

## INSTITUTIONALIZED TRANSPORTATION HANDICAPPED AND ELDERLY SURVEY

Institution Name:
Institution Address:
Person No
I 1. What is your age?
2. Sex (male = 1; female = 2).
<ul> <li>If "3" → 3. Please indicate which of the following three statements best describes you:</li> <li>go to</li> <li>II 1. You have a physical or mental problem which would make it <u>impossible</u> for you to use public buses if they were available.</li> <li>2. You have a physical or mental problem which would make it <u>difficult</u> for you to use public buses although you could still use them if they were available.</li> <li>3. You have <u>no difficulty</u> using public buses if they were available.</li> <li>3. You have <u>no difficulty</u> using public buses if they were available.</li> <li>4. How would you describe your disability or handicap? (Interviewer probe)</li> <li>Type of Disability (describe):</li></ul>
<ul> <li>7. I am going to read five statements. Please tell me which one best describes your condition.</li> <li>1. You are home bound or bedridden and cannot get out at all.</li> <li>2. You must use a wheelchair when you go out.</li> <li>3. You need the personal assistance of someone to help you whenever you go out.</li> <li>4. You use some type of mechanical aid other than a wheelchair such as a cane or orthopedic device when you go out. (Includes guide dog.)</li> <li>5. Even though you do not need any mechanical aid or personal assistance, you still have trouble getting around when you go out.</li> <li>II Now, I'd like to ask you some questions about the trips you made during the past week. Where was the first place you went vesterday?</li> </ul>

Interviewer: Record all one way trips made on the travel day. Ask for travel on each of the last seven days. Remember to record trips made to return to the institution. Help respondent remember by recording trips in sequence.

A Travel Day	B Trip Line Number	C Why did you make the trip? (enter purpose	Dic trip at h	D d this start ome?	E How did you make this trip? (enter mode	F What time of day?
		code)	No (0)	Yes (1)	code)	
	1					a.m.
						am
	2					p.m.
						a.m.
	3					p.m.
						a.m.
	4					p.m.
	5					a.m.
	-					p.m. a m
	6					p.m.
						a.m.
	7					p.m.
						a.m.
	8					p.m.
	9					a.m.
	_					p.m. a m
	10					p.m.
						a.m.
	11					p.m.
	12			_		a.m.
	12					p.m.

= Total Number of Trips

**Trip Purpose Codes** 

- 0 = Home (Institution)
- 1 = Work
- 2 = School (attend classes, receive instruction)
- 3 = Shopping
- 4 = Social recreation (out to eat, visiting, entertainment, etc.)
- 5 = Personal business (to financial matters, church, see social worker, etc.)
  6 = Medical

### Mode of Travel Codes

- 1 = Auto driver (includes truck)
- 2 = Auto passenger (includes truck)
- 3 = Regular bus service
- 4 = Special transportation service (includes Handicabs, Care Cab, the Red Bus, etc.)
- 5 = Taxi
- 6 = Walk or bicycle
- 7 = Other (specify)

III Now I'll ask some questions about the availability of transportation.

lf "Yes" —	► 1. Do you usually have a car avai	lable that you can drive?
go to		
4	No = 0	Yes = 1
	2. Is there generally a private aut	o available for you to ride in?
	1 = Never.	3 = Most of the time.
	2 = Occasionally.	4 = Always.
	3. Assume that a private auto is and ride in it as a passenger?	available. How would you describe your ability to get in
	1 = Impossible.	3 = Some difficulty,
	2 = Difficult,	but don't need assistance.
T	do need assistance.	4 = No problem.

1 = I cannot afford taxis at all. 2 = I can only afford to make very important trips in a taxicab. 3 = I can afford as much taxi travel as I want.
5. When did you last ride in a taxi?
<ul> <li>1 = Less than one week.</li> <li>2 = Less than one month.</li> <li>3 = More than one month.</li> <li>4 = Don't know.</li> </ul>
6. How much was the fare of your last trip?
<ol> <li>1 = Under two dollars.</li> <li>2 = Between two and five dollars.</li> <li>3 = More than five dollars.</li> <li>4 = Don't know.</li> </ol>
7. If bus service exists in your area, how close is the nearest public bus stop? (seven blocks or more equals "no service") Interviewer: Answer by direct observation.
8. How would you describe your own ability to reach a bus stop (if one were located near you)?
<ul> <li>1 = I could not go to a bus stop at all.</li> <li>2 = I could only go to a bus stop right in front of where I live.</li> <li>3 = I could go only 1 block.</li> <li>4 = I could go 2 blocks.</li> </ul>
<ul> <li>9. Is there any special transportation service available for you here, perhaps provided by the institution? 0 = No 1 = Yes</li> <li>Interviewer: If respondent doesn't understand, give examples: a social or human service agency such as DePaul, Curative Workshop, Goodwill, Handicabs, Care Cabs, or volunteer groups.</li> </ul>
10. How much does this service cost you to ride?
11. Which of the following three statements best describes you?
<ul> <li>1 = I can not afford this service at all.</li> <li>2 = I can only afford to make very important trips by this service.</li> <li>3 = I can afford as much travel by this service as I want.</li> </ul>
12. How many round trips/month do you make on this service?
13. Which of the following statements best describes the personal assistance which you need when traveling?
A. Leaving the institution (here).
<ol> <li>I need to be physically carried on a stretcher or in a wheelchair.</li> <li>I need to be helped out, although I can walk.</li> <li>I can walk out the door by myself.</li> </ol>
B. Entering the vehicle.
1. I need to be physically lifted into the vehicle by someone or by a lift.

4. We are interested in which statement best describes your ability to afford a regular

taxicab.

- 2. I need someone to help me enter the vehicle.
- 3. I can enter the vehicle unassisted.

## C. Riding in the vehicle.

- 1. I need an ambulance.
- 2. I need either a wheelchair or special seating.
- 3. I can sit in a seat and need no special attention.

## D. At the destination.

- 1. I generally need someone to accompany me.
- 2. I generally do not need anyone to accompany me.

## IV <u>Barriers</u>

Now, think as if you wanted to use a public bus. There may be some problems and we want you to tell us which things you find to be problems as we read the list.

	(1)	(2)	(3)
	Severe	Some	No
	Difficulty	Difficulty	Difficulty
Reading schedules and maps. Getting information over phone. Walking on uneven ground and slopes. Crossing streets and curbs. Going out in bad weather. Waiting for the bus to come. Standing at the bus stop. Climbing the bus steps. Negotiating crowds on buses. Handling change and transfers. Getting a seat before the bus starts. Standing up when a seat is not available. Affording the bus fare. Using the seats. Reaching the buzzer cord.			
-			

#### **T** Improved Service.

1. Now, think about the trips that you might make if public transit buses were available which were improved so that they had wheelchair lifts, lower front steps, wider doors, better handholds, and reserved seats for the elderly. How many round trips/week would you make on such buses at a one-way fare of:

\$0.25_____ \$0.50____ \$1.00____ No Cost _____

2. Now, suppose a new type of public transportation service were started that would pick you up at your door and take you wherever you wanted to go, whenever you requested such service. We want to ask you about how often (round trips a week) you would want to use such a service, at different one-way fare levels.

\$0.50_____ \$0.75_____ \$1.00_____ No Cost_____

- Are you receiving medicaid or supplemental income from the Government to help you meet the cost of living here?
  - 1 = Medicaid
  - 2 = Supplemental Income
  - 3 = Neither
  - 4 = Don't know

	ON-BOA	RD SU	JRVEY
--	--------	-------	-------

Mata	mimor
Note	The:

6. Personal Business

8. Social or Recreational

7. Visiting

9. Other

□ week

month

Hello my name is

I am conducting a survey of the users of this transportation service as part of a study conducted by the Southeastern Wisconsin Regional Planning Commission. Your cooperation will help us to improve the transportation available to you and to others in the area. Now then,

- 1. What is your name, please? (INTERVIEWER: Do Not Record Name) Have I interviewed you before? (If yes, thank interviewee and conclude interview.)
- 2. What is your age, please? (no response put N.R.)
- 3. How long have you been using this service year(s) month(s) day(s)
- 4. On the average, how often do you travel by this service? day(s) per per

5. What is the purpose of your trip today 1. Home (if home, note from where returning)

- 2. Work
- 3. Church
- 4. Shopping
- 5. Medical or Dental
- 6. If this service did not exist how would you have taken this trip?

Car Driver Car Rider **D**Taxi

Dublic Bus

□Walk

□ By family

□ By friends

①Other(specify)

Would not have taken the trip

- 7. Could you have made this trip on the regular public buses if they had been equipped with wheelchair lifts?  $\Box$  YES
- 8. Do you pay for this service yourself or is it paid for by another source?

🛛 Yourself	□Agency (specify)
<b>D</b> Medicare	Other (specify)

9. Sex (Interviewer Answer by Direct Observation) □Male □ Female

> (Next Attitudinal Questions) Semantic Differential Instructions

Now, I want to get a more detailed picture of how you feel about this transportation service and several other items.

(GIVE THE RESPONDENT THE SEMANTIC DIFFERENTIAL QUESTIONS AND A PENCIL).

On this page are a series of questions which we would like you to respond to. There are rows of 7 lines, with words such as "good" and "bad" at the end of each row. The two words at the ends of each row are always opposite to each other in meaning.

#### SPECIALIZED TRANSPORTATION

			Very	Somewhat More	Slightly	In-Between	Slightly	Somewhat More	Very	
10.	Is this vehicle	COMFORTABLE								UNCOMFORTABLE
11.	Is this service	CONVENIENT								INCONVENIENT
12.	Are the drivers	COURTEOUS		<u>-</u>						RUDE
13.	How easy is it for you to get into and out of the vehicle?	EASY								HARD
14.	Is the time you spend wait- ing for a ride generally short or long?	SHORT	<u></u>							LONG
15.	How convenient or incon- venient is it for you to call 24 hours in advance to reserve a ride?	CONVENIENT								INCONVENIENT
16.	Is this service	SAFE								UNSAFE
17.	Is this service	RELIABLE								UNRELIABLE
18.	How important is privacy to you when traveling?	IMPORTANT		<del></del>						UNIMPORTANT
19.	Do you mind sharing a ride with other people when you use this transportation service?	MUCH								LITTLE
20.	How do you feel about having this ride paid for by an agency?	GOOD								BAD

(POINT TO THESE WORDS AS YOU READ THEM) Now, would you read aloud the rest of the pairs of words for me?

(IF FOR ANY REASON, THE RESPONDENT IS UNABLE TO UNDERSTAND OR COMPLY, DO NOT CONTINUE. INSTEAD, ADMINISTER ORALLY ACCORDING TO SPECIAL INSTRUCTIONS BELOW.)

Now, I want you to use the rows of lines and words and answer each question telling me how you feel about this transportation service. You do this by putting a check mark on one of the seven lines in each row to the right of the question. The closer to one of the two words you put the check, the more like the word you think the transportation service is. Put only one check in each line.

(WATCH TO MAKE SURE THAT THE INSTRUMENT IS BEING COMPLETED PROPERLY. AFTER RE-SPONDENT HAS FINISHED, CHECK TO MAKE SURE THERE IS A CHECK ON EVERY LINE, BUT NO MORE THAN ONE PER LINE).

SPECIAL INSTRUCTIONS FOR ORAL ADMINISTRATION

O.K. let's take the first pair. Is this vehicle "comfortable", uncomfortable", or "in between"?

(RESPONDENT PICK "COMFORTABLE")

O.K. is it "slightly comfortable", "somewhat more comfortable" or "very comfortable" (CHECK RESPONSE THEN CONTINUE DOWN THE PAGE IN THE SAME WAY).

21. What do you think are the best features of this service? (RECORD ANS. VERBATIM)

22. Do you have any suggestions for improving this service (RECORD ANS. VERBATIM)

23. What is the last year of schooling that you have completed? Elementary Grades High School College or Technical School 9 10 11 12 13 14 15 16 17 + 12345678 24. Disability (INTERVIEWER; ANSWER BY DIRECT OBSERVATION) □ Wheelchair Stretcher Crutches Leg brace **D**Blind Mental Handicap/Retarded Done Apparrent □ Infirm 25. (INTERVIEWER; Hand Respondent Card with Incomes on it) Please tell me the letter of the category on the card which is closest to your household's gross income. (before taxes) (INTERVIEWER; this includes non-taxable income) □ a. under \$4,000 **Q**e. \$10,000 to \$11,999 □ b. \$4,000 to \$5,999 **D**f. \$12,000 to \$14,999 □ c. \$6,000 to \$7,999 □ q. \$15,000 or more □d. \$8,000 to \$9,999

(INTERVIEWER: If respondent is unable to read card, follow the special instructions for eliciting income information verbally. (See control sheet))
#### Appendix E

## PROCEDURES FOR RETROFITTING EXISTING TRANSIT VEHICLES WITH A WHEELCHAIR LIFT

The procedures used in retrofitting an existing transit vehicle will vary depending upon the specific model and manufacturer but may be generally categorized as disassembly of existing structures and components, modification of existing equipment, installation of new equipment, and reassembly and testing. These steps are not necessarily sequential but to a certain extent can be carried out in parallel. The whole process can be performed in approximately 200 man-hours. The following description of procedures with respect to General Motors Corporation vehicles is based on conversations with personnel of Transportation Design and Technology who supplied the lift modification kits and instructions for San Diego and with personnel from the Metropolitan Atlanta Regional Transportation Authority (MARTA) who are installing 20 similar lifts. Additionally, the description of the actual steps, below, is based on these conversations plus an article on the San Diego experience appearing in the 1977 March/April issue of Metropolitan.

#### **Modification Process**

The first step is to remove the doors and existing stepwell and the teardrop window. The door aperture is then modified and prepared for the lift assembly installation in three major stages. The side panel is separated from the "B" post at the rear of the doorway by withdrawing the rivets, and then cut back five inches while the "B" foot itself is cut away for repositioning. The main bulkhead panel is cut away by the frame and a new one bolted into position with the repositioned "B" post. At the same time an additional header plate is attached at the top of the door and tied into the "B" post. At the front of the door a new shear panel is attached with a strong gusset to the main frame, bumper, and "A" post.

The vehicle is now ready to receive the lift assembly which is attached by four mounting bolts on either side. The hydraulic module package is mounted on the frame rail and hydraulically connected to the lift assembly. Total hydraulic capability is then obtained by installing a power steering pump and a reservoir in the rear engine compartment and connecting through to the module. The lift can now be operated manually and checked for leaks and sequencing. Once this is successfully accomplished, the electrical controls can be installed on the instrument panel and the unit retested.

Final reassembly can now commence with the replacing of the teardrop window which has been cut to reduce its size. Protective close-out panels for the lift assembly are installed and the lift operation rechecked for any interferences. The last step is reinstalling the doors. This involves a minor modification to the mechanism to allow for the greater width. The door panels have themselves been modified by removing the front extrusion which holds the sealing strips, and adding filler pieces to widen the panels. Once the door panels have been replaced and the door/lift interlocks checked out the vehicle is ready for a cyclic test program (minimum 25 cycles) and evaluation of the interior modifications made to accommodate the wheelchairs. These modifications usually include removal of the first rows of transverse seats, installation of tip-up seats as replacements, and location of suitable tiedowns for the wheelchairs.

Mechanical modifications consume the major effort—about 90 percent of the work for a vehicle in good condition. The conversion requires 180 to 220 hours of labor with a one- to two-man crew depending on conditions and familiarity with the work. Transportation Design and Technology recommends as the most expeditious method, that 3 two-person crews work sequentially on various aspects of about five vehicles. This method should produce the lower level of labor hours. Personnel from Transportation Design and Technology can be provided to assist in the initial conversions and, thus, expedite the learning process.

#### $\mathbf{Cost}$

The most favorable cost for lifts can be obtained by maximizing the quantities purchased. Thus, a joint purchase of 26 units by Kenosha and Racine would give unit costs of \$8,100 to \$8,800 depending on the number of wheelchair lifts per bus, their location, and provisions for external control of the lift. Such a joint purchase would also enable a central location for conversion to be established at which personnel from both systems could be used to ensure familiarity with the equipment.

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# Appendix F

## GUIDELINES FOR DETERMINATION OF ELIGIBILITY FOR USER-SIDE SUBSIDY PROGRAM SERVICES

In order to implement the recommended user-side subsidy program in the three urbanized areas and the recommended demand responsive systems in the rural areas it will be necessary to establish criteria for determining who is eligible for these services as well as a certification procedure for determining eligibility. The purpose of this appendix is to present guidelines to accomplish these purposes.

As discussed in Chapter VI, the target group of persons eligible for service are the transportation handicapped. It should be recalled that the able-bodied elderly (nontransportation handicapped) are not included in this group. Consequently, the guidelines presented herein do not contain provisions for this group of persons. After the programs have been in operation for a reasonable time and actual ridership, and cost data are available, an assessment can be made to determine the additional funds required to provide service for the able-bodied elderly. If an area elects to provide this service, these guidelines can be modified to include age certification by the Social Security Administration.

In order to develop these guidelines, a review was conducted of the criteria and procedures that have been used in similar programs in other parts of the country. Suggestions and advice from persons concerned with these programs were also solicited. One common theme from this experience was that the eligibility process should be as simple as possible and convenient for the user. From the viewpoint of persons administering the program (defined herein as Program Management) it should also be simple and cost-effective to administer and have reasonable controls.

### DEVELOPMENT OF FINAL CRITERIA AND PROCEDURES

In order to implement the eligibility process, the designated Program Management should develop a preliminary version of the eligibility criteria and registration procedures. The guidelines presented in this appendix are intended to provide an initial version of the required documentation. The preliminary version should be distributed for review and comment by persons and groups concerned with the transportation handicapped in addition to a program advisory group. Development of the final version of eligibility criteria and registration procedures should be a coordinated effort between concerned handicapped groups, the program advisory group, and Program Management. Once the system is implemented it should be reviewed periodically and any resultant modification should also be accomplished with recommendations from the program advisory group. Hopefully such changes will be relatively minor so that potential confusion by users can be minimized.

### ELIGIBILITY CRITERIA

In the urbanized areas, all transportation handicapped persons who reside more than two blocks from accessible fixed-route bus service would be eligible for the user-side subsidy program. In addition, as recommended by all three advisory groups, those transportation handicapped persons who live within two blocks of an accessible bus route but who because of their particular disability cannot use or have great difficulty using such service would also be eligible for the user-side subsidy.

In the rural areas, since no accessible fixed-route bus service is planned, all transportation handicapped persons would be eligible for demand responsive services. Determination of who is transportation handicapped requires the development of an operational definition based upon an expansion of the functional definition presented in Chapter II. The eligibility criteria suggested here is patterned from that currently being used in the Urban Mass Transportation Administration (UMTA)-sponsored taxi user-side subsidy demonstration program in Danville, Illinois.¹ The eligibility criteria in Danville was based on similar criteria drawn up by the San Francisco Bay Area Task Force on Handicapped Definitions.

From a functional viewpoint, a transportation handicap is any incapacity or disability which results in the inability of a person to perform one or more of the following functions necessary for effective use of mass transportation facilities:

- 1. Negotiating a flight of stairs, escalator, or ramp.
- 2. Boarding or alighting from a public transit vehicle.
- 3. Standing in a moving public transit vehicle.
- 4. Reading informational signs.
- 5. Hearing announcements by bus drivers or station agents.
- 6. Walking more than 200 feet.

In order to provide an operational basis for determining who is transportation handicapped, Exhibit  $F-3^2$  presents proposed eligibility criteria based upon disabilities. Major categories of disabilities include: physical, developmental, mentally disordered, and Veterans Administration disabilities.

There are two major classifications of transportation handicapped persons; permanent (chronic condition) and temporary (acute condition). Any person who has a physical, mental, or psychlogical disability or incapacity of less than six months duration that is covered in the eligibility criteria will be considered as temporarily transportation handicapped and will only be eligible for service over a limited time period.

In order to become eligible, a person must have a certification form signed by a physician or a qualified local, state, or federal agency representative. Thus, the burden of determining who meets the eligibility criteria is vested with qualified persons and not with the Program Management or the transportation service providers. Exhibit F-1 presents a sample certification form and Exhibit F-2 shows a statement which explains the process to persons qualified to certify.

In the urban areas, it will be necessary to ascertain that a person resides one-quarter mile or more from an accessible fixed-route bus stop. This can be accomplished by having the applicant indicate this information on the application card. No certification is necessary since this information can be easily verified if necessary by Program Management. A different situation exists with respect to transportation handicapped persons who reside within one-quarter mile of an accessible fixed-route bus stop and have great difficulty getting to the stop. Provisions could be made to include this information on the certification form, but this may be confusing since the majority of the applicants will not need this additional statement. The simplest approach is to use an honor system whereby the applicant indicates this problem on the application card, since possible abuses can be monitored.

Details of the application procedure and process for becoming eligible for service are presented in Appendix G.

¹ Final Evaluation Report, User-Side Subsidies for Shared Ride Taxi Service in Danville, Illinois: Phase I, Crain & Associates, Menlo Park, California.

²Presented as a separate attachment for reproduction and discussion convenience.

# Exhibit F-1

# **CERTIFICATION FORM**

# CERTIFICATE FORM

# PROGRAM NAME

I certify that		meets th	e (progra	um name) eligit	oility criteria
(Please Print Person's Name)		-		, U	•
as handicapped, Section No.	and is				eligible
(Section No.)		(per	manently	/temporarily)	
for a discount fare. Length of Temporary Disability					_
	(Nu	mber of l	Months)		-
* * * *	*	*	*	*	
Person's Address					
Telephone	Birt	thdate			
Resident of					
(Cit	y and Cou	unty)			
Ι,	a	gree to th	ne release	of this inform	nation to the
(Signature of Applicant) (Program Name) for the purpose of discount fare elig	gibility ce	ertificatio	n.		
* * * *	*	*	*	*	
PLEASE TYPE OR PRINT:					
Name of Person Certifying			Age	ncy	
Address			Telep	hone	
Physician's License Number (if applicable)					

Signature of Certifying Person

#### Exhibit F-2

#### **CERTIFICATION INSTRUCTIONS**

# NOTICE OF PHYSICIANS LOCAL, STATE, AND FEDERAL AGENCY PERSONNEL

Discount fares for transportation service are now available to handicapped persons who are residents and who are certified by a physician or local, state, or federal agency as meeting definitions described on the attached eligibility criteria. If you are requested to certify a person as transportation handicapped for discount fare eligibility, please follow the procedure described below:

- 1) Determine if the person meets the permanent or temporary criteria described in the eligibility criteria based on appropriate medical records. Note the section number.
- 2) Fill out the attached certificate form indicating the section number and person's address, birth date, and telephone number.
- 3) If temporary disability, indicate period disabled in appropriate space.
- 4) Sign the certificate form and fill out address and telephone number and license number, if applicable.

# NOTE: Local, State, and Federal Agency Personnel

Certification forms may only be signed by those persons whose name(s) and title(s) are on file with the (program name) office as designated personnel. Agencies need notify the program office of any change in designated personnel.

The certificate forms will remain on file with the program office as medical records, not subject to public review.

Please return the form to the person requesting certification for transmittal to the project office or send it directly to the program office yourself.

Thank you for your cooperation.

#### Exhibit F-3

#### **ELIGIBILITY CRITERIA**

The eligibility criteria presented here was developed in conjunction with state groups, e.g., agency service personnel, members of the handicapped community, and advisory groups. It is the sole basis for determining whether a person is transportation handicapped.

There are two categories of persons who meet the criteria; permanent (chronic condition) and temporary (acute). Any person who has a physical, mental, or psychological disability or incapacity of less than six months duration that is covered in the eligibility criteria is considered in the temporary category, and his or her eligibility is limited to the duration of meeting the criteria. All other persons meeting the eligibility criteria have chronic conditions.

#### EXCLUSIONS

Persons whose sole incapacity is 1) pregnancy, 2) obesity, 3) acute or chronic alcoholism or drug addiction, and 4) contagious diseases are specifically excluded from eligibility.

#### PHYSICAL DISABILITIES

- Section 1. Nonambulatory Disabilities: Impairments that, regardless of cause, confine individuals permanently to wheelchairs.
- Section 2. <u>Semiambulatory Disabilities</u>: Impairments that cause individuals to walk with difficulty or insecurity including individuals using a long leg brace, a walker, or crutches to achieve mobility.
- Section 3. <u>Semiambulatory Disabilities:</u> Persons who due to any cause suffer arthritis which causes a functional motor deficit in any two major limbs (arms and/or legs).

American Rheumatism Association criteria may be used as a guideline for the determination of arthritic handicap. Therapeutic Grade III or worse and Functional Class III or worse and Anatomical State III or worse are evidence of arthritic handicap.

- Section 4. Semiambulatory Disabilities: Persons who suffer amputation of or anatomical deformity of both hands, or one hand and one foot (i.e., loss of major function due to degenerative changes associated with vascular or neurological deficits, traumatic loss of muscle mass or tendons and X-ray evidence of bony or fibrous ankylosis [a stiffness or "fixation" of a joint caused by fibrous or bony tissue accumulating in a joint space] at an unfavorable angle, or joint subluxation [incomplete or partial dislocation of a joint] or instability); persons who suffer amputation of lower extremity at or above the tarsal region—one or both legs. (The tarsal region is in the ankle. Tarsal bones are small bones that collectively support the leg bones above the foot.)
- Section 5. <u>Semiambulatory Disabilities:</u> Cerebrovascular accident (stroke) with one of the following occurring four months post-CVA:
  - a. Pseudobulbar palsy (spastic weakness of the muscles enervated by the cranial nerves [face, larynx] due to bilateral corticospinal lesions of the spinal cord); or
  - b. Functional motor deficit in any of two extremities; or
  - c. Ataxia affecting two extremities substantiated by appropriate cerebellar signs or proprioceptive loss. (Ataxia is loss of the ability to coordinate the voluntary muscles in a normal manner, e.g., legs and/or arm muscles.)

Section 6. <u>Semiambulatory Disabilities—Pulmonary Ills:</u> Persons suffering respiratory impairment (dyspnea—a disability that involves shortness of breath or difficulty breathing) as defined by <u>The Journal of the American Medical Association</u>, "Guides to the Evaluation of Permanent Impairment, The Respiratory System," November 22, 1965.

**Classes of Respiratory Impairment** 

- Class III Dyspnea does not occur at rest but does occur during the usual activities of daily living. However, the patient can walk a mile at his own pace without dyspnea although he cannot keep pace on the level with others of the same age and body build. Percent disability 40-50.
- Class IV Dyspnea occurs during such activities as climbing one flight of stairs or walking 100 yards on the level, or less exertion or even at rest.
- Class VI Dyspnea present on slightest exertion, such as dressing, talking, at rest.
- Section 7. <u>Semiambulatory Disabilities—Cardiac Ills:</u> Persons suffering functional classifications of cardiac disease, Classes III and IV and therapeutic classification Classes C, D, E as defined by Diseases of the Heart and Blood Vessels—Nomenclature and Criteria for Diagnosis, Sixth Edition, Boston, Little, Brown and Company by the New York Heart Association.

#### **Functional Classification**

- Class III Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary physical activity causes fatigue, palpitation, dyspnea, or anginal pain. For instance, inability to walk one or more level blocks or climb a flight of ordinary stairs.
- Class IV Patients with cardiac disease resulting in inability to carry on any physical activity without discomfort. Symptoms of cardiac insufficiency or of the anginal syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased.

#### Therapeutic Classification

- Class C Patients with cardiac disease whose ordinary physical activity should be moderately restricted, and whose more strenuous efforts should be discontinued.
- Class D Patients with cardiac disease whose ordinary physical activity should be markedly restricted.
- Class E Patients with cardiac disease who should be at complete rest, confined to bed or chair.
- Section 8. <u>Semiambulatory Disabilities-Dialysis:</u> Persons who in order to live must use a kidney dialysis machine.
- Section 9. Sight Disabilities: This section includes only the legally blind.
  - a. Those persons whose vision in the better eye after best correction is 20/200 or less; and
  - b. Those persons whose visual field is contracted (commonly known as tunnel vision)
    - 1. to 10 degrees or less from a point of fixation, or
    - 2. so the widest diameter subtends an angle no greater than 20 degrees.
- Section 10. Hearing Disabilities: Deafness or hearing incapacity that may make an individual insecure in public areas because the individual is unable to communicate or hear warning signals.

This section includes only those persons whose hearing loss is 90dba or greater in the 500, 1000, 2000 Hz. ranges.

Section 11. Disabilities of Incoordination: This section includes those persons suffering faulty coordination or palsy from brain, spinal, or peripheral nerve injury and persons with a functional motor deficit in any two limbs or who suffer manifestations which significantly reduce mobility, coordination, and perceptiveness not accounted for in previous categories.

### DEVELOPMENTAL DISABILITIES

Those persons, not psychotic, who are so developmentally disadvantaged from infancy or before reaching maturity that they are incapable of managing themselves and their affairs independently, with ordinary prudence, or of being taught to do so, and who require supervision, control, and care for their own welfare, or for the welfare of others, or for the welfare of the community; and any person who is unable, or likely to be unable, to physically or mentally respond to an oral instruction relating to danger and, unassisted, take appropriate action relating to such danger. This section includes only those persons with the following disorders who are participating in a state or federally funded or state-recognized program.

- Section 12. <u>Mental Retardation</u>: Refers to subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior (a general guideline is an IQ which is more than two standard deviations below the norm). This section also applies to adults who by reason of illness or accident suffer mental retardation.
- Section 13. <u>Cerebral Palsy:</u> A nonprogressive disorder dating from birth or early infancy. However, if it is not treated, there is marked regression in functioning characterized by examples of aberations of motor functions (paralysis, weakness, uncoordination) and often other manifestations of organic brain damage such as sensory disorders, seizures, mental retardation, learning difficulty, and behavioral disorders.
- Section 14. Epilepsy (Convulsive Disorder): Clinical disorder involving impairment of consciousness, characterized by major motor seizures (grand mal or psychomotor) substantiated by electroencephalogram (EEG), occurring more frequently than once a month in spite of prescribed treatment. With:
  - a. Diurnal episodes (loss of consciousness and convulsive seizure); or
  - b. Nocturnal episodes which show residuals interfering with activity during the day.
- Section 15. <u>Autism:</u> (1) a syndrome described as consisting of withdrawal, very inadequate social relationships, exceptional object relationships, language disturbances, and monotonously repetitive motor behavior; many children with autism will also be seriously impaired in general intellectual functioning; (2) this syndrome usually appears before the age of six and is characterized by severe withdrawal and inappropriate response to external stimuli.
- Section 16. <u>Neurological Handicap</u>: A syndrome characterized by learning, perceptual, and/or behavioral disorders of an individual whose IQ is not less than two standard deviations below the norm. These characteristics exist as a result of brain dysfunction (any disorder in learning or using the senses), neurological disorder, or any damage to the central nervous system, whether due to genetic, hereditary, accident, or illness factors. This section includes persons with severe gait problems who are restricted in mobility.

#### MENTALLY DISORDERED DISABILITIES

This section carries no age restriction.

# Section 17. Emotionally Disturbed: To the extent of total disability and

- a. living in a board and care home and receiving state or federal financial assistance and participating in a state or federally funded work activity center or workshop or
- b. living at home under supervision and may or may not receive state or federal financial assistance and participating in state or federally funded state or federal prescribed treatment programs or rehabilitation services.

### VETERANS ADMINISTRATION DISABILITY

Any veteran who holds a disability rating for aid and attendants, housebound or permanently totally rated at the 100 percent disability level, is immediately eligible and criteria section number requirement is waived on the Certificate Form.

All other veterans are subject to the above eligibility criteria.

Any veteran wishing to apply for certification to the Veterans Administration should include his or her Social Security number and VA file number on the Certificate Form or attachment sheet when mailing to the Veterans Administration.

### Appendix G

### USER-SIDE SUBSIDY PROGRAM GUIDELINES

### INTRODUCTION

User-side subsidy programs are a relatively recent approach to providing discounted fare transportation services. Various approaches have been tried, primarily on a demonstration or experimental basis. This appendix presents a discussion of the various approaches and selection of the recommended approach, and concludes with a discussion of operational procedures needed for implementation.

Before proceeding further, it is helpful to clarify nomenclature. Persons who would be eligible for the user-side subsidy program but have not applied for eligibility are termed prospective users. Persons who have applied and have been certified as eligible are called users, even if they don't actually use the system. The administration and management of the program will be under the auspices of a public body of respective counties. This organization has been termed Program Management. The program itself should be given a concise name for rememberable identification and for marketing purposes. The taxi and chair car operators who are certified to provide service have been termed providers.

### DISCUSSION OF VARIOUS APPROACHES

There are three basic approaches that can be considered for structuring the implementation of a user-side subsidy program. Each has been tested, at least on an experimental basis. They can best be described from the viewpoint of when the user of the transportation service pays the discounted fare:

- 1. Prepayment: The user buys discounted tickets or tokens before the trip and then gives the tickets/ tokens to the driver at the time of the trip in lieu of cash.
- 2. Time of Trip Payment: The user pays in cash a discounted fare to the driver at the time of the trip.
- 3. Postpayment: The user pays the discounted fare after the trip.

For each of these systems it is necessary to establish or certify who is eligible for the service and certify operators to provide the service. The methods for accomplishing this are for all practical purposes not dependent on a particular approach and could be similar for all three approaches.

#### Prepayment System

With this system users purchase tickets (or tokens) at less than face value based upon the program discount subsidy. Tickets at face value are then used to pay the full cost of the trip. Generally, the ticket denomination can be set so as to avoid or minimize the need for the driver to make change. The user may be required to show an ID card to the driver for fraud control, but this is an optional requirement. Users purchase tickets by mail or in person on a periodic basis dependent upon the program constraints. For example, a person could buy one ticket book per month which contained tickets worth a fixed face value.

Providers turn collected tickets in to the Program Management on a periodic basis and are reimbursed the face value of the tickets.

Program Management has to print up ticket books, keep track of tickets, provide a distribution process, and reconcile redeemed tickets. Generally there are some tickets sold which are not used.

A primary example of this type of system is the West Virginia Transportation Remuneration Incentive Program (TRIP). Low-income handicapped or elderly persons can purchase ticket books at a discount based upon a sliding income scale (similar to Food Stamps). Exhibit G-1 shows the TRIP tickets. The tickets can be used throughout the state with certified providers, including trains, local buses, intercity buses (Greyhound and Trailways), and taxis. The program originated in June 1974, and has been administered by the West Virginia Welfare Department. Some problems have been encountered: registration is less than expected, users primarily consist of persons in the upper half of the mean low-income level, and implementation of transportation systems has lagged due to administrative and technical difficulties.

Two other examples of this type of system are the Oklahoma City taxi user-side subsidy for handicapped and elderly (Share-A-Fare), and a pilot program of the Massachusetts Bay Transportation Authority (MBTA) which provides demand responsive service for the handicapped in selected areas of Boston (THE RIDE).

Advantages of this system approach include:

- 1. A limit can be placed on the number of tickets a user can purchase in a fixed time period.
- 2. Program Management can accurately project subsidy liabilities and have an advantageous cash flow position.
- 3. Providers do not have to handle cash unless change is necessary and driver fraud is minimized.
- 4. Discounts can be varied as function of user income.

Disadvantages include:

- 1. Users have to periodically buy tickets in advance of making trips. This is an inconvenience and requires persons to plan ahead. It is particularly difficult for low-income people.
- 2. Tickets are generally small which presents some handling problems.
- 3. Some possibility exists for users to sell ticket books to noneligible persons if ID cards are not required.

#### Time of Trip Payment System

With this approach, the user pays a prescribed discounted fare at the time of the trip in cash. The user must show an ID card to the driver. Both the driver and the user sign a trip charge or voucher slip. The slips are collected by the provider and periodically turned into Program Management for reimbursement of the difference between the actual full cost of the trip and the user fare.

The user ID card is critical in this system since it is the only means that the driver has to know that the passenger is eligible for a discount.

Limits on frequency of use present some difficulty. One approach is to inform users that they should not exceed a set limit of total trip costs per month. Program Management would monitor individual trip costs and inform users that they have exceeded the limit. Continued violation could result in the user becoming ineligible for service.

This system has been in operation since December 1975 for the user-side subsidy taxi demonstration project sponsored by the Urban Mass Transit Administration (UMTA) (RTR Project) in Danville, Illinois. A comprehensive evaluation has indicated that the approach has operated successfully.¹

¹Performed by Crain Associates, Menlo Park, California.

The advantages of this approach include:

- 1. It is most convenient for users since it minimizes what they have to do to take a trip.
- 2. Providers do not have to make change.
- 3. Project Management is not responsible for ticket distribution and system administration.

Disadvantages include:

- 1. Only an after-the-fact monitoring of individual use is possible. This is important if there is a limit placed on the frequency or subsidy dollars for users in specified time periods.
- 2. Drivers and users are occasionally delayed due to processing trip slips.
- 3. Provider fare structure may make it difficult to compute the user fare. A zone fare structure eliminates this problem.
- 4. Project Management must set up procedures for minimizing fraud.

### Postpayment System

This approach is based on a credit card or equivalent system. Users are issued credit cards. Provider vehicles have an electronic box containing a tape cassette which reads and records information contained on the credit card. Users insert their cards in the box upon entering and leaving the vehicle. Their fares can be computed for multiple zone trips, or a variable fare structure based upon trip zones and number of passengers carried can be instituted. Fare tapes are processed for billing and tabulation of extensive operational data.

An optional approach without credit cards could be devised, but this would involve extensive administrative costs by Program Management.

The credit card system was originated on an experimental basis by the Valley Transit District (VTD) in Derby, Connecticut as an UMTA demonstration project. The system operated for several years, but local funding problems curtailed operations. A similar experiment has recently become operational in Portland, Oregon to obtain additional operating experience and data.

Advantages of this approach include:

- 1. Drivers do not have to handle cash or make change.
- 2. A variable fare structure can be used.
- 3. Billing and operational data are compiled by computer.

Disadvantages include:

- 1. Electronic boxes to read credit cards are required for each provider vehicle. These units are expensive, because they are not available as standard commercial products. This is a major deterent when various types of provider vehicles (particularly taxis) are involved.
- 2. Users may not pay bills and credit cards may be used by ineligible persons; however, this was not a major problem encountered with the VTD system.
- 3. Users don't readily know the cost of a trip until they receive their bill.
- 4. Program Management has a poor cash flow position.

## SELECTION OF RECOMMENDED APPROACH

Since various types of vehicles and providers will be involved in the user-side subsidy program, the postpayment approach is not considered feasible. The major advantage of the prepayment approach compared to the time-of-trip approach is that a limit on use can be implemented; however, it would involve inconvenience to users and additional administrative costs.

In the Danville user-side subsidy program (time-of-trip payment), a limit of \$20 per month was established (equivalent to about 15 trips) on an honor system basis. Only 3 percent of all users constantly exceeded the limit. The amount of fares discounted in excess of the monthly limit only amounted to 5 percent of all fares discounted.

The time-of-trip payment approach offers the least inconvenience to users, should have the lowest administrative costs, and is compatible for different types of providers. Furthermore, it has been tried and judged to be successful. Consequently, it is recommended for all three urban areas.

# RECOMMENDED APPROACH OPERATIONAL PROCEDURES

Based upon the recommended approach for structuring the user-side subsidy program, this section suggests procedures for implementation. They are intended to serve as guidelines for Program Management. As such they should be carefully reviewed since modification based upon particular local conditions may be necessary.

### Application and Certification Procedure

Prospective users must apply to use the system. Application packages consisting of an application card, certification form, eligibility criteria (includes certification notice), and a permission slip (for minors) should be obtained by mail or in person at the Program Management Office. Exhibits G-2 and G-3 show, respectively, an application card and permission slip. Eligibility criteria and a certification form were presented earlier in Appendix F.

Note that prospective users residing within one-quarter mile of a bus stop (assumed to be accessible) indicate that they cannot get to the stop on the application card. This was not included on the certification form since it should be obvious that it can be checked and the person signing the certification form should not be expected to know local mobility barriers.

Prospective users indicate on the application card whether they can or cannot use a taxi. This is done so that taxis will be used when possible to take advantage of reduced trip costs.

After the application package has been completed and approved by Program Management, a user will be issued an identification card. Exhibit G-4 shows an identification card. For positive identification a photograph on the card is proposed. This will necessitate prospective users to appear in person at the Program Office. In order to accomplish this, arrangements should be made to give prospective users a free trip to the office.

An alternate option would be to not require a photograph. This would result in less positive identification, but prospective users could become users without coming into the office.

Users certified as permanent transportation handicapped would be issued ID cards valid for at least a year. The main reasons for the time limit is to provide a mechanism for updating user files. If this is not considered important, then no expiration date is needed on permanent ID cards.

Users certified as temporary transportation handicapped will be issued cards of a different color with expiration dates at the end of the last month of their disability. If the disability becomes permanent then a user should be given that type of ID card.

When the user obtains the ID card he or she should be instructed on how to use the system. Persons who have indicated that they can ride a taxi should be given lists with telephone numbers of certified taxi providers. Persons who cannot use taxis should be given similar information on chair car providers. Users should be given a trip voucher (Exhibit G-5) and told how their fare will be computed and that they and the driver must sign the voucher.

To use the system users call either a certified taxi or chair car carrier. They should show the driver their ID card. They then pay the driver the rider share, and sign the trip voucher after the driver signs it. Taxi tips will not be paid by the user, since provision has been made to include the tip as part of the subsidy. This was done to avoid the problem of poor driver service because of inadequate driver tips.

A summary of the application and certification procedures is given in Exhibit G-6.

#### PROGRAM MANAGEMENT CONTROL PROCEDURES

A major consideration is whether a limit should be imposed on the frequency that users use the system. Persons who use it to go to and from work could make more than 40 trips per month. Based upon the experience from Danville cited earlier, and the projections presented in Chapter VII, the average number of trips will be considerably below that figure. A reasonable approach would be to start the program with no limit and let the user fare be the only thing acting as a constraint. Then over a period of time if excessive trip making is encountered a limit can be imposed. This would be accomplished by notifying all existing users and putting a limit statement on the application card.

Program Management must be considered with overall administration of the program which includes concern for possible fraud. Some of the key control elements which have been set up by this design include:

- 1. Certification
  - a. Address checks for residences—correct addresses required for receipt of ID cards, and correct phone numbers required.
  - b. Signature on application card.
  - c. Unique ID numbers, connected to a person's name, address, and telephone number which are recorded in a master file.
- 2. Use of ID Cards
  - a. ID cards color-coded with photograph for visibility control of who uses them.
  - b. ID number, photo, name, address, and signature on ID card.
  - c. Driver's reluctance to honor improper ID cards.
  - d. Driver's reporting of suspicions of misuse of ID cards.
  - e. Trip voucher slips coded by provider company.
  - f. Date, time, and ID numbers recorded—specific individuals connected to specific trips charged to project on specific provider companies.
  - g. Name of driver required on trip voucher slip.
  - h. Signature of rider-to correspond with signature on ID card.

- 3. Redemption
  - a. Copies of trip voucher provided to the project.
  - b. Trip voucher slips data processed or tabulated to confirm invoices to the project.
- 4. Monthly Tabulations or Computer Printout
  - a. Use of program at various frequency levels reported.
  - b. Provider trends analyzed.

There are two points in the process where a serious level of fraud can take place: 1) fraudulent creation of trips by the driver and 2) fraudulent creation of trips by provider owners. In the first case, it can be shown that personal profit to the driver for fraudulent creation of trips would be small in comparison to the risks involved. In the case of the owner, there is an opportunity for him to create trips at 100 percent profit. However, to do that he would have to make up an ID number, name of rider, name of driver, and individual signatures. Data from on-board surveys and analysis of time series data can be used to uncover any significant attempts at fraud on the part of a company. Monthly monitoring should catch incorrect ID numbers or overuse by some ID numbers (in which case the user is called and asked about their trips). In addition, periodic interviews of users is possible. All parties involved should be made aware of the monitoring system for potential fraud. However, the best and most cost-effective method to minimize fraud is to carefully screen providers before they are certified. Only reputable companies should be certified.

In order to gather information on users which could be helpful in analyzing trends for program planning and evaluation, it would be advisable to survey users as part of the certification process. Basic information that should be obtained includes:

- Socioeconomic characteristics.
- Alternative modes of transportation available.
- Purpose and modes for all trips taken in previous three days.
- Transit handicap details.

This survey could be conducted by phone with social service personnel helping to complete interviews for persons not capable of responding to questions. Additional periodic on-board surveys then should be used to gather comparative data.

Providers will send invoices to Program Management on a periodic basis for payment. A reasonable approach would be to use two week intervals rather than a month so as to reduce cash flow problems for providers. All invoices will have to be monitored and checked by Program Management before payment is made to providers.

### PROVIDERS

All providers must meet public safety and licensing requirements. Providers should have a sound financial accountability system and be mandated by contract terms to provide driver sensitivity training. In order to to become a certified provider a contract between the provider and Program Management must be executed. Details with regard to the use of the Trip Voucher, required supporting data, discount fare policy, billing process, and payment procedure should be included in the contract. Examples of contracts used in Oklahoma City, Oklahoma and Danville, Illinois are presented in Exhibit G-7 at the end of this appendix.

TRIP TICKET BOOK



Source: Applied Resource Integration, Ltd.

### **EXHIBIT G-2**

## **APPLICATION CARD**

	N CARD
JAME:	OFFICIAL USE I.D. NUMBER: GROUP: INITIAL:
I am incapable of using a taxi.	
ce: Applied Resource Integration, Ltd.	
Exhibit G	-3
PERMISSION	SLIP
PERMISSION	ISLIP
I give my permission for Name) I.D. card, in order to use the subsidy program body, or department thereof, responsible for any acc	(Name of Child) to receive a (Program of (Name). I will <u>not hold any g</u> overnmental idents or injuries that might occur when
using a cab.	
using a cab. Signat	ture:
using a cab. Signat Title (Parent, Gu	ardian, or Other)

# **IDENTIFICATION CARD**

IDENTIFICATION CAI	RD	
(Program Name)		
(Identification Number)	(Photo)	
John Doe 309 N. Vermilion Milwaukee, Wisc.		
Signature Plate		
EXPIRATION DATE		

Source: Applied Resource Integration, Ltd.

## Exhibit G-5

### TRIP VOUCHER SLIP

(Program Name)					
TRIP VOUCHER SLIP					
	(Transportation Provider)				
Date:	Time:				
I. D. Number (1)	(4)				
(2)	(5)				
(3)					
Total Fare: \$					
Rider Share: \$					
Driver:					
Rider:					
	(Signature)				

Source: Applied Resource Integration, Ltd.

#### **APPLICATION PROCEDURES**

#### USER-SIDE SUBSIDY PROCEDURE FOR TRANSPORTATION HANDICAPPED PERSONS

Procedure for the Permanently Handicapped

- 1. Obtain application package from (Program Name) project office. Forms will be mailed upon telephone request (number) or can be picked up at the project office (address).
- 2. The certificate form must be completed by a licensed physician or designated representative of a local, state, or federal agency. The signed form constitutes eligibility for the issuance of an identification card.
- 3. Bring the completed certificate form to the project office. A photo identification card will be issued with an individual identification number for each person certified.
- 4. The receipt of an identification card by persons certified as transportation handicapped will serve as immediate proof of eligibility for purchase of discount rides in taxis or chair car carriers and no additional proof of eligibility will be required.

#### Procedure for Discount Fare Eligibility for the Temporarily Handicapped

A temporary handicap is caused by injury or illness—as described in the eligibility criteria—which is considered by a licensed physician, or by a designated representative of a local, state, or federal agency to be nonpermanent.

A person suffering a temporary handicap shall be eligible for a discount fare during the period of disability. The period of time such a person shall be eligible for the discount shall depend upon the extent of the injury or illness.

The completed certificate form shall clearly indicate the length of time a person shall be considered disabled.

A temporary photo identification card clearly indicating the expiration date of discount fare eligibility shall be issued to the temporarily handicapped person.

The temporary discount identification card will be identified by a color stripe and discount rides can be purchased only through the month in which the expiration date takes place.

If upon the expiration date of discount fare eligibility, the disabling condition continues to exist, the extension of eligibility with physician's recertification shall be granted and a new identification card indicating a new expiration date shall be issued.

Should a temporary handicap continue to exist to the extent that a person is considered permanently handicapped, a permanent identification card shall be issued and the cardholder shall be eligible for a discount for one year.

Loss of Damaged Identification Cards

Identification cards which are lost or damaged will be replaced at a cost of \$1.00 to the card holder.

# SAMPLE CONTRACTS BETWEEN PROVIDERS AND PROGRAM MANAGEMENT

#### RTR PROJECT AND TAXICAB COMPANY CONTRACT

THIS AGREEMENT made and entered into this day of ______, 1975, by and between the City of Danville, hereinafter referred to as the "City," and ______Cab Company, hereinafter referred to as "Company,"

WITNESSETH:

WHEREAS, the City has many people in need of reasonably priced transportation, and;

WHEREAS, there currently exists in the City, Companies which are experts in the field of providing taxi transportation and are licensed to operate under the ordinances of the City of Danville, and;

WHEREAS, the City received a grant of \$314,530.00 on August 9, 1975, from the Federal Urban Mass Transportation Administration in order to help fund a user-side taxi transit subsidy program for a period of 24 months, and;

WHEREAS, Company is licensed and qualified to perform the services which are the subject of this agreement, and;

WHEREAS, the City and the Company are desirous of cooperating on the implementation of the taxi transit program.

NOW THEREFORE THE CITY AND THE COMPANY AGREE TO THE FOLLOWING:

- 1. TERM. The term of this agreement shall be for a period of 21 months after the initiation of the program in Danville.
- 2. DESCRIPTION OF SYSTEM. The Danville Taxi Transit System, hereinafter referred to as "system," shall be subject to the following:
  - A. The system will only transport individuals who live in the City.
  - B. System service shall be on a shared ride basis.
  - C. All patrons shall show a proper identification card before receiving a rider under this program.
  - D. All patrons shall deliver to driver, cash in the proper amount based upon the charges of Company as provided in ordinances of the City.
  - E. The driver shall complete a "charge slip" for the balance of the trip fare. One copy goes to the rider, one to the City, and one is retained by the Company.
- 3. Company shall at all times comply with provisions in paragraph 2 above and shall be subject to the following:
  - A. The Company will avoid any undue delay of any patron, either at point of pick-up or en route and will strive to pick up System patrons within 30 minutes of time of call.
  - B. The Company will govern vehicle staging and routing.
  - C. System vehicles will not wait for patron more than two minutes at any point.
  - D. System drivers will assist in loading and unloading of elderly passengers, parcels, and personal effects.

- 4. <u>VEHICLES AND SPECIFICATIONS</u>. Vehicles used in the System will be conventional four-door sedans equipped according to applicable City Codes on taxi cabs and shall at all times be kept in good and safe operating condition and shall at all times be kept in clean and comfortable condition. All drivers shall be licensed and meet the requirements of the City Codes.
- 5. <u>COMMUNICATIONS AND DATA COLLECTION</u>. Each vehicle shall have two-way radios. Company shall account for all patrons transported together with the appropriate charge, and shall maintain accurate trip sheets and other data which may provide information to allow for evaluation of the System by City and the Federal Government.
- 6. HOURS OF OPERATION. The company shall operate vehicles for this System 24 hours per day seven days a week and based on experience shall at all times have sufficient vehicles and personnel to meet the demand for service.
- 7. <u>REIMBURSEMENT FOR RIDES</u>. All charges by Company shall be made on the basis of the applicable rates as provided in the ordinances of the City. The Company shall meet with the City's representative each week on an agreeable date to submit a voucher for payment. The voucher shall be detailed enough to substantiate the billing. City shall pay the voucher as soon as possible unless there is some question about its validity. In such event, Company shall be contacted immediately and prompt steps taken to resolve such question.
- 8. INTERRUPTION OF SERVICE. Company shall be excused for failure to perform services under this agreement if said service is prevented by reason of Acts of God, strikes, labor disputes, or other occurrences over which Company has no control.
- 9. In the event Company or City shall fail to comply with this agreement, and shall continue to do so for five days after receiving notice in writing of any breach of this agreement, then this contract may be terminated by the aggrieved party.
- 10. MODIFICATION OF AGREEMENT. This agreement may be modified periodically by the parties in order to meet the changing transit needs of Danville and to better evaluate the System.
- 11. This agreement shall terminate if the funds to be provided by the Federal Urban Mass Transportation Administration shall not be received by City or if the license of Company to operate a taxi service in the City is suspended or revoked.
- 12. This agreement shall at all times be subject to the rules and regulations of the Federal Mass Transportation Administration and the Act under which it operates.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above mentioned.

CITY OF DANVILLE, A Municipal Corporation

BY:

MAYOR

CAB COMPANY

#### **OPERATING AGREEMENT**

THIS AGREEMENT made and entered into this 12th day of December 1975, by and between MASS-TRANS, a division of the Central Oklahoma Transportation and Parking Authority, as Administrator of the Share-A-Fare project as hereinafter defined, and YELLOW CAB COMPANY OF OKLAHOMA, INC., a corporation, SAFEWAY CAB, INC., a corporation, NORTHSIDE CAB COMPANY, <u>ABC CAB</u> COMPANY

(hereinafter Operators);

#### WITNESSETH:

Recitation. MASSTRANS has heretofore entered into a Memorandum of Understanding dated the <u>26th</u> day of <u>November</u> 1975, a copy of which is attached hereto as Exhibit "A," which states the general purposes and goals of the Areawide Aging Agency, Inc. (hereinafter AAA), and the Junior League of Oklahoma City. Inc. (hereinafter OCJL), and MASSTRANS, collectively referred to as Sponsors, in establishing a transportation project for the handicapped and elderly entitled Share-A-Fare. Operators desire to implement the Share-A-Fare project by furnishing drivers and equipment to effect the purposes set forth in the Memorandum of Understanding.

IT IS THEREFORE AGREED by all parties signatory hereto as follows:

- 1. Yellow Cab Company of Oklahoma, Inc., one of the operators, agrees to furnish office space, basic office equipment, inclusive of desk and chairs and other physical necessities required to implement the Share-A-Fare project.
- 2. Yellow Cab Company dispatcher shall coordinate trips, relay directions to cab drivers and generally supervise all deliveries.
- 3. Operators, and each of them, signatory to this Agreement agree to hold Sponsors individually and collectively harmless from any claims by the riding public being caused by the Act, action or failures of operators, drivers or employees. This hold harmless statement is inclusive of but not limited to defending lawsuits arising out of the operation of the taxicabs as herein provided and payment of any judgment fees, costs and expenses obtained against Sponsors individually or collectively. Each Operator acknowledges that it is in compliance with Section 29-36 of the Oklahoma City Code providing for an indemnity deposit in lieu of insurance for the protection of the riding public.
- 4. Sponsors shall furnish and pay for a telephone outlet to be used by OCJL in the implementation of the Share-A-Fare project.
- 5. The parties to this Agreement agree that the actual fares and rate schedule to be charged by Operators shall be governed by the schedules and exhibits attached hereto and marked Exhibits <u>A</u>, <u>B</u>, ____. In this connection, it is contemplated by all parties that within 90 days from the commencement of the project, if any of the parties hereto feel that the rate structure is inequitable either for the using public or the Operators, that party may make a written request for consideration of alteration of the rate structure to the Share-A-Fare Advisory Committee, who shall then after full consideration of all factors submit a report in writing to the COTPA Board with its recommendations.
- 6. All parties to this Agreement mutually agree and covenant that this project is being commenced on a limited trial basis for a twelve (12) month period and that therefore the actual operating procedures for sale and redemption of coupons and other administrative procedures will be governed by periodic directives to be mutually agreed upon between Sponsors and Operators and the parties understand and are aware that their procedures will be subject to review by the Urban Mass Transit Authority and will tailor their administrative procedures and bookkeeping accordingly.

Done this 12th day of December 1975, to be effective as herein provided.

### CENTRAL OKLAHOMA TRANSPORTATION AND PARKING AUTHORITY

Authorized Representative Chairman (This page intentionally left blank)

## Appendix H

# BASIC CONCEPTS FOR COORDINATION OF AGENCY SERVICES

This appendix presents eight basic concepts for coordinating agency services. The first four concepts are primarily administrative in nature while the latter four are operational. The final concept involves total consolidation. The first seven concepts are modular and can be combined with one another in various ways. Further, several concepts are synergistic resulting in better results when combined than when implemented alone. For each concept, the major planning, administrative, and service related elements are described.

#### ADMINISTRATIVE CONCEPTS

#### 1. Outreach Coordination

Under this coordination concept, the outreach and information function of agencies are combined into one "outreach coordination office." A client or prospective client who is having trouble getting transportation would have one place to contact to determine which agency or agencies could provide suitable transportation. This would eliminate possible difficulties or problems that a client might have due to overlapping jurisdictions and the multiplicity of services.

The referral given to the client would depend on the potential client's eligibility group, residence, income, need for travel, and other factors established by the agencies themselves but communicated by the coordinated outreach office to the client. Assuming that no other concepts had been implemented in conjunction with this concept, the potential client would contact the appropriate agency directly himself after having been appropriately referred.

The planning elements or components required for this concept are fairly straightforward but important nonetheless. Obviously, the agencies who intend to participate in the concept are identified first. Next, an inventory is compiled which shows who is eligible for transportation services from each agency and exactly what services are available including any relevant trip restrictions. Then, a marketing outreach program is designed so as to reach potential clients of all types. This is the most important planning element since, without adequate public knowledge of the outreach coordination effort, little use will be made of it and no benefits will be gained. Finally, a procedure is developed for updating any changes in eligibility or services. This could involve voluntary efforts by the agencies or periodic checks by the outreach coordination office.

The administrative elements of this concept are not unduly complex. First, an office and staff is retained. If an existing agency is to operate the outreach coordination effort, it should be one currently reaching as broad a range of clients as possible. An agency which already has a "hotline" or other public information service is good. Next, the participating agencies have to sign agreements for the financial support of the outreach coordination office. Cost allocations can be made on the basis of number of referrals made to that agency. These agreements can be dispensed with if another source of direct funding can be found, such as a state, regional, or federal office.

The service components of this concept are several. First, a telephone is established so that anyone can call. Needless to say, the number must be emphasized in the marketing outreach program. Next, the marketing outreach plan as a whole is implemented. Finally, the outreach coordination office monitors and evaluates the effect of its referrals and whether those referred succeed in obtaining transportation.

It should not take long to put this concept into practice. Estimated time is about one to three months. The great advantage of this concept is that it reduces confusion for those clients looking for an agency. It has no disadvantages, although its scope is very limited. Presumably, it has no effect on the management or operations components of the participating agencies' operations. The concept can be applied in any type of area although it might work more effectively in a large urban area with numerous agencies. Because of its limited scope and its obvious relation to overall agency transportation marketing, this concept combines well with the other coordination concepts to be discussed.

## 2a. Maintenance Coordination—Outside Contractor

Under this coordination concept, the maintenance functions of the participating agencies are all placed with the same outside contractor—either a private firm or separate government agency. The theory behind this concept is that such an arrangement reduces the maintenance costs to the participating agencies since the maintenance service can be purchased in large volumes. This concept lends itself easily to combination with other coordination concepts such as purchasing coordination or operations coordination concepts. The benefits from this concept can be both a decrease in maintenance costs and improved maintenance due to a better preventative maintenance program.

The planning elements or components required in this concept are not difficult to execute but cannot be ignored. Once the participants are established, an inventory is made of the participants' vehicles maintenance requirements. This is needed in the negotiations with the private contractors. Next, a preventative maintenance program is designed for each agency, perhaps in conjunction with the private contractor. A city, county, or other governmental unit with a garage or maintenance facility can provide this maintenance service, provided that the costs are reasonably in accord with the private sector costs.

The administration components are not complex, although the agency consortium must be careful and selective in choosing the services of a private contractor. The contract must be at lower than prevailing rates or else it is of no use. Billing procedures between the contractor and each individual agency must be determined. No real service components go with this concept because it does not affect the actual service delivery of any of the agencies.

This concept would not take long to implement, perhaps one or two months to complete agency need inventories and select a contractor. However, the major difficulty with this concept is that it may be of limited value where agencies have different types of vehicles—vans, station wagons, buses—which must be serviced in different places or where vehicles are new and still covered by the dealer warranty. As vehicles get older, this concept increases in value and can be of further use if future vehicles are purchased in bulk from one manufacturer.

# 2b. Maintenance Coordination-Internal Program Plus Garage

Under this concept, the maintenance functions of all participating agencies are coordinated by establishing a maintenance center for the vehicles of all agencies. The maintenance center is operated by one of the agencies, such as a vocational rehabilitation agency. Again, the prevailing theory is that maintenance costs go down due to bulk volume. Further, if that bulk volume allows the effective establishment of an internal program which generates costs lower than those in the private sector, the end result is beneficial to the agencies. It is also sensible to provide an overnight storage facility to complement the maintenance garage facility. Again, a preventative maintenance program is established and can be easily combined with other coordination concepts such as purchasing coordination. The storage idea is useful in preventing vandalism, exposure to weather, and unauthorized use. However, an effective storage facility implies a certain geographical proximity of the vehicles at the end of the day and thus might not be useful in all areas, especially rural ones.

The planning elements of this concept are not elaborate but do involve some thought. The participants must develop an inventory of their maintenance needs and decide on the required size of a maintenance facility. A preventative maintenance program must also be designed. An allowance for growth and adequate storage space must be considered. The actual planning should be undertaken by the agency which is to operate the internal program.

The administrative elements or components are more elaborate than if an outside contractor is used. As when any service is directly provided by one agency for all other agencies, careful consideration of mutual responsibilities and financial obligation is required. The first step is to hire a mechanic or mechanics based on the plans developed from the agencies' needs. Then a garage is rented, built, or purchased along with appropriate tools, parts, supplies, etc. Finally, the appropriate cost-sharing devices must be implemented. This can be done by having the lead agency simply sell to the other agencies as if it were a private firm. However, this may be perceived by the other agencies as a reduction of effective policy control. An improved method might be a cooperative in which each agency contributes a fair share of the cost based on the number of vehicles and hours of maintenance needed.

Service components are existent only insofar as the capability to store vehicles overnight affect operation. Implementation time for this concept may be lengthy depending on the time to purchase, build, or rent garage space. Renting might be accomplished quickly in one or two months. Purchase or building could take several months. Again, the problem of different vehicle types might make the concept unworkable.

### 3. Purchasing Coordination

This coordination concept is based upon the bulk purchase of parts, supplies, or vehicles by the participating agencies which allows discounts and, therefore, cost savings for the agencies. The concept can generally be implemented in combination with one of the maintenance coordination concepts or implemented alone, especially for the purchase of high-cost or bulk articles such as vehicles or gasoline. It probably does not have applicability for buying auto parts. Aside from the cost benefits, the vehicle bulk purchase may also lead to standardization of agency fleets which could be helpful from the point of view of easier maintenance in the future.

Planning elements or components of this concept are not too difficult to carry out. The participating agencies inventory their needs and develop a future schedule of purchases. With large-scale items like vehicles, this may be difficult but in the case of gasoline, it can be worked out fairly rigidly to a point where weekly deliveries can be scheduled. As with the maintenance coordination-outside contractor concept, the participation of a city, county, or other governmental unit may bring benefits especially if it means relief from gas taxes. Concerning vehicles, governmental participation may mean long delays. Therefore, if timing is important, such participation is not encouraged.

Administrative elements are simple because each agency participating in a bulk purchase would presumably pay for its portion of an order and thus no deliberate cost sharing arrangements are needed. This concept has limited use where vehicle and agency needs are very different. Again, there are no service components because the operation function is not affected. The time frame for establishment is one to four months. This concept also lends itself well to combination, especially with the maintenance coordination concept.

### 4. Billing and Accounting Coordination

This coordination concept involves the billing and accounting function which agencies perform to receive funds for the clients they carry. This concept requires a billing and accounting coordination office which can handle these functions for all participating agencies for any type of funding including Titles XIX and XX of the Social Security Act, block grants from Area Agencies on Aging (AOA), Rehabilitation Services Administration (RSA), Office of Child Development (OCD), Office of Human Development (OHD), Community Services Administration (CSA), funds from the federal Department of Transportation (DOT), any other available and useful federal sources. Each local agency (and each private provider offering services under contract) has only one place to send all its bills for funds. Also, agencies do not have to spend lengthy amounts of time preparing monthly summaries since this can also be done at the center. Each state/regional unit likewise has only one office to deal with in determining how much it owes to local agencies although the state unit must still make payments directly to local agencies or private providers. Figure H-1 shows an example of a typical funding flow today wherein different local agencies seek funds from the same sources, creating parallel, duplicative, and competitive funding channels. Figure H-2 shows the placement of a billing and accounting center below the state/regional units and above the local agencies. As can be seen, the funding flow lines are simplified in this situation.

Figure H-1





Source: Applied Resource Integration, Ltd.

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Source: Applied Resource Integration, Ltd.

It is clear that this concept cannot be implemented entirely by local agencies but requires the active cooperation and participation of the state/regional units which provide agency transportation funds in a local area. The Wisconsin Department of Health and Social Services (HSS) and the Department of Transportation (DOT) are two state agencies whose involvement would be critical.

The planning components of this concept are complex. Many factors are involved and a thorough search of the regulations of all funding sources must be made. The next step in the planning process is to list the various eligibility criteria, funding levels, and service restrictions. It is advantageous for the coordination center to keep certification records so that clients can transfer between agencies or private providers without requiring recertification. This is especially valuable and timesaving if the center is computerized. Funding-level authorizations are necessary to determine eligible trip volumes which are then communicated to the local agencies. Service restrictions must also be noted. The center handles the accountability function. The next step in the plan is to actually develop the computer programs or manual procedures for doing standardized billing and for preparing standardized transportation data for monitoring and evaluation purposes.

The administrative components are complex, and depend to a large degree on the situation at the state level. Thus, not all specific components can be delineated in advance. Clearly, an office and staff are needed, preferably funded from the state/regional level to avoid intricate joint funding problems. It is advantageous for the state to require that all agency transportation funds go through the coordination center. Without such pressure, the state units will not likely cooperate and the concept implementation will fail. Finally, it is most helpful to establish one uniform billing rate which is not a function of funding sources or arbitrary state unit decisions.

The time frame for implementation of this concept is long, probably one to two years. Legislative action may be required to authorize the center because of the implied changes in funding procedures which are already generally well-defined. The advantages of this concept are that funding flows can be simplified, better fiscal knowledge and control can be effected at the state/regional level, and a burden of paperwork can be lifted from the backs of the local agencies. There are also numerous disadvantages in terms of administrative roadblocks, however.

# OPERATIONS CONCEPTS

Operation functions include all those components of the agency transportation program which directly affect the operation of vehicle/purchase of service and which are an integral part of the service delivery function. Three operations coordination concepts are presented. However, first two overall approaches must be defined which express how operation functions may be coordinated. These are called "ride sharing" and "time sharing."

"Ride sharing" occurs when geographic and temporal proximity dictates that client X can be more easily carried on agency Y's vehicle than on agency X's vehicle. The concept is that such assignments result in less vehicle mileage, less vehicle hours of service, and lower costs.

During ride sharing, it may or may not be necessary to have interagency reimbursement schemes depending on the degree to which each agency's vehicle tours are interrupted by the addition (or subtraction) of additional passengers. Specific solutions to such questions can only be found at the local level and depend to a great extent on the particular operations coordination concept chosen.

"Time sharing" (vehicle-time sharing) occurs when a vehicle is temporarily unused, empty, or otherwise not in service. During these times it can be used for vehicle tours for other agencies, thus potentially reducing overall vehicle requirements and capital needs, increasing overall service capacity obtained from a vehicle fleet of fixed size, and possibly reducing certain maintenance costs.

Both ride sharing and time sharing can be utilized under the clearinghouse for vehicle operation, centralized dispatching, and consolidation concepts presented below.

### 5. Volunteer Driver Coordination

This operations coordination concept consists of the merging of all of the volunteer drivers of all participating agencies into one large pool. This would have the obvious beneficial effects of increasing the number of volunteer drivers available to each agency, smoothing out capacity crushes and slack periods, and in some cases, allowing ride sharing on volunteer vehicles. Three options exist for implementation of this concept. In Option 1, a separate office is set up which has the inventoried list of all volunteer drivers. Then, an agency seeking a volunteer calls the office and gets assigned an appropriate name from the pool.

In Option 2, the list of pooled volunteer names is simply distributed to all agencies, who then make their own calls. This second option is easier and cheaper to implement, but may not provide as high a level of service. In addition, Option 1 can be combined quite effectively with the outreach coordination concept or some of the other concepts.

In Option 3, a central office would be created to recruit, manage, assign, and reimburse all volunteer drivers. This type of operation enhances usage of volunteer services by the participating agencies in that under the uncoordinated option or options, one or two volunteers may not be able to satisfy the need of a particular agency on a given day, but would be able to handle an assignment by another agency due to such circumstances as starting time, ending time, personal assistance required by the client, or duration of requested assistance. Participating agencies would be freed of day-to-day management and administrative chores under this system.

The first planning element is identifying the agencies participating. Some agencies may feel protective about their lists of volunteers but should be persuaded of the value of this concept. Once the volunteers from all agencies have been pooled, they can be contacted individually to determine their willingness to participate. It is quite possible that many volunteers may be only interested in serving one type of client, and thus are adverse to receiving referrals from different agencies. In such a case, they are not to be dropped from the pool, but only restricted to whom they are assigned. The volunteer contact is made by the coordinated office in Options 1 and 3 and by the agency that originally put the volunteer's name in the pool in Option 2. Finally, cross-lists of the volunteers can be made by client types, available destination, and times, etc.

The administrative elements, or components, are easily defined in Options 1 and 3 but still require some thought. Option 2 requires no administrative elements. The office (Options 1 and 3) requires a staff, office space, and telephone, much like the outreach coordination concept. Cost-sharing for the participating agencies can be worked out on the basis of use. Reimbursement channels for volunteers and agencies can go through the coordination office (Options 1 and 3). The office pays the volunteers at the established per-mile rate and bills the agency, who in turn bills the appropriate funding source. Again, this concept can be easily combined with the coordinated billing and accounting concept or the centralized dispatching concept.

This concept is estimated to take two to four months to implement. Its advantage is that it provides a larger pool of volunteers to each agency, thus reducing the possibility that a particular client cannot be served due to a lack of volunteers. The major disadvantage or problem with this concept is that volunteers are often tied to their agency by interest or other reasons. Thus, they may not be especially eager to transport new types of clients.

### 6. Clearinghouse for Vehicle Operations

In this concept, a vehicle operations clearinghouse acts as a central depository of information on each participating agency's actual vehicle operations. This information is kept for use by other agencies as well as by prospective users. Each day, or other suitable time period, every agency sends or telephones to the clearinghouse an actual schedule of vehicle operations detailing where and when the vehicles are to be in service. The assumption is made that each operating agency continues to dispatch its own vehicles. Each agency is now able to stay informed about the operations of every other agency.

This concept is designed for participating agencies that wish to send certain clients on the vehicles of other agencies when it is convenient, and yet do not wish to give up any control over the operation of their own vehicles. Thus, through the clearinghouse each agency finds out when empty vehicle space is available to handle an extra pick-up or other type of trip not easily carried on its own vehicle.

The planning elements of this concept are of concern but do appear solvable. First, the eligible participating agencies must be identified from an inventory of their current operations, such as the service performance inventory shown in Appendix I. A procedure must also be developed whereby the clearinghouse can keep day-to-day track of each agency's operation. This will involve some kind of real-time updating system, preferably with telephone inquiries directed by the clearinghouse.

The administrative component of this concept is complicated. First, a staff and office must be set up. Since this whole concept really implies the addition of an operations layer on top of all the agencies' existing operations (which would not be reduced), it may make more sense to give this work to an existing agency rather than a new one. Second, a standard form or type of agreement for reimbursement must be developed. This can be done with the aid of the clearinghouse, but the agency funding flows could go directly to the agencies. The reimbursement flows could also go directly through the clearinghouse, but payment can more easily be accomplished by combining this concept with the billing and accounting coordination concept. Finally, the participating agencies need to arrange to share the cost of running the clearinghouse or obtain funds from state or regional sources.

This concept would take an estimated three to nine months to implement based on local initiatives and priorities. The concept's advantage is that ride sharing and vehicle sharing could take place between agencies without their having to give up direct operating control of their vehicles. Thus, this concept can be effective as the first step in an incremental series of steps leading to concepts which require more commitment. The big disadvantage of this concept is that it is redundant. The clearinghouse is clearly a duplication of the dispatching and scheduling work being carried out by the individual agencies. Unless the clearinghouse is used extensively, its existence might not be justified. This concept can be combined with many of the other coordination concepts.

### 7. Centralized Dispatching

In this operations concept, a somewhat more complex system is structured wherein the participating agencies who operate vehicles desire to maintain direct operational control over their vehicles and yet are willing to have the central dispatcher assign extra passengers to their vehicles or are willing to provide specific vehicle hours of service or specific vehicle tours to other clients under a cost reimbursement scheme from the central dispatcher. A central dispatcher receives trip requests either directly from agency clients or from an agency itself that wished to purchase service. The dispatcher keeps a log of all actual vehicle operations of the agency providers, including any regular routes and free vehicle time. The agency providers indicate to the dispatcher when and where they are willing to accommodate additional clients and how much they want to be reimbursed. Depending on the desires of the provider agency, reimbursement from the dispatcher can be in money, based on per-hour, per-trip, or per-mile rates, or "trip credits" which allow the providing agency to send some of its own clients on other vehicles.

The planning components of this concept are not necessarily more complex than those of the operations clearinghouse concept. The potential participants first prepare an inventory of the operations and the need for additional operations, and indicate agency willingness to ride share or time share. Clearly, this concept cannot succeed without that willingness and also without a reasonably substantial capacity for service increase when the concept is implemented. Thus, if all agencies feel they are at capacity, analysis of the transportation system by the counties or designated agencies must prove that efficiencies can be made by ride sharing before the cost and risk of the concept is worth taking. As part of this analysis, a vehicle time analysis of fixed or subscription service must also be made.

Once the decision is made to proceed, an assignment methodology must be designed for the demand responsive part of the operation. Dispatching riders from several agencies to other agencies' vehicles requires

the utmost in sensitivity to users' needs and agencies' capabilities. Typically, the personal contact which is established between the agency and the client is a strong bond which resists outside change or manipulation.

Clearly, a two-way radio system is highly desirable for any type of efficient demand responsive operation. When coordinating the vehicles of several agencies, the question really becomes how can it be done without the radio. The last planning element needed is interagency reimbursement procedures. These would be planned and administered exactly as in the clearinghouse concept.

The administrative components of the concept require some attention. First, staff office and radio facilities need to be set up. Second, a management information system (MIS) and monthly billing system must be set up and implemented. Clearly, each agency will want to know, for example, where its clients are being assigned, since it will no longer be able to keep track of them itself. Quality control will be important because each agency will want some sort of assurance that its level of service will not decrease when it a) puts its own clients on other's vehicles and b) allows the central dispatcher to direct its vehicles.

The service components of this concept are the most complicated. First, the central dispatcher receives trip requests directly from agency clients or agencies themselves. Second, optional routings and vehicle assignments must be determined based on day-to-day needs and standing orders. Preferably, each agency should continue to carry most of its own clients on its own vehicles, especially during the start-up of the coordination program. However, as time goes on, additional agency clients—either new clients or clients increasing their tripmaking—should be assigned by the central dispatcher to the vehicle which can carry them the most efficiently.

Certain constraints will occur. For example, persons in wheelchairs should not be assigned to inaccessible vehicles. Clients from certain agencies may not mix well—the classic example is detoxification patients mixed with preschool children. Certain types of clients may need special medical equipment or trained drivers. All these items must be on file at the central dispatcher. Finally, the dispatcher must keep track of the reimbursements and bill each agency monthly. This concept can be combined with the billing and accounting coordination concept in that respect but could also go with outreach coordination, maintenance coordination, or others.

The time frame for implementation of this concept varies according to size and local energy. About six months to two years appears practical. The advantage of this concept is that it introduces central control over disparate operations with attendant anticipated efficiencies. The big disadvantage is that agencies may not easily adjust to the loss of their own control which is implied in this concept.

### 8. Total Consolidation of Services

Under this concept, a complete consolidation of all of the agencies' transportation operations into one organization takes place. All agencies actually transfer ownership and operation of their vehicles to the consolidation agency. In return for this, the consolidation agency agrees to provide the agency with the transportation service that the agency needs at a certain rate. This rate can be fixed on either a per-trip basis or on a per-vehicle-hour basis. The consolidated dispatcher then arranges for transportation services on the shared-ride pool of vehicles or, when appropriate, subcontracts to a taxicab, chair car carrier, or volunteers. As mentioned, in most cases the vehicle pool will come from those vehicles that the agencies give up to the consolidated agency. However, in some cases the conslidation agency may purchase vehicles for the pool separately.

In many respects this concept operates much like the centralized dispatcher concept. The consolidation agency has to have a dispatcher to receive and dispatch trip requests and to perform billing. The addition of the management function to the overall service introduces added opportunities such as coordinating vehicle scheduling with scheduled preventative maintenance. The time frame for this concept is about one to two years. The essential differences are in the ownership of the vehicles and in the integration of the management function with the operations functions. These management functions include all those modular management functions suggested by the management coordination concept such as outreach, maintenance, purchasing, and billing. The planning components of this concept are worthy of some attention. The participating agencies must prepare an inventory of all of their operations and their management functions. A consolidation scheme can then be prepared for both subscription and demand responsive types of services. This is done in much the same way as in the previous concept.

Next, a dispatching methodology is developed, preferably with a two-way radio system. Finally, an ongoing plan for meeting future year needs is developed and adopted. It is clear that one of the major advantages of a truly consolidated agency transportation program is that future year funding for both capital and operation will flow more easily to consolidated operations than to disparate agencies. This is especially true for Urban Mass Transportation Administration (UMTA) funds including, but not limited to, the 16B program, for example, consolidated operations like the Delaware Authority for Specialized Transportation (DAST) are eligible for federal operating and capital assistance.

The administrative components of the concept are potentially troublesome. First, an appropriate receiving agency for the consolidated equipment, personnel, etc. must be set up or an existing agency must be designated. Available evidence strongly suggests the formation of a special transportation authority like DAST is the most appropriate way to operate. A second consideration could be a private nonprofit corporation (or a city or county agency) dedicated to special transportation, with a social or human service agency providing transportation as a sideline as the final alternative. Clearly, agencies are going to have trouble transferring ownership of their hard-won vehicles to some other agency, if that other agency is not a universal transportation agency but is one normally associated with a limited clientele.

Once the agency for consolidation is available, transfer of vehicle or radio titles to that agency must take place. This must be part of an overall agreement signed with each individual contributing agency in which the consolidation agency states what service it guarantees and at what rate. The problem of paid drivers who are forced to change their employer can also be troublesome. A general wage hike of limited amount might be a good way to effect this change. Those agencies operating their vehicles with staff or volunteers do not have this problem. Those private contracts leased by an agency can also be transferred.

Finally, purchase of service agreements at certain rates must be implemented. Each agency buys the service it needs from the consolidation agency at either a standard rate for all agencies or at varying rates based on specific needs. Service quality delivery guarantees can also be part of the purchase of service agreement.

# Appendix I

## SERVICE PERFORMANCE INVENTORY FOR DETERMINATION OF FEASIBILITY OF AGENCY COORDINATION

The service performance inventory (SPI) consists of a series of forms designed to gather information from which the feasibility of agency coordination can be judged. The SPI consists of five forms: general information; service inventory, vehicle inventory, staff inventory, and transportation budget.

The general information form, Exhibit I-1, is intended to provide an overall background on the purpose and type of transportation being provided and to provide an insight into possible maintenance, purchasing, billing, accounting, and other coordination concepts. The service inventory form, Exhibit I-2, is a daily log that is to be kept for two weeks showing current operations. If service expansion or new service is being planned, the agency should complete one pro forma service inventory form representing contemplated operations for a typical day. The vehicle inventory form, Exhibit I-3, is self-explanatory.

Another important piece of information is the availability and utilization of agency staff as vehicle drivers. In simple cases, this can be covered in the general information form. For example, when three full-time drivers do all the driving, it can be indicated in the general information and the staff inventory form need not be completed. However, in cases where staff are expected to spend a certain amount of time driving and a certain amount of time for other duties the optional staff inventory form, Exhibit I-4, must be completed.

Agency personnel who drive as part of their duties are a difficult aspect of agency transportation services to assess. Also, the whole client transportation program may be so intertwined with package delivery, staff transportation, or counseling and outreach functions that proper analysis is very difficult. The forms shown, I-1 through I-5, may not be adequate, in which case the agency should devise some way to describe its transportation personnel availability, utilization, and relationship to the program.

#### Exhibit I-1

#### **GENERAL INFORMATION FORM**

Form of service:

Provided directly by agency Contracted with third party

If provided directly by agency complete all forms.

If contracted specify contractor and contract arrangements (i.e., hourly rates, mileage rates, etc.) and only complete those categories marked with an asterisk (*) on this form. Also, only complete the service inventory, staff inventory, and transportation budget forms.

- * Specific purpose of transportation program:
- * Hours of operation (those days and times when transportation service is available):

Drivers: Full-time Part-time Volunteers

- * Service area:
- * Client request procedure and required advance notice (if any):

Vehicle dispatching procedures (include use of radios and telephones):

* Priorities on use of vehicles:

Place of Storage

Maintenance procedures—if contracted specify contractor (include site of maintenance garage, preventive maintenance plan, and costs):

Fares and method of collection:

- * Description of existing purchasing procedures (include items such as joint purchases with other agencies, bidding procedures if any, and annual anticipated purchases of items or quantity and cost):
- * Describe current billing and accounting program (include computer capabilities, if any; how fund requests are prepared, whether or not budget process is zero-based, whether or not budget format is by program—functions—or by type of expense—line item):

Additional comments:

Source: Applied Resource Integration, Ltd.
### Exhibit I-2

### **SERVICE INVENTORY FORM**

Time Period	Vehicle 1**	Vehicle 2	Vehicle 3	Etc
8:00 - 9:00 a.m.	Use of Vehicle: Mode (D/R or fixed*) Number of Trips Purpose Funding Source			
9:00 -10:00 a.m.				
Etc. 🛉				

* If fixed, attach map.

**Coordinate vehicle numbers with vehicle inventory sheet.

Source: Applied Resource Integration, Ltd.

# Exhibit I-3

## TRANSPORTATION VEHICLE INVENTORY

1. Provider Agency:

2. Service Organization (if applicable):

Vehicle Type*	Vehicle Capacity	Vehicle Condition	Vehicle Mileage	Vehicle Age	Equipment of Vehicle

*Service vehicles to be coordinated/consolidated should be specifically identified.

Source: Applied Resource Integration, Ltd.

#### Exhibit I-4

## STAFF INVENTORY FORM (OPTIONAL)

#### EXAMPLE

	1.	2.	Etc. → → →
Name Title			
Job Description			
Percent of Time Spent on Transportation Program			· ·
Salary			
Cost to Transportation Program			
Source of Salary			

Source: Applied Resource Integration, Ltd.

Exhibit I-5

# TRANSPORTATION BUDGET

Labor

Drivers Salaries and Wages Administrative Salaries and Wages Other Salaries and Wages

## **Fringe Benefits**

Materials and Supplies Fuel and Lubricants Tires and Tubes Other Materials and Supplies

### Utilities

Insurance Costs Vehicle Insurance Other Insurance

Taxes

Contracted Services

Miscellaneous Expenses

Source: Applied Resource Integration, Ltd.

## Appendix J

# MODEL RESOLUTION FOR ADOPTION OF THE REGIONAL TRANSPORTATION PLAN FOR THE TRANSPORTATION HANDICAPPED IN SOUTHEASTERN WISCONSIN: 1978-1982

WHEREAS, the Southeastern Wisconsin Regional Planning Commission, which was duly created by the Governor of the State of Wisconsin in accordance with Section 66.945 of the Wisconsin Statutes on the 8th day of August 1960, upon petition of the Counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha, has the function and duty of making and adopting a master plan for the physical development of the Region.

WHEREAS, the Southeastern Wisconsin Regional Planning Commission has:

- 1. Collected, compiled, processed, and analyzed various types of demographic, economic, public utility, financial, and transportation data and materials pertaining to the Region.
- 2. Prepared objectives, principles, and standards for transportation handicapped persons in the Region.
- 3. Prepared and evaluated alternative transportation systems for the transportation handicapped in the Region.
- 4. Adopted on April 13, 1978, a plan for the transportation handicapped in the Region.

WHEREAS, the aforementioned inventories, analyses, objectives, principles, standards, alternative systems, and adopted plan are set forth in a published report entitled SEWRPC Planning Report No. 31, <u>A Regional</u> Transportation Plan for the Transportation Handicapped in Southeastern Wisconsin: 1978-1982; and

WHEREAS, the Commission has transmitted certified copies of its resolution adopting such plan for the transportation handicapped together with the aforementioned Planning Report No. 31, to the local government units; and

WHEREAS, the (Name of Local Governing Body) has supported, participated in the financing of, and generally concurred in the regional planning programs undertaken by the Southeastern Wisconsin Regional Planning Commission and believes that the plan for transportation handicapped prepared by the Commission will be a valuable guide to the provision of services to the transportation handicapped in the Region and in each community and the adoption of the plan by the (Name of Local Governing Body) will assure a common understanding by the several governmental levels concerned and enable their staffs to program the necessary areawide and local plan implementation work.

NOW, THEREFORE, BE IT HEREBY RESOLVED that, pursuant to Section 66.945(12) of the Wisconsin Statutes, the (Name of Local Governing Body) on ______ day of ______, 1978, hereby adopts the regional plan for the transportation handicapped previously adopted by the Commission as set forth in SEWRPC Planning Report No. 31 as a guide for regional and community development.

BE IT FURTHER HEREBY RESOLVED that the Clerk transmit a certified copy of this resolution to the Southeastern Wisconsin Regional Planning Commission.

Chairman, Mayor, or President of the Local Governing Body

ATTESTATION:

Clerk of the Local Governing Body