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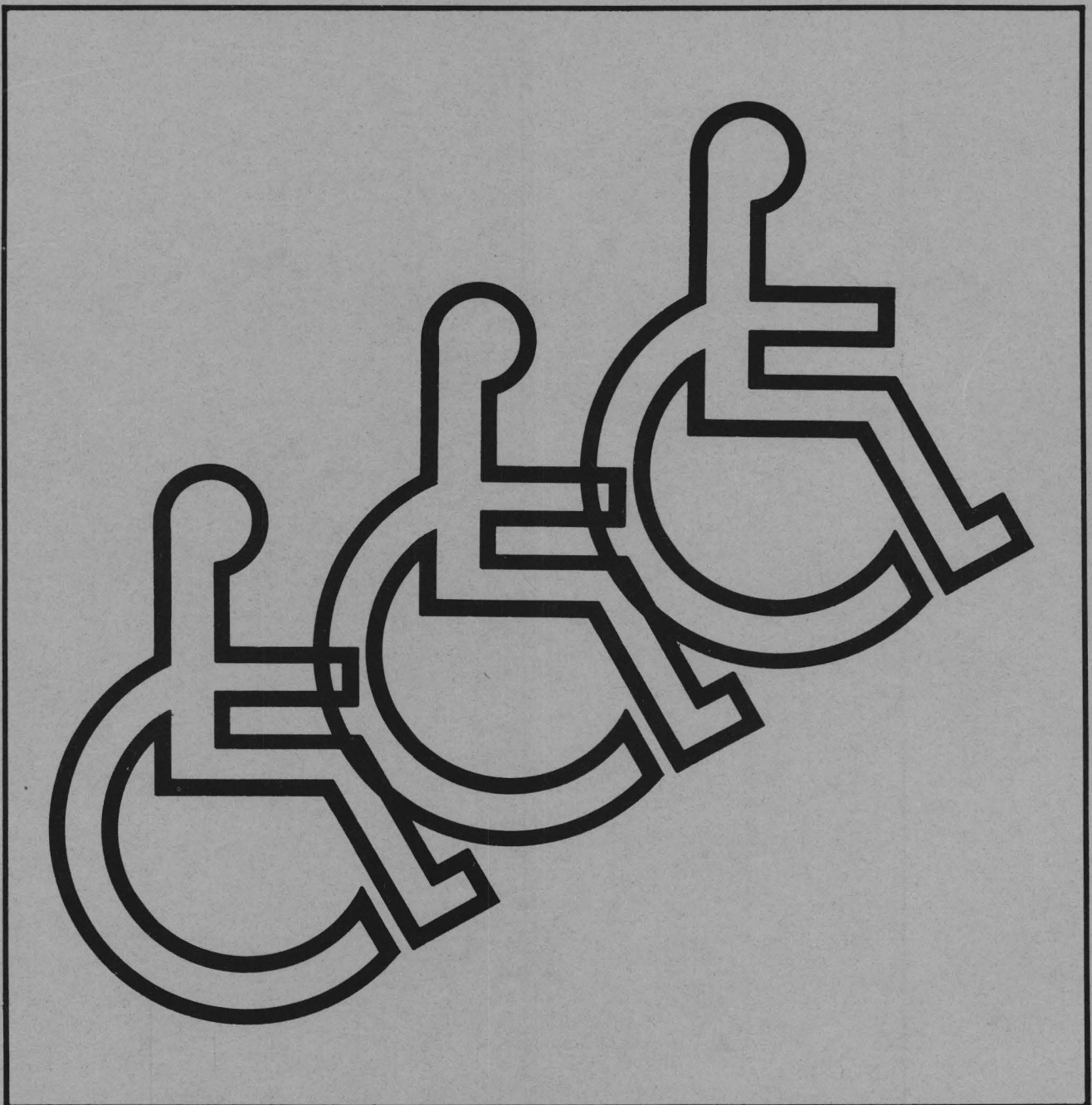


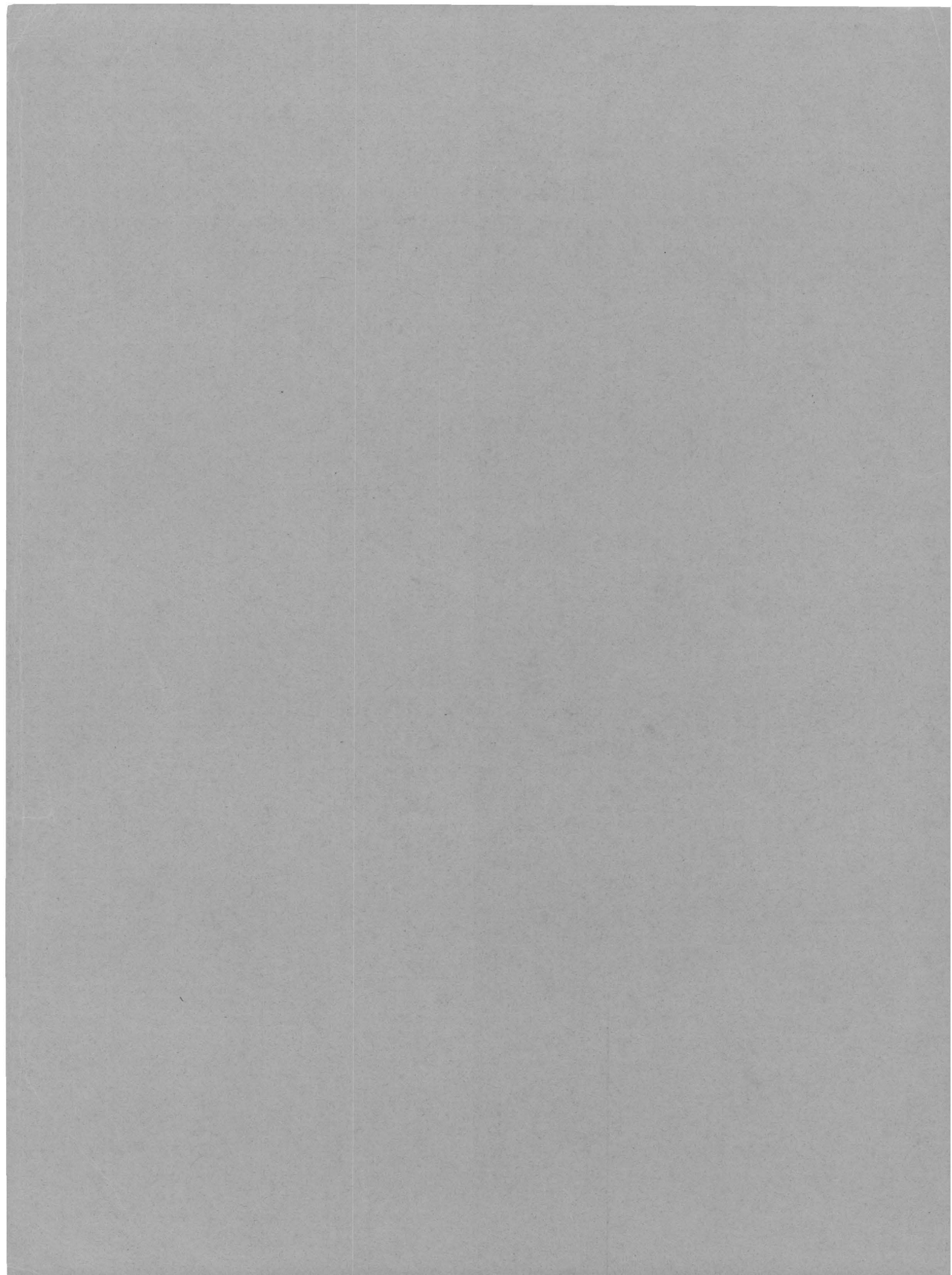
U.S. Department of
Transportation

Planning Services for Transportation-Handicapped People

Data Collection Manual

August 1983





Planning Services for Transportation-Handicapped People

Data Collection Manual

Final Report
August 1983

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One of the most important activities in the transportation planning process is data collection. Only with accurate, up-to-date data can the planner correctly identify a problem and design effective solutions. Yet, in the area of services for transportation handicapped persons, collecting adequate data has been hampered by the relatively low number of such persons and by their particular travel characteristics and needs. In recognition of this problem, the Urban Mass Transportation Administration's Office of Planning Assistance initiated a program of studies designed to assess a variety of data collection methods which could be used in this area. As a result of these studies, a comprehensive data collection process was developed and this manual prepared.

This manual describes a comprehensive data collection process which can be used in planning for transportation needs of mobility limited persons at the local level. The methods included were selected after careful analysis and were successfully tested in a case study application in the Dayton, Ohio area. The process includes several techniques which have proved to be cost-effective in developing information on the incidence rates, characteristics, geographic location, travel habits and transportation problems and needs of transportation handicapped persons. We believe that this manual will be very useful to planners at the local level interested in designing, evaluating and monitoring services to meet these needs.

Additional copies of this report are available from the National Technical Information Service (NTIS), Springfield, Virginia 22161. Please reference UMTA-DC-09-9049-83-1 on the request.



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I. INTRODUCTION

PURPOSE AND SCOPE

This manual describes a data collection process for use by local transportation planning agencies and transit operators in planning, designing, and evaluating public transportation services and facilities provided for transportation-handicapped people. The manual provides step-by-step instructions and supporting documentation for each of the individual data collection techniques which comprise the process. Each of these techniques has been tested and confirmed effective for use in local planning efforts.

For the purposes of this manual, a transportation-handicapped person is defined as:

any individual who, because of illness, injury, age, congenital malfunction, or other permanent or temporary incapacity or disability, is unable without special facilities, planning, or design to use mass transportation facilities and services as effectively as persons who are not so affected. Transportation-handicapped people form a subset of the elderly and/or handicapped population, since some elderly and/or handicapped people may not have any physical trouble using conventional public transportation facilities or services.

This definition excludes those elderly and/or handicapped persons who can otherwise effectively use public transportation facilities and services without difficulty. Therefore, the term transportation-handicapped persons will be used instead of the more traditional term elderly and handicapped persons.

The specific techniques described in this manual are designed for use by local transportation planners and transit operators in:

- . developing new public transportation services for transportation-handicapped people;
- . adjusting existing public transportation services to better serve transportation-handicapped people;
- . retrofitting existing public transportation facilities to better serve transportation-handicapped people; and

- . monitoring and evaluating existing public transportation services and facilities which serve transportation-handicapped people.

These techniques address the following issues:

- . What is the size of the transportation-handicapped population within a local area?
- . What are the characteristics of the local transportation-handicapped population in terms of disability, geographic distribution, and transportation needs?
- . What are the travel habits of the local transportation-handicapped population?
- . How effective are current public transportation services and facilities in serving transportation-handicapped people's needs?

These are basic questions, which until recently could not be effectively answered either by local transportation planners or transit operators without extensive and expensive surveys. These issues involve the number, characteristics, and transportation needs of transportation-handicapped people.

BACKGROUND

In 1970 Congress amended the Urban Mass Transportation Act of 1964 to declare as a national policy that "elderly and handicapped persons have the same right as other persons to utilize mass transportation facilities and services." Congress also authorized the Secretary of Transportation to require that special efforts be exerted in the planning of mass transportation facilities and services to ensure that they could be used effectively by elderly and handicapped persons. With these actions, the federal government established the legislative basis for planning for the transportation needs of handicapped people.

The "special efforts" requirement was eventually incorporated into the urban transportation planning process in September 1975. That is when the Urban Mass Transportation Administration (UMTA) and the Federal Highway Administration (FHWA) jointly issued regulations requiring that special efforts be made in the urban transportation planning process to make mass transportation facilities and services useful to elderly and handicapped persons. These regulations also made federal funds for local transit operating and capital programs contingent upon compliance with the "special efforts" requirement.

These regulations were subsequently expanded and clarified in April 1976 when UMTA and FHWA issued advisory guidelines on transportation planning for elderly and handicapped persons. These regulations advised transportation planners to rely on existing sources of data as much as possible to obtain information on the location and transportation needs of elderly and handicapped persons, particularly wheelchair users and semi-ambulatory handicapped persons. UMTA and FHWA also suggested that planners use self-identification techniques rather than elaborate survey methods to locate transportation-handicapped persons. These techniques ask handicapped persons to identify themselves and report their transportation needs to the local transportation planning agency or transit operator.

In response to these requirements, various state and local planning agencies and transit operators conducted local studies of the transportation needs of elderly and handicapped people. The types of data gathered in these studies varied considerably; a composite list is contained in Appendix A (5, p. II.2 and II.3). These initial attempts to obtain usable data on the location and transportation needs of elderly and handicapped persons from existing sources and self-identification techniques were not very successful (7, p. II.40-II.48 and 8, p. III.21). Although there were many secondary sources of information about the nature and travel characteristics of elderly and handicapped people, each had numerous limitations. No single existing source or combination of sources provided complete, accurate, and reliable information on elderly and handicapped people living in urbanized areas. In addition, self-identification survey techniques proved inadequate either for developing representative samples of elderly and handicapped people or for locating a large sample quickly.

The limitations of these data collection techniques prompted UMTA to study alternative methods of collecting information on the transportation-handicapped portion of the elderly and handicapped population. UMTA considered various methods, including:

- . primary data collection methods;
- . use of secondary sources; and
- . use of self-identification survey techniques.

After reviewing and testing various data collection methods in a series of demonstration projects, UMTA selected several techniques which together provide a comprehensive data collection process for use in local planning for the transportation needs of transportation-handicapped people.

OBJECTIVES OF THE DATA COLLECTION PROCESS

Data collection is not an end in itself, but a means to obtain information needed to perform certain analytical functions. To provide for the transportation needs of transportation-handicapped people, transportation planners and transit operators must better understand the social and economic characteristics, size, location, and transportation problems of this specialized subset of the urban population.

Significant information is available regarding the size, characteristics, and transportation needs of the national transportation-handicapped population (1, 3, 4, 10). However, little is known about transportation-handicapped people at the local or subarea level. Transportation planners and transit operators need information at this level so they can develop and evaluate alternative local solutions to the problems of this specialized group. Such information should enable local transportation planners and transit operators to determine the following about transportation-handicapped persons:

- . their number and disability characteristics;
- . their geographic distribution within the local area;
- . their travel behavior;
- . their available modes of transportation;
- . the nature of their transportation needs;
- . the nature of their transportation problems;
- . the extent to which they use available public transportation services and the reasons for not using these services; and
- . the quality and adequacy of available public transportation services.

To accomplish these objectives, UMTA has developed and tested an integrated and comprehensive data collection process, which is briefly described below.

ELEMENTS OF THE DATA COLLECTION PROCESS

The data collection process for developing information on the transportation-handicapped population of a local area consists of three interrelated elements, each of which represents a separate technique or group of techniques, and a fourth element for continued service monitoring. Multiple techniques are used

because no one technique can accomplish all of the objectives described above and still be cost-effective. The failure of many past data collection efforts involving the transportation-handicapped population can be attributed to the use of techniques which were neither comprehensive nor reliable. The techniques described in this manual are sufficiently comprehensive to address each of the objectives listed above, and have proved reliable and cost-effective for local or subarea planning.

The first three elements of the data collection process provide increasingly detailed information regarding the number, characteristics, and needs of the local transportation-handicapped population. This information is used primarily for developing new services or service changes. These three interrelated elements are:

- . Areawide Telephone Survey - to establish the overall size, characteristics, travel habits, and transportation needs of the local transportation-handicapped population;
- . Census Data Factoring of Areawide Telephone Survey Data - to estimate the geographic distribution of the local transportation-handicapped population by census tract or other small subarea; and
- . Small Subgroup Survey - to develop, with the help of local social service organizations, additional documentation on small but important subgroups of the transportation-handicapped population.

The fourth element extends the data collection process beyond the planning and design stages to the monitoring and evaluation stages. This fourth element is:

- . Ongoing Service Monitoring - to monitor and evaluate the use of public transportation services by transportation-handicapped people through registration files, on-board counts, and/or service request and inquiry files.

Areawide Telephone Survey

The areawide telephone survey represents the primary data collection technique in the process. As its name implies, this technique compiles information on the number, characteristics, and transportation needs of local area transportation-handicapped people through a cost-effective telephone survey. The telephone survey consists of a screening questionnaire to determine if a transportation-handicapped person resides at the residence contacted, and a handicapped person questionnaire to identify the characteristics and transportation needs of the respondent.

The areawide telephone survey requires a relatively small random sample of residences to be contacted to produce reliable information concerning transportation-handicapped people on an areawide basis (e.g., city, transit district, or Standard Metropolitan Statistical Area). A much larger sample would be needed to produce equally reliable information on a disaggregate, sub-area basis (e.g., neighborhood, census tract, or travel analysis zone).

An areawide telephone survey can be completed fairly quickly. For most local areas, a sample size of two to three thousand households should be adequate for estimating the size of the local transportation-handicapped population. With adequate publicity and proper training and supervision of the interviewers, the telephone survey technique should produce a response rate of 75 to 80 percent or better. With the average screening interview lasting less than five minutes and the average handicapped person interview lasting less than 15 minutes, a survey of from two to three thousand households can be completed within a month.

The cost of conducting an areawide telephone survey of transportation-handicapped people depends primarily on the size of the household sample to be screened, the length of the survey questionnaires, and the duration of the overall survey. The following equation describes the fixed, variable, and total costs (in 1983 dollars) of conducting an areawide telephone survey of three weeks duration. It is based on a pilot areawide telephone survey conducted in Dayton, Ohio, in 1980 (6), and assumes questionnaires similar to those contained in Appendix B:

$$\text{Areawide Telephone Survey Cost} = \$5,000 + \$5X,$$

where X = number of completed screening questionnaires required.

Thus, for an areawide telephone survey requiring completion of 2,000 screening questionnaires, the total cost would be about \$15,000. This does not include the costs of analyzing the survey results once they have been keypunched.

Census Data Factoring of Areawide Telephone Survey Data

Research has demonstrated that transportation-handicapped people are not uniformly distributed over an entire urban area (6, p. IV.17). Therefore, some method is required to break down the areawide information on transportation-handicapped people to the subarea level of detail.

Instead of greatly expanding the size of the sample included in the areawide telephone survey, data from the 1980 Census can be used to break down areawide information to the census tract level. This capability is unique to the 1980 Census, which included a question pertaining to a person's ability to use public transportation due to a physical or mental handicap. Although this question may result in understating the incidence of transportation-handicapped people as they are defined in this manual, research has demonstrated that the question produces an acceptable geographic distribution of transportation-handicapped people (6, p. IV-20).

This second element of the process consists of developing the percentage of transportation-handicapped people for each census tract in a specified study area. This is done using the 1980 Census and applying the resulting percentages to areawide data developed by the areawide telephone survey. This is a very cost-effective technique since it provides a reliable method of breaking down the areawide telephone survey data without increasing the size of the telephone survey sample.

By focusing on incidence rates, this technique assumes that the transportation-handicapped population's specific characteristics do not vary significantly between subareas except for incidence rates. Where further breakdown of the data is required, a larger sample size would have to be contacted during the areawide telephone survey, or a more specialized survey would have to be conducted.

For most urban areas, developing and applying census tract percentages of transportation-handicapped people will require only a couple of days of staff time, plus the cost of acquiring one or two reels of census data. Therefore, the estimated cost of this technique is:

$$\text{Census Data Analysis Cost} = \$200 + \$140R,$$

where R = number of reels of census tapes required.

If the local transportation planning agency or transit operator can obtain special computer-printed tabulations of the appropriate census data, the total cost will be limited to that of several days of staff time devoted to developing the census tract percentages and applying them to the areawide telephone survey data.

Small Subgroup Survey

The transportation-handicapped population is believed to represent between 5 and 6 percent of the nation's total population (3). This group is made up of numerous subgroups representing different categories of physical and/or mental dysfunction. Certain of these subgroups, though representing a small

proportion of the total transportation-handicapped population, have very specialized transportation needs of significant concern to local transportation planners and transit operators. Such groups include wheelchair users, blind people, and mentally disabled people.

The previous elements of the recommended data collection process would probably not produce large enough samples of such specialized subgroups to provide meaningful results. Therefore, the third element of the recommended data collection process consists of contacting social service agencies and other local organizations that serve these individuals and obtaining the agencies' help in collecting information on their travel characteristics and needs.

This technique is not intended to develop a probability sample of certain transportation-handicapped subgroups, since the sampling technique is neither random nor necessarily representative. It excludes persons within each subgroup who are not clients of the social service agencies or other local organizations. However, the technique helps to quickly locate a significant number of individuals from small subgroups of the transportation-handicapped population whose views might not otherwise be adequately reflected by the areawide telephone survey results.

The cost of contacting social service agencies and other local organizations to collect information on specific subgroups of the transportation-handicapped population will depend on the number of groups to be contacted and the degree to which such groups will cooperate with the survey team, the extent to which persons within the subgroups belong to any one organization, and the degree to which members are willing and able to supply requested information. Where the survey team is unable to directly contact clients of a particular social service organization, it may be possible to have the organization conduct the interview or distribute self-administered questionnaires to its clients, who can then complete the questionnaire and return it to either the social service organization or the survey office.

The cost of conducting a small subgroup survey, assuming the same types of questionnaires included in Appendix B, can be approximated by the following equations:

$$\begin{array}{l} \text{Small Subgroup} \\ \text{Survey Cost} \end{array} = \$1,740 + \$5X + \$96Z,$$

where X = number of completed screening questionnaires required; and
Z = number of social service organizations cooperating in the survey.

Thus, for a small subgroup survey of six organizations requiring completion of 200 screening questionnaires in a 120-hour timeframe, the total cost would be around \$3,300.

On-going Service Monitoring

The fourth element of the recommended data collection process consists of techniques for monitoring the use of public transportation services by transportation-handicapped people. These techniques include:

- . developing and reviewing registration files of persons using specialized transportation service programs;
- . performing periodic counts of transportation-handicapped passengers using these programs; and
- . reviewing records of requests for or inquiries regarding specialized transportation services.

Each of these techniques involves developing and using an easily maintained data base to monitor and evaluate the use of public transportation services by transportation-handicapped people. This information can then be used by transportation planners and transit operators to fine-tune or revise their special transportation service programs.

The cost of monitoring the use of public transportation services by transportation-handicapped people depends on many factors, including the technique used, frequency of data collection, extent of data collected, and sample size. The use of registration files is a low-cost monitoring technique, especially for those organizations already using them in special transportation service programs. The costs of developing and maintaining a registration file for special transportation services, assuming a simple one-page format, can be estimated using the following equation:

$$\text{Registration File Cost} = \$600 + \$2.5X,$$

where X = number of completed registration forms.

The cost of collecting transportation-handicapped user information by on-board passenger counts depends on the number of bus or special vehicle runs surveyed, the quantity of information sought, and the incidence rates of transportation-handicapped persons using the services. The cost of maintaining and reviewing special transportation service request or inquiry records is also fairly low, especially for those organizations that maintain an active public relations program. The cost of either technique is difficult to estimate because of the many variables involved, so no cost equations are provided in this manual for these two techniques.

IMPLICATIONS OF THE DATA COLLECTION PROCESS

The data collection process presented in this manual has several implications for transportation planners and transit operators. These include the following:

- . The overall process is comprehensive. Both primary and secondary data collection techniques are used to develop local subarea information on the number, location, characteristics, and transportation needs of transportation-handicapped people.
- . The process develops statistically reliable estimates of local transportation-handicapped population characteristics, while also providing significant information on small subgroups of the transportation-handicapped population having specialized transportation needs.
- . The process is adaptable to local planning needs and resources. Each of the techniques in the process can be tailored to the size of the local area and the resources available to collect data. The techniques represent the most cost-effective procedures for developing comprehensive and reliable information on local transportation-handicapped people. Several of the techniques use data bases which may already exist at the local level but which may not yet be used in the services and facilities planning or monitoring processes.
- . The process enhances the usefulness of census data on the transportation-handicapped population. The process first develops an independent estimate of the size and characteristics of the transportation-handicapped population on an areawide basis. The census data is then used to distribute this areawide data to the subarea (census tract) level. This avoids the problems of underrepresentation and data obsolescence which might result from using census data to estimate current incidence rates of transportation-handicapped people at the local level.
- . The process is relatively simple. Sample sizes are provided in the manual for the areawide telephone survey, based on the area's population, the confidence level of the estimate, and the relative error of the estimate. Screening and handicapped person interviews are conducted by telephone, thereby avoiding the costs and logistical problems associated with personal interviews and the poor response rates associated with mail-back questionnaires.

- . The process can easily involve transportation-handicapped people, particularly in the telephone survey elements. It is recommended that interviewers be hired from among the transportation-handicapped population. Local community organizations serving transportation-handicapped people are involved primarily in the special subgroup survey efforts, as well as in providing direct guidance to the survey team and helping to publicize the program.

ORGANIZATION OF THE MANUAL

The following four sections of the manual describe in detail the steps and costs involved in conducting each of the techniques which make up the recommended process for collecting local data on the characteristics and transportation needs of transportation-handicapped people. Section II describes the areawide telephone survey technique, Section III describes the census data factoring techniques, and Section IV describes the ongoing service monitoring techniques. The appendices also contain illustrative examples of survey forms used in studies which demonstrated each of these data collection techniques.

Appendix A contains a composite list of types of data gathered in various local studies of the transportation-handicapped population.

Appendix B contains detailed estimates of the areawide telephone survey sample sizes needed to estimate the incidence and daily travel rates of the local transportation-handicapped population. Appendix B also contains the screening and handicapped person questionnaires, interviewer instructions, evaluation forms, and survey control forms used in a pilot areawide telephone survey of transportation-handicapped persons conducted in Dayton, Ohio (6). The Dayton study demonstrated the validity of several of the techniques described in this manual, including the areawide telephone survey (which incorporated a two-day travel diary) and the use of 1980 census data to geographically distribute the results of the areawide telephone survey.

Appendix C summarizes a travel diary-based survey conducted in Pittsburgh, Pennsylvania, and contains copies of the survey forms used in the study. Appendix D contains a copy of an application blank for ordering census data, reports, tapes, or microfiche. Appendix E summarizes the results of a social service agency survey conducted in San Diego, California, and illustrates the survey format used in this study. Appendix F summarizes the results of a registration file-based data collection effort conducted in Tacoma, Washington, and illustrates the survey forms used in this study. The latter two studies demonstrate the use of self-identification survey techniques.

II. AREAWIDE TELEPHONE SURVEY

INTRODUCTION

The first step in the recommended data collection process is the areawide telephone survey. The purpose of the survey is to locate transportation-handicapped people and obtain information concerning:

- . their disabilities;
- . the nature of their travel habits; and
- . their transportation problems and needs.

The areawide telephone survey technique involves contacting by telephone individuals who live in the study area. This type of interview is more personal than a mail-back survey and less costly than a home interview. The accessibility provided by the telephone avoids the high costs associated with traveling to each interview site and having to return if the interviewee is not available at that time.

As applied to the planning process for transportation-handicapped people, this technique involves the use of two questionnaires. The first questionnaire, called the screening questionnaire, enables the interviewer to screen a random sample of households in the study area to identify those with transportation-handicapped residents. The second questionnaire, called the handicapped person questionnaire, is completed only for persons identified in the study sample as transportation-handicapped. This second questionnaire is more detailed than the screening questionnaire since it includes numerous questions regarding the transportation problems and needs of the persons interviewed. It also includes a two-day trip log which documents the actual travel habits of those interviewed.

Telephone screening and interviewing is a practical and cost-effective way of obtaining a representative sample of transportation-handicapped people at the local level and collecting data on their travel habits and needs. The basis for the discussion in this chapter comes primarily from the results of a pilot study conducted in Dayton, Ohio, during 1980 (5), in which the areawide telephone survey technique was successfully refined and tested. This technique has also been used successfully in Milwaukee, Oakland, Louisville, and the State of Iowa.

Appendix B contains sample survey questionnaires, interviewer application tests and instructions, and survey control forms for use in conducting an areawide telephone survey. These are based on the pilot areawide telephone survey conducted in Dayton, Ohio (5). A large-scale data collection study

involving transportation-handicapped people, more recently conducted in Pittsburgh, Pennsylvania, also used a telephone screening questionnaire, as well as home interviews and a seven-day travel diary (2). Appendix C summarizes this study and illustrates the various survey forms used during the study.

STEPS IN CONDUCTING AN AREAWIDE TELEPHONE SURVEY

Conducting an effective telephone survey requires careful planning, thorough supervision, and rigorous review of the results. The telephone survey technique involves several steps:

- . specifying survey objectives and data requirements;
- . delineating the survey scope;
- . designing the sampling plan;
- . designing questionnaires;
- . pretesting questionnaires;
- . publicizing the survey;
- . selecting the sample;
- . hiring and training interviewers;
- . obtaining physical facilities and equipment;
- . conducting interviews;
- . maintaining quality control; and
- . coding and editing survey data.

These twelve steps are described below.

Specifying Survey Objectives and Data Requirements

The first step in conducting an areawide telephone survey is to specify its objectives. This first step is critical, since the objectives greatly influence the design of the questionnaires and the sampling plan. Typical objectives for such surveys are:

- . to determine the number of transportation-handicapped people in the local study area;

- . to determine the proportion of transportation-handicapped people with specific disabilities in the local study area;
- . to characterize the travel patterns, transportation problems, and transportation needs of transportation-handicapped people in the local study area;
- . to determine the extent to which transportation-handicapped people in the local study area use available public transportation services (both conventional and specialized); and
- . to determine the attitudes of transportation-handicapped people in the local study area towards available and alternative public transportation services.

As a data collection technique, the areawide telephone survey can incorporate other objectives not dealing with transportation issues. However, this would dull the focus of the data collection effort by lengthening the questionnaire and enlarging the object group of the survey. It is therefore recommended that the areawide telephone survey be confined to issues relating to the transportation-handicapped population of the local study area.

Delineating the Survey Scope

The local study area defines the scope of the areawide telephone survey and forms the sampling frame from which the households to be contacted will be drawn. Defining the study area depends primarily on the service area for which the transportation planner or transit operator is responsible. This may be a city, town, incorporated area, county, or some combination of these.

Another determinant of the study area is the availability of information regarding the sampling frame, such as the names, addresses, and phone numbers of households in the local study area. Two such sources are often readily available. These are:

- . telephone directories; and
- . city/town address directories.

Telephone directories are readily accessible sampling frames which include all of the information cited above. Because telephone directories list households alphabetically, it is relatively simple to develop a random sample of households with no geographic bias within the sampling frame of each directory. Telephone directories, however, exclude households that

either do not have a phone or have an unlisted phone number. In addition, the geographic scope of the available telephone directories may not correspond to the desired local study area. Where this poses a major problem, the use of city or town address directories may provide an easier way to define the geographic limits of the sampling frame, since these directories typically arrange households by street address. However, such directories are usually confined to the municipal boundaries of a particular urban area. Where these geographic boundaries do not correspond with the desired study area, additional sampling frames may be needed.

Designing the Sampling Plan

To be cost effective, the areawide telephone survey samples the general population of the local study area to identify transportation-handicapped people for subsequent interviewing. The size of this sample should be small enough to be affordable by local transportation planning organizations and transit operators, yet large enough to effectively represent the desired characteristics of those living in the study area. These issues are discussed below.

Sample Size

The size and cost of the areawide telephone survey will depend on the degree of precision required of the resulting estimates, and the probability that the desired precision will be obtained. The higher the precision required or the probability of obtaining that precision, the larger the sample size. The precision of an estimate can be measured only if the estimate is obtained from a random sample of the general population.

The precision of an estimate is usually expressed in terms of the relative error. For example, a planning agency or transit operator may wish to estimate the percentage of people who have mobility limitations within plus or minus 10 percent of the true percentage. Likewise, the agency may wish to estimate the average daily trip rate of transportation-handicapped people within a plus or minus 10 percent of the true average. Since the true rate of incidence and the true average daily trip rate are unknown, planners and transit operators cannot be absolutely sure that the estimate derived from the sample lies within the bounds of the desired relative error. Therefore, each estimate has a certain level of confidence or, conversely, a certain amount of risk associated with it. A 90 percent level of confidence means that the planning agency or transit operator is 90 percent sure that the sample statistic does not differ from the true value by more than the relative error. It also means that the agency or operator is willing to risk a 10 percent chance that the sample statistic or estimate differs from the true value by a margin greater than the relative error.

For most studies of the transportation needs of transportation-handicapped people, a relative error of plus or minus 10 percent and a level of confidence of 90 percent should be sufficient. At these levels of precision, we can estimate the required size and cost of an areawide telephone survey, for various planning area population sizes and incidence rates of transportation-handicapped people, by using Exhibits II-1 and II-2. Exhibit II-1 indicates the number of households which should be screened to estimate the incidence rate of transportation-handicapped people in the study area. Appendix B contains more detailed exhibits which indicate the incidence rates and daily trip rates of transportation-handicapped people, assuming varying population sizes, incidence rates, relative errors, and confidence levels.

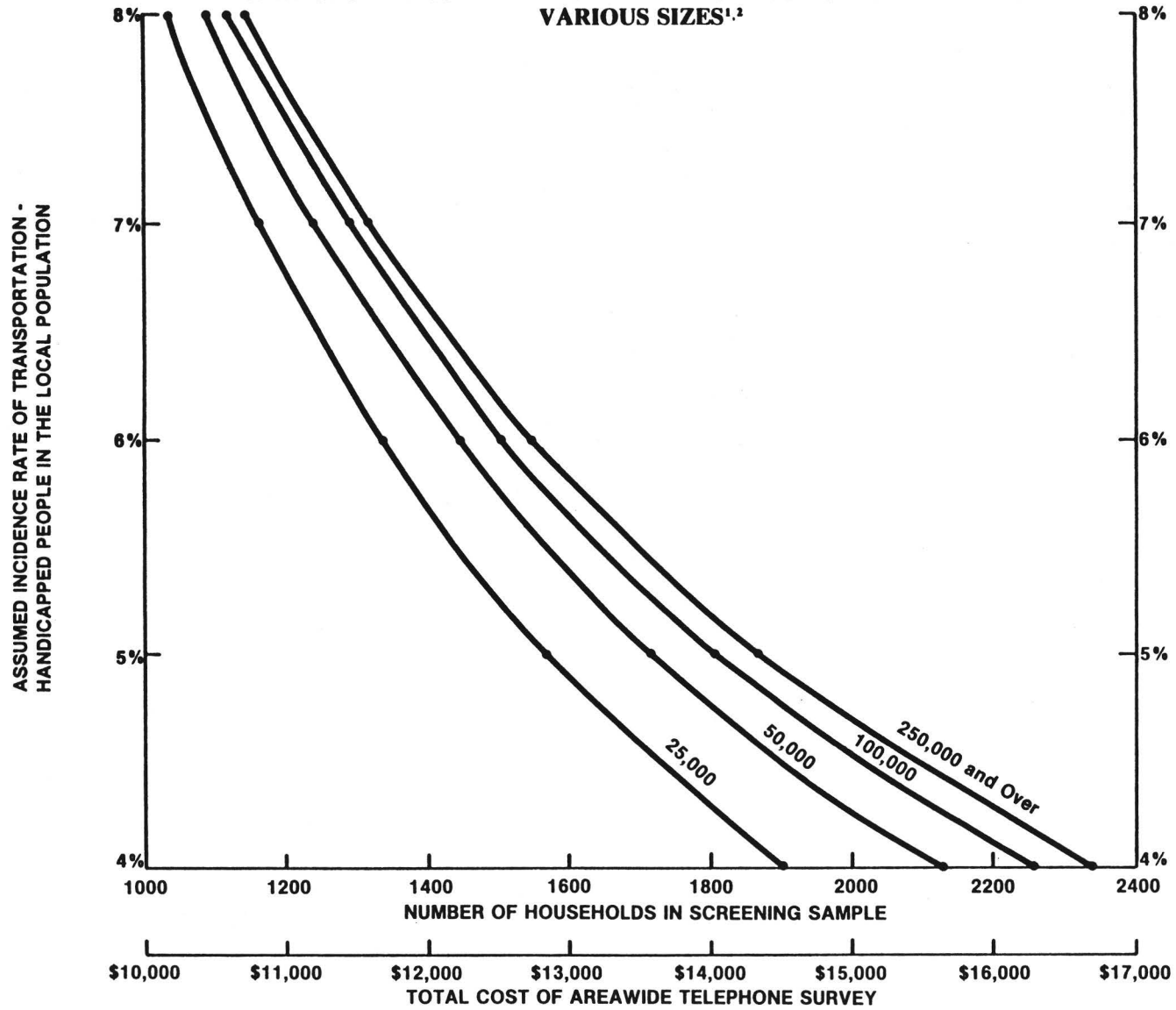
Exhibits II-1 and II-2 show how the sample size depends on the incidence rate of transportation-handicapped people in the study area. The UMTA National Survey of Transportation-Handicapped People, conducted in 1977, found that incidence rates in various parts of the United States ranged from 3.9 percent in the north central region to 7.6 percent in the southeast region (3). In most cases, the planning agency or transit operator will not know the true incidence rate and will want to use survey results to estimate it. Since the sample sizes are larger for the lower incidence rates, the planning agency or transit operator should assume a low incidence rate and choose the corresponding sample size. This approach will result in a more precise estimate if the incidence rate from the sample is greater than the assumed incidence rate.

As the size of the population to be sampled increases, its influence on the required sample size diminishes. In small urbanized areas, the planning agency or transit operator must sample a larger proportion of the population than in large urbanized areas to obtain estimates with the same desired degree of precision and level of confidence. The population of the urbanized area does not become a significant factor in determining the sample size until it drops below 100,000, however.

A comparison of Exhibits II-1 and II-2 reveals that for the same relative error, level of confidence, incidence rate, and population size, a much larger sample of households is needed to estimate the average daily trip rate of transportation-handicapped people than is needed to estimate their incidence rate. If the sample sizes in Exhibit II-2 are used, a much more precise estimate of the incidence rate can be made. If, however, these sample sizes are beyond the limits of the available budget, they can be reduced by increasing the allowable relative error, lowering the level of confidence, or both. For example, in an urbanized area of 500,000 and an assumed incidence rate of 4 percent, the sample size of households needed to estimate the average daily trip rate of transportation-handicapped people can

EXHIBIT II-1

SAMPLE SIZES AND COSTS FOR ESTIMATING THE NUMBER OF TRANSPORTATION-HANDICAPPED PEOPLE IN URBAN AREAS OF VARIOUS SIZES^{1,2}

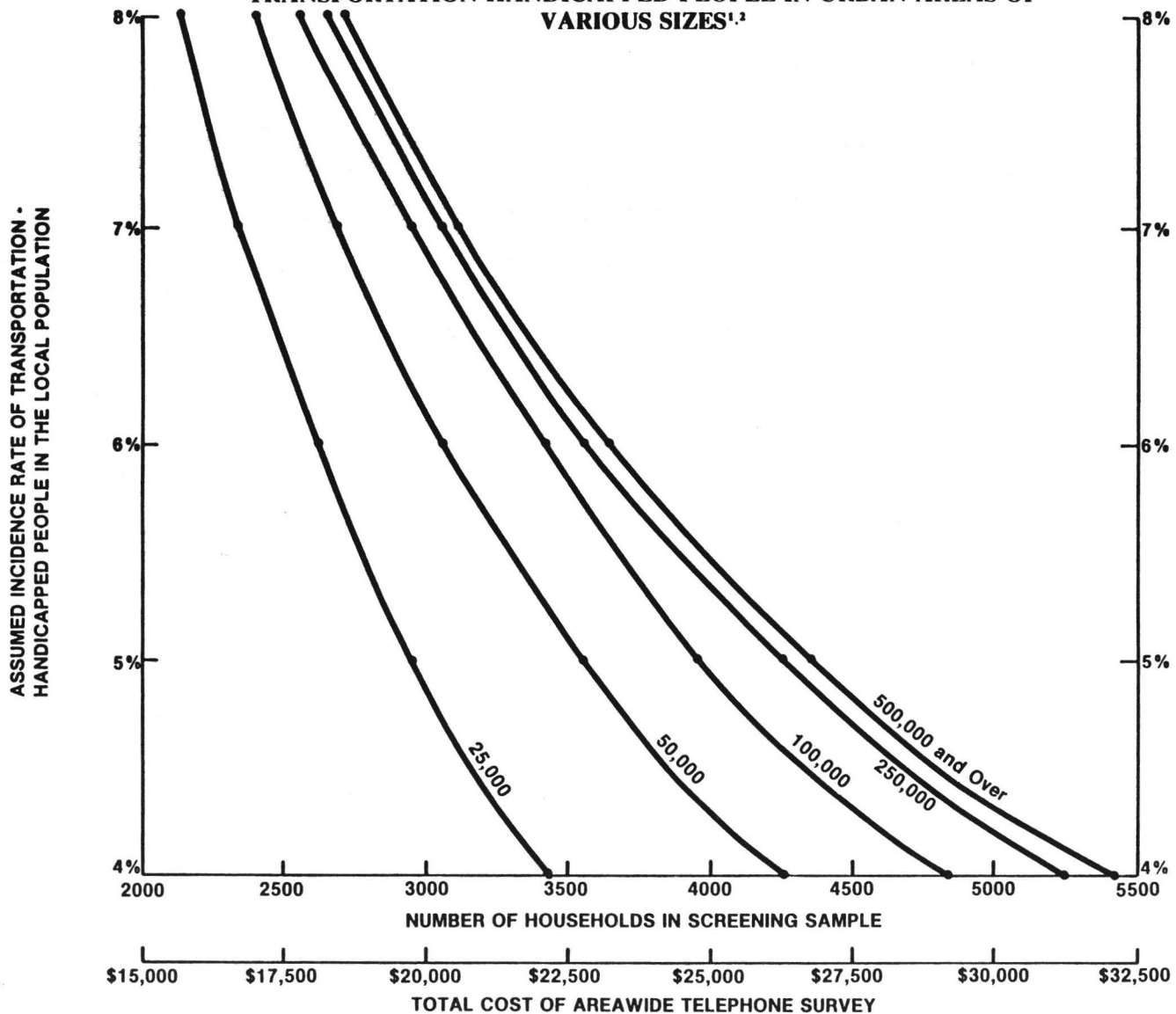


¹ Assuming a 90% Level of Confidence and 10% Relative Error.

² Population of Urban Area Indicated on Each Line.

EXHIBIT II-2

SAMPLE SIZES AND COSTS FOR ESTIMATING THE TRIP RATE OF
TRANSPORTATION-HANDICAPPED PEOPLE IN URBAN AREAS OF
VARIOUS SIZES^{1,2}



¹ Assuming a 90% Level of Confidence and 10% Relative Error.

² Population of Urban Area Indicated on Each Line.

be reduced from 5,360 to 1,380 by increasing the allowable relative error from 10 percent to 20 percent while keeping the level of confidence at 90 percent (see Exhibit B-5 in Appendix B). This reduced sample size is significantly below the sample size needed to estimate the incidence rate of transportation-handicapped people with a relative error of 10 percent at a 90 percent level of confidence.

In many cases, the size of the areawide telephone survey will be controlled by the budget of the sponsoring agency or organization. Therefore, Exhibits II-1 and II-2 also include the estimated costs of conducting an areawide telephone survey for the varying sample sizes indicated, assuming a three-week survey duration and questionnaires similar to those contained in Appendix B.

These costs are based on the following equation:

$$\frac{\text{Areawide Telephone Survey Cost}}{\text{Survey Cost}} = \$5,000 + \$5X,$$

where X = number of completed screening questionnaires required.

The basis for this cost equation will be further discussed at the end of this section.

Sampling Technique

In order to develop a random sample of transportation-handicapped persons, it is recommended that a prescreening sampling technique be used for the areawide telephone survey. This technique involves surveying a sample of the entire population to collect data that can be used to identify a sample of transportation-handicapped people.

A random sample of the general population of a local area can be developed in many ways, such as using random number tables to select names from a numbered list, randomly selecting names from a telephone or city address directory, or systematically sampling names from a list at a predetermined interval. Once the general population sample is selected, the screening process should produce a random sample of the transportation-handicapped population.

This sampling technique provides a cost-effective method of ensuring that a random sample of transportation-handicapped people are identified, while also determining their rate of incidence in the local study area. The resulting random sample of transportation-handicapped people can then be interviewed to determine in greater detail the nature of their dysfunctions, their travel characteristics, and their transportation problems and needs.

Designing Questionnaires

The areawide telephone survey requires two questionnaires to gather information. The first questionnaire is called the screening questionnaire. It is used to screen each household in the sample to identify those having persons with any kind of disability that might limit or prevent them from using public transportation. The second questionnaire is called the handicapped person questionnaire. It is used to develop more detailed information on the transportation characteristics, problems, and needs of those transportation-handicapped persons identified by the screening questionnaire. Suggested versions of each questionnaire are included in Appendix B.

Screening Questionnaire

The screening questionnaire is designed to identify transportation-handicapped people. Deciding whether or not a person with some type of disability is truly transportation-handicapped is often very subjective. Pretests of the 1980 Census questionnaire indicated that even disabled persons often have difficulty deciding whether or not their condition limits or prevents them from using public transportation. In many previous surveys, interviewers were required to decide during the screening interview whether or not anyone in the household was transportation-handicapped. Often their decisions were based on either their own judgment or the judgment of some family member who was answering the screening questions. To avoid this situation, the screening questionnaire is designed to identify persons with one or more specific disabilities regardless of their perceived effect on the person's ability to travel in buses and taxis. Consequently, some of the disabled people subsequently interviewed may not be transportation-handicapped. But this approach lessens the possibility that a transportation-handicapped person might be excluded because of false perceptions during the screening interviews.

A separate screening questionnaire should be completed for each household in the sample by the head of the house or some other responsible person. The screening questionnaire shown in Appendix B is divided into two parts. The first part identifies disabled persons in the household. The second part obtains supplementary information on the household.

Identifying Disabled Persons. The first two questions accomplish the actual screening. Question 1 is taken from the long form of the 1980 Census questionnaire. It asks whether or not there are persons in the household with a physical, mental, or other health condition limiting or preventing them from using any form of public transportation. Whenever the head of the household gives an affirmative answer, each person with such a condition is identified by either their first name or their relationship to the head of the household. The purpose of

Question 1 is to determine the number of persons in the sample who are perceived to be handicapped. Question 2 asks whether or not there are persons in the household who have one or more of several specific functional disabilities which could make travel by bus or taxi difficult, if not impossible. The disabilities involve walking, going up and down steps, standing, using hands and arms, seeing, hearing, speaking, and reasoning. This question provides important information on the prevalence of specific types of disabilities as well as combinations of disabilities. The answers to Questions 1 and 2 are analyzed to determine the correlation between certain functional disabilities and the perceived ability to use public transportation. The analysis of these two questions should reveal which disabilities tend to be problems when using public transportation.

Developing Household Information. The remainder of the screening questionnaire is used to obtain supplementary information about the household. This information is used to calculate incidence rates, factor the survey results, and check for households that have moved outside of the local study area.

To determine the incidence rate of transportation-handicapped people among the local study area population, data on the size of each household screened is needed. Question 3 obtains this information. Questions 3A through 3D are added to determine the number of household members in each of four age groups. The answers to these questions are used to estimate and compare the incidence of transportation-handicapped people among school-age children, young and middle-aged adults, and elderly persons. The data on household size is also used to factor the results of the survey.

Question 4 gathers information on the number of automobiles and other motor vehicles belonging to the household being screened. It is also used to analyze the characteristics of transportation-handicapped persons and their current travel behavior. The information provided by Question 4 has several transportation planning applications. Household auto availability is an important determinant of the demand for public transportation. It indicates the extent to which a transportation-handicapped person can rely on other household members for transportation. Transportation planners and transit operators may also use this information to estimate the latent demand for public transportation accessible to transportation-handicapped persons.

Question 5 is included in the screening questionnaire to determine whether or not a household being screened is still located in the local study area. This question asks for the name of the street on which the household is located. Only when the address mentioned by the respondent is outside of the local study area should the household be removed from the sample and the screening interview disregarded.

Handicapped Person Questionnaire

Each person mentioned in response to either Question 1 or Question 2 of the screening questionnaire should be interviewed individually using the handicapped person questionnaire. The handicapped person questionnaire can be divided into five parts. These parts deal with:

- . identifying transportation-handicapped people;
- . determining auto availability;
- . identifying specialized aids used by disabled persons;
- . documenting current travel characteristics; and
- . developing demographic data.

Identifying Transportation-Handicapped People. One of the principal purposes of the handicapped person interviews is to distinguish the truly transportation-handicapped individuals from all other persons with disabilities. In determining who is transportation handicapped, one cannot simply rely on the answers to one or two simple questions. Question 2 of the screening questionnaire identifies people who have serious disabilities. Some of these people, however, may not have difficulty using buses or taxis because of their physical or mental dysfunctions. For this reason, a number of questions are included in the handicapped person questionnaire to assist in identifying transportation-handicapped people. The first nine questions of the handicapped person questionnaire help determine which disabled people identified by the screening questionnaire are also transportation-handicapped.

Questions 1 and 8 are designed to identify transportation-handicapped persons. Question 1 asks respondents whether or not their health condition or disability makes it difficult for them to use the regular local bus service. Question 8 asks the same thing about their ability to use taxi service. Both questions, however, suffer from the same weakness as the 1980 Census question on disability--that is, they are highly subjective.

Question 1 provides a good opening for the interview, but the value of the information it provides must be determined. For this reason, several clarifying questions are added. Question 2 asks if the respondent encounters or would encounter certain problems in using bus service because of a disability. The number and types of difficulties reported indicate the extent to which the respondent is transportation-handicapped. Questions 5 and 6 go one step further by inquiring about the type of assistance the respondent would need to use bus service. Persons who never ride buses or who live far away from a

bus stop may answer these questions differently than persons who ride buses or who live close to a bus stop. Questions 3 and 4 are added to account for these two factors. Question 3 asks whether the respondent ever uses regular local bus services. Question 4, which asks how far away the nearest bus stop is from the respondent's home, is also a filter question for Questions 5 and 6. Both questions deal with the types of assistance needed to allow the respondent to use regular local bus service. Persons who live one or two blocks away from a bus stop are asked Question 5, while everyone else is asked Question 6. This is so that people can be asked about any difficulty they might have in getting to a bus stop because of their health condition or disability. People who live more than a few blocks from a bus stop might claim that it is difficult to get to and from the stop not necessarily because of their disability but because of the distance involved. These people are therefore asked to imagine that the nearest bus stop is only two blocks away.

Question 7 deals with the respondent's ability to use taxi service. Questions 8A through 8F test the reliability of the answers to Question 7 by asking about the problems handicapped persons might have in using a taxicab. Because persons who never use a taxicab may respond differently from those who do, Question 9 is added so that the response of each group can be analyzed separately and compared.

Determining Auto Availability. Questions 10, 11, and 12 address the availability of an automobile to the disabled person being interviewed. Different levels of auto availability are considered, including the ability to drive one's self or to find another person to drive. As mentioned earlier, this information indicates the extent to which a transportation-handicapped person can rely on other household members or neighbors for transportation.

Identifying Specialized Aids Used by Disabled Persons. Questions 13, 14, and 15 identify the special aids used by certain subgroups of the handicapped population, such as wheelchair users, blind persons, and deaf persons.

Documenting Current Travel Characteristics. A large portion of the handicapped person questionnaire is devoted to gathering data on the respondent's travel characteristics. Questions 16 and 17 consist of a diary of trips made by the respondent during the two days preceding the interview. The origin, destination, starting time, purpose, and means of transportation of each trip are recorded. This information is used to characterize the travel behavior of disabled people in the local study area. Question 16 deals with the day prior to the interview, while Question 17 deals with the day before that. By obtaining a two-day travel diary, the survey results will be more representative of the average travel characteristics of the persons interviewed.

Developing Demographic Data. Questions 18, 19, and 20 request information concerning the employment status, age, and sex of the person being interviewed. This information can be used to help stratify the survey results.

Questionnaire Linkage

Both the screening questionnaire and the handicapped person questionnaire should have cover sheets on which the interviewer writes the address and phone number of the household contacted, the date of the interview, and the name of the interviewer. In addition, the cover sheet should include space for a 5-digit serial number unique to each household contacted. The purpose of the serial number is to permit the two types of questionnaires to be correlated for the same household. This would enable information from two questionnaires to be combined into a single data set when finally coded and tabulated.

Each screening questionnaire should be assigned a unique serial number when first filled out by the interviewer. This number should subsequently be written on each handicapped person questionnaire completed for any disabled individual mentioned in the screening interview. Both the individual's first name and handicapped person number should be noted on the cover sheet of the handicapped person questionnaire. The handicapped person number is the column number under which this person's name appears on the screening questionnaire.

Pretesting Questionnaires

The proposed questionnaires and interview procedures should be pretested before conducting the survey to:

- . identify potential problems;
- . determine the average time needed to conduct the screening and handicapped person interviews; and
- . identify those periods of the day most effective for reaching potential respondents at home.

To accomplish these objectives, a small number (under 30) of households should be randomly selected from the survey sampling frame and contacted by a member of the survey staff using the screening and handicapped person questionnaires where appropriate. After each interview, an evaluation form should be completed which identifies problems the respondents may have had with any of the questions or the interview instructions. (A copy of this evaluation form appears in Appendix B.)

After the pretest interviews are completed, the questionnaires and their evaluation forms should be revised before final printing.

Publicizing the Survey

Involving the public in a data collection survey can be done in a variety of ways, including public hearings, citizen advisory committees, direct citizen involvement, and media advertising. The specific public involvement program for an areawide telephone survey should have at least two goals:

- . to inform the general public that an areawide telephone survey is being conducted to determine the characteristics, needs, problems, and travel patterns of the transportation-handicapped population in the area; and
- . to increase the awareness of households in the area that they might be called for an interview, in order to improve the interview completion rate.

Several specific activities for a publicity program are discussed in this subsection.

Citizen Advisory Committee

A direct form of public involvement in an areawide telephone survey can be obtained by enlisting the help of an established citizen advisory committee. Such committees are often composed of representatives from:

- . social service agencies;
- . transportation planning agencies;
- . public transportation authorities;
- . consumer groups; and
- . special-interest groups (such as handicapped and elderly person groups).

A committee of this sort could assist the survey team by reviewing the survey plan, interview procedures, and questionnaires, and providing critical comments and suggestions.

Transportation-Handicapped Interviewers

Another method of involving the public, particularly the transportation-handicapped public, is to select interviewers who are themselves transportation-handicapped. Such individuals would likely make conscientious and understanding interviewers, except for those with significant speech, hearing, emotional, or sight dysfunctions which might inhibit their effectiveness in conducting telephone interviews. Using such individuals may

require that special efforts be taken to provide transportation to and from the interview site, and that the site itself be free of barriers to mobility.

Media Coverage

The public can be informed of a telephone survey through a variety of media, including:

- . television;
- . radio;
- . newspaper; and
- . special flyers.

Television provides the widest coverage of any of these media. Although television commercial advertising is probably too expensive for announcing an areawide telephone survey, free time provided by local television stations for airing public service announcements can be used instead. These public service announcements are often shown during periods of light viewing and therefore should be augmented by local news, talk show, and other public interest program coverage. Local television stations should be informed of the telephone survey and invited to cover the first day of interviewing. Special features might also be encouraged during news programs concerning the problems and needs of transportation-handicapped people in the local area.

Radio stations also provide free air time for public service announcements. In addition, local radio stations typically have public service programs, which can provide a forum for discussing the objectives and nature of the telephone survey. The news departments of local radio stations might also cover the start of the survey as a news item.

Newspaper coverage might include press releases, advertising, and interviews with members of the survey team. Local as well as regional newspapers should be included in the publicity program to ensure comprehensive coverage.

The printing and distribution of flyers announcing the start of the telephone survey is a fourth method of advertising the survey. Flyers should be placed in public locations frequented by transportation-handicapped people.

Of the four advertising media described above and used in previous telephone surveys, the most cost effective have been television and newspaper announcements. This is because they cover wider areas than radio, which serves smaller, more fragmented markets, and printed flyers, which are more limited in their distribution. Because sampling frames for an areawide

telephone survey will probably be derived from the total population of the local study area, the use of wider-coverage media is a more effective way of informing the general population of the survey and its objectives.

Selecting the Sample

Sample selection involves applying a chosen sampling plan to a sampling frame. In an areawide telephone survey, the survey team should select a random sample of households to interview from whatever directory reasonably covers the local study area. The names, addresses, and phone numbers of each household selected should be written on a survey list and a blank screening questionnaire. Preparing the screening questionnaires in this way reduces the chances of overlooking or double-counting a household in the screening process. The handicapped person questionnaires are not used until after a transportation-handicapped individual is identified by the screening questionnaire.

The number of households selected for the survey should be approximately twice the number of screening interviews needed by the sampling plan. This over-sampling, which is based on the pilot areawide telephone survey conducted in Dayton, Ohio, is necessary to compensate for incomplete interviews resulting from:

- . a disconnected phone;
- . a changed number;
- . a business phone;
- . no answer;
- . refusal to be interviewed; and
- . a partial interview.

Therefore, if the nature of the study area and survey requires that 2,000 household screening interviews be completed, then 4,000 households should be selected for the initial survey sample.

Hiring and Training Interviewers

Hiring and training personnel to conduct telephone interviews is a very important responsibility of those administering the survey. The success of the survey will depend largely on the quality of the interviewers. Several activities are involved in hiring and training, including:

- . advertising for prospective interviewers;

- . interviewing and screening applicants;
- . scheduling the interviewers; and
- . training the interviewers.

Advertising for Prospective Interviewers

There are several ways to solicit interviewer applicants for an areawide telephone survey. These include:

- . advertising in the help-wanted section of the local newspaper;
- . securing the services of professional job-placement agencies;
- . contacting senior citizen and vocational rehabilitation centers to identify applicants who share some of the physical dysfunctions associated with those being surveyed; and
- . contacting student and employment offices of local colleges or universities.

Employment announcements should describe the duties of the interviewers, the minimum skills required, the anticipated period of employment, and the address and phone number of the survey office where the applications will be processed.

Interviewing and Screening Applicants

Applicants should be requested to come to the survey project office to complete two short tests designed to evaluate their ability to effectively conduct interviews. The first test, a sample of which is included in Appendix B, evaluates the applicant's speaking voice and ability to complete the actual screening questionnaire during a simulated telephone interview. The results are graded subjectively, with the score based upon the observing staff member's impressions of the applicant's telephone style. Important characteristics which should be considered in the evaluation are:

- . clarity;
- . understandability;
- . pleasantness; and
- . courteousness.

The second test, a sample of which is included in Appendix B, evaluates the applicant's general level of reading comprehension and mathematical ability. This is a written test which is graded objectively. Applicants should be considered for employment only if they pass both tests.

Depending upon the method used to solicit applicants for the interviewer position, the survey staff should expect to interview from three to four times as many applicants as there are interviewer positions to be filled. The number of interviewer positions will depend on the total duration of the survey, the duration of each interview shift, and the total number of screening interviews which must be completed.

Exhibit II-3 shows the number of full-time interviewers who should be hired initially for an areawide telephone survey of varying size and duration using the type of questionnaires described in this section. This number includes a 20 percent allowance for interviewers who resign or are dismissed during the course of the survey. Slight overhiring at the beginning is preferable to seeking and training additional interviewers after the survey has begun. According to Exhibit II-3, at least 3.7 full-time interviewers (or their part-time equivalent) should be hired for each 1,000 completed screening questionnaires required, assuming the survey runs for three weeks. For example, eight full-time interviewers should be hired for a survey which is to produce 2,000 completed screening questionnaires. This is based on the results of the pilot areawide telephone survey conducted in Dayton, Ohio.

Scheduling the Interviewers

Each interviewer's working hours should be established upon acceptance of employment. Because of the need to contact individuals at home, the survey team should schedule portions of the survey during evenings and Saturdays, as well as during regular working hours. The controlling factor in scheduling the interviewers is the number of telephones available in the survey office. The number of telephones required depends on the survey office's hours of operation and the number of full-time equivalent employees hired to complete the survey within the prescribed timeframe. In general, one telephone should be sufficient for each two full-time employees hired. This assumes that the survey office is open days, evenings, and Saturdays.

The daily schedule of the interviewers should be drawn up based upon the availability of telephones and the interviewers' individual preferences for working hours. At least one supervisor per ten interviewers should also be scheduled whenever the survey office is open. The role of the supervisor should be to:

- . answer questions raised by the interviewers;

EXHIBIT II-3

INITIAL INTERVIEWER HIRING REQUIREMENTS
FOR AREAWIDE TELEPHONE SURVEYS¹

Completed Screening Questionnaires Required	Survey Duration (Weeks)					
	1	2	3	4	5	6
300	4	2	1	1	1	1
500	6	3	2	2	1	1
700	8	4	3	2	2	1
1,000	11	6	4	3	2	2
2,000	22	11	8	6	5	4
3,000	34	17	11	9	7	6
5,000	56	28	19	14	11	9
7,000	78	39	26	19	16	13
10,000	111	56	37	28	22	19
13,000	145	72	48	36	29	24

¹ Based on full-time interviewers working 40 hours per week, including a 20 percent allowance for interviewers who resign or are dismissed during the course of the survey.

- . assist interviewers in completing their questionnaires and survey control forms;
- . monitor the interviewers' performance;
- . adjust the interview schedule based on interviewer absence, sickness, or other problems;
- . perform a preliminary check of the returned questionnaires to ensure completeness; and
- . check all interviewers in and out of the survey office.

An extra telephone should be installed for the supervisor's use.

Training the Interviewers

All interviewers should be required as a condition of employment to attend a training session on how to perform their job responsibilities effectively. It is recommended that two sessions be held, one in the morning and one in the afternoon, to increase the opportunity for applicants to attend.

Each session should last at least three to four hours and address interviewing procedures as well as administrative details, such as personal services contracts and pay periods. Each interviewer should be given an opportunity to practice conducting an interview during these sessions. If possible, arrangements should be made for a representative of the local telephone company to attend the sessions to discuss effective telephone techniques.

Obtaining Physical Facilities and Equipment

Four types of physical facilities must be obtained before the start of an areawide telephone survey. These include:

- . office space;
- . office furniture;
- . office supplies; and
- . telephone lines.

Depending on the survey size and the sponsoring organization's resources, these facilities can either be supplied directly by the sponsoring organization or acquired from outside sources. The total cost of running the survey would be much lower if the sponsoring organization used its own facilities and equipment.

Office Space

An areawide telephone survey requires enough office space to accommodate the maximum number of interviewers who will be working at one time during the survey. For purposes of computing the amount of office space needed, one can use 150 square feet per interviewer as a basis.

For surveys involving 2,000 completed screening questionnaires and five telephone lines (including one for a supervisor), a 600-square-foot office area would be sufficient. If possible, this should be provided at the sponsoring organization's offices. If this is not possible, or for much larger surveys, temporary office space might be needed.

When searching for temporary office space, one should consider:

- . proximity to the downtown area and the sponsoring organization's offices;
- . proximity to fixed-route transit services;
- . parking availability;
- . building accessibility to the handicapped (if handicapped interviewers are involved); and
- . availability of necessary utilities and rest rooms.

If possible, a monthly lease should be arranged for the office space.

Office Furniture

The types of office furniture needed for an areawide telephone survey include:

- . salesman desks (one per telephone line);
- . swivel chairs (one per telephone line);
- . 4-drawer filing cabinet;
- . several tables;
- . several additional chairs; and
- . water cooler.

If these items cannot be provided by the sponsoring organization, they should be leased on a monthly basis from a reputable equipment rental company which will deliver, set up, and pick up the furniture at the survey site.

Office Supplies

Office supplies needed for an areawide telephone survey include:

- . pencils;
- . paper pads;
- . pencil sharpeners;
- . erasers;
- . tape dispensers;
- . paper clips; and
- . file folders and labels.

These items should all be supplied directly by the sponsoring organization.

Telephone Lines

The local telephone company should be contacted well ahead of the start of the survey to provide adequate time to schedule installation of telephone equipment. As described earlier, at least one telephone line should be installed for every two interviewers hired, plus an extra line for each survey supervisor. This should provide an adequate number of lines for the maximum number of interviewers who will be working at any one time during the survey. If the study area includes households beyond the local exchange, then one of the telephone lines could be installed with a foreign exchange to permit long-distance calling at reduced rates. This should only be done if the number of calls made to the foreign exchange justifies its cost.

The telephone equipment must be installed before the start of the survey, especially if the office space and furniture are only available for a limited time. A telephone directory should be provided for each line installed. A telephone monitoring device is an optional feature which could facilitate the supervisor's job. This device, if installed on the supervisor's telephone, would permit the supervisor to monitor each of the interviewers' lines to ensure that the survey is being conducted properly. The availability of telephone monitoring devices varies by local telephone company.

If the survey size is relatively small and the sponsoring organization has sufficient telephone equipment available, there would be no need to install additional phones for the survey. This would represent a significant cost saving for the survey.

Conducting Interviews

During the training sessions and prior to the start of the survey, the interviewers should be given detailed instructions on how to conduct the screening and handicapped person interviews. Appendix B includes a copy of the interviewer instructions used for the pilot areawide telephone survey conducted in Dayton, Ohio. The following discussion summarizes the key elements of the interviewing procedures.

Requesting a Screening Interview

All screening interviews should be conducted with either the male or female head of the household. If neither head of the household is available, an appointment should be made to call back at a more convenient time. If either head of the household refuses to be interviewed, no attempt should be made to speak to any other member of the household.

In introducing themselves, the interviewers should:

- . identify themselves;
- . indicate their affiliation with the sponsoring organization;
- . ask to speak to a head of the household;
- . state the purpose of their call; and
- . request an interview.

A standard introductory statement should be prepared for this purpose.

Asking Questions and Recording Responses

Both the screening questionnaire and the handicapped person questionnaire should be designed to be self-coding. The interviewers should be instructed to write the number corresponding to the respondent's answer in the coding boxes below each question.

There are two exceptions to the above procedure in the questionnaires included in Appendix B. The first exception involves Questions 1 and 2 on the screening questionnaire. In both of these questions, the interviewers are required to record the names of any handicapped persons mentioned by the head of the household. The other exception involves Questions 16 and 17 on the handicapped person questionnaire. These questions deal with the characteristics of trips taken by the handicapped person during the two days preceding the day of the interview.

The interviewers are instructed to write the names and addresses of the destinations, the starting times and purposes of the trips, and the modes of transportation used in the spaces provided on the questionnaire. The answers to these questions are coded after the interviews are completed.

In general, interviewers should be told to state the questions exactly as they are worded and to ask the questions in the same order as they appear on the questionnaires. There is, however, an exception to the first rule. This involves the wording of Questions 1 and 2 on the screening questionnaire. If the respondents mention at the beginning of their interviews that they live alone, the interviewers should ask Questions 1 and 2 in a slightly different manner. For example, instead of asking, "Is there anyone in your household who has difficulty walking?", they should ask, "Do you have difficulty walking?". The interviewers should also be advised to be especially careful in asking such respondents questions about their mental ability and ability to speak and hear.

Interviewing Handicapped Persons

The interviewers should ask to speak to each person mentioned in response to Questions 1 and 2 on the screening questionnaire. They should attempt to interview each handicapped person in a household immediately after the screening interview. When this is impossible, they should make an appointment to call back at a more suitable time.

The interviewers should try to speak to each handicapped person directly. This may not always be feasible, however. Handicapped children, mentally disabled people, and people with a speech defect or defective hearing may have trouble responding to questions over the telephone. Before trying to interview such persons, the interviewers should ask the head of the household whether or not the person in question is capable of participating in an interview. If the head of the household indicates that the handicapped person would have difficulty, an attempt should be made to have the head of the household answer the questions for the handicapped person.

Dealing with Incomplete or Unsuccessful Interviews

The outcome of calls made by interviewers should be recorded on the cover sheet of each questionnaire. The code letters CI can be used to indicate "complete interview." A significant portion of the calls made by interviewers will result in either incomplete or unsuccessful interviews. Such calls typically fall into the categories shown in Exhibit II-4. These calls should be handled as follows.

EXHIBIT II-4

POSSIBLE OUTCOMES OF TELEPHONE CALLS IN
AREAWIDE TELEPHONE SURVEYS

<u>Code</u>	<u>Name</u>	<u>Explanation</u>
CI	Completed Interview	A completed interview.
PI	Partial Interview	A person answers some of the questions and then refuses to continue.
US	Unmatched Street	The interview is completed but the address given is different than the one obtained from the telephone or city address directory.
NA	No Answer	No one answers the telephone.
CB	Call Back	Someone in the household answers the telephone but instructs the interviewer to call back later.
REF	Refusal	A person refuses to answer any of the questions.
X	Disconnected Number	The interviewer hears a recorded message that the number he or she dialed has been disconnected.
NC	Number Changed	The interviewer hears a recorded message that the number he or she dialed has been changed.
BIZ	Business	The telephone listing is a business establishment.

Partial Interviews. If an interviewer is unable to complete a screening interview or a handicapped person interview, the code letters PI should be recorded on the questionnaire to indicate "partial interview." An incomplete interview should be treated as a partial interview if at least the first two questions are answered. Otherwise, it should be regarded as a refusal. In general, if any usable information is obtained at all, it should be retained for future analysis.

Changes of Address. If the street name mentioned in the screening questionnaire does not match the household address reported in the sampling frame, the interviewers should be instructed to write the code letters US for "unmatched street" on the screening questionnaire. The information from the screening questionnaire and possible subsequent handicapped person questionnaires can still be used in the survey if the new address is within the study area.

Unanswered Phone Calls. In a telephone survey, the same household is often called more than once. This usually occurs if during the previous attempt:

- . no one answers the phone;
- . the head of the household asks to be called at another, more convenient time; or
- . the handicapped person(s) identified during the screening interview is (are) not available to be interviewed after the screening questionnaire is completed.

To give severely handicapped persons ample time to answer the phone, interviewers should be instructed to let the phone ring at least ten times before concluding that no one is at home. If no one answers the phone by the tenth ring, the interviewer should write the code letters NA for "no answer" in the upper left corner of the screening questionnaire and retain it for subsequent attempts.

At least three hours should be allowed between successive attempts to contact a household to give the residents time to return home. Successive calls should be made at different periods of the day, until either the call is completed or four to five calls have been made with no answer. Further calls to the same household would not be recommended given the limited resources likely to be available for the survey. Since these calls would be made at different periods of the day, the same interviewers will not always be able to follow up on their own "no answer" calls. These subsequent calls should be assigned to other interviewers by the supervisor. The most likely time to complete follow-up calls is during the evening or weekend.

Therefore, several interviewers scheduled to work during these periods should be assigned exclusively to follow up calls to control the backlog.

Call-Backs. If someone other than the head of the household or a handicapped resident should answer the phone, the interviewer should make an appointment to call back at a more convenient time and write the appointed time and code letters CB for "call-back" in the upper left corner of the screening questionnaire. Whenever possible, interviewers should follow up on their own call-back appointments. Otherwise, the supervisor should assign call-backs to interviewers working during the appointed times.

Refusals. These calls can be handled very simply. The interviewers should be instructed to thank the head of the household politely and code the letters REF on the questionnaire. No attempt should be made to persuade the head of the household or a handicapped person to consent to an interview.

Disconnected Phones and Changed Phone Numbers. If an interviewer receives a recorded message that the number dialed is either not a working number or has been changed, the appropriate code for the outcome of the phone call should be recorded on the screening questionnaire. The code letter X can be used to indicate a nonworking number. The code letters NC can be used to indicate that the phone number has been changed. The questionnaire should then be signed and dated by the interviewer. No attempt should be made to call a new phone number not contained in the original sample.

Business Phones. Business establishments should not be included intentionally in the sample of households. If, however, a business is contacted, the code letters BIZ for "business" should be recorded on the screening questionnaire. The questionnaire should then be signed and dated by the interviewer.

Busy Signals. Busy signals should not be counted as one of the four or five attempts to contact a household, and no special code need be assigned to it. Whenever an interviewer receives a busy signal, he or she should call another household before calling the first household again. This procedure should be repeated until the interviewer succeeds in contacting someone in the household.

Interviewer Productivity

The interviewing staff will probably consist of persons who only want to work a few hours a day as well as those who prefer a full eight-hour day. At a minimum, each interviewer should be required to work at least a three-hour shift. Until the interviews are completed, the duties of the interviewing staff should

be restricted to conducting telephone interviews. These same persons would also be very effective in the subsequent manual edit of the completed questionnaires.

Due to call-backs and other unsuccessful phone calls, the interviewing staff should expect to make about three phone calls per completed screening questionnaire. This represents 50 percent more calls than the actual survey sample. For each ten screening questionnaires completed, from one to two transportation-handicapped persons should be identified, of which about 75 percent should provide complete handicapped person interviews. The time needed to complete a screening questionnaire should average around five minutes, and the time needed to complete a handicapped person questionnaire should average around fifteen minutes. These productivity rates are based upon the types of questionnaires contained in Appendix B and the results of the pilot areawide telephone survey conducted in Dayton, Ohio.

Maintaining Quality Control

Considerable effort should be devoted to developing quality control procedures. These procedures should focus on monitoring and controlling the progress of the survey. Appendix B contains several forms developed for the Dayton areawide telephone survey which are designed to help the supervisor and interviewers control the progress of the survey. These include an interviewer log and a call-back schedule.

Interviewer Log

The purpose of the interviewer log is to help the supervisor and the interviewers keep track of all phone calls made. The interviewers should record the following information on the log sheets for each household called:

- . the address and phone number of the household;
- . the outcome of each phone call (using the codes described in Exhibit II-4);
- . the starting and ending times of the screening interview;
- . the number of handicapped persons in the household;
- . the outcome of each attempt to interview a handicapped person; and
- . the starting and ending times of the handicapped person interview.

By examining the interviewer logs, the supervisor can determine the following on a daily and weekly basis:

- . the number of households contacted;
- . which households have to be called back;
- . the number of refusals;
- . the number of phone calls that do not lead to a valid interview because of disconnected phones, changed phone numbers, business phones, and changes of address;
- . the average time per screening interview;
- . the number of handicapped persons identified and the number interviewed; and
- . the average time per handicapped person interview.

The starting and ending times of each interview enable the supervisor to monitor the productivity of each interviewer and to estimate the time required to complete the survey.

Call-Back Schedule

The other form used to manage the survey is the call-back schedule. As its name implies, this form should be used to keep track of households that have to be called back either for a screening interview or for a handicapped person interview. The interviewers should record the following information on this form:

- . the address and phone number of the household;
- . whether the interview to be conducted is a screening interview or a handicapped person interview;
- . the date and time of day the household is to be called, if an appointment has been made; and
- . the names of the handicapped people to be interviewed if the screening interview has already been completed.

This form is used by the supervisor to assign call-backs to interviewers working on subsequent shifts and to monitor the performance of individual interviewers.

Verification of Interviews

It is standard practice in a telephone survey to select a random sample of completed questionnaires and to verify them. This can be done by calling some of the households a second time to determine whether or not an interview actually occurred. If a telephone monitoring device is used, the supervisor can directly verify the interviews by monitoring the calls of each interviewer. This method of verification has two important advantages over the call-back approach. First, it allows the supervisor to study each interviewer's telephone etiquette and determine whether the interviews are being conducted properly. Secondly, it eliminates the problem of having to bother some of the households a second time.

Coding and Editing Survey Data

Certain portions of the questionnaires described in this report require the coding of responses. Examples include:

- . coding the outcome of each phone call;
- . coding the purpose of trips listed in the travel diary;
- . coding the mode of travel used for trips listed in the travel diary; and
- . geocoding the trip origins and destinations of trips listed in the travel diary.

The coding functions should be performed by trained staff, familiar with the various codes used in the survey.

Once the survey is completed and the questionnaires coded, each questionnaire should be manually edited to ensure that all questions have been completely and consistently answered, each response is properly recorded, and the cover sheets are properly filled out.

Members of the interviewing staff would provide an effective work force for performing this function, provided they do not edit the same questionnaires they completed. Spot checking of completed questionnaires should also be performed by supervisory personnel throughout the interview and edit phases of the survey.

Once the questionnaires are manually edited and coded, the responses should be keypunched onto data cards, magnetic tape, or diskette for future computer processing and analysis. Key-punching can either be performed by data entry specialists employed by the sponsoring organization or contracted out to a private firm.

SUMMARY OF SURVEY PERSONNEL RESPONSIBILITIES

The personnel requirements for conducting an areawide telephone survey can be divided into two categories-- administrative staff and interviewing staff. Administrative staff are employees of the sponsoring organization who are assigned responsibility for conducting the survey. The activities of the administrative staff can be grouped into three time periods, representing the periods before, during, and after the actual telephone interviews.

Prior to the interviews, the administrative staff should:

- . assist in the development of the preliminary and final survey questionnaires and interviewing instructions;
- . arrange public involvement relating to review of the questionnaires;
- . secure an adequate office in which to conduct the interviews;
- . secure telephones, office furniture, and supplies;
- . supervise and evaluate a pretest of the survey questionnaires;
- . perform activities related to staffing the survey office, such as contacting various agencies for employee referrals, developing written and oral tests to screen applicants, interviewing applicants, and scheduling personnel;
- . establish hours of operation of the survey office;
- . organize operation of the survey office, including arranging desks and telephones, assigning personnel to specific telephones, and establishing interviewer schedules;
- . conduct training sessions for the interview staff;
- . ensure that the sample selection process is well underway and that a sufficient number of screening questionnaires will be available for the first day of interviewing;
- . ensure that the publicity campaign is underway;
- . ensure that the survey questionnaires and supplementary forms, such as interview logs and call-back schedules, are printed; and

- . ensure that personal services contracts, time sheets, and sign-in/sign-out sheets are prepared.

During the interviewing process, the administrative staff should:

- . review completed questionnaires, log sheets, and call-back schedules at the end of each interviewer's shift;
- . assign days and times to questionnaires requiring call-backs;
- . distribute questionnaires requiring call-backs, along with associated call-back schedules and log sheets, to specific interviewers;
- . separate completed questionnaires from those requiring call-backs and file by employee name and date of completion;
- . tally interview outcomes, as appearing on the log sheets, at the end of each day;
- . reschedule personnel assignments, as needed;
- . assign serial numbers to those screening questionnaires without them;
- . monitor telephone calls of the interview staff, as necessary, to verify accuracy and to assess interviewer's performance;
- . answer questions asked by the interviewers on any aspect of the study;
- . review time sheets at the end of each pay period;
- . dismiss personnel for unsatisfactory performance, as necessary;
- . provide interviews to local television and radio stations and to the newspapers in accordance with the publicity campaign schedule, and also upon request;
- . speak with persons who become angry when called for an interview, if they request to speak to a supervisor;
- . monitor the volume of activity and productivity in the sample selection and interviewing processes;

- . prepare weekly progress reports on overall project activities; and
- . distribute paychecks to the interviewers.

After completion of the interviews, the administrative staff should:

- . instruct and supervise personnel in coding the travel diary (as necessary), coding the interview outcomes, and performing a manual edit;
- . dismiss all temporary personnel hired for the survey after completion of their duties;
- . make arrangements to remove telephones, office furniture, and supplies from the survey office if leased;
- . close survey office;
- . make arrangements for keypunching questionnaires; and
- . prepare final report on survey results and findings.

Interviewing staff consists of the temporary interviewers hired to call the sample of households and complete the survey questionnaires. The activities of the interviewing staff can be summarized as follows:

- . attend a training session on interviewing tips and procedures prior to the first day of telephone interviewing;
- . sign a daily time sheet before starting and after completing each daily shift;
- . obtain from the supervisor a sufficient number of screening and handicapped person questionnaires, log sheets, and call-back schedules for the anticipated daily interview activities;
- . attempt as many telephone interviews as possible;
- . record all interview attempts requiring a call-back on the call-back schedules;
- . attach completed handicapped person questionnaires to the associated screening questionnaires, if applicable;

- . make own call-backs, if possible;
- . keep completed questionnaires in order by serial number;
- . separate completed questionnaires from those requiring call-backs and give both sets of forms to the supervisor before leaving for the day;
- . complete a time sheet prior to the end of each pay period; and
- . assist in manually editing and coding completed survey questionnaires after completion of the telephone interview portion of the study (if applicable).

AREAWIDE TELEPHONE SURVEY COSTS

The costs of conducting an areawide telephone survey consist of both fixed and variable elements. The following categories of telephone survey costs are relatively unaffected by the size of the survey sample or the questionnaires used:

- . administration:
 - developing the survey questionnaires and interview instructions;
 - delineating the survey scope and sampling plan; and
 - pretesting the questionnaires.
- . publicity:
 - developing and issuing announcement fliers;
 - arranging public announcements on television, radio, or newspapers; and
 - scheduling on-site interviews for broadcast by local television news or talk shows.
- . office rental (if necessary).
- . office equipment rental (if necessary).
- . supplies.

The final three items listed above may already be available to the local transportation planning agency or transit operator. If so, these costs should not be included in the fixed cost estimate.

The remaining costs of conducting an areawide telephone survey depend primarily on the sample size of households to be screened and the length of the survey questionnaires. The

following categories of telephone survey costs are related to both the size of the survey sample and the questionnaires used:

- . administration:
 - . selecting the sample and preparing the questionnaires;
 - . hiring and training the interviewers; and
 - . supervising the interviewers.
- . interviews:
 - . conducting household screening interviews; and
 - . conducting handicapped person interviews.
- . data coding and editing:
 - . coding selected questionnaire responses; and
 - . editing the completed questionnaires.
- . telephone equipment rental.

The total costs of conducting an areawide telephone survey can be estimated using the pro-forma cost schedule illustrated in Exhibit II-5. The fixed cost elements are developed on the basis of administrative staff time, while the variable cost elements are developed on the basis of the required number of completed screening questionnaires and the expected duration of the interview process. The variable cost rates assume that questionnaire forms similar to those in Appendix B will be used and that the incidence rate of transportation-handicapped persons is about 4 to 5 percent of the study area's population.

Exhibit II-6 contains an illustrative application of the pro-forma cost schedule, assuming 2,000 screening questionnaires are completed over a three-week timeframe. The administrative staff time, personnel rates, and various rental costs are estimated based on experience with similar surveys and representative costs as of Spring 1983. The results of Exhibit II-5 can be summarized by the following equation, based on the personnel assignments and rates listed in the exhibit:

$$\text{Survey cost} = \$3,600 + X[\$4.5 + \$64.5/Y] + \$12Y,$$

where X = number of completed screening questionnaires required; and
Y = duration of interview process, in hours.

EXHIBIT II-5

AREAWIDE TELEPHONE SURVEY PRO-FORMA COST SCHEDULE
(1983 Dollars)

	<u>Person-Hours</u>	<u>Rate (\$/Hour)</u>	<u>Cost</u>
<u>FIXED COSTS</u>			
<u>Administration</u>			
- Develop Questionnaire/ Instructions			
- Delineate Survey Scope/ Sampling Plan			
- Pretest Questionnaires			
<u>Publicity</u>			
- Arrange Publicity			
- Media Advertising			
<u>Supplies</u>			
			\$ _____
<u>SUBTOTAL FIXED COSTS</u>			
<u>VARIABLE COSTS</u>			
<u>Administration</u>			
- Select Sample/Initialize Questionnaire	0.090X		
- Hire/Train Interviewers	24 + 1.500X/Y		
- Supervise Interviewers	Y		
<u>Interviewing</u>	0.374X		
<u>Coding, Editing and Keypunching</u>			
- Coding	0.016X		
- Editing	0.107X		
- Keypunching	-	\$0.221X	
<u>Telephone Equipment</u>	-	\$6.30 + \$0.158X + \$11.04X/Y	
<u>Office Space</u>	-	\$26.04X/Y	
<u>Office Equipment</u>	-	\$205 + \$9.36X/Y	
			\$ _____
<u>SUBTOTAL VARIABLE COSTS</u>			
<u>TOTAL COST</u>			\$ _____

Where:

X = Number of completed screening questionnaires required.
Y = Duration of survey in hours.

EXHIBIT II-6
ILLUSTRATIVE APPLICATION OF
AREAWIDE TELEPHONE SURVEY PRO-FORMA COST SCHEDULE
(1983 Dollars)

	Person-Hours	Rate (\$/hour)	Cost
<u>FIXED COSTS</u>			
<u>Administration</u>			
- Develop Questionnaire/ Instructions	80	\$12	960
- Delineate Survey Scope/ Sampling Plan	35	\$12	420
- Pretest Questionnaires	50	\$12	600
<u>Publicity</u>			
- Arrange Publicity	32	\$12	384
- Media Advertising	-	-	500
<u>Supplies</u>	-	-	\$ 200
<u>SUBTOTAL FIXED COSTS</u>			\$ 3,064
<u>VARIABLE COSTS</u>			
<u>Administration</u>			
- Select Sample/Initialize Questionnaire	0.090X	\$12	\$ 2,160
- Hire/Train Interviewers	24 + 1.500X/Y	\$12	\$ 588
- Supervise Interviewers	Y	\$12	\$ 1,440
<u>Interviewing</u>	0.374X	\$ 6	\$ 4,488
<u>Coding, Editing and Key punching</u>			
- Coding	0.016X	\$10	\$ 320
- Editing	0.107X	\$ 6	\$ 1,264
- Key punching	-	\$0.221X	\$ 442
<u>Telephone Equipment</u>	-	\$6.30 + \$0.156X + \$11.04X/Y	\$ 506
<u>Office Space</u>	-	\$26.04X/Y	\$ 434
<u>Office Equipment</u>	-	\$205 + \$9.36X/Y	\$ 361
<u>SUBTOTAL VARIABLE COSTS</u>			\$ 12,023
<u>TOTAL COST</u>			\$ 15,087

Assume:

X = 2,000 completed screening questionnaires.
Y = 120-hour survey duration.

Exhibit II-7 lists the estimated survey costs associated with areawide telephone surveys of various sizes and durations, using this equation as a basis. According to this exhibit, a survey of three weeks' duration would be least costly if the required number of completed screening questionnaires is 2,000. For surveys of three weeks duration, a useful rule of thumb cost equation would be:

$$\underline{\text{Survey Cost}} = \$5,000 + \$5X,$$

where X = number of completed screening questionnaires required.

These charts and equations can be used to develop realistic cost estimates for conducting an areawide telephone survey, assuming the use of survey questionnaires similar to those described in Appendix B. Different cost levels would result if the scope or nature of the survey changed significantly, or if the various labor or rental rate assumptions changed. When more exact cost information is available, it should be used to augment these cost guidelines.

EXHIBIT II-7

ESTIMATED COSTS OF AREAWIDE TELEPHONE SURVEYS BY SURVEY SIZE AND DURATION
(1983 Dollars)

COMPLETED SCREENING QUESTIONNAIRES REQUIRED	SURVEY DURATION (Weeks)					
	1	2	3	4	5	6
300	5,900*	6,150	6,550	7,000	7,450	7,900
500	7,150*	7,200	7,550	8,000	8,400	8,850
700	8,350	8,250*	8,550	8,950	9,400	9,800
1,000	10,200	9,850*	10,100	10,400	10,800	11,250
2,000	16,300	15,150	15,100*	15,350	15,650	16,000
3,000	22,400	20,500	20,150*	20,250	20,450	20,800
5,000	34,650	31,100	30,250	30,050*	30,100	30,300
7,000	46,850	41,700	40,300	39,850	39,750*	39,850
10,000	65,200	57,600	55,400	54,550	54,250	54,150*
13,000	83,550	73,550	70,550	69,250	68,700	68,450*

* Low cost survey duration by screening sample size.

III. CENSUS DATA FACTORING OF AREAWIDE TELEPHONE SURVEY DATA

INTRODUCTION

Information on the location of transportation-handicapped people can be especially useful to transportation planners and transit operators. Knowing the geographic distribution of transportation-handicapped people, transportation planners and transit operators can determine which bus routes should receive the highest priority for lift-equipped buses. They can estimate how many transportation-handicapped people live within normal walking distance of a bus stop. They also can identify areas where many transportation-handicapped people live and where new, accessible transportation services might be provided first.

Determining the geographic distribution of transportation-handicapped people within an urban area through an areawide telephone survey can be very costly. The survey team must first subdivide the local study area into subareas such as traffic analysis zones or census tracts and then screen a probability sample of households in each subarea. In an average size census tract, the survey team would have to screen between 600 and 900 households to estimate the incidence rate of transportation-handicapped people within plus or minus 10 percent of the true incidence rate at a 90 percent level of confidence. The total sample size would be the sum of the sample sizes for the individual census tracts. An urban area with 500,000 people might contain as many as 125 census tracts or more. The survey team in an urban area of this size would, therefore, have to screen between 75,000 and 112,500 households altogether. An areawide telephone survey of this magnitude would probably be prohibitively expensive.

Fortunately, the 1980 Census of Population and Housing (PHC/80) can be used in conjunction with a small-scale, areawide telephone survey to estimate the spatial distribution of the local transportation-handicapped population quickly and inexpensively (1).

1980 Census Data on Public Transportation Disability

The long form of the 1980 Census questionnaire posed the following question about each member of the household: "Does this person have a physical, mental, or other health condition which has lasted for six or more months and which limits or prevents this person from using public transportation?" The long form was sent to half of the housing units in incorporated places of less than 2,500 population and to one out of every six housing units in all other places. In incorporated places with

less than 2,500 population, half of all persons living in group quarters received the long form of the questionnaire, while in all other places, one out of every six persons living in group quarters received the long form. Altogether, approximately 19 percent of the nation's housing units received the census form containing the question on public transportation disability.

Census estimates of the number of people with a public transportation disability are available from published reports and computer tapes for each census tract. Both the reports and the tapes contain the following tabulations:

- . persons 16 to 64 years of age with a public transportation disability; and
- . persons 65 years of age or older with a public transportation disability.

The population base for the above tabulations consists of all noninstitutionalized persons 16 years of age or older. Thus, the census estimates of the number of people with a public transportation disability excludes all people under the age of 16 and those persons confined to one of the following types of institutional group quarters:

- . homes, schools, hospitals, or wards for persons who are blind, deaf, or physically handicapped;
- . homes, schools, hospitals, or wards for mentally handicapped persons;
- . psychiatric hospitals or wards;
- . hospitals or wards for tubercular patients;
- . hospitals or wards for people who are chronically ill; and
- . nursing, convalescent, and rest homes for persons who are aged and/or dependent.

Uses and Limitations of Census Data

The 1980 Census is the only source of information on the distribution of transportation-handicapped people within urbanized areas. The only alternative to using the census data is to conduct an extensive and costly subarea survey. Transportation planners and transit operators could also assume that the local transportation-handicapped population is distributed in proportion to the general population, but previous research has shown that this is not necessarily the case (6, p. IV.19). Consequently, using the 1980 Census data in conjunction with a

small-scale areawide telephone survey is a convenient, inexpensive, and reliable way of determining the geographic distribution of the transportation-handicapped population within an urban area.

Transportation planners and transit operators should be aware that the estimated number of transportation-handicapped people in their area, as determined by the 1980 Census, may differ from the number obtained from a limited areawide telephone survey. These differences may arise because of differences in the way transportation-handicapped people are defined or identified. For the 1980 Census, the Census Bureau defined a public transportation disability as a physical, mental, or other health condition that has lasted six months or longer and that makes it difficult or impossible to use buses, trains, subways, or other forms of public transportation. Thus, a person with a temporary health problem such as a sprain or a broken bone that is expected to heal normally would not be counted as a transportation-handicapped person in the 1980 Census. The census data also excluded anyone under 16 years of age from tabulations of the number of transportation-handicapped people, as well as excluding institutionalized persons.

In the Technical Documentation to the 1980 Census computer tape summaries, the Census Bureau notes that the decision was made to include a question on public transportation disability despite "test evidence that there was likely to be a problem with data reliability." Whether or not a physical, mental, or other health condition limits or prevents someone from using public transportation is often a matter of judgment. Not everyone afflicted with such a condition has difficulty using public transportation. Moreover, persons who would have trouble using public transportation do not always regard themselves as being transportation-handicapped, especially if they have never tried to use public transportation. In a limited areawide telephone survey, local transportation planners or transit operators can carefully screen households and ask detailed questions about the ability of residents to use public transportation. This was not possible in the 1980 Census. Nevertheless, despite the concern about the reliability of the census data on public transportation disability, there is reason to believe that the percentage distribution of transportation-handicapped people by census tract in the 1980 Census is a reliable measure of the actual geographic distribution of the local transportation-handicapped population.

The 1980 Census provides only estimates of the number of transportation-handicapped people in a particular area. It does not provide any information on the degree of difficulty they have using public transportation or the types of problems they would have in attempting to travel by this mode. Furthermore, the 1980 Census does not provide any data on other important

characteristics of the transportation-handicapped population such as current frequency of travel, modes of transportation used, reasons for traveling, need to travel more often or to new destinations, need for special aids or assistance while traveling, availability of various modes of transportation, or ability to pay for transportation services. All of this information, of course, could be collected in a limited areawide telephone survey.

STEPS IN OBTAINING AND USING CENSUS DATA

The procedure for using census data to determine the spatial distribution of transportation-handicapped people in a local area employs the following steps:

- . obtaining census data on public transportation disability; and
- . developing factors to geographically distribute areawide telephone survey data.

Obtaining Census Data on Public Transportation Disability

The PHC/80-2 series of printed reports, produced by the Census Bureau, provides estimates for each census tract of the number of people 16 years of age or older with a public transportation disability. A separate report is available for each Standard Metropolitan Statistical Area (SMSA) and for the tracted balance of each state and Puerto Rico. These reports can be ordered from the Superintendent of Documents of the U.S. Government Printing Office. A form for ordering published reports from the 1980 Census is included in Appendix D. Alternatively, transportation planners and transit operators may be able to find selected issues of these reports at public libraries, university libraries, state data centers, regional offices of the Census Bureau, and district offices of the U.S. Department of Commerce.

The same tabulations that appear in these printed reports are also available on computer tapes. These tapes comprise the Summary Tape File 3A (STF 3A). There is one STF 3A for each state. Each file contains tabulations of the number of people with a public transportation disability by census tract or by block numbering area. As in the printed reports, the tabulations are stratified into two age groups: 16 to 64 years of age, and 65 years of age or older. Tapes for individual states can be purchased separately from the Data User Services Division of the Census Bureau. The cost is \$140 per reel. Exhibit III-1 indicates the number of reels for each state at tape densities of 1,600 bits per inch (bpi) and 6,250 bpi, respectively.

EXHIBIT III-1

NUMBER OF REELS IN SUMMARY TAPE FILE 3A
FROM THE 1980 CENSUS, BY STATE
AND BY TAPE RECORDING DENSITY

STATE	NUMBER OF REELS		STATE	NUMBER OF REELS	
	TAPE DENSITY 1600 bpi	TAPE DENSITY 6250 bpi		TAPE DENSITY 1600 bpi	TAPE DENSITY 6250 bpi
Alabama	2	1	Missouri	3	1
Alaska	1	1	Montana	1	1
Arizona	2	1	Nebraska	2	1
Arkansas	2	1	Nevada	1	1
California	9	3	New Hampshire	1	1
Colorado	2	1	New Jersey	3	1
Connecticut	2	1	New Mexico	1	1
Delaware	1	1	New York	7	2
District of Columbia	1	1	North Carolina	3	1
Florida	4	2	North Dakota	2	1
Georgia	3	1	Ohio	5	2
Hawaii	1	1	Oklahoma	2	1
Idaho	1	1	Oregon	2	1
Illinois	6	2	Pennsylvania	6	2
Indiana	3	1	Rhode Island	1	1
Iowa	3	1	South Carolina	2	1
Kansas	2	1	South Dakota	2	1
Kentucky	2	1	Tennessee	2	1
Louisiana	2	1	Texas	7	2
Maine	1	1	Utah	1	1
Maryland	2	1	Vermont	1	1
Massachusetts	3	1	Virginia	3	1
Michigan	5	2	Washington	2	1
Minnesota	4	1	West Virginia	1	1
Mississippi	2	1	Wisconsin	4	1
			Wyoming	1	1

Tapes may be purchased from the Data User Services Division of the Census Bureau at a cost of \$140 per reel

Instead of purchasing the tapes, transportation planners and transit operators may wish to contact their State Data Center and obtain computer printed tabulations of the public transportation disability data. Local metropolitan planning organizations and universities may also have purchased the STF 3A tapes for their state. They may be able to sell or provide special computer-printed tabulations to local planning agencies and transit operators.

Developing Factors to Geographically
Distribute Areawide Telephone
Survey Data

Determining the spatial distribution of the local transportation-handicapped population using data from the 1980 Census is a very straightforward process. Both the PHC/80-2 series of published reports and the Summary Tape File 3A indicate the number of people with a public transportation disability in each census tract. These numbers can be converted quickly to percentages by dividing each by the census estimate of the total number of people with a public transportation disability in the urbanized area. Each census tract percentage is then multiplied by the total number of transportation-handicapped people estimated from the areawide telephone survey to yield a revised estimate of the number of transportation-handicapped people in each census tract.

Exhibit III-2 illustrates the above procedure for a hypothetical urbanized area with a 1980 population of 150,000 people. The Metropolitan Planning Organization (MPO) in this urbanized area conducted a limited areawide telephone survey to estimate the size of the local transportation-handicapped population and to obtain other information about the characteristics and transportation needs of these people. From this survey, the MPO estimated that there were 6,220 transportation-handicapped people in the area five years of age or older. The MPO then used census tract data on the incidence of people with a public transportation disability to distribute the 6,220 transportation-handicapped people geographically. The census statistics are shown in Column (2) of Exhibit III-2. These numbers were taken from printouts made from Summary Tape File 3A. They represent the number of people 16 years of age or older with a physical, mental, or other health condition that has lasted at least six months and that limits or prevents the use of public transportation. According to the 1980 Census, there were a total of 4,981 people with a public transportation disability in the hypothetical urbanized area. As Exhibit III-2 shows, 94 or 1.887 percent of these people resided in tract 1.00. The MPO, therefore, allocated 1.887 percent of the estimated 6,220 transportation-handicapped people to this census tract. Thus, the MPO estimated that there were 117 transportation-handicapped people five years of age or older in census tract 1.00. This number is shown in Column (4). The process

EXHIBIT III-2

HYPOTHETICAL EXAMPLE ILLUSTRATING THE USE OF 1980 CENSUS TRACT DATA
ON PUBLIC TRANSPORTATION DISABILITY¹

CENSUS TRACT (1)	PERSONS WITH A PUBLIC TRANSPORTATION DISABILITY AS DETERMINED BY THE 1980 CENSUS ²		NUMBER OF- TRANSPORTATION HANDICAPPED PEOPLE ³ (4)
	NUMBER (2)	PERCENT (3)	
TOTAL	4,981	100.0	6,220
1.00	94	1.887	117
2.00	232	4.658	290
3.00	103	2.068	129
4.00	85	1.706	106
5.00	86	1.727	107
10.00	117	2.349	146
11.00	101	2.028	126
12.01	376	7.549	470
12.02	196	3.935	245
13.00	159	3.192	199
14.01	38	0.763	47
14.02	102	2.048	127
20.00	297	5.963	371
21.00	89	1.787	111
22.01	52	1.044	65
22.02	206	4.136	257
22.03	102	2.048	127
22.04	48	0.964	60
23.01	66	1.325	82
23.02	78	1.566	97
30.00	183	3.674	229
31.00	102	2.048	127
40.00	220	4.417	275
50.00	77	1.546	96
100.00	48	0.964	60
110.00	155	3.112	194
111.01	62	1.245	77
111.02	262	5.260	327
121.01	339	6.806	423
121.02	148	2.971	185
201.01	173	3.473	216
201.02	193	3.875	241
202.01	92	1.847	115
202.02	214	4.296	267
210.00	86	1.727	107

¹ Based on a hypothetical urbanized area with a 1980 population of 150,000, and containing 35 census tracts.

² The number of persons 16 years of age or older with a physical, mental, or other health condition that has lasted 6 months or longer and that limits or prevents the use of public transportation. The numbers in Column (2) can be obtained from either of two sources: Summary Tape File 3A, issued for each state, or the PHC 80-2 series of printed reports, issued for each SMSA.

³ Number of people 5 years of age or older who are transportation-handicapped. The total at the top of Column (4) was estimated from the results of a limited areawide telephone survey conducted by the Metropolitan Planning Organization in the hypothetical urbanized area. The total was then allocated to the census tracts according to the percentages in Column (3).

was repeated for each of the remaining census tracts in the hypothetical urbanized area. This example assumes the same geographic distribution of transportation-handicapped persons in the hypothetical urbanized area who are over 15 years of age as for those over 4 years of age.

CENSUS DATA FACTORING COSTS

The costs of using census data to geographically distribute the number of transportation-handicapped people identified by an areawide telephone survey can be calculated using the following equation:

$$\text{Census Data Factoring Costs} = \$600 + \$140R,$$

where R = number of reels of census data obtained for the survey.

This is based on an estimate of two days of staff time to obtain census data and perform the factoring procedure described above. The actual factoring procedure can be performed manually in a very short time. At most, it should take an analyst from the survey team no more than a few hours to complete the calculations, even for a large metropolitan area.

Unless the planning agency or transit operator needs detailed census data for other purposes, there should be no need to purchase magnetic tapes of the census tract data. State and SMSA-level summaries are available from the Census Bureau for a nominal charge. In addition, computer printouts of the required tabulations generally can be purchased from State Data Centers, which are repositories of 1980 Census data. Without the need to purchase reels of census data, this element of the recommended data collection process becomes the least expensive and easiest to conduct.

IV. SMALL SUBGROUP SURVEY

INTRODUCTION

The incidence rate of certain subgroups of the transportation-handicapped population, such as wheelchair users, blind people, and mentally disabled people, is usually so small that an areawide telephone survey will not locate enough of them to yield statistically significant information. Therefore, another technique which identifies a large enough number of such people to provide meaningful results must be used. This technique, the third step in the recommended data collection process, entails collecting information on such subgroups through the assistance of social service organizations.

Social service agencies and various other public and private organizations and institutions provide many services to persons with physical and mental disabilities, including health care, education, vocational rehabilitation, recreation, meals, and transportation. A large metropolitan area will have many of these organizations.

Social service organizations might offer the following types of assistance to the survey team:

- . providing the organization's client listing, including names, addresses, and eligibility criteria;
- . distributing survey questionnaires to clients;
- . collecting completed survey questionnaires from clients; or
- . providing survey literature to clients.

The extent of such assistance will depend on the organization's policies regarding the disclosure of client information, and the applicability of state and federal laws restricting the disclosure of such information.

Appendix E describes a data collection study, conducted in San Diego, California, in 1980, which relied primarily on social service organizations to identify and survey transportation-handicapped people (9). The appendix also contains examples of the survey forms used to collect information on the social service organizations participating in the study and their clients.

STEPS IN CONDUCTING A SMALL SUBGROUP SURVEY

Surveying the transportation-handicapped clients of social service organizations involves several steps, including:

- . specifying survey objectives and data requirements;
- . determining categories of transportation-handicapped persons to be surveyed;
- . identifying social service organizations;
- . contacting social service organizations;
- . choosing survey techniques;
- . designing questionnaires;
- . pretesting questionnaires;
- . publicizing the survey;
- . hiring and training interviewers;
- . obtaining physical facilities and equipment;
- . conducting interviews;
- . maintaining quality control; and
- . coding and editing survey data.

Because the intent of the small subgroup survey is to augment and complement the areawide telephone survey, the two surveys should be coordinated. As a result, several of these steps, which are similar to those discussed in Section II, should be conducted at the same time as the areawide telephone survey. These steps are noted in the following subsection.

Specifying Survey Objectives and Data Requirements

The primary purpose of the small subgroup survey is to increase the sample size for certain subgroups of the transportation-handicapped population which may not be adequately represented by the areawide telephone survey sample. The objectives and data requirements of the small subgroup survey should be consistent with those of the areawide telephone survey, since both are elements of the same data collection process. Where required for special planning purposes, additional information might also be sought concerning such issues as:

- . the utilization of accessible fixed-route bus service or other specialized transportation services;

- . the desirability of accessible fixed-route service or other specialized transportation services and the reasons for their use or nonuse; or
- . the extent to which existing social service organizations satisfy the respondent's transportation needs.

The types of data developed by a small subgroup survey will be limited by the following:

- . the amount and kinds of data maintained by various social service organizations;
- . the age and accuracy of data maintained by various social service organizations;
- . the method by which this data is stored;
- . the types of individuals served by the organization; and
- . the restrictions imposed by organization policy or law regarding public disclosure of client data.

Much of the data maintained by social service organizations is confidential and not available to the public. Title XX of the Social Security Act prohibits social service agencies from divulging any information provided by applicants and recipients, and these agencies are usually reluctant to provide the names and addresses of the people they serve.

While the confidentiality requirements of social service organizations restrict public access to their client files, various methods can be used to collect needed information while maintaining the confidentiality of the source. For example, social service organizations may be willing and able to provide edited tabulations of the data they collect from their clientele. More important, they may be willing to assist the planning agency or the transit operator either by distributing questionnaires to elderly or handicapped clients or by contacting these people to make arrangements for a personal or telephone interview.

Determining Categories of Transportation-Handicapped Persons to be Surveyed

The small subgroup survey should be conducted when needed to provide a larger sample size of those subgroups of the transportation-handicapped population not adequately covered by

the areawide telephone survey. The survey should focus on those subgroups whose transportation needs are highly specialized, such as:

- . wheelchair users;
- . blind persons; and
- . mentally disabled people.

Identifying Social Service Organizations

Once the particular survey subgroups have been determined, the survey team should identify which social service organizations currently serve them. Developing a complete list of such agencies and organizations in a community can be a time-consuming and difficult task, particularly in large urbanized areas where there are many of these organizations. Several possible sources can be used to locate social service agencies and related organizations. These sources include:

- . the telephone book or Yellow Pages;
- . the local United Way Directory;
- . the local planning department;
- . state agencies responsible for channeling federal funds to local areas; and
- . the proposed state services plan required under Title XX of the Social Security Act.

State social service agencies have various names, such as:

- . department of human resources;
- . bureau of the elderly;
- . bureau of vocational rehabilitation;
- . department of rehabilitation;
- . health, social, and rehabilitation services administrations; or
- . department of elderly affairs.

The services plans proposed by the agencies are the basic source of information about social services programs in a state. They indicate which people are eligible for which services, which services will be provided in each geographic

area of the state, and the estimated expenditures for each service, category of recipient, and geographic area. The plans also include information about how the programs are administered, the use of public and private agencies and volunteers, and where people can apply for services. The proposed services plans can themselves be a useful source of data as well as identifying other possible data sources.

Contacting Social Service Organizations

After identifying the appropriate social service organizations, the survey team should contact the administrator of each organization to explain the nature and objectives of the survey and request the organization's cooperation. The study team representative should discuss with the administrator how best to proceed. This discussion should focus on:

- . the type of assistance the organization is willing and able to provide;
- . the type of data maintained by the organization, its limitations, and its availability; and
- . the method by which clients could be contacted to complete the survey questionnaires.

The survey team must be careful to respect the confidentiality requirements of each organization contacted.

Choosing Survey Techniques

Each social service organization should be asked to cooperate in the survey by either:

- . supplying names, addresses, and phone numbers of clients with specific disabilities so that they can be contacted by the survey office for a telephone interview;
- . interviewing clients with social service organization staff;
- . distributing blank questionnaires for their clients to administer to themselves; or
- . requesting their clients to contact the survey office directly for an interview.

The type of assistance offered by each organization will largely determine the survey techniques used. The preferred survey technique would be to contact by telephone clients of social service organizations cooperating in the survey, as in the

areawide telephone survey. This would simplify the requirements of questionnaire development, interviewer training, and response coding and editing.

Certain social service organizations may not provide client lists to the survey team. In such cases, the agency may offer to interview its own clients and submit the results to the survey office. This would reduce the effort of the survey team while maintaining the confidentiality of the agency's client list. Self-administered questionnaires may be another acceptable survey method which maintains the confidentiality of the respondent. In other cases, clients may be willing to call the survey office and participate in the survey without revealing their identity or organization affiliation. These latter two methods are harder to control since the clients retain full responsibility for responding to the survey. In addition, the self-administered questionnaire suffers from the lack of an interviewer to explain the questions and guide the respondent. The self-administered questionnaire must instead be accompanied by a detailed set of instructions.

Designing Questionnaires

A similar questionnaire to that developed for the areawide telephone survey should be used for the small subgroup survey, augmented where necessary to collect additional data on special transportation needs. Where social service agency clients are interviewed by telephone, the survey process is the same as for the areawide telephone survey. The only difference in the questionnaire should be the designation on the questionnaire cover sheets of the social service organization with which the respondent is affiliated. In cases where the organization requires that client confidentiality be maintained, the name, address, and social service organization affiliation of the respondents may be omitted from the questionnaire forms.

Where the names and addresses of respondents are withheld from the survey office, there exists the potential for double-counting, since the sample person could also be surveyed through different agencies or through the areawide telephone survey. This could be avoided by including a question in the survey questionnaire regarding prior participation in the survey effort.

If the questionnaires must be self-administered, the forms should be simple and short enough to enable the respondents to complete the forms unaided. This might require that certain questions be reworded or eliminated. All self-administered questionnaires should include the phone number of the survey office so that respondents can direct questions regarding the survey to a knowledgeable interviewer. Self-administered questionnaires should include a stamped, self-addressed envelope for returning the completed forms to the survey office, unless the social service organization is willing to collect the completed forms and forward them to the survey office.

Pretesting Questionnaires

Unless the areawide telephone survey questionnaires have been significantly altered for the small subgroup survey, no additional pretesting of the questionnaires is necessary. However, the self-administered questionnaires should be pretested on a small number of respondents to determine whether the forms can be easily understood and completed without assistance.

Publicizing the Survey

The most cost-effective time to initiate a small subgroup survey is during the areawide telephone survey, so that certain of the various fixed costs of conducting each survey can be shared. One of these fixed cost items is publicity. In addition to the publicity program described in Section II for the areawide telephone survey, the cooperating social service organizations might be willing to supply the following assistance:

- . notify their clients of the survey through an organization newsletter;
- . provide space in the organization's office for posters and flyers announcing the survey; or
- . notify their clients of the survey during client visits.

Hiring and Training Interviewers

Due to the similarity in the survey instruments and interviewing techniques used in both the areawide telephone survey and the small subgroup survey, procedures similar to those discussed in Section II should be used when hiring and training interviewers, including interviewers from the staffs of cooperating social service organizations. Such interviewers would likely already be familiar with the special characteristics and transportation needs of clients of the social service organizations for which they work.

Obtaining Physical Facilities and Equipment

The physical facilities and equipment required for the areawide telephone survey may have to be increased to accommodate the small subgroup survey, depending on the number of respondents. It may be possible to use the cooperating social service organization's facilities to conduct the interviews, particularly local and neighborhood organizations where clients periodically attend various programs. This would be cost effective, especially if the small subgroup survey extends significantly beyond the time required to complete the areawide telephone survey.

Conducting Interviews

The same interview procedures used to conduct an areawide telephone survey should be used to conduct the small subgroup survey, except where the questionnaires are self-administered. Self-administered questionnaires, as their name implies, require no interviewer. However, telephone interviewers should be available to answer respondents' questions. This is another reason to initiate the small subgroup survey during the areawide telephone survey.

Maintaining Quality Control

The same quality control measures used for the areawide telephone survey should be used when questionnaires are completed during telephone interviews. Self-administered questionnaires should be reviewed upon submission to ensure completeness. Incomplete questionnaires should be disregarded, unless the respondents can be contacted and asked to complete the remaining questions.

Coding and Editing Survey Data

If possible, the small subgroup survey questionnaires should be coded and edited at the same time that the areawide telephone survey questionnaires are coded and edited to ensure consistency in the responses of the two surveys. Where known, the social service organization affiliated with each respondent should be properly coded into the data files, so that the small subgroup survey results can be distinguished from the areawide telephone survey results during subsequent processing.

SUMMARY OF SURVEY PERSONNEL RESPONSIBILITIES

The personnel responsibilities associated with conducting a small subgroup survey of social service organization clients are summarized below in terms of both administrative and interviewer staff.

Prior to the interviews, the administrative staff should:

- . assist in refining the final survey questionnaires and instructions;
- . identify and contact social service organizations who serve handicapped persons with special transportation needs;
- . supervise and evaluate a pretest of the survey questionnaires; and

- . ensure that the survey questionnaires, supplementary forms, and announcements are printed and distributed to the various social service organizations cooperating in the survey.

During the interview process, the administrative staff should:

- . supervise and monitor the telephone interviews and review the self-administered questionnaires which are returned;
- . supervise and monitor those interviewers taking calls from respondents to the self-administered questionnaires; and
- . collect completed questionnaires from the various social service organizations cooperating in the survey.

After the interviews are over, the administrative staff should:

- . instruct and supervise personnel in coding and editing the survey results;
- . make arrangements for keypunching completed questionnaires;
- . contact the various social service organizations cooperating in the survey to thank them for their assistance; and
- . prepare final report on survey results and findings.

The activities of the interviewing staff conducting a small subgroup survey are itemized below:

- . for all telephone or personal interviews, conduct the survey in a similar manner to the areawide telephone survey;
- . for self-administered questionnaires, assist respondents who call the survey office with questions;
- . assist in reviewing and manually editing completed survey questionnaires; and
- . if possible, call back respondents who have returned incomplete self-administered questionnaires.

SMALL SUBGROUP SURVEY COSTS

The types of costs incurred while conducting a small subgroup survey should be similar to those incurred during an areawide telephone survey. Differences could arise due to the administrative requirements of adapting the areawide telephone survey questionnaires for the small subgroup survey, the higher percentage of completed handicapped person interviews per screening interview, and the shorter interviewer time required for self-administered questionnaires or interviews conducted by staff of the cooperating social service organizations.

The additional administrative costs of conducting a small subgroup survey depend in part on the number of social service organizations contacted and the number agreeing to participate. For the purposes of this manual, it is assumed that a member of the survey team will devote one person-day to identifying each cooperating social service organization and contacting its administrator. An additional three person-days of staff time will be needed to revise and pretest the questionnaires, and to train interviewers from the cooperating social service organizations.

The variable costs of conducting a small subgroup survey would be similar per completed screening questionnaire to an areawide telephone survey. The higher percentage of handicapped person interviews per screening interview in the sample of social service agency clients contacted would generally increase the average time needed to conduct the interviews and to code, edit, and keypunch the survey results. However, this would be offset by the use of shorter and simpler questionnaires, social service organization staff interviewers, and self-administered questionnaires.

The total cost of conducting a small subgroup survey is illustrated in Exhibit IV-1, using the pro-forma cost schedule developed in Section II and adjusting the labor or rate levels accordingly. These results can be summarized by the following equation, based on the personnel assignments and rates listed in the exhibit:

$$\text{Survey Cost} = \$300 + X [\$4.5 + \$64.5/Y] + \$12Y + \$96Z,$$

where X = number of completed screening questionnaires required;
Y = duration of interview process in hours; and
Z = number of social service organizations cooperating in the survey.

EXHIBIT IV-1
 SMALL SUBGROUP SURVEY PRO-FORMA COST SCHEDULE
 (1983 Dollars)

	Person-Hours	Rate (\$/Hour)	Cost
<u>FIXED COSTS</u>			
<u>Administration</u>			
- Develop Questionnaire/ Instructions	12	\$12	144
- Delineate Survey Scope/ Sampling Plan	5	\$12	60
- Pretest Questionnaires	8	\$12	96
<u>Publicity</u>			
- Arrange Publicity	-	-	-
- Media Advertising	-	-	-
<u>Supplies</u>			
	-	-	-
<u>SUBTOTAL FIXED COSTS</u>			\$ 300
<u>VARIABLE COSTS</u>			
<u>Administration</u>			
- Select Sample/Initialize Questionnaire	0.090X	\$12	
- Hire/Train Interviewers	1.500X/Y	\$12	
- Supervise Interviewers	Y	\$12	
- Contact Social Service Organization	Z	\$12	
<u>Interviewing</u>	0.374X	\$ 6	
<u>Coding, Editing, and Keypunching</u>			
- Coding	0.016X	\$10	
- Editing	0.107X	\$ 6	
- Keypunching		\$0.221X	
<u>Telephone Equipment</u>	-	\$0.158X + \$11.04X/Y	
<u>Office Space</u>		\$26.04X/Y	
<u>Office Equipment</u>	-	\$ 9.36X/Y	
<u>SUBTOTAL VARIABLE COSTS</u>			\$ _____
TOTAL COST			\$ _____

Where:

X = Number of completed screening questionnaires required.
 Y = Duration of interview process in hours.
 Z = Number of social service organizations cooperating in the survey.

This equation assumes the combined use of telephone questionnaires, social service organization staff interviewers, and self-administered questionnaires.

Exhibit IV-2 lists the estimated costs associated with small subgroup surveys of various sizes, assuming a survey duration of three weeks. A useful rule-of-thumb cost equation for small subgroup surveys of three weeks duration would be:

$$\text{Survey Cost} = \$1,740 + \$5X + \$96Z,$$

where X = number of completed screening questionnaires required; and
Z = number of social service organizations cooperating in the survey.

These charts and equations can be used to develop realistic cost estimates for conducting small subgroup surveys, assuming the use of survey questionnaires which are similar though somewhat shorter than those described in Appendix E. Different cost levels would result if the scope and nature of the survey were changed significantly, or if the various labor or rental rate assumptions changed. This would be particularly true if the small subgroup survey is used to obtain significantly different information than the areawide telephone survey. When more exact information is available on the scope and cost of the survey, it should be used to augment these cost guidelines.

EXHIBIT IV-2

ESTIMATED COSTS OF SMALL SUBGROUP SURVEYS
 BY SURVEY SIZE ^{1,2}
 (1983 Dollars)

COMPLETED SCREENING QUESTIONNAIRES REQUIRED	NUMBER OF COOPERATING SOCIAL SERVICE ORGANIZATIONS									
	1	2	3	4	5	6	7	8	9	10
50	2,090	2,180	2,280	2,380	2,470	2,570	2,660	2,760	2,860	2,950
100	2,340	2,440	2,530	2,630	2,720	2,820	2,920	3,010	3,110	3,200
150	2,590	2,690	3,780	2,880	2,980	3,070	3,170	3,260	3,360	3,460
200	2,840	2,940	3,040	3,130	3,230	3,320	3,420	3,520	3,610	3,710
250	3,100	3,190	3,280	3,380	3,480	3,580	3,670	3,770	3,860	3,960
300	3,350	3,440	3,540	3,640	3,730	3,830	3,920	4,020	4,120	4,210

¹ Assume a survey duration of 120 hours.

² Survey types include telephone questionnaires, social service organization staff interviews, and self-administered questionnaires.

V. ONGOING SERVICE MONITORING

INTRODUCTION

The data collection techniques described in the preceding sections are designed primarily to collect information needed for planning transportation services for transportation-handicapped people. Once established, these services should be regularly monitored by the transit operator or service provider as part of a service evaluation program. Transit operators or service providers are the most appropriate group to implement such a program because of their direct access to the public transportation users and their ability to utilize the results to improve their services. Such a program should determine:

- . who is using these services, how often, and why;
- . who is not using these services and why;
- . the adequacy of these services; and
- . the quality of service provided.

This information can then be used to revise existing services or initiate new services.

This section describes several ongoing data collection techniques to support a transportation-handicapped service evaluation program. The following three data collection techniques are suggested for this purpose:

- . registration files;
- . periodic on-board counts; and
- . service request and inquiry monitoring.

These techniques are narrower in scope and less costly than the areawide telephone or small subgroup surveys described previously. They can be used individually or in combination, depending on the monitoring needs of the local transit operator or transportation planning agency. They can also be used in combination with the other data collection techniques described in previous sections of this report.

Appendix F describes a data collection study conducted in Tacoma, Washington, in 1979, which made extensive use of ongoing self-identification survey techniques, including registration surveys, on-board passenger counts, service comment files, and trip tickets (12). The appendix contains illustrations of the various data collection forms developed and used in this study.

REGISTRATION FILES

Introduction

Many programs and services for transportation-handicapped persons require proof of eligibility. For example, transit operators who receive federal financial assistance under Section 9 of the Urban Mass Transportation Act of 1964, as amended, must offer half-fare programs to elderly and handicapped persons during the off-peak hours. As a result, most public transit systems in the United States have some type of reduced-fare program for elderly and handicapped people. To take advantage of these programs, elderly and handicapped persons must first certify their eligibility. This is often done by establishing registration files kept by a transit operator.

Where these files already exist, they provide transit operators with a permanent record of transportation-handicapped people who have expressed interest in using public transportation. Since the names and addresses of registrants are usually included in the files, they can be used as a sampling frame for conducting periodic surveys of transportation-handicapped people as part of an ongoing service monitoring program. Because not every transportation-handicapped person will register for special programs or services, registration files may not be representative of the local transportation-handicapped population. Therefore, registration files should not be used in place of the previously described survey techniques for estimating the size, composition, and geographic distribution of the local transportation-handicapped population.

This approach need not be limited to registration for a reduced fare program or special transportation service. It can also include registration for other social services and community programs, whose forms could be augmented to collect information on the transportation characteristics and needs of their clients.

Where registration files do not already exist, they can be designed to collect additional information about the registrant which would be particularly useful for planning and designing new transportation services or for monitoring and evaluating existing services for transportation-handicapped people. Properly designed, the registration files can become a continuous source of information concerning the attitudes of transportation-handicapped people towards public transportation. Registration files can also be used as a mailing list for sending registrants information about transportation and other services available to transportation-handicapped people.

Registration files represent a very cost-effective source of information concerning transportation-handicapped users of public transportation. Many communities have already developed

registration files to establish eligibility for special transportation programs. As such, they can be easily modified for the purposes of a service monitoring program and maintained with little additional effort.

The primary limitation of registration files relates to the representativeness of their samples. Because only those who register are included in the sample, the results may not be representative of the total local transportation-handicapped population. However, this sample may be more representative of those transportation-handicapped people who use or would use public transportation.

Steps in Maintaining Registration Files

This subsection describes the steps involved in developing and utilizing registration files for collecting information on the use of public transportation by transportation-handicapped persons. These steps include:

- . specifying registration file objectives and data requirements;
- . choosing a registration method;
- . designing the registration form;
- . pretesting the registration form;
- . developing filing procedures;
- . developing updating procedures;
- . maintaining quality control; and
- . coding and editing registration files.

Specifying Registration File Objectives and Data Requirements

The first step in developing a registration file for collecting information from transportation-handicapped people is to specify the objectives of the file. Typical registration file objectives are:

- . to identify the names, addresses, and phone numbers of persons seeking to utilize special public transportation services;
- . to establish the eligibility of registrants for special transportation service programs based upon pre-established criteria, relating primarily to functional disability, medical condition, or age;

- . to identify the types of transportation services and special aids required by registrants;
- . to determine the purpose, frequency, origin, and destination of trips made by registrants using special transportation services; and
- . to determine the attitudes of transportation-handicapped registrants towards available public transportation services, particularly those for which they are registered.

The choice of objectives will dictate the type of data incorporated in the registration file form and file update requirements.

Choosing a Registration Method

Several methods can be used to develop a registration file. The most popular method requires applicants to visit the transit operator's offices to personally fill out a registration form. Certification by a doctor or social service agency may be required to establish eligibility. This can be provided by the applicant at the time of registration.

Another method is to permit registration by mail. Using this method, applicants call the transit operator to request a registration form be sent to them. The form can be completed at home and returned to the transit operator along with the appropriate certifications. This method requires the forms to be self-explanatory, thereby requiring less staff time than the method described above. Because there is no need to visit the offices of the transit operator to register, this method might be preferred by those who have difficulty traveling. A variation of this technique would be to have the applicant register by phone. Phone registration is more difficult to control and administer, especially where certification of functional disabilities and medical conditions is required.

A third method uses social service organizations and institutions which serve transportation-handicapped people in a manner similar to the small subgroup survey. These organizations are given registration forms for their clients to complete. This method has the advantage of more directly accessing transportation-handicapped people. It utilizes the resources of social service organizations to inform their clients of the registration program and to help them complete the forms and return them to the transit operator.

Designing the Registration Form

The registration form should include sufficient data items to satisfy the objectives of the registration file, and yet be

simple and easy to complete. Useful information which can be required by registration forms includes:

- . date of application.
- . name of applicant.
- . address of applicant.
- . phone number of applicant.
- . eligibility criteria satisfied:
 - . functional disability;
 - . medical condition; and
 - . age.
- . special aids used by applicant:
 - . wheelchair;
 - . crutches;
 - . cane; and
 - . guidedog.
- . trip purpose or purposes for using the service:
 - . medical;
 - . shopping;
 - . work;
 - . recreation; and
 - . school.
- . frequency with which the registrant will use the service.
- . special requirements.
- . attitude towards service (if service is already operating).
- . suggestions for improvements (if service is already operating).

Registration forms may be either letter-size or index card-size, and should be printed on one side only. Mail-back forms should have the address of the transit operator on the reverse side and be prestamped. A separate instruction sheet must be sent along with mail-back registration forms.

Each item of information requested should be afforded sufficient space on the registration form. Where multiple answers are possible, several blank spaces should be provided. Where a predefined set of answers is possible, each may be listed next to a blank box. This would permit the interviewer or applicant to easily and quickly check the appropriate box or boxes, and also speed editing and coding of the completed forms. A sample registration file form is illustrated in Exhibit V-1.

Pretesting the Registration Form

Once the registration form is developed, it should be pretested on a small sample of transportation-handicapped people. The results of the pretest should be evaluated on the basis of how understandable and easy to complete the form proves to be. If necessary, the registration form should be modified to reduce confusion and simplify processing.

Developing Filing Procedures

The registration file can be either kept in paper form by simply collecting the individual forms or cards, or stored on computer tape or diskette. If the registration file is kept in paper form, it should be arranged in alphabetical order according to the applicant's last name. The use of computer storage would facilitate the processing, revision, updating, and analysis of the registration file contents. This is particularly important if the registration file is large and continuously updated. It is important that the filing procedure used be compatible with the registration file's purposes.

Developing Updating Procedures

Registration files should be updated on a regular basis to provide a continuous source of information about the users of specialized transportation services, particularly those designed for transportation-handicapped people. Periodic updating will allow the transit operator to:

- . eliminate the files of deceased, relocated, or other registrants who no longer participate in the program;
- . change the status of those whose age or condition place them in a different eligibility category;

EXHIBIT V-1

SAMPLE REGISTRATION FILE FORM

SPECIAL PROGRAM: _____

INTERVIEWER: _____ DATE: _____

NAME: _____ PHONE: _____

ADDRESS: _____ AGE: _____

ELIGIBILITY CRITERIA: _____

SPECIAL AIDS USED: Wheelchair Cane
(Check Appropriate Box) Crutches Guidedog
Other _____

TRIP FREQUENCY PER WEEK

TRIP PURPOSE (Indicate Number of Trips Per Week)	Current Use	Desired Use
. Medical	_____	_____
. Shopping	_____	_____
. Work	_____	_____
. Recreation	_____	_____
. School	_____	_____
. Other _____	_____	_____

ATTITUDES TOWARDS SPECIAL PROGRAM (if currently operating):
(Check Appropriate Column)

	<u>Unacceptable</u>	<u>Acceptable</u>	<u>Superior</u>
. Service Frequency	_____	_____	_____
. Service Reliability	_____	_____	_____
. Cost	_____	_____	_____
. Service Area (Route)	_____	_____	_____
. Driver Courtesy	_____	_____	_____
. Convenience	_____	_____	_____
. Ability to Use Service	_____	_____	_____

SUGGESTIONS FOR IMPROVEMENT: (Please Specify)

- _____
- _____
- _____

- . collect information from participants regarding new services so they can be evaluated; and
- . develop a time series data base for measuring the use of existing services and the effect of modifications to these services.

Updating can be accomplished by having registrants reapply for the program in person, by telephone, or by mail. The registration period should depend on the information needs and staff resources of the transit operator. A possible technique for updating registration files would be to establish a five-year registration period, with 20 percent of the registrants reapplying each year. Another technique would require registrants to confirm the information on the registration forms by phone once a year. Registrants should also be requested to report changes in address when they occur.

Maintaining Quality Control

The quality of the information developed by registration files will depend primarily on the consistency with which the forms are completed. This requires thorough training of personnel responsible for assisting applicants in completing the registration forms. Simplifying the forms will help reduce confusion and the time needed for their completion. The use of multiple choice questions will further facilitate the efficient and consistent completion of the forms.

Coding and Editing Registration Files

Once each registration form is completed or returned to the transit operator or service provider, it should be reviewed for completeness. If the forms are to be computer processed, the responses should be coded and keypunched onto computer cards, tape, or diskette. Coding and key-punching completed registration forms could be done on a batched basis to reduce costs. Commercially available data base management software is also available for use in processing registration files on a micro-computer.

Registration File Costs

Registration files are very cost effective for collecting data on users of special transportation programs. Existing staff employed by the transit operator can assist applicants in completing the registration forms. Very little staff time is needed for each completed form. Coding and keypunching the completed forms can also be done with minimal resources. The primary cost of registration files is the staff time devoted to developing the registration form and analyzing the file data once collected. These costs depend on the size of the form, the number of completed forms required, and the complexity of the

required analyses. For large areas generating a significant number of registration forms, the analysis costs will be greatly reduced by using readily available computer software to process the file data.

Exhibit V-2 illustrates a pro-forma cost schedule for developing a registration file. The costs shown are based on a registration form similar to that shown in Exhibit V-1, and include the costs of developing and implementing the system but not analyzing the results. Different costs would probably result from use of a registration form significantly different from that shown in this report (such as the one illustrated in Appendix F). The following equation summarizes the results of Exhibit V-2 by defining the costs in terms of the number of completed registration forms:

$$\text{Total Cost} = \$600 + \$2.5X,$$

where X = number of completed registration forms.

Available facilities at the transit operator's offices should be sufficient for the purposes of maintaining a registration file. Therefore, no incremental cost is assigned for physical facilities and equipment used in developing the registration file.

Registration files maintained by independent organizations serving transportation-handicapped people represent another potential data source for transportation planners or transit operators. However, these files are typically very limited in scope and likely to be subject to restrictive privacy laws.

PERIODIC ON-BOARD COUNTS

The second technique for collecting information on the use of public transportation services by transportation-handicapped people involves the periodic counting of transportation-handicapped passengers on board transit vehicles. On-board passenger counts should be taken by trained observers who ride a statistical sample of transit vehicles and record the number of transportation-handicapped passengers who exhibit certain functional disabilities or medical conditions. Total passenger counts can also be taken as a basis for comparison.

Many transit operators routinely conduct passenger counts for planning, reporting, and subsidiary allocation purposes. A count of transportation-handicapped passengers could be incorporated into these routine counts.

On-board passenger counts are typically taken on a sample of transit vehicle runs within a local area to limit the cost and duration of the survey. The exception to this would be

EXHIBIT V-2

REGISTRATION FILE
 PRO-FORMA COST SCHEDULE
 (1983 Dollars)

<u>FIXED COSTS</u>	<u>Person- Hours</u>	<u>RATE (\$/Hour)</u>	<u>Cost</u>
Develop Registration Form/Instructions	16	\$12	192
Pretest Registration Form/Instructions	12	\$12	144
Review Registration Form/Instructions	12	\$12	144
Train Staff	10	\$12	<u>120</u>
<u>SUBTOTAL FIXED COSTS</u>			<u>\$600</u>
 <u>VARIABLE COSTS</u>			
Conduct Registration	0.08X	\$10.00	0.8X
Review and Edit Completed Forms	0.16X	\$10.00	1.6X
Key punch Completed Forms	-	\$ 0.10X	<u>0.1X</u>
<u>SUBTOTAL VARIABLE COSTS</u>			<u>\$2.5X</u>
TOTAL COST		<u>\$600</u>	+ <u>\$2.5X</u>

Where: X = number of completed registration forms.

small urban areas which are served by only a small number of transit vehicles. On-board passenger counts should be taken during both peak and off-peak periods. Both fixed route and specialized transit services should be included in the survey.

The types of data collected by an on-board survey of specialized transportation services include:

- . the number of transportation-handicapped passengers per run by functional disability or medical condition;
- . the number of transportation-handicapped passengers per run using special aids;
- . the number of transportation-handicapped passengers boarding or alighting per stop; and
- . the total passengers per run.

This information can be used to develop estimates of the extent of transportation-handicapped ridership on existing transit routes and specialized services. This technique can be combined with other techniques described in this report to develop even more information concerning transportation-handicapped passengers. Possible combinations include issuing registration forms or mail-back surveys for passengers to complete and return at the end of their trip or at some other convenient time.

On-board passenger counts provide an effective way to quickly develop information on the use of transit services, particularly specialized services designed for transportation-handicapped people. Counts should be made whenever new services are instituted or existing services are modified. On-board passenger counts are particularly useful for conducting before-and-after studies of transit service use. Their primary drawback is the subjective nature of the classification system observers use in identifying transportation-handicapped people. In some cases, the observer may not realize a passenger is transportation-handicapped. Therefore, care must be exercised in training the observers to be sensitive to the characteristics of the transportation-handicapped population. In addition, the results of the on-board passenger counts should be carefully reviewed to account for possible misclassification of passengers leading to the undercounting of transportation-handicapped riders.

The costs of conducting on-board passenger counts will depend on the number of transit runs observed, the type and amount of data collected, and the frequency of observation. These parameters will vary widely between urban areas, depending on their size and the specific information needs of the transit operator. Therefore, no effort is made here to develop a pro-forma cost schedule for conducting on-board passenger counts.

SERVICE REQUEST AND INQUIRY MONITORING

The final technique suggested to collect information on the travel needs of transportation-handicapped people involves maintaining records which document requests for specialized transportation services. Transit operators, particularly those providing specialized services to transportation-handicapped people, also receive letters and calls from persons seeking information about existing services, commenting on the quality and adequacy of these services, or suggesting new or improved services. Service requests, inquiries, and comments are made by all types of people, including transportation-handicapped people. These requests and inquiries provide a valuable listing of those transportation-handicapped people most likely to use public transportation, and are another valuable source of information for monitoring and evaluating their use of public transportation services.

Service requests and inquiries can be received by mail or by telephone. Trip tickets documenting the use of specialized transportation services by individuals are another source of information available to certain transit operators which can be used in developing a service request and inquiry file. In order to set up a survey inquiry file, the transit operator should develop a standard form so that information from the various sources can be listed in a consistent format for subsequent filing and processing. Such a form should include the following data items:

- . date of request or inquiry;
- . name;
- . address;
- . phone number;
- . nature of disability and special aid(s) used;
- . date and time of specialized transportation service need;
- . origin and destination of specialized transportation service need;
- . trip purpose;
- . information requested; and
- . service comment or suggestion.

Service request and inquiry forms should be maintained by staff responsible for receiving and reviewing service requests and comments. A separate service request and inquiry file for transportation-handicapped people can be developed using the information contained on the general service request and inquiry form, indicating type of disability and special service needs.

The information contained in a service request and inquiry file of transportation-handicapped people can be used to:

- . identify the origin-destination patterns and temporal distribution of demand for special transportation services;
- . identify who among the registrants is using special transportation services and their frequency of use;
- . identify problems incurred by transportation-handicapped people in using existing transit services;
- . develop new services or service modifications which better serve transportation-handicapped people; and
- . establish a sampling frame for surveying those who use special transportation services provided for transportation-handicapped people.

This information should be coded, computerized, and subsequently summarized on at least a yearly basis to provide input to the service planning and evaluation programs of the transit operator or service provider. Service request and inquiry files should be purged after five years, or when the transit operator or service provider no longer has a use for the individual records.

Most transit operators maintain a public relations department whose functions include receiving and responding to service requests and comments. In most cases, this data collection technique can easily be incorporated in the public relations department at little additional expense. Therefore, no effort is made here to develop a pro-forma cost schedule for monitoring service requests and inquiries.

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APPENDIX A

DATA ITEMS COLLECTED IN PREVIOUS LOCAL
ELDERLY AND HANDICAPPED TRANSPORTATION STUDIES

APPENDIX A

DATA ITEMS COLLECTED IN PREVIOUS LOCAL ELDERLY AND HANDICAPPED TRANSPORTATION STUDIES

SOCIAL, ECONOMIC, AND DEMOGRAPHIC DATA

- Number or rate of incidence of elderly and handicapped persons in the study area
- Number or rate of incidence of elderly and handicapped persons by subarea (county, ZIP code area, census tract, traffic zone, city block, etc.)
- Residential address
- Age
- Sex
- Race
- Religion
- Marital status
- Personal income
- Household income
- Sources of income
- Employment status
- Employment location
- Level of education
- Household size
- Type of dwelling unit
- Dwelling unit owned or rented
- Number of dependents
- Living arrangements
- Eligibility for social services
- Voter registration status
- Membership in groups and organizations

MEDICAL DATA

- Name or type of physiological disorder or condition
- Name or type of mental or psychological disorder or condition
- Duration of disorder or condition
- Source of disorder, disability, or condition (congenital, illness, accident, military service, old age)

DATA ON TRANSPORTATION HANDICAPS AND PROBLEMS

- Use of special aids (wheelchairs, canes, crutches, walkers, braces, artificial limbs, seeing eye dogs, etc.)
- Ability to use different modes of transportation (private automobile, bus, taxi, van, subway car, etc.)
- Problems encountered in using different modes of transportation due to the disability
- Problems encountered in using different modes of public transportation due to the quality and level of service
- Ability to perform certain physical and mental tasks (walk, stand, see, hear, speak, reach, handle, reason, etc.)
- Ability to perform certain tasks associated with travel by bus or rail rapid transit (go to and from the bus stop or rail station, get on or off a bus, read route-destination signs, hear the bus driver, pull the signal cord, etc.)
- Ability to use elevators, escalators, turnstiles, and other modern contrivances
- Effects and relative importance of transportation barriers and problems

DATA ON RELATIVE IMPORTANCE OF TRANSPORTATION

- Proximity of public transportation as a factor in choosing a place of residence
- Perceived relative importance of improved transportation for elderly and handicapped people
- Extent to which transportation affects ability to hold a job or to obtain a better job
- Extent to which factors other than transportation affect ability to hold a job or to seek employment
- Extent to which transportation affects ability to shop, conduct personal business, attend school or training programs, or engage in recreational activities
- Extent to which travel needs are met by current means of transportation
- Reasons for using or not using public transportation

APPENDIX A (Continued)

PSYCHOLOGICAL DATA

- Fear of crime
- Fear of crowds
- Fear of becoming lost
- Fear of being embarrassed
- Perceptions of other people's attitudes toward handicapped persons
- Personal interests

DATA ON ATTITUDES, PREFERENCES, AND PERCEPTIONS

- Awareness of and familiarity with regular transit services and special transportation services and programs
- Attitudes toward or preferences for various features or attributes of regular transit and special transportation services
- Awareness of and familiarity with various social services (consumer information, legal aid, family clinic, congregate meals, recreation, health insurance, home health care, adult education, etc.)
- Attitudes toward or preferences for various social services
- Preferences for home delivery of social services
- Ideas on improving transportation services (shelters, benches, information, driver courtesy, heating and air conditioning, wheelchair lifts or ramps, lower steps, handrails, free fare, improved scheduling and routing, etc.)

DATA ON AVAILABILITY OF TRANSPORTATION

- Possession of driver's license
- Number of automobiles owned by or available to members of the household
- Number of licensed drivers in the household
- Ability to drive an ordinary or a specially equipped automobile
- Availability of public transit in the neighborhood or community
- Distance from the home to the nearest bus stop or rail station
- Availability of special transportation services or projects for elderly and handicapped persons
- Availability of taxi service in the neighborhood or community

CURRENT TRAVEL DATA

- Frequency of travel
- Origins and destinations of trips
- Modes of transportation used
- Mode of access to primary modes of transportation
- Times of the day trips are made
- Trip purposes
- Trip length (time and distance)
- Expenditures for travel

DATA ON LATENT DEMAND FOR TRANSPORTATION

- Desired frequency of travel, by trip purpose
- Number of trips not taken because of problems with public transportation
- Additional trips (by trip purpose) that would be taken if necessary improvements were made in the public transit system
- Additional trips (by purpose) that would be taken if special transportation services were available at a reasonable fare
- Potential destinations if accessible transportation were available (including frequency and time of day of trips to these destinations)
- Willingness to pay for additional or better transportation service

APPENDIX B
AREAWIDE TELEPHONE SURVEY
FORMS AND INSTRUCTIONS

AREAWIDE TELEPHONE SURVEY

SAMPLE SIZE GUIDES

EXHIBIT B-1

SAMPLE SIZES FOR ESTIMATING THE NUMBER OF TRANSPORTATION-HANDICAPPED
PEOPLE IN AN URBAN AREA: 95% LEVEL OF CONFIDENCE¹

PLANNING AREA POPULATION	ASSUMED INCIDENCE RATE (%)	NUMBER OF HOUSEHOLDS TO BE SCREENED IF THE CHOSEN RELATIVE ERROR IS:			EXPECTED NUMBER OF TRANSPORTATION- HANDICAPPED PEOPLE IN THE SAMPLE IF THE CHOSEN RELATIVE ERROR IS:		
		5%	10%	20%	5%	10%	20%
2,000,000	4	13,270	3,370	850	1,345	342	86
	5	10,540	2,670	670	1,335	338	85
	6	8,720	2,200	550	1,325	334	84
	7	7,410	1,870	470	1,314	332	83
	8	6,420	1,620	410	1,301	328	83
1,000,000	4	13,030	3,350	850	1,320	339	86
	5	10,400	2,660	670	1,317	337	85
	6	8,620	2,200	550	1,310	334	84
	7	7,330	1,860	470	1,300	330	83
	8	6,360	1,620	410	1,289	328	83
500,000	4	12,580	3,320	840	1,275	336	85
	5	10,110	2,640	670	1,281	334	85
	6	8,420	2,180	550	1,280	331	84
	7	7,190	1,850	470	1,275	328	83
	8	6,260	1,610	410	1,269	326	83
250,000	4	11,780	3,260	840	1,194	330	85
	5	9,580	2,600	670	1,214	329	85
	6	8,050	2,160	550	1,224	328	84
	7	6,920	1,840	470	1,227	326	83
	8	6,050	1,590	410	1,226	322	83
100,000	4	9,870	3,100	830	1,000	314	84
	5	8,280	2,500	660	1,049	317	84
	6	7,110	2,080	550	1,081	316	84
	7	6,210	1,780	470	1,101	316	83
	8	5,500	1,550	400	1,115	314	81
50,000	4	7,780	2,860	810	788	290	82
	5	6,760	2,340	650	856	296	82
	6	5,960	1,970	540	906	299	82
	7	5,310	1,700	460	942	301	82
	8	4,790	1,490	400	971	302	81
25,000	4	5,460	2,470	780	553	250	79
	5	4,940	2,070	630	626	262	80
	6	4,500	1,780	520	684	271	79
	7	4,120	1,560	450	731	277	80
	8	3,800	1,380	390	770	280	79

¹ Assuming an average household size of 2.533 persons, excluding children under 5 years of age, based on 1980 census data.

EXHIBIT B-2

SAMPLE SIZES FOR ESTIMATING THE NUMBER OF TRANSPORTATION-HANDICAPPED
PEOPLE IN AN URBAN AREA: 90% LEVEL OF CONFIDENCE¹

PLANNING AREA POPULATION	ASSUMED INCIDENCE RATE (%)	NUMBER OF HOUSEHOLDS TO BE SCREENED IF THE CHOSEN RELATIVE ERROR IS:			EXPECTED NUMBER OF TRANSPORTATION- HANDICAPPED PEOPLE IN THE SAMPLE IF THE CHOSEN RELATIVE ERROR IS:		
		5%	10%	20%	5%	10%	20%
2,000,000	4	9,400	2,380	600	953	241	61
	5	7,460	1,880	470	945	238	60
	6	6,160	1,550	390	936	236	59
	7	5,230	1,320	330	927	234	59
	8	4,540	1,140	290	920	231	59
1,000,000	4	9,280	2,370	600	940	240	61
	5	7,390	1,880	470	936	238	60
	6	6,110	1,550	390	929	236	59
	7	5,200	1,320	330	922	234	59
	8	4,510	1,140	290	914	231	59
500,000	4	9,050	2,350	600	917	238	61
	5	7,240	1,870	470	917	237	60
	6	6,010	1,540	390	914	234	59
	7	5,120	1,310	330	908	232	59
	8	4,450	1,140	290	902	231	59
250,000	4	8,620	2,320	600	874	235	61
	5	6,960	1,850	470	882	234	60
	6	5,820	1,530	390	885	233	59
	7	4,990	1,300	330	885	231	59
	8	4,350	1,130	290	882	229	59
100,000	4	7,560	2,240	590	766	227	60
	5	6,250	1,800	470	792	228	60
	6	5,320	1,490	390	809	226	59
	7	4,610	1,280	330	818	227	59
	8	4,060	1,110	290	823	225	59
50,000	4	6,270	2,110	580	635	214	59
	5	5,340	1,710	460	676	217	58
	6	4,640	1,440	380	705	219	58
	7	4,100	1,230	330	727	218	59
	8	3,650	1,080	280	740	219	57
25,000	4	4,670	1,890	560	473	192	57
	5	4,140	1,570	450	524	199	57
	6	3,710	1,330	380	564	202	58
	7	3,350	1,160	320	594	206	57
	8	3,050	1,020	280	618	207	57

¹ Assuming an average household size of 2.533 persons, excluding children under 5 years of age, based on 1980 census data.

EXHIBIT B-3

SAMPLE SIZES FOR ESTIMATING THE NUMBER OF TRANSPORTATION-HANDICAPPED
PEOPLE IN AN URBAN AREA: 80% LEVEL OF CONFIDENCE¹

PLANNING AREA POPULATION	ASSUMED INCIDENCE RATE (%)	NUMBER OF HOUSEHOLDS TO BE SCREENED IF THE CHOSEN RELATIVE ERROR IS:			EXPECTED NUMBER OF TRANSPORTATION- HANDICAPPED PEOPLE IN THE SAMPLE IF THE CHOSEN RELATIVE ERROR IS:		
		5%	10%	20%	5%	10%	20%
2,000,000	4	5,740	1,450	360	582	147	36
	5	4,550	1,150	290	576	146	37
	6	3,760	950	240	572	144	36
	7	3,190	800	200	566	142	35
	8	2,760	700	160	559	142	36
1,000,000	4	5,690	1,440	360	577	146	36
	5	4,520	1,140	290	573	144	37
	6	3,740	940	240	569	143	36
	7	3,180	800	200	564	142	35
	8	2,750	700	180	557	142	36
500,000	4	5,610	1,440	360	569	146	36
	5	4,470	1,140	290	566	144	37
	6	3,700	940	240	562	143	36
	7	3,150	800	200	559	142	35
	8	2,730	690	180	553	140	36
250,000	4	5,440	1,430	360	551	145	36
	5	4,360	1,130	290	552	143	37
	6	3,630	940	240	552	143	36
	7	3,100	800	200	550	142	35
	8	2,690	690	180	545	140	36
100,000	4	5,000	1,390	360	507	141	36
	5	4,070	1,110	290	516	141	37
	6	3,420	920	240	520	140	36
	7	2,950	800	200	523	142	35
	8	2,580	680	180	523	138	36
50,000	4	4,400	1,340	360	446	136	36
	5	3,660	1,080	290	464	137	37
	6	3,130	900	240	476	137	36
	7	2,730	770	200	484	137	35
	8	2,410	670	180	488	136	36
25,000	4	3,550	1,250	350	360	127	35
	5	3,060	1,020	280	388	129	35
	6	2,680	860	230	407	131	35
	7	2,380	740	200	422	131	35
	8	2,130	650	170	432	132	34

¹ Assuming an average household size of 2.533 persons, excluding children under 5 years of age, based on 1980 census data.

EXHIBIT B-4

SAMPLE SIZES FOR ESTIMATING THE AVERAGE DAILY TRIP RATE OF TRANSPORTATION-HANDICAPPED
PEOPLE IN AN URBAN AREA: 95% LEVEL OF CONFIDENCE^{1,2}

PLANNING AREA POPULATION	ASSUMED INCIDENCE RATE (%)	NUMBER OF HOUSEHOLDS TO BE SCREENED IF THE CHOSEN RELATIVE ERROR IS:			EXPECTED NUMBER OF TRANSPORTATION- HANDICAPPED PEOPLE IN THE SAMPLE IF THE CHOSEN RELATIVE ERROR IS:		
		5%	10%	20%	5%	10%	20%
2,000,000	4	30,050	7,760	1,950	3,045	786	197
	5	24,240	6,220	1,570	3,070	787	198
	6	20,310	5,190	1,310	3,087	788	198
	7	17,480	4,450	1,120	3,099	789	198
	8	15,340	3,900	980	3,109	790	198
1,000,000	4	28,870	7,670	1,950	2,925	777	197
	5	23,470	6,170	1,560	2,972	781	197
	6	19,770	5,160	1,300	3,004	783	197
	7	17,070	4,420	1,110	3,027	784	197
	8	15,030	3,880	980	3,045	786	197
500,000	4	26,760	7,510	1,940	2,711	761	196
	5	22,050	6,070	1,550	2,793	768	196
	6	18,750	5,080	1,300	2,850	772	197
	7	16,310	4,370	1,110	2,892	775	197
	8	14,440	3,840	980	2,925	777	197
250,000	4	23,350	7,220	1,920	2,366	731	194
	5	19,680	5,870	1,540	2,493	743	195
	6	17,010	4,940	1,290	2,585	751	195
	7	14,980	4,270	1,110	2,656	757	196
	8	13,380	3,760	970	2,711	761	196
100,000	4	16,890	6,460	1,860	1,711	654	188
	5	14,880	5,360	1,500	1,885	678	190
	6	13,310	4,580	1,260	2,022	695	191
	7	12,030	4,000	1,090	2,133	708	192
	8	10,980	3,540	960	2,224	717	193
50,000	4	11,560	5,490	1,770	1,171	556	179
	5	10,580	4,680	1,440	1,340	592	182
	6	9,760	4,070	1,220	1,483	618	185
	7	9,060	3,600	1,060	1,606	638	187
	8	8,450	3,230	930	1,711	654	188
25,000	4	7,090	4,230	1,610	718	428	163
	5	6,710	3,720	1,340	850	471	169
	6	6,370	3,330	1,140	968	506	173
	7	6,060	3,010	1,000	1,074	533	176
	8	5,780	2,750	890	1,171	556	179

¹ Assuming an average household size of 2.533 persons, excluding children under 5 years of age, based on 1980 census data.

² Assuming an average daily trip rate of 0.97 and a standard deviation of 1.38. Based on the results of a telephone survey of transportation-handicapped people in the Milwaukee area(11).

EXHIBIT B-5

SAMPLE SIZES FOR ESTIMATING THE AVERAGE DAILY TRIP RATE OF TRANSPORTATION-HANDICAPPED PEOPLE IN AN URBAN AREA: 90% LEVEL OF CONFIDENCE^{1,2}

PLANNING AREA POPULATION	ASSUMED INCIDENCE RATE (%)	NUMBER OF HOUSEHOLDS TO BE SCREENED IF THE CHOSEN RELATIVE ERROR IS:			EXPECTED NUMBER OF TRANSPORTATION- HANDICAPPED PEOPLE IN THE SAMPLE IF THE CHOSEN RELATIVE ERROR IS:		
		5%	10%	20%	5%	10%	20%
2,000,000	4	21,440	5,480	1,390	2,172	555	140
	5	17,250	4,390	1,110	2,184	556	140
	6	14,430	3,660	930	2,193	556	140
	7	12,400	3,140	790	2,199	557	140
	8	10,880	2,750	690	2,204	557	140
1,000,000	4	20,830	5,440	1,380	2,110	551	139
	5	16,850	4,360	1,110	2,134	552	140
	6	14,150	3,640	930	2,151	553	140
	7	12,200	3,130	790	2,163	554	140
	8	10,720	2,740	690	2,172	555	140
500,000	4	19,700	5,360	1,380	1,996	543	139
	5	16,110	4,310	1,100	2,040	546	139
	6	13,630	3,610	920	2,071	548	139
	7	11,810	3,110	790	2,093	550	139
	8	10,410	2,720	690	2,110	551	139
250,000	4	17,790	5,200	1,370	1,802	527	138
	5	14,810	4,210	1,090	1,875	533	138
	6	12,680	3,540	920	1,927	537	139
	7	11,090	3,050	790	1,966	540	139
	8	9,850	2,680	690	1,996	543	139
100,000	4	13,780	4,800	1,340	1,396	486	135
	5	11,920	3,940	1,080	1,509	499	136
	6	10,500	3,350	910	1,596	508	137
	7	9,390	2,910	780	1,664	515	137
	8	8,490	2,570	680	1,719	520	137
50,000	4	10,010	4,250	1,290	1,014	430	130
	5	9,000	3,560	1,050	1,139	450	132
	6	8,160	3,070	880	1,240	466	133
	7	7,480	2,690	760	1,325	477	134
	8	6,890	2,400	670	1,396	486	135
25,000	4	6,480	3,450	1,210	656	349	122
	5	6,040	2,980	990	764	377	125
	6	5,650	2,630	840	858	399	127
	7	5,310	2,350	730	941	416	129
	8	5,010	2,130	650	1,014	430	130

¹ Assuming an average household size of 2.533 persons, excluding children under 5 years of age, based on 1980 census data.

² Assuming an average daily trip rate of 0.97 and a standard deviation of 1.38. Based on the results of a telephone survey of transportation-handicapped people in the Milwaukee area(11).

EXHIBIT E-6

SAMPLE SIZES FOR ESTIMATING THE AVERAGE DAILY TRIP RATE OF TRANSPORTATION-HANDICAPPED PEOPLE IN AN URBAN AREA: 80% LEVEL OF CONFIDENCE^{1,2}

PLANNING AREA POPULATION	ASSUMED INCIDENCE RATE (%)	NUMBER OF HOUSEHOLDS TO BE SCREENED IF THE CHOSEN RELATIVE ERROR IS:			EXPECTED NUMBER OF TRANSPORTATION- HANDICAPPED PEOPLE IN THE SAMPLE IF THE CHOSEN RELATIVE ERROR IS:		
		5%	10%	20%	5%	10%	20%
2,000,000	4	13,170	3,340	840	1,334	338	85
	5	10,570	2,680	680	1,338	339	85
	6	8,830	2,230	560	1,342	339	85
	7	7,580	1,920	480	1,344	339	85
	8	6,650	1,680	420	1,346	339	85
1,000,000	4	12,930	3,330	840	1,310	337	85
	5	10,420	2,670	680	1,319	338	85
	6	8,730	2,230	560	1,326	338	85
	7	7,500	1,910	480	1,330	338	85
	8	6,590	1,670	420	1,334	338	85
500,000	4	12,490	3,300	840	1,265	334	85
	5	10,130	2,650	680	1,283	335	85
	6	8,520	2,210	560	1,295	336	85
	7	7,360	1,900	480	1,304	336	85
	8	6,470	1,670	420	1,310	337	85
250,000	4	11,700	3,240	830	1,185	328	84
	5	9,600	2,610	670	1,216	330	84
	6	8,140	2,190	560	1,237	332	84
	7	7,070	1,880	480	1,253	333	85
	8	6,250	1,650	420	1,265	334	85
100,000	4	9,810	3,070	820	994	311	83
	5	8,300	2,510	660	1,051	317	83
	6	7,190	2,110	560	1,092	320	84
	7	6,340	1,830	480	1,123	323	84
	8	5,670	1,610	420	1,488	325	84
50,000	4	7,740	2,840	800	784	287	81
	5	6,770	2,350	650	857	297	82
	6	6,010	2,000	540	913	303	82
	7	5,410	1,740	470	958	308	83
	8	4,910	1,540	410	994	311	83
25,000	4	5,440	2,460	770	551	249	78
	5	4,950	2,080	630	626	263	79
	6	4,520	1,800	530	687	273	80
	7	4,180	1,590	460	740	281	81
	8	3,870	1,420	400	784	287	81

¹ Assuming an average household size of 2.533 persons, excluding children under 5 years of age, based on 1980 census data.

² Assuming an average daily trip rate of 0.97 and a standard deviation of 1.38. Based on the results of a telephone survey of transportation-handicapped people in the Milwaukee area(11).

AREAWIDE TELEPHONE SURVEY
QUESTIONNAIRES (6)

**AREAWIDE TELEPHONE SURVEY OF
TRANSPORTATION-HANDICAPPED PERSONS**

SCREENING QUESTIONNAIRE

SERIAL NO.

--	--	--	--	--

1 5

FORM NO.

1

6

CARD NO.

1

7

DATE OF INTERVIEW

		/			/		
--	--	---	--	--	---	--	--

8 13

ADDRESS OF HOUSEHOLD:

PHONE NUMBER: _____

TRAFFIC ZONE

--	--	--	--

14 17

(INTERVIEWER'S SIGNATURE)

1. Is there anyone in your household who has a physical, mental, or other health condition which limits or prevents them from using public transportation?

1. NO
 2. YES
 18

If NO, skip to Q. 2.

A. Which members of your household have such a condition?
 May I please have their first names?

No. 1

No. 2

No. 3

Write their first names here.

Put a '1' in the box below
 each name mentioned.

19

20

21

B. (Ask for EACH person mentioned.)
 Has (NAME) had this condition for
 6 months or more?

1. NO
 2. YES
 22

1. NO
 2. YES
 23

1. NO
 2. YES
 24

2. I am going to read a list of physical and mental disabilities that sometimes make it difficult for people to use buses and taxis. After each one that I mention, please tell me if there is anyone in your household 5 years of age or older who has that kind of disability. First of all, is there anyone in your household who has . . .

No. 1

No. 2

No. 3

Write first names here.

A. Difficulty walking?

1. NO
 2. YES
 25

1. NO
 2. YES
 26

1. NO
 2. YES
 27

If NO, skip to B.

Does (NAME) use a wheelchair?

1. NO
 2. YES
 28

1. NO
 2. YES
 29

1. NO
 2. YES
 30

Does (NAME) use leg braces,
 crutches, a cane, or a walker?

1. NO
 2. YES
 31

1. NO
 2. YES
 32

1. NO
 2. YES
 33

B. Difficulty going up and down
 steps?

1. NO
 2. YES
 34

1. NO
 2. YES
 35

1. NO
 2. YES
 36

C. Difficulty standing for more than
 a few minutes?

1. NO
 2. YES
 37

1. NO
 2. YES
 38

1. NO
 2. YES
 39

2. (Continued)

No. 1

No. 2

No. 3

Rewrite first names
in the SAME ORDER

D. Difficulty using one or both
hands or arms?

1. NO
 2. YES
40

1. NO
 2. YES
41

1. NO
 2. YES
42

E. Difficulty seeing even with
glasses on?

1. NO
 2. YES
43

1. NO
 2. YES
44

1. NO
 2. YES
45

If NO, skip to F.

Is (NAME) able to see well enough
to see moving objects, such as cars
moving or people walking?

1. NO
 2. YES
46

1. NO
 2. YES
47

1. NO
 2. YES
48

F. Difficulty hearing even with
a hearing aid?

1. NO
 2. YES
49

1. NO
 2. YES
50

1. NO
 2. YES
51

If NO, skip to G.

Is (NAME) able to hear well
enough to hear loud noises?

1. NO
 2. YES
52

1. NO
 2. YES
53

1. NO
 2. YES
54

G. Difficulty speaking?

1. NO
 2. YES
55

1. NO
 2. YES
56

1. NO
 2. YES
57

H. A mental disability?

1. NO
 2. YES
58

1. NO
 2. YES
59

1. NO
 2. YES
60

I. Difficulty getting around outside
your home because of a respiratory
condition or a heart condition?

1. NO
 2. YES
61

1. NO
 2. YES
62

1. NO
 2. YES
63

3. Counting yourself, how many people are there in your household?

64 65

A. How many of them are 4 years of age or younger?

66 67

B. How many of them are between the ages of 5 and 15?

68 69

3. (Continued)

C. How many of them are between the ages of 16 and 64?

<input type="text"/>	<input type="text"/>
70	71

D. How many of them are 65 years of age or older?

<input type="text"/>	<input type="text"/>
72	73

4. How many cars and other motor vehicles such as vans and pick-up trucks does your household have?

<input type="text"/>	<input type="text"/>
74	75

5. What is the name of the street on which you live?

IMPORTANT: If the street name mentioned does not agree with the address on the front of this questionnaire, **DO NOT INTERVIEW** the handicapped persons, if any, who live in this household.

If the street names **DO NOT MATCH**, put a '1' in the box below.

<input type="text"/>
76

REFER TO INSTRUCTIONS ON COMPLETING THE SCREENING INTERVIEW.

**AREAWIDE TELEPHONE SURVEY OF
TRANSPORTATION HANDICAPPED PERSONS
HANDICAPPED PERSON QUESTIONNAIRE**

COPY THE FOLLOWING FROM THE SCREENING QUESTIONNAIRE FOR THIS HOUSEHOLD:

SERIAL NO.
1 5

FORM NO.
6

FIRST NAME OF HANDICAPPED PERSON: _____

HANDICAPPED PERSON NO.
(THE COLUMN NUMBER
UNDER WHICH THIS PERSON'S
NAME APPEARS ON THE
SCREENING QUESTIONNAIRE)
7

CARD NO.
8 9

TRAFFIC ZONE
10 13

DATE OF INTERVIEW: / /
14 19

DAY OF WEEK:

- 1. SUNDAY**
2. MONDAY
3. TUESDAY
4. WEDNESDAY
5. THURSDAY
6. FRIDAY
7. SATURDAY

(INTERVIEWER'S SIGNATURE)

1. How much difficulty would you (he/she) have riding one of the local buses because of your (his/her) health condition or disability? Would you (he/she) have little or no difficulty, a lot of difficulty, or not be able to ride the buses at all?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to ride buses at all

21

2. I am going to read you a list of things a person might have to do in order to ride one of the local buses. For each one I read, please tell me how much difficulty you (he/she) would have doing this thing because of your (his/her) health condition or disability. Tell me if you (he/she) would have little or no difficulty, a lot of difficulty, or not be able to do it at all. First of all, how much difficulty would you (he/she) have. . .

A. Waiting for a bus while standing?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

22

B. Waiting for a bus while sitting?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

23

C. Seeing the route name and number on a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

24

D. Understanding the route name and number on a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

25

E. Getting up and down the steps on a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

26

F. Asking the bus driver or someone else for information?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

27

G. Hearing what the bus driver or someone else is saying?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

28

H. Understanding what the bus driver or someone else is saying?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know

29

2. (Continued)

I. Handling coins or tickets for the fare box?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 30

J. Counting the right amount of change to pay the fare?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 31

K. Holding onto the handrails in a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 32

L. Getting in and out of a seat on a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 33

M. Riding in a bus while sitting?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 34

N. Riding in a bus while standing?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 35

O. Holding onto personal belongings while riding in a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 36

P. Knowing where to get off the bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 37

Q. Reaching and pulling the signal cord in a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 38

R. Pushing open the rear door on a bus?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to do at all
 4. Don't know
- 39

3. Do you (Does NAME) ever ride one of the regular local buses in (NAME OF CITY)?

1. NO
 2. YES

40

4. How many blocks from your home is the nearest local bus stop?

1. ONE BLOCK OR LESS
 2. TWO BLOCKS
 3. THREE BLOCKS
 4. FOUR BLOCKS OR MORE
 5. DOES NOT KNOW

41

If 3 BLOCKS, 4 BLOCKS OR MORE, or DOES NOT KNOW, skip to Q. 6.

If 1 BLOCK OR LESS, or 2 BLOCKS, ask Q. 5.

5. Does your (his/her) health condition or disability make it difficult for you (him/her) to get from your home to the bus stop?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS

42

A. Would you (he/she) ever need someone to help you (him/her) get from your home to the bus stop?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS

43

C. Would you (he/she) need someone to help you (him/her) get on and off a bus?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS

44

D. Would you (he/she) need someone to ride with you (him/her) in a bus?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS

45

SKIP TO Q. 7.

GO TO Q. 6 ON NEXT PAGE.

6. Let's suppose that there was a bus stop only 2 blocks away from your home. Would your (his/her) health condition or disability make it difficult for you (him/her) to get to it?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS
 42

- A. Would you (he/she) ever need someone to help you (him/her) get from your home to the bus stop?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS
 43

- B. Would you (he/she) need someone to help you (him/her) get on and off a bus?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS
 44

- C. Would you (he/she) need someone to ride with you (him/her) in a bus?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS
 45

7. If you (NAME) wanted to use a taxicab, how much difficulty would you (he/she) have because of your (his/her) health condition or disability? Would you (he/she) have little or no difficulty, a lot of difficulty, or not be able to use a taxi at all?

1. Little or no difficulty
 2. A lot of difficulty
 3. Not able to use a taxi at all
 46

8. Let's suppose you (he/she) wanted to go someplace by taxi.

- A. Would you (he/she) be able to use a telephone to call for a taxi?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS
 47

- B. Would you (he/she) ever need someone to help you (him/her) get from your home to the taxi?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS
 48

8. (Continued)

C. Would you (he/she) be able to open the door of the taxi?

1. NO
 2. YES -- SOMETIMES
 3. YES -- ALWAYS

49

D. Would you (he/she) need someone to help you (him/her) get in and out of a taxi?

1. NO
 2. YES -- SOMETIMES
 3. YES -- ALWAYS

50

E. Would you (he/she) have difficulty sitting in a taxi?

1. NO
 2. YES -- SOMETIMES
 3. YES -- ALWAYS

51

F. Would you (he/she) need someone besides the taxi driver to ride with you (him/her) in a taxi?

1. NO
 2. YES -- SOMETIMES
 3. YES -- ALWAYS

52

9. Do you (Does NAME) ever ride in a taxicab in (NAME OF (CITY))?

1. NO
 2. YES

53

10. Do you (Does he/she) now have a driver's license?

1. NO
 2. YES

54

If NO, skip to Q. 12.

11. Do you (Does he/she) usually have a car or other motor vehicle available to you (him/her) to drive when needed?

1. NO
 2. YES

55

If NO, ask Q. 12.

If YES, skip to Q. 13.

12. Are you (Is he/she) usually able to find a friend or relative to drive you (him/her) someplace when needed?

1. NO
 2. YES

56

13.

WHEELCHAIR USERS ONLY

- A. Do you (Does NAME) use a wheelchair all of the time or only part of the time to get around?

1. ALL OF THE TIME
 2. PART OF THE TIME

57

- B. Are you (Is he/she) able to transfer to and from your (his/her) wheelchair by yourself (himself/herself)?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS

58

- C. Do you (Does he/she) have a collapsible wheelchair?

1. NO
 2. YES

59

- D. Do you (Does he/she) have an electric wheelchair?

1. NO
 2. YES

60

14.

BLIND PERSONS ONLY

- A. Do you (Does NAME) use a guide dog to help you (him/her) get around outside?

1. NO
 2. YES – SOMETIMES
 3. YES – ALWAYS

61

- B. Are you (Is he/she) able to read Braille?

1. NO
 2. YES

62

15.

DEAF PERSONS ONLY

- Do you have a teletype or TTY machine hooked up to your phone?

1. NO
 2. YES

63

REPEAT CARD COLUMNS 1 – 7.

					2		2	1
1				5	6	7	8	9

16. I would now like to ask a few questions about the trips you (NAME) made YESTERDAY.
This information will be very useful for planning better transportation.

A. First of all, did you (he/she) go anyplace yesterday?

1. NO
 2. YES

10

If NO, skip to Q. 17.

B. Did your (his/her) first trip yesterday begin at home or somewhere else?

1. AT HOME
 2. SOMEWHERE ELSE

11

If SOMEWHERE ELSE: What was the name of this place where you (he/she)
started your (his/her) first trip?

NAME OF PLACE: _____

ADDRESS OR NEAREST
INTERSECTION: _____

TRAFFIC ZONE:

12			15

COMPLETE THE TABLE OF TRIPS BEGINNING ON THE NEXT PAGE.

→ GO TO Q. 17 WHICH FOLLOWS THE TABLE OF TRIPS.

16. TRIPS MADE YESTERDAY. INSTRUCTIONS: Fill in a line for EACH PLACE the person you are interviewing visited yesterday.
 Don't forget to fill in a line for EACH time he or she returned home.

B.22

TRIP	WHAT PLACE DID YOU (HE/SHE) GO TO FIRST/NEXT?	AT WHAT TIME DID YOU (HE/SHE) LEAVE TO GO THERE?	WHAT WAS THE PURPOSE OF THIS TRIP?	HOW DID YOU (HE/SHE) GET THERE?
1	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>16 19</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>20 23</small>	<input type="text"/> <small>24</small>	<input type="text"/> <input type="text"/> <small>25 28</small>
2	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>30 33</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>34 37</small>	<input type="text"/> <small>38</small>	<input type="text"/> <input type="text"/> <small>39 40</small>
3	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>44 47</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>48 51</small>	<input type="text"/> <small>52</small>	<input type="text"/> <input type="text"/> <small>53 54</small>
4	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>58 61</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>62 65</small>	<input type="text"/> <small>66</small>	<input type="text"/> <input type="text"/> <small>67 68</small>

16. TRIPS MADE YESTERDAY. (Continued)

					2		2	2
1				5	6	7	8	9

TRIP	WHAT PLACE DID YOU (HE/SHE) GO TO NEXT?	AT WHAT TIME DID YOU (HE/SHE) LEAVE TO GO THERE?	WHAT WAS THE PURPOSE OF THIS TRIP?	HOW DID YOU (HE/SHE) GET THERE?
5	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>10 13</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>14 17</small>	<input type="checkbox"/> <small>18</small>	<input type="text"/> <input type="text"/> <small>19 20</small>
6	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>24 27</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>28 31</small>	<input type="checkbox"/> <small>32</small>	<input type="text"/> <input type="text"/> <small>33 34</small>
7	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>38 41</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>42 45</small>	<input type="checkbox"/> <small>46</small>	<input type="text"/> <input type="text"/> <small>47 48</small>
8	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>52 55</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>56 59</small>	<input type="checkbox"/> <small>60</small>	<input type="text"/> <input type="text"/> <small>61 62</small>

B.23

REPEAT CARD COLUMNS 1 -- 7

					2		3	1
1				5	6	7	8	9

17. TRIPS MADE ON THE DAY BEFORE YESTERDAY.

A. Did you (NAME) go anyplace on the day before yesterday?

1. NO
 2. YES

10

If NO, skip to Q. 18.

B. Did your (his/her) first trip on that day begin at home or somewhere else?

1. AT HOME
 2. SOMEWHERE ELSE

11

If SOMEWHERE ELSE: What was the name of this place where you (he/she) started your (his/her) first trip?

NAME OF PLACE: _____

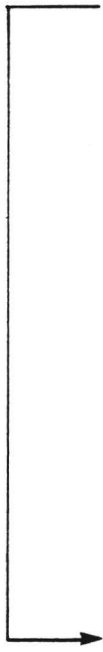
ADDRESS OR NEAREST INTERSECTION: _____

TRAFFIC ZONE:

--	--	--	--

12 15

COMPLETE THE TABLE OF TRIPS BEGINNING ON THE NEXT PAGE.



GO TO Q. 18 WHICH FOLLOWS THE TABLE OF TRIPS.

**17. TRIPS MADE ON THE
DAY BEFORE YESTERDAY**

INSTRUCTIONS: Fill in a line for EACH PLACE the person you are interviewing visited on the day before yesterday. Don't forget to fill in a line for EACH return trip home.

TRIP	WHAT PLACE DID YOU (HE/SHE) GO TO FIRST/NEXT?	AT WHAT TIME DID YOU (HE/SHE) LEAVE TO GO THERE?	WHAT WAS THE PURPOSE OF THIS TRIP?	HOW DID YOU (HE/SHE) GET THERE?
1	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>18 19</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>20 23</small>	<input type="text"/> <small>24</small>	<input type="text"/> <input type="text"/> <small>25 26</small>
2	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>30 33</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>34 37</small>	<input type="text"/> <small>38</small>	<input type="text"/> <input type="text"/> <small>39 40</small>
3	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>44 47</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>48 51</small>	<input type="text"/> <small>52</small>	<input type="text"/> <input type="text"/> <small>53 54</small>
4	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>58 61</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>62 65</small>	<input type="text"/> <small>66</small>	<input type="text"/> <input type="text"/> <small>67 68</small>

B.25

17. TRIPS MADE ON THE DAY BEFORE YESTERDAY. (Continued)

					2		3	2	
1					5	6	7	8	9

TRIP	WHAT PLACE DID YOU (HE/SHE) GO TO NEXT?	AT WHAT TIME DID YOU (HE/SHE) LEAVE TO GO THERE?	WHAT WAS THE PURPOSE OF THIS TRIP?	HOW DID YOU (HE/SHE) GET THERE?
5	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>10 13</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>14 17</small>	<input type="text"/> <small>18</small>	<input type="text"/> <input type="text"/> <small>19 20</small>
6	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>24 27</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>28 31</small>	<input type="text"/> <small>32</small>	<input type="text"/> <input type="text"/> <small>33 34</small>
7	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>38 41</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>42 45</small>	<input type="text"/> <small>46</small>	<input type="text"/> <input type="text"/> <small>47 48</small>
8	Name of place: _____ Address or nearest intersection: _____ TRAFFIC ZONE NO. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>52 55</small>	: a.m. : p.m. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <small>56 59</small>	<input type="text"/> <small>60</small>	<input type="text"/> <input type="text"/> <small>61 62</small>

REPEAT CARD COLUMNS 1 -- 7

					2		4	0
1				5	6	7	8	9

18. Do you (Does NAME) currently have an occupation from which you earn (he/she earns) an income?

1. NO
 2. YES

10

If NO, skip to Q. 19.

A. Do you (Does he/she) work at this occupation full-time or part-time?

1. FULL-TIME
 2. PART-TIME

11

B. Do you (Does he/she) work at this occupation at home or somewhere else?

1. WORKS AT HOME
 2. WORKS SOMEWHERE ELSE

12

→ 19. Age group of handicapped person:

1. 5 – 15 YEARS
 2. 16 – 64 YEARS
 3. 65 YEARS OR OVER

13

20. INSTRUCTIONS FOR THE INTERVIEWER: Record the sex of the handicapped person you are interviewing or asking questions about. DO NOT ASK unless necessary.

1. MALE
 2. FEMALE

14

END OF INTERVIEW – REFER TO INSTRUCTIONS

AREAWIDE TELEPHONE SURVEY
INTERVIEWER INSTRUCTIONS (6)

AREAWIDE TELEPHONE SURVEY OF TRANSPORTATION-
HANDICAPPED PERSONS

INTERVIEWER INSTRUCTIONS

BACKGROUND AND OBJECTIVES

This survey is being conducted by (name of local transportation planning agency or transit operator responsible for the survey).

The general purpose of the survey is to learn more about the number, characteristics, and transportation needs of people who have some type of physical or mental disability which makes it difficult for them to use public transportation. The data collected from this survey will help us answer the following questions:

- . How many people in the local study area have some kind of disability that makes it difficult for them to use either buses or taxis?
- . On the other hand, how many people in the local study area have a physical or mental disability and yet do not have any trouble using buses or taxis?
- . What are the characteristics of transportation-handicapped people in the local study area?
- . How often do transportation-handicapped people travel within the local study area? To what places do they travel? At what times of the day do they travel? What means of transportation do they currently use?

Answers to these questions will help us determine how many handicapped people need better transportation, the types of transportation service that would best meet their needs, and the number of handicapped people who would be likely to use a better transportation service.

HOW THE SURVEY WILL BE CONDUCTED

There are two parts to the survey:

- . In the first part, you will be screening a sample of households by telephone to determine which of them contain persons who have a physical or mental disability.

- . In the second part, you will interview each person with a disability that you find during the screening.

Each part of the survey has its own questionnaire:

- . Screening questionnaire - You will complete one screening questionnaire for each household you call.
- . Handicapped person questionnaire - You will complete a handicapped person questionnaire for each person with a disability that you interview.

If a household contains one or more persons with a disability, it is important that you keep the screening questionnaire and the handicapped person questionnaires for that household together at all times.

All of the interviewing will be done by telephone.

PART 1 - SCREENING INTERVIEWS

INTERVIEWER LOG

1. The purpose of the interviewer log is to help you keep track of your phone calls. It will provide us with important information about the outcome of each call, including the number of "no answers" and the number of refusals.
2. You must indicate on your interviewer log the outcome of each phone call you make.
3. Write the address and phone number of each household you try to call. You will only have to write it once.
4. You will make up to four attempts to contact someone in each household.
5. After each attempt, indicate the outcome in the appropriate "Attempt No." column, using one of the code numbers shown at the top of the log.
6. After you have completed your screening interview, indicate the number of people in the household who have a disability.
7. Indicate the outcome of your attempt to interview each person with a disability in the household.

NO ANSWERS

1. Let the phone ring ten times. If no one answers, indicate "no answer" on your interviewer log under the appropriate "Attempt No." column.
2. You should make up to four attempts to contact someone in the household.
3. Each attempt should be made during a different time interval of the day. The time intervals for this project are as follows:
 - . 10:00 a.m.-12:00 noon Monday-Friday;
 - . 2:00 noon-6:00 p.m. Monday-Friday;
 - . 6:00 p.m.-9:00 p.m. Monday-Friday; and
 - . all day Saturday.

4. If more than one attempt is needed, allow at least three hours between successive attempts.
5. If more than one attempt is needed, and your working hours do not enable you to call a person during different time intervals, make the first call (and second if possible) and then notify the supervisor so he or she can have someone on a different shift make the necessary call-backs.

BUSY SIGNALS

1. A busy signal is NOT the same as a "no answer." It does NOT count as one of the four attempts.
2. If you get a busy signal, call another household. Then go back and try calling the first household again. Repeat this procedure until you no longer get a busy signal.

PHONE NUMBER CHANGED

1. If you hear a message saying that the phone number you dialed has been changed, do NOT attempt to call the new number.
2. Indicate on your interviewer log that the phone number has been changed.

HOW TO MAKE YOUR INTRODUCTION

A. If a Small Child Answers the Phone:

1. Ask to speak to the child's father or mother.
2. When the father or mother comes to the phone, say:

"Good morning/afternoon/evening. My name is _____ and I'm calling on behalf of the (name of local transportation planning agency or transit operator conducting the survey). We are doing a study to determine the transportation needs of people who may have difficulty using buses or taxis because of a health condition or disability. Would you take five minutes now to answer some questions for our survey?"

B. If an Adult Answers the Phone:

1. Say:

"Good morning/afternoon/evening. My name is _____ and I'm calling on behalf of (name of local transportation planning agency or transit operator conducting the survey). Am I speaking to a head of the household?"

2. Reintroduce yourself when a head of the household comes to the phone.

3. Say to a head of the household:

"We are doing a study to determine the transportation needs of people who may have difficulty using buses or taxis because of a health condition or disability. Would you take five minutes now to answer some questions for our survey?"

CALL-BACKS

1. Make an appointment to call back if:

a. a head of the household is not at home; or

b. it is inconvenient for a head of the household to answer questions at the time you call.

2. Ask:

"When would be a better time for me to call back?"

3. Write the date and time for the call-back on your Call-Back Schedule, along with the address and phone number of the household.

REFUSALS

1. Politely say: "Thank you for your time."

2. Indicate on the interviewer log that the screening interview was refused.

THE SCREENING QUESTIONNAIRE

1. State the questions as they are worded. The wording of each question has been tested in actual interviews, and each question has been designed to obtain the desired information. The quality of the data from this survey will greatly depend on every interviewer asking the questions in the same way.

2. Write the number corresponding to the respondent's answer legibly inside the coding boxes. Keep in mind that other people will have to read the information on these forms and keypunch the data.
3. Do NOT read the numbered responses that are shown next to the coding boxes. Read only the questions themselves.
4. Ask each question carefully to be sure that the respondent fully understands it. Do not read the questions rapidly.
5. Be sure to follow all SKIP instructions carefully.
6. Question 1 - Asking for first names of relationships:

- a. A few heads of household may be reluctant to mention the first name of anyone who has a disability. If anyone should ask you why you need to know first names, say:

"We have found that in many households more than one person has a disability. By asking for the first names, we will be able to learn what types of disability each person has. If you prefer, you can indicate the person's relationship to you rather than his or her first name."

- b. In place of first names, answers such as "my wife," "my husband," "my youngest child," "my daughter," etc. are also acceptable.
- c. If the head of the household refuses to mention any first names, ask:

"Could you tell me how many members of your household have such a condition?"

If only one, put a "1" in the coding box below No. 1. If two people, put a "1" in the coding boxes below No. 1 and No. 2. If three people, put a "1" in each of the three coding boxes.

7. Question 2

- a. Whenever the head of the household answers YES to any of these questions, ask:

"Which members of your household have such a condition? May I please have either their first names or their relationship to you?"

- b. In place of first names, answers such as "my wife," "my husband," "my youngest child," or "my daughter" are also acceptable.

8. Questions 1 and 2 - If the respondent lives alone:

- a. Occasionally, a head of the household will tell you at the beginning of the screening interview that he or she lives alone. If this should happen, instead of asking "Is there anyone in your household who has difficulty walking...," ask "Do you have difficulty walking..."
- b. When you know that the person you are interviewing lives alone, be careful about asking Questions 2G and 2H. If the person is speaking to you without any difficulty, you need not ask Question 2G. Likewise, do not ask Question 2H unless the person you are interviewing seems to have extreme difficulty understanding and answering the questions.

9. Question 3

- a. Make sure that the answers to A, B, C, and D add up to the total number of people in the household.
- b. If there are only one or two people in the household, ask Question 3C first. Then, if necessary, ask 3D, 3B, and 3A in that order.
- c. Some respondents may hesitate to answer these questions. If asked why we need this information, you should say:

"We need to know the percentage of people in the local study area who have some type of disability. We would learn more if we also knew the age groups."

10. Question 4

- a. Some respondents may not understand that Question 4 has to do with a survey of disabled people. If asked about this, you should say:

"This is a way of knowing that we are calling a representative sample of households for our survey."

- 11. You may find that some people will "volunteer" information. That is, they will answer one of the survey questions before you come to it in the questionnaire. For example, when you ask Question 1, the respondent may tell you without hesitation what

types of disabilities various members of the household have. If this should happen, try to record the respondent's answers as best as you can in the appropriate coding boxes. However, BE CAREFUL. You should still ask about each disability listed under Question 2 to confirm what the respondent has already told you and to be certain that you have complete information about the household.

HOW TO COMPLETE THE SCREENING INTERVIEW

1. If there is NO ONE WITH A DISABILITY in the household:
 - a. If the head of the household answered NO to Question 1 and every question from 2A through 2I, say:

"This completes our survey. Thank you for taking the time to answer our questions."
 - b. Print the date in the boxes provided on the front of the screening questionnaire.
 - c. Sign your name in the space provided on the front of the questionnaire.
 - d. Indicate on your interviewer log that the screening interview was completed.

2. Question 5 - If the street names do not match:
 - a. If the street name mentioned in Question 5 does not agree with the address on the front of the screening questionnaire and is outside of the survey study area, say:

"This completes our survey. Thank you for taking the time to answer our questions."
 - b. Follow the instructions below Question 5. Be sure to put a "1" in the coding box.
 - c. Indicate on your interviewer log that the street names do not match.

3. If there are ONE OR MORE PERSONS WITH A DISABILITY in the household:
 - a. Indicate on your interview log that the screening interview was completed. Also indicate the number of persons with a disability in the household.

- b. Print the date in the boxes provided on the front of the screening questionnaire.
- c. Sign your name in the space provided on the front of the questionnaire.
- d. Attempt to interview each person mentioned in Question 1 and Questions 2A through 2I.

HOW TO REQUEST AN INTERVIEW WITH EACH HANDICAPPED PERSON

- 1. Say:
 - "I would like to speak with (you/NAME OF PERSON) to find out more about (your/his or her) transportation needs and any transportation problems (you/he or she) may have. May we do this now?"
- 2. If an interview is not possible at this time, make an appointment to call back.
 - a. Ask: "When would be a better time for me to call back?"
 - b. Write the date and time for the call-back on your Call-Back Schedule.
 - c. Say: "Thank you for taking the time to answer our questions."
- 3. If an interview is possible at this time, you may need to find out whether the handicapped person is capable of answering questions.
 - a. If the handicapped person is DEAF, has a SPEECH DEFECT, has a MENTAL DISABILITY, or is a CHILD, he or she may not be capable of answering questions. Ask the head of the household:
 - "Would (NAME) have trouble answering my questions because of (his/her) disability?"
 - b. If YES, ask:
 - "Would you be willing to answer the questions for (him/her)?"

REFUSALS

1. If the head of the household refuses to allow you to interview any of the handicapped persons in the household, say:

"Thank you very much for taking the time to answer our questions."

2. Indicate on your interviewer log that the handicapped person(s) interview was refused.

PART 2 - HANDICAPPED PERSON INTERVIEWS

BEFORE YOU BEGIN THE INTERVIEW

1. It is important that you remember the types of disability that the person you are interviewing has. Make sure that the screening questionnaire for the household is open in front of you.
2. If at all possible, fill out the front page of the handicapped person questionnaire before you begin the interview:
 - a. copy the serial number shown on the front page of the screening questionnaire;
 - b. write the handicapped person's first name in the space provided;
 - c. write the handicapped person number in the box provided. This is the column number under which this person's name appears on the screening questionnaire. It will either be "1," "2," or "3;"
 - d. copy the traffic zone number shown on the front page of the screening questionnaire;
 - e. write the date of the interview in the appropriate boxes;
 - f. indicate the day of the week; and
 - g. sign your name.
3. If you do not have time to fill out the front page before you begin the interview, you should do so immediately after you complete the interview.

HOW TO MAKE YOUR INTRODUCTION

1. Interviews Occurring Immediately After the Screening:
 - a. If the handicapped person you are going to interview is the same person who answered the screening questionnaire, no further introduction is necessary. Start asking the questions on page 2 of the handicapped person questionnaire.
 - b. Whenever you are interviewing someone whom you have not talked to before, introduce yourself by saying:

"Good morning/afternoon/evening. My name is _____ and I'm calling on behalf of (name of local transportation planning agency or transit operator conducting the survey). Your answers to our survey can help us determine the transportation needs of people who have trouble using buses or taxis. Would you be willing to answer some questions for our survey?"

2. Introduction When Making a Call-Back

- a. Begin by giving the standard introduction:

"Good morning/afternoon/evening. My name is _____ and I'm calling on behalf of (name of local transportation planning agency or transit operator conducting the survey). Am I speaking to a head of the household?"

- b. Reintroduce yourself to a head of the household, then say:

"As you may recall, I (one of our other interviewers) called you earlier about a study we are doing to determine the transportation needs of people who may have difficulty using buses or taxis because of a health condition or disability. May I please speak to (you/NAME) now to find out more about (your/his or her) transportation needs?"

- c. If the person you wish to interview is DEAF, has a SPEECH DEFECT, has a MENTAL DISABILITY, or is a CHILD, find out whether he or she is capable of answering questions.

1. Ask the head of the household: "Would (NAME) have trouble answering my questions because of (his/her) disability?"

2. If YES, ask the head of the household: "Would you be willing to answer the questions for (him/her)?"

- d. When the handicapped person you wish to interview comes to the phone, introduce yourself by saying:

"Good morning/afternoon/evening. My name is _____ and I'm calling on behalf of (name of local transportation planning agency or transit operator conducting the survey). Your answers to our survey can help us determine the transportation needs of

people who have trouble using buses or taxis. Would you be willing to answer some questions for our survey?"

THE HANDICAPPED PERSON QUESTIONNAIRE

1. General Instructions

- a. State the questions exactly as they are worded. The wording of each question has been tested in actual interviewing, and each question has been designed to obtain the desired information. The quality of the data from the survey will depend on every interviewer asking the questions in the same way.
- b. Ask the questions in the order they appear on the questionnaire. If you change the order, you will find that both you and the respondent are likely to become confused.
- c. Ask each question carefully to be sure that the respondent fully understands it.
- d. Write the number corresponding to the respondent's answer legibly inside the coding boxes. Keep in mind that other people will have to read the information on these questionnaires and keypunch the data.
- e. Follow all SKIP instructions carefully.
- f. Do NOT read the numbered responses next to the coding boxes. Read only the questions.
- g. As in the screening interview, some people may "volunteer" information. That is, they will answer one of the survey questions before you come to it in the questionnaire. Because the handicapped person questionnaire is long, DO NOT JUMP AHEAD in the questionnaire to code the responses to questions you have not asked yet. Remember what the respondent tells you. Then, when you come to a question that the respondent has already answered, confirm that answer by saying something like "You mentioned that.... Is that correct?"

2. Questions 1 and 2 - Some people may answer NOT ABLE TO RIDE BUSES AT ALL to Question 1, but answer LITTLE OR NO DIFFICULTY to the questions between 2A and 2R.

Although this might seem inconsistent to you, you should NOT ask Question 1 again or change the respondent's answer.

3. Question 2 - Ask ALL of these questions regardless of what disabilities the respondent has or does not have.
4. Questions 5, 6, and 8 - These questions have two possible YES responses: YES - SOMETIMES and YES - ALWAYS. If the respondent simply says YES, you should write a "3" in the coding box for YES - ALWAYS. If the respondent says YES, but qualifies his or her answer by saying something like "when the weather is bad," you should put a "2" in the coding box for YES - SOMETIMES.
5. Question 12 - You may not always get a straight YES or NO answer to this question. If the respondent somehow indicates that there are times when he or she cannot get someplace because there is no one to take him/her there, you should consider the answer to be NO and put a "1" in the coding box.
6. Question 14 - BLIND PERSONS ONLY. A blind person is someone who is unable to see moving objects, such as cars moving or people walking. Check the answers to Question 2E on the screening questionnaire. If the person you are interviewing has difficulty seeing even with glasses on BUT IS ABLE to see well enough to see moving objects, then that person is NOT considered blind. In such a case, you should NOT ask Question 14. You should refer to the screening questionnaire BEFORE you begin the interview to see whether or not the handicapped person is blind.
7. Question 15 - DEAF PERSONS ONLY. A deaf person is someone who cannot hear loud noises. Check the answers to Question 2F on the screening questionnaire. If the person you are interviewing has difficulty hearing even with a hearing aid, BUT IS ABLE to hear well enough to hear loud noises, then that person is NOT considered deaf. In such a case, you should NOT ask Question 15. Again, you should refer to the screening questionnaire BEFORE you begin the interview to see whether or not the handicapped person is deaf.
8. TRIP TABLES - Questions 16 and 17
 - a. What is a trip? Whenever a person goes from one place to another, he or she has made a trip. It makes no difference how the trip was made: whether by car, bus, taxi, on foot, in a wheelchair, or some combination of these. For example: Suppose

that a handicapped person took a taxi from his or her home to the bank, walked from the bank to a nearby department store, then took a bus from there to the library, and finally rode home from the library in a taxi. He or she would have made four trips. The first trip was the taxi ride from home to the bank. The second trip was the walking trip from the bank to the department store. The third trip was the bus ride from the store to the library. The fourth trip was the return trip home by taxi.

b. Destinations of Trips

- (1) If the respondent's destination was his or her home, simply write "Home" on the NAME OF PLACE line. You do not have to ask for the person's address.
- (2) For any other destination, more detailed information is needed. In most cases, we will need to know the exact address or at least the names of the nearest intersecting streets.
- (3) Answers such as "the bank," "my place of work," "the grocery store," "the doctor's office," and so on are NOT sufficient.
- (4) If the destination is a unique and well-known place such as a shopping center, a factory, a major building, a university, a public park, a museum, and so on, write the exact name of the place on the NAME OF PLACE line. You do not need to ask for the address of these kinds of places.
- (5) Major stores, banks, and companies may have two or more branches or locations in the local study area. This is especially so for grocery stores. Simply knowing the names of these places is not enough to locate them. Ask the respondent: "Can you tell me the address or where it is located?"
- (6) If the destination is not a unique and well-known place, ask the respondent: "Can you give me the address?" If the respondent does not know the exact address, ask: "Can you tell me what street it is on and the name of the nearest intersecting street?"

- (7) If nothing else, the respondent should be able to tell you the name of the street and the general location, such as the name of the community or subdivision, or the name of a well-known place that is nearby. Help the respondent as best you can. Do not insist on an exact address if the respondent does not know it. Write on the ADDRESS line as much information as the respondent can tell you.
- (8) You do not have to fill in the coding boxes for the traffic zone. That will be done later by the coders. However, you must write down as much detailed information about the location of the destination as the respondent can give you so that the coders can determine the traffic zone.

c. Starting Times

- (1) Write the respondent's answer in the space in front of the "a.m." or "p.m.". If the respondent says he or she left at 9:30 in the morning, write 9:30 in front of the "a.m." If the respondent says he or she left at around 3:20 in the afternoon, write 3:20 in front of the "p.m."
- (2) Do not ask the respondent to tell you the exact time he or she left. If anyone should ask you how precisely you need to know the time of departure, say: "within 5 or 10 minutes if you can."
- (3) If the respondent gives you a range of time instead of a single time, write the midpoint of the range on the questionnaire. For example, if the respondent says "between 9:00 and 9:30 in the morning," write 9:15 a.m. on the questionnaire.
- (4) If the respondent says "noon," write "noon" in front of the "p.m."
- (5) Do NOT write anything in the starting time coding boxes for this question.

d. Trip Purposes

- (1) Write the respondent's answer in the space above the coding box. Do NOT write anything in the trip purpose coding boxes for this question.

- (2) You MUST ask this question for every trip EXCEPT when the respondent's destination is his or her home. If the respondent was returning home, just write "return home" in the space above the coding box.
- (3) Do not assume that you know the purpose of the trip because of the person's destination. For example, if a respondent tells you that he or she went to a hospital, the trip could have been made for one of several purposes. The respondent could have gone to the hospital for medical treatment, to visit a sick friend or relative, or because he or she works there. Each of these reasons is a different trip purpose. Therefore, you must ask for the purpose of every trip except return trips home.
- (4) Some people may tell you the trip purpose when you ask them "What place did you go to next?" For example, they might say "I went to work," or "I went to visit a relative," or "I went to the bank to cash a check." In such instances, you do not have to ask the question about trip purpose. Simply record their reply to your original question. Be sure, however, to get more specific information about the location of their destination.

e. Means of Transportation

- (1) Write the respondent's answer in the space above the coding boxes. Do not write anything in the transportation mode coding boxes for this question.
- (2) Be as specific as possible. Study the list of various means of transportation included with these instructions.
- (3) If the respondent went by car or other motor vehicle, indicate whether he or she drove or rode as a passenger.
- (4) If the respondent was a passenger in a car or other motor vehicle, ask, "Were you driven by a friend or relative?" If not, find out who drove...which social service agency, social or religious organization, senior citizens' center, or private non-profit organization provided the transportation.

- f. REMINDER: Don't forget to fill in a line for each return trip home. When you have completed a line for a trip, ask: "Did you then return home, or did you go someplace else first?"
9. Question 17 - Trips Made on the Day Before Yesterday
- a. You can help the respondent remember what trips he or she made on the day before yesterday by mentioning what day of the week that was. For example, say: "The day before yesterday was a Tuesday."
10. Question 19 - Age Group of the Handicapped Person
- a. Do not ask this question if the person you are interviewing lives alone. You can determine his or her age group from the screening questionnaire. Don't forget to record the correct number in the coding box.
 - b. In most cases, you should not have to ask the respondent what his or her age group is. Check Question 3 of the screening questionnaire. If everyone in the household is in the same age group, there is obviously no need to ask the question. Otherwise, you may have to ask. Sometimes, however, you can tell the person's age group from the sound of his or her voice. Whether or not you have to ask for the person's age group, you must record a number in the coding box.
 - c. Persons under five years of age are not included in the areawide telephone survey, since they are typically not able to independently use public transportation services.

AT THE END OF THE INTERVIEW

- 1. If there are no more handicapped people in the household to be interviewed:
 - a. Say: "This completes our survey. Thank you very much for taking some time to answer our questions."
 - b. Indicate on your interviewer log that the handicapped person interview has been completed.
 - c. If you have not already done so, fill out the front page of the questionnaire and sign it.

2. If there are more handicapped people in the household to be interviewed:
 - a. Say: "This completes our survey. Thank you very much for taking some time to answer our questions. May I now please speak to (NAME)?"
 - b. Indicate on your interviewer log that one of the handicapped person interviews has been completed.
 - c. If you have not already done so, fill out the front page of the questionnaire you have just completed and sign it.
 - d. Introduce yourself to the next handicapped person and begin the interview.

THE ART OF INTERVIEWING

1. It is important that your manner be businesslike. However, this should be combined with a friendly, courteous attitude. You will find that people reply much more readily to a courteous, friendly interviewer.
2. Never indicate your personal opinion about any reply you receive to a question, even by your tone of voice.
3. Your tone of voice is very important. It can affect a person's willingness to answer any and all questions. Because the respondent can't see you, his or her impression of you will be greatly influenced by your tone of voice.
4. Respondents will sometimes say what they think you want them to say. Don't "lead" a respondent by adding words or comments to the questions.
5. Some people may be reluctant to answer the questions because they are suspicious of the survey or misunderstand it. If that appears to be the case, explain the purpose of the survey as it has been explained to you. Mention that the respondent's answers will be kept strictly confidential.
6. If anyone should ask you why or how their household was selected, say: "Your household was chosen at random from the city directory."

SUPERVISION

1. Your work will be checked each day for completeness and accuracy. The supervisors will inform you of any errors or omissions, so that you can avoid future mistakes.
2. One or more supervisors will always be available to assist you if necessary. Meet with a supervisor immediately whenever any problem or question arises.

CONFIDENTIALITY

1. The information you collect in this survey must be kept strictly confidential.
2. You are not allowed to keep copies of completed questionnaires, take completed questionnaires home with you, or copy any information from a completed questionnaire.

NO SOLICITING DURING INTERVIEWS

1. Refrain at all times from selling, soliciting, political campaigning, or other such activities while you are interviewing.

REMEMBER: The success of the study depends a great deal on the quality of the work of each interviewer.

1. Read and become thoroughly familiar with this set of instructions.
2. Be available for work at your appointed times.
3. Perform all work in an efficient and accurate manner.

TRIP PURPOSE CODES FOR COMPLETING THE TABLES OF TRIPS
IN QUESTIONS 16 AND 17

CODE
NO.

- 1 RETURN TRIPS HOME
 - Any trip in which the person's destination is his or her home.
- 2 WORK TRIPS
 - Trips to the person's place of employment, such as a factory, a shop, a store, an office, etc.
 - Trips to places that a person must visit as part of his or her work.
- 3 SCHOOL TRIPS
 - Trips to attend classes or a training session at a regular school, college, or university; a special school for handicapped people; a job training program; or a vocational rehabilitation school or program.
- 4 SHOPPING TRIPS
 - Trips made to shop for or purchase goods at any commercial establishment where goods are sold.
 - Trips made to a store for the purpose of "just looking."
 - Trips made for repairs to autos, radios, TVs, or any other item.
- 5 TRIPS FOR HEALTH CARE, MEDICAL TREATMENT, OR PHYSICAL THERAPY
 - Trips to a doctor's office, dentist, hospital, or clinic for checkups, medical treatment, or physical therapy.
- 6 TRIPS TO SOCIAL, RELIGIOUS, AND RECREATIONAL ACTIVITIES
 - Trips to visit friends or relatives.
 - Trips to social meetings or social gatherings of any type.
 - Trips to church services or church-sponsored social activities.

- Trips to museums, movies, concerts, and plays.
- Trips made for golfing, fishing, bowling, attending athletic events, pleasure riding, pleasure walking, picnics, and other leisure time activities.
- Trips to senior citizens' lunch programs.

7 PERSONAL BUSINESS TRIPS

- Trips to take care of personal business or personal matters at banks; post offices; gas, water, or electric utilities; the telephone company; libraries; government agencies; social service agencies; law offices; insurance agencies; etc.
- Trips for a job interview.
- Trips to a barber, hairdresser, or laundromat.
- Trips to restaurants, diners, cafeterias, and other eating places to buy a meal.

8 TRIPS TO OR FROM THE AIRPORT OR THE BUS DEPOT

- Trips to the airport or the bus depot to board a plane or an intercity bus.
- Trips from the airport or the bus depot after getting off a plane or an intercity bus.

9 TRIPS TO TRANSPORT ANOTHER PASSENGER

- Trips made to pick up someone at any location.
- Trips made to take someone to any destination.

MEANS OF TRANSPORTATION CODES FOR COMPLETING THE
TABLES OF TRIPS IN QUESTIONS 16 AND 17

CODE
NO.

- 1 DROVE a car, van, or other motor vehicle
- 2 RODE as a PASSENGER in a car, van, or other motor vehicle driven by a FRIEND or RELATIVE
- 3 REGULAR LOCAL BUS SERVICE
- 4 SPECIALIZED PUBLIC TRANSPORTATION SERVICE
- 5 SCHOOL BUS
- 6 TAXI
- 7 WALKED (or used WHEELCHAIR)
- 8 SPECIAL TRANSPORTATION SERVICE - Rode in a car, bus, or van provided by a social service agency, social organization, religious group, senior citizens' center, or private non-profit organization.
- 9 BICYCLE
- 10 AMBULANCE

AREAWIDE TELEPHONE SURVEY
CONTROL FORMS (6)

AREAWIDE TELEPHONE SURVEY
PRETEST EVALUATION FORMS (6)

PRETEST EVALUATION FORM

1. Which questionnaire is being evaluated? SERIAL NUMBER _____ (#)
2. On which call did the interview take place? When was the call made?

FIRST CALL

DATE: _____ TIME: _____
(please fill in the appropriate answers)

- A. No Answer/Busy Signal _____
- B. Asked you to call back _____
- C. Refused questionnaire (fill in reason): _____

(If "REFUSED", go on to the next survey)
- D. Interview completed _____ Time interview ended: _____
(If the interview was completed, go to question #3)

SECOND CALL

DATE: _____ TIME: _____

- A. No Answer/Busy Signal _____
- B. Asked you to call back _____
- C. Refused questionnaire (fill in reason): _____

(if "REFUSED", go on to the next survey)
- D. Interview completed _____ Time interview ended: _____
(if the interview was completed, go to question #3)

THIRD CALL

DATE: _____ TIME: _____

- A. No Answer/Busy Signal _____
- B. Asked you to call _____
- C. Refused questionnaire (fill in reason): _____

(If the interview was completed, go to question #3)
- D. Interview completed _____ Time interview ended: _____
(Don't bother calling anybody a fourth time)

3. Was every question in the survey form answered? YES _____ NO _____
(If "YES", go on to the next survey)
4. Which was the last question completed? _____ (#)
5. Why wasn't every question in the survey form answered? (Write in the reasons):

AREAWIDE TELEPHONE SURVEY
INTERVIEWER APPLICATION TESTS (6)

**AREAWIDE TELEPHONE SURVEY
TELEPHONE APPLICATION TEST
FOR INTERVIEWERS**

PLEASE TAKE A FEW MINUTES TO READ THIS TWICE, THEN DIAL THE DESIGNATED PHONE NUMBER AND INTRODUCE YOURSELF AS FOLLOWS:

“Good morning/afternoon/evening. My name is _____
and I’m calling on behalf of (name of local transportation planning agency or transit operator conducting the survey). May I speak to a head of the household?”

IF SOMEONE ELSE (A HOUSEHOLD HEAD) COMES TO THE PHONE, REINTRODUCE YOURSELF, BY NAME AND ORGANIZATION, EXACTLY AS YOU DID SO BEFORE, AND SAY:

“We are doing a study to determine the transportation needs of people who may have difficulty using buses or taxis because of a health condition or disability. Would you take 5 minutes now to answer some questions for our survey?”

GO TO QUESTION 1

1. Is there anyone in your household who has a physical, mental, or other health condition which limits or prevents them from using public transportation?

1. NO
 2. YES

If NO, skip to Q. 2.

A. Which members of your household have such a condition?
 May I please have their first names?

No. 1

No. 2

No. 3

Write their first names here.

Put a '1' in the box below
 each name mentioned.

B. (Ask for EACH person mentioned.)
 Has (NAME) had this condition for
 6 months or more?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

2. I am going to read a list of physical and mental disabilities that sometimes make it difficult for people to use buses and taxis. After each one that I mention, please tell me if there is anyone in your household 5 years of age or older who has that kind of disability. First of all, is there anyone in your household who has . . .

No. 1

No. 2

No. 3

Write first names here.

A. Difficulty walking?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

If NO, skip to B.

Does (NAME) use a wheelchair?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

Does (NAME) use leg braces,
 crutches, a cane, or a walker?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

B. Difficulty going up and down
 steps?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

C. Difficulty standing for more than
 a few minutes?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

2. (Continued)

No. 1

No. 2

No. 3

Rewrite first names
in the SAME ORDER

D. Difficulty using one or both hands or arms?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

E. Difficulty seeing even with glasses on?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

If NO, skip to F.

Is (NAME) able to see well enough to see moving objects, such as cars moving or people walking?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

F. Difficulty hearing even with a hearing aid?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

If NO, skip to G.

Is (NAME) able to hear well enough to hear loud noises?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

G. Difficulty speaking?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

H. A mental disability?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

I. Difficulty getting around outside your home because of a respiratory condition or a heart condition?

1. NO
 2. YES

1. NO
 2. YES

1. NO
 2. YES

3. Counting yourself, how many people are there in your household?

A. How many of them are 4 years of age or younger?

B. How many of them are between the ages of 5 and 15?

3. (Continued)

C. How many of them are between the ages of 16 and 64?

--	--

D. How many of them are 65 years of age or older?

--	--

4. How many cars and other motor vehicles such as vans and pick-up trucks does your household have?

--	--

5. What is the name of the street on which you live?

END OF TELEPHONE INTERVIEW TEST

**AREAWIDE TELEPHONE SURVEY
WRITTEN APPLICATION TEST
FOR INTERVIEWERS**

Please answer the following questions:

1. Buses arrive at a certain location every 8 minutes during rush hour. If the first bus arrives at 7:00 a.m., and the second bus arrives at 7: 08 a.m., when do the fourth and fifth buses arrive?

- 7:00 & 7:08 7:08 & 7:16 7:16 & 7:24 7:24 & 7:32 7:32 & 7:40

2. If the bus fare is 50¢ for a one-way trip, how many one-way trips can a person take for \$3.00?

- 2 4 6 8 10

3. A person catches a bus at 7:03. The bus takes 42 minutes to arrive downtown. It takes six minutes to walk from the downtown bus stop to his office. What time does he arrive at work?

- 7:42 7:45 7:48 7:51 7:54

4. Special lift-equipped buses are used to serve only people who are unable to use regular buses due to physical disabilities. Sufficient vehicles are available to operate the service only within the city limits of an urban area. Can a handicapped person ride these buses between the suburbs and the downtown area of the city?

- Yes No

5. Using a complete sentence, please tell me whether or not the president would be allowed to ride the special lift-equipped buses described above and the reason why.

APPENDIX C
PITTSBURGH TRAVEL DIARY STUDY FORMS

PITTSBURGH TRAVEL DIARY STUDY FORMS

INTRODUCTION

In 1981, the Port Authority of Allegheny County conducted an extensive demonstration of the travel diary method of collecting data on the characteristics, travel habits, and travel needs of transportation-handicapped people.(2) This UMTA-sponsored study was designed to document the travel behavior of Pittsburgh transportation-handicapped citizens through the use of various screening questionnaires, certification questionnaires, and travel diaries.

The Pittsburgh study involved contacting by telephone over 20,000 households to identify a sample of qualified participants for the travel diary. Of the 2,250 households designated as qualified, 1,425 households permitted a home interview for certifying participants for the travel diary. Of the total, about 541 persons participated in the full demonstration, including members of the general public, elderly persons, and handicapped persons (including both users and non-users of specialized transportation services provided by ACCESS Transportation Services, Inc., a paratransit broker serving the Pittsburgh area).

STUDY FINDINGS AND RECOMMENDATIONS

The Pittsburgh study sought to demonstrate the advantages of a limited sample, long-term travel diary survey over larger scale, one-day surveys for collecting information about transportation-handicapped people at the local level. The full results of this study are not available at this time since the survey data have not yet been fully processed and analyzed. However, several observations have been made by the study team regarding the design and implementation of data collection programs aimed at transportation-handicapped people. These are summarized below:

- . careful planning of data collection programs and early pre-testing of survey forms are required to ensure a cost-effective data collection effort;
- . survey designers must carefully consider which procedures are important to the validity of the data collection program and which can be relaxed in the interest of cost saving or expediency without detracting from the validity of the program;
- . important survey procedures should be clearly specified in detail prior to the start of the survey;

- . detailed interviewer instructions and training sessions regarding the context, purpose, and content of the survey are needed to ensure the quality of its results; and
- . detailed surveys, such as travel diaries, should be conducted shortly after participants have been screened and certified to minimize the potential for participants losing interest in the survey and refusing to complete the required forms.

The cost of the Pittsburgh travel diary survey amounted to \$194 per completed diary. This included the cost of prescreening and certifying a sample of potential participants, and completing the travel diaries, plus the related administrative, reproduction, postage, office, and telephone costs associated with the overall data collection program. The higher costs of the data collection program resulted from the combined use of multiple survey techniques, including telephone surveys, home-interviews, and self-administered surveys; the disaggregation of participants into up to four separate categories; and the use of numerous, detailed survey forms which are described below.

DATA COLLECTION FORMS

The Pittsburgh Travel Diary Study utilized three general types of survey instruments and up to four versions of each, ranging in size from two to eight pages. These included the following ten forms:

- . Screening Forms:
 - . For Transportation-Handicapped Individuals Only;
 - . For Transportation-Handicapped Elderly Persons;
 - . For Transportation-Handicapped Elderly Persons and General Population; and
 - . For Persons Registered for the Local Specialized Transportation Services (ACCESS).
- . Certification Interview Forms:
 - . Non-Registered Transportation-Handicapped Persons;
 - . Registered Transportation-Handicapped Persons; and
 - . Elderly Persons and General Population.

. Travel Diaries:

- . Non-Registered Transportation-Handicapped Persons;
- . Registered Transportation-Handicapped Persons; and
- . Elderly Persons and General Population.

The screening forms were used to identify a random sample of people who satisfied one of the four descriptions listed above, and to develop information about their demographic characteristics, disabilities, travel problems, and travel needs. The screening interviews were conducted by telephone.

A copy of the transportation-handicapped person screening questionnaire form is included with this appendix.

The certification interview forms provided more detailed information about the potential participants and their travel habits, problems, and needs. This information was used to distinguish more precisely between the various groups participating in the study, especially elderly persons who were transportation-handicapped and those who had only minor difficulty traveling. The certification interviews, which were conducted at the homes of potential participants, also permitted the survey team to explain the purpose and nature of the travel diary and to gain the commitment of those interviewed to participate in the travel diary portion of the study.

A copy of the non-registered transportation-handicapped certification interview form is included with this appendix, along with a copy of the interviewer's introductory statement.

The travel diary form requested detailed information about all trips made by the respondent during a consecutive seven-day period. Information was requested regarding the origin, destination, time, purpose, method of travel, cost, and use of an escort for each trip made by the respondent during this time-frame. Respondents were instructed to record the details of each trip as soon as possible after the trips were made. Two calls and one home visit were made to each participant by staff during the period in which the diaries were being completed. Instructions and adequate copies of the two-page daily travel diary were provided in a logbook to each participant when the certification interview was conducted.

The information collected by the travel diary was intended to indicate the frequency and nature of trips made by transportation-handicapped people in the Pittsburgh study area. The travel diary was not designed to estimate the incidence rates, characteristics, or travel problems and needs of the local

transportation-handicapped population. The screening questionnaire and certification interview attempted to accomplish these other objectives.

A copy of the non-registered transportation-handicapped person travel diary form and instruction sheet is included with this appendix.

INTERVIEWER _____
DATE _____
TIME _____ AM/PM

FINAL
STATUS

SCREENING FORM #1 -- PART A
SCREENING FOR TRANSPORTATION-HANDICAPPED
INDIVIDUALS ONLY

Telephone Number: _____

Last Name: _____

Address: _____ City/Town: _____

Corrected Address (if necessary): _____

Hello, my name is _____. I'm conducting a survey for Port Authority Transit's ACCESS Service to help them improve transportation for the elderly and handicapped in Allegheny County. Your telephone number was chosen for this survey randomly. Would you be willing to give us a few minutes of your time to answer some questions?

YES: GO TO QUESTION 1.

NO: CONTINUE BELOW.

Is there someone else in your household who might be willing to help us?

1) _____ no, interview refused. → TRY TO ASK QUESTIONS 1 AND 2.

2) _____ yes.

Is this person at home now? May I speak with him or her?

1) _____ yes → REINTRODUCE YOURSELF AND BEGIN WITH QUESTION 1.

2) _____ no → NOTE NAME OF PERSON AND COMPLETE PHONE LOG BELOW.

NAME OF PERSON BEING CALLED: _____	
FIRST CALL _____	CALLBACK #2 _____
CALLBACK #1 _____	CALLBACK #3 _____
CANNOT BE REACHED _____	

CARD NUMBER

1
i

INTERVIEW NUMBER

2 3 4 5 6

1. Are there any people in your household who have some difficulty in traveling? This means people who have difficulty walking, climbing stairs, who use a wheelchair or who are deaf or blind?

1) _____ yes 2) _____ no → ASK QUESTION 4 AND THEN TERMINATE INTERVIEW BY SAYING: Thank you for your cooperation; that completes our questions. 7

2. How many persons have some difficulty in traveling? 8 9
 _____ persons

3. How many of these handicapped people are 65 years of age or older? 10 11
 _____ persons

4. Could you tell me if anyone in your household uses any of the following aids when they go outside the house? Do they use ... READ LIST. IF "YES", PLEASE ASK THE NUMBER OF PERSONS USING EACH AID AND RECORD. IF "NO" RECORD 0.

- Wheelchair 12
- Walker 13
- Crutches 14
- Cane (for walking) 15
- Cane (for blind person) 16
- Seeing-eye dog 17
- Artificial limbs 18
- Braces 19
- Hearing Aid 20
- Another person 21
- Other (specify) _____ 22

SCREENING FORM #1 -- PART B

IF SOMEONE IN THE HOUSEHOLD USES A WHEELCHAIR, ASK TO SPEAK TO THIS PERSON OR SOMEONE WHO CAN SPEAK FOR THE INDIVIDUAL IF THE DISABILITY PRESENTS A COMMUNICATION PROBLEM. REINTRODUCE YOURSELF AND BEGIN WITH QUESTION 5. IF THE PERSON IS NOT HOME, COMPLETE PHONE LOG BELOW.

IF NO ONE IN THE HOUSEHOLD USES A WHEELCHAIR, ASK TO SPEAK WITH THE DISABLED PERSON. IF MORE THAN ONE, ASK TO SPEAK TO THE DISABLED PERSON WHO HAD THE MOST RECENT BIRTHDAY AS A MEANS OF RANDOMLY SELECTING A DISABLED PERSON TO INTERVIEW (OR SOMEONE WHO CAN SPEAK FOR THE PERSON IF THE DISABILITY PRESENTS A COMMUNICATION PROBLEM.) REINTRODUCE YOURSELF AND BEGIN WITH QUESTION 5. IF THIS PERSON IS NOT HOME, COMPLETE THE PHONE LOG BELOW.

NAME OF PERSON BEING CALLED: _____	
FIRST CALL _____	CALLBACK #2 _____
CALLBACK #1 _____	CALLBACK #3 _____
CANNOT BE REACHED _____	

5. I'm going to ask you if you have difficulty in doing a few things that might be done if someone were traveling. Please respond yes or no. Do you have difficulty . . .

- | | | | |
|---|-----------|----------|-----------|
| Walking more than one block | 1) ___yes | 2) ___no | <u>23</u> |
| Boarding or leaving from a standard bus | 1) ___yes | 2) ___no | <u>24</u> |
| Standing in a moving bus | 1) ___yes | 2) ___no | <u>25</u> |
| Sitting down or getting up | 1) ___yes | 2) ___no | <u>26</u> |
| Grasping coins, tickets or handles | 1) ___yes | 2) ___no | <u>27</u> |
| Reading information signs | 1) ___yes | 2) ___no | <u>28</u> |
| Hearing announcements | 1) ___yes | 2) ___no | <u>29</u> |
| Getting in and out of a car or taxi | 1) ___yes | 2) ___no | <u>30</u> |

6. If you had to, would you be able to get on a PAT bus or streetcar by yourself? 31

- 1) ___yes 2) ___no 3) ___don't know

7. Do you know about the ACCESS program?

32

1) yes

2) no \longrightarrow

"ACCESS is a program operating in Allegheny County to provide special transportation services to the elderly and handicapped. I'd be glad to send you more information later if you like." (SKIP TO QUESTION 9)

8. Do you have an ACCESS card?

33

1) yes \longrightarrow

2) no

TERMINATE INTERVIEW BY SAYING:
"Thank you very much for your cooperation; that completes our list of questions. However, you may be called again when we survey ACCESS card holders."

9. How many trips did you make yesterday? (Please consider any trip outside your home, even if it is to visit a neighbor. Please count each leg of your journey as one trip. For example, if you went to the store then directly to the doctor's office, you would count this as three trips -- one to the store, one to the doctor's, and one to return home.)

 one-way trips

34 35

10. How far away do you live from the nearest PAT bus stop?

 miles (10 blocks = 1 mile)

36 37 38 39

11. What is your age? years

+0 +1

12. How many people, including yourself, live in your home on a full-time basis?

 people

+2

13. How many cars or trucks does your household have (in operating condition)?

 vehicles

+3

14. Do you have a valid driver's license?

1) ___yes

2) ___no

44

15. Is the combined income (before taxes) of your household above or below \$6,000?

1) ___above

2) ___below

45

16. Sex (RECORD FROM OBSERVATION).

1) ___Male

2) ___female

46

READ:

In addition to this survey, we are trying to locate a small group of people to participate in a larger travel study. This study is being sponsored by Port Authority of Allegheny County (PAT) and the results of this study will help us plan transportation service here in Allegheny County. This group will be asked to keep a brief diary of all trips they make over a longer period of time. They will be compensated for their efforts.

If you might be willing to keep a record of your travel, I will put your name on our list and you will receive a letter explaining in more detail what is involved. We will also be calling you again to schedule a time when a PAT employee can come to your home and assist you in getting started with the record. If you do participate, someone will be in touch with you to answer any questions or help with any problems you might have.

INTERVIEWER: CHECK STATUS

1) ___permits home visit



VERIFY NAME AND ADDRESS
IF LISTED ON FRONT.
ASK NAME AND ADDRESS
AND RECORD IF NOT LISTED.

2) ___refuses home visit

47

That completes my list of questions for you. Thank you very much for your cooperation.

INTERVIEWER: CHECK APPROPRIATE ANSWER.

PERSON AGREEING TO PARTICIPATE IN DIARY . . .

48

1) ___ uses a wheelchair.

2) ___ is transportation-handicapped but does not use a wheelchair.

ACCESS NONREGISTRANT DIARY CERTIFICATION INTERVIEW

Hello, my name is _____. I am here concerning the Port Authority Transit's travel survey.

Thank you for agreeing to participate in the Port Authority's survey. Your efforts are very much appreciated and very important to our survey, the results of which will be used to try and improve transportation services for elderly and handicapped citizens.

Today, I am going to ask you some questions about yourself and about the way you travel. All of the information you give me will remain confidential and will be used for statistical purposes only. It is important that you try to answer these questions the best you can so that the information we get is accurate.

After we complete the questionnaire I will show you how to fill out the travel diary. We'd like you to keep the diary as a record of all the trips you make over a two-week period. We'll go through yesterday's trips and record them together. If you have any questions after I leave, you can call the Survey Center and they will help you with any problems you might be having. The telephone number of the Survey Center is listed in the logbook I will leave with you to record your trips.

ACCESS NONREGISTRANT CERTIFICATION INTERVIEW

Card Number: _____

Identification Number: _____ 1

Date: _____ 2 3 4 5

Participant Name: _____ 6 7 8 9

Street: _____ 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

City or Town: _____ 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46

Zip Code: _____ 47 48 49 50 51 52 53 54 55 56 57 58

Interviewer: _____ 59 60 61 62 63

_____ 64 65

CARD NUMBER: _____ 2

ID NUMBER: _____ 1

_____ 2 3 4 5

PART A -- QUESTIONS ABOUT TRAVELING

1. Any person in Allegheny County who is physically unable to use regular PAT buses or streetcars or who is over 65 can register to use PAT's door-to-door service, ACCESS. We are wondering why persons who have not registered to become an ACCESS cardholder have not done so. Can you tell me what reasons you may have had for not registering? We would like to hear all of your reasons if there is more than one. Please tell us your most important reason first.

_____ 6 7

_____ 8 9

_____ 10 11

2. Are you a client of a social service agency? 12
 1) yes 2) no SKIP TO QUESTION 6
3. Of which social service agency are you a member? (ASK RESPONDENT TO GIVE COMPLETE NAME OF AGENCY, IF KNOWN.) 13

4. Has your social service agency ever provided transportation for you, such as to go to the doctor's, shopping, or to one of its activity centers? 14
 1) yes 2) no
5. Did this agency use ACCESS service to provide transportation for you? 15
 1) yes 2) no 3) don't know
6. Do you have a disability that restricts your travel? 16
 1) yes 2) no SKIP TO QUESTION 8
7. Can you describe your disability? 17 18

8. When you go out, do you use any of these aids? 19
- | | | | |
|-------------------------|---------------------------------|--------------------------------|----|
| Wheelchair | 1) <input type="checkbox"/> yes | 2) <input type="checkbox"/> no | 20 |
| Walker | 1) <input type="checkbox"/> yes | 2) <input type="checkbox"/> no | 21 |
| Crutches | 1) <input type="checkbox"/> yes | 2) <input type="checkbox"/> no | 22 |
| Cane (for walking) | 1) <input type="checkbox"/> yes | 2) <input type="checkbox"/> no | 23 |
| Cane (for blind person) | 1) <input type="checkbox"/> yes | 2) <input type="checkbox"/> no | 24 |
| Seeing-eye dog | 1) <input type="checkbox"/> yes | 2) <input type="checkbox"/> no | 25 |

Artificial Limbs	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>28</u>
Braces	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>29</u>
Hearing Aid	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>30</u>
Another person	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>31</u>
Other (specify)	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>32</u>

9. I am going to ask you if you have difficulty in doing a few things while traveling. Please respond yes or no. Do you have any difficulty ...

Walking more than one block	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>33</u>
Boarding or leaving from a standard bus	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>34</u>
Standing in a moving bus	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>35</u>
Sitting down or getting up in a moving bus	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>36</u>
Grasping coins, tickets, or handles in a bus	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>37</u>
Reading information signs	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>38</u>
Hearing announcements over a loudspeaker	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>39</u>
Getting in our out of a car or taxi	1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>40</u>

10. Are you physically able to get on and ride a PAT bus or streetcar?

1) <input type="checkbox"/> yes	SKIP TO QUESTION 12	<u>41</u>
2) <input type="checkbox"/> no		<u>42</u>

11. If a PAT bus were equipped with a lift that would not require climbing any stairs, would you be able to use it?

1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>43</u>
---------------------------------	--------------------------------	-----------

12. Are you physically able to ride in a car?

1) <input type="checkbox"/> yes	2) <input type="checkbox"/> no	<u>44</u>
---------------------------------	--------------------------------	-----------

13. How far away do you live from the nearest bus stop? _____
_____miles (10 blocks = one mile) 45 46 47

14. Are you able to walk (or wheel) there?
1) ___yes 2) ___no SKIP TO QUESTION 16 _____
48

15. How long does it take to walk (or wheel) there?
_____minutes _____
49 50 51

16. Now, I would like to ask you a few questions on your travel, before you begin recording your trips in the travel diary. I would like you to think back carefully over what you did and where you went yesterday. When you think you remember, I would like you to give me a list of each of these places you went, starting in order with the first place you went that day. Describe to me as best you can why you went there. I am interested in every place you went outside your home, even if it was only visiting a neighbor 3 doors down, or taking a walk around the block.

INTERVIEWER: RECORD EACH TRIP BY PURPOSE IN TABLE ON FOLLOWING PAGE. PLEASE RECORD TRIPS IN TERMS OF ONE-WAY TRIPS. RECORD EACH LEG OF A TRIP SEPARATELY INCLUDING RETURN TRIPS.

WHEN YOU HAVE FINISHED WITH YESTERDAY'S TRIPS, ASK:

Now, do you think you can tell me what you did on the day before yesterday?

RECORD TRIPS, THEN ASK:

Now to really see how good your memory is, can you remember what you did the day before that?

THREE DAY TRIP RECALL RECORD
(RECORD TRIPS BY PURPOSE)

	YESTERDAY	2 DAYS AGO	3 DAYS AGO
Trip 1			
Trip 2			
Trip 3			
Trip 4			
Trip 5			
Trip 6			
Trip 7			
Trip 8			
Trip 9			
Trip 10			

33. I'm going to give you a card with a list of categories on it. I'd like you to tell me which letter corresponds to the combined income (before taxes) of your entire household.

APPROXIMATE HOUSEHOLD INCOME BEFORE TAXES

- | | |
|----------|--|
| 1) _____ | a) less than \$5,000 (less than \$415 monthly) |
| 2) _____ | b) \$5,000 to \$9,999 (\$417 to \$833 monthly) |
| 3) _____ | c) \$10,000 to \$14,999 (\$834 to \$1,249 monthly) |
| 4) _____ | d) \$15,000 to \$24,999 (\$1,250 to \$2,083 monthly) |
| 5) _____ | e) \$25,000 to \$34,999 (\$2,084 to \$2,917 monthly) |
| 6) _____ | f) \$35,000 or more (\$2,918 or more monthly) |
| 7) _____ | g) refused to answer |
| 8) _____ | h) doesn't know |

INTERVIEWER: DO
NOT READ AS POSSIBLE
RESPONSES

INSTRUCTIONS FOR COMPLETING TRAVEL DIARY

This diary has been designed for you to record all trips or journeys that you make each day of a **one** week period. You should use it as a logbook to record the details of every trip you make. All trips for which you travel outside your home should be included, no matter how far you traveled, for what purpose you traveled, or by what method you traveled. A separate sheet should be used for each successive day and a separate row for each successive trip. Extra sheets are provided at the rear of your logbook should you require them.

Please use the instructions below as a guide in completing your diary. You also have assigned to you an interviewer from the Survey Center who will acquaint you with the procedures for completing the diary, and you can always call the Survey Center for answers to specific questions. Your interviewer will be calling back occasionally to make sure that you are not encountering any problems.

Your interviewer's name is Mr./Ms. _____

The Survey Center telephone number is _____

The Center is open _____

1. Record in your logbook the details of **ALL TRIPS** made each day. Try to record your trips as close as possible to the time you actually make them. Each log sheet has the date printed on it at the top of the page. If there is not enough room on two sheets for all the trips you make in one day, use one of the spare blank sheets in the back of the notebook (record the correct date on the blank sheet). Start your logbook each day by recording the place from which you begin your first trip. Usually, this will be your home.
2. A trip is defined as a **one-way** journey for which you leave your home (or place from which you start) to go to some place for **ANY PURPOSE** by **ANY METHOD OF TRAVEL**. Examples of some trips are:
 - a) a trip by bus from your house to your friend's house to visit;

- b) a trip in your friend's car from your friend's house to the grocery store;
- c) a trip walking from the grocery store to a restaurant close by for lunch;
- d) a trip walking from the restaurant back to the grocery store;
- e) a trip in your friend's car from the grocery store back to your house.

You should include any trip, even walk trips, large or small, for which you must go out of doors. You should also remember that your trips must all "fit together," so that you do not appear to go some place and not come back. Also, please remember to record your trips back home. You do not have to make a lot of trips for your information to be valuable to us. We are interested in an accurate record of your trips, no matter how many or how few you make.

3. For each trip, record the following information:

WHERE DID YOU GO?

Please record the name of the place, its street number and address, and the city or town in which it is located. Try to record the street address of every place you go to, even familiar places such as a shopping mall. A telephone directory lists the street addresses of most places. If you take a trip outside Allegheny County, you should simply list the city and state of the place you visited, but be sure to record all the information on the other aspects of your trip.

WHAT TIME DID YOU BEGIN?

Record the time your trip began as accurately as you remember.

FOR WHAT REASON DID YOU GO THERE?

Every trip is made for a purpose, even if it is just for a walk around the block or to visit a friend who lives down the street. Try to describe that reason as accurately as possible. Please do not just record the type of place to which you traveled, such as a hospital. You could go to the hospital for several reasons: for a medical appointment; to do volunteer work; or to visit a friend. We would like to know the specific purpose of your trip.

If you go to one place, such as a shopping mall, and do a number of things while you are there, use only one row and note the reason that comes closest to describing the most important reason for your trip.

HOW DID YOU GET THERE?

This question asks you to record the principal way by which you traveled on your trip. If you traveled by more than one method, record each method. If you travel some place in an automobile, be sure to indicate if you were the driver or the passenger. Also, remember to record trips that you made by walking some place (except walk trips from parking lots to nearby places.) These are easy to forget.

HOW MUCH DID THE TRIP COST?

Please record the amount you paid to take your trip, except if you walked or made your trip by a private automobile. If you used a private automobile to make the trip, either as a driver or a non-paying passenger, or if you walked, please put a "0" in the space provided. If you were an auto passenger and paid something to the driver for this trip, please record the amount.

DID YOU HAVE AN ESCORT?

If you **NEED** an escort to accompany you when you travel because of some disability, and if you had an escort on this particular trip, please check "yes." If you were accompanied by a friend but you do not physically need an escort to travel or if you traveled alone, please check "no."

Do not hesitate to contact the Survey Office if you are unsure of how to record something in your travel diary. They will be glad to help you.

THANK YOU AGAIN FOR YOUR HELP.

PORT AUTHORITY OF ALLEGHENY COUNTY TRAVEL DIARY

Date: _____

Diary No.: _____

Where did you start your first trip today?	I made no trips today.	Did you pay using an ACCESS card?	How much did this trip cost you?	Did you have an escort?	
Trip	And then where did you go?	At what time did you begin your trip?	For what reason did you go there?	How did you get there?	
1	Name of Place:	____:____ a.m.	<input type="checkbox"/> walk (wheel) <input type="checkbox"/> social service <input type="checkbox"/> agency vehicle <input type="checkbox"/> taxi <input type="checkbox"/> Magic Carpet <input type="checkbox"/> auto driver <input type="checkbox"/> auto passenger <input type="checkbox"/> PAT bus or streetcar <input type="checkbox"/> jitney <input type="checkbox"/> other, specify	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
	Number & Street:	____:____ p.m.			
	City or Town:				
2	Name of Place:	____:____ a.m.	<input type="checkbox"/> walk (wheel) <input type="checkbox"/> social service <input type="checkbox"/> agency vehicle <input type="checkbox"/> taxi <input type="checkbox"/> Magic Carpet <input type="checkbox"/> auto driver <input type="checkbox"/> auto passenger <input type="checkbox"/> PAT bus or streetcar <input type="checkbox"/> jitney <input type="checkbox"/> other, specify	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
	Number & Street:	____:____ p.m.			
	City or Town:				
3	Name of Place:	____:____ a.m.	<input type="checkbox"/> walk (wheel) <input type="checkbox"/> social service <input type="checkbox"/> agency vehicle <input type="checkbox"/> taxi <input type="checkbox"/> Magic Carpet <input type="checkbox"/> auto driver <input type="checkbox"/> auto passenger <input type="checkbox"/> PAT bus or streetcar <input type="checkbox"/> jitney <input type="checkbox"/> other, specify	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
	Number & Street:	____:____ p.m.			
	City or Town:				
4	Name of Place:	____:____ a.m.	<input type="checkbox"/> walk (wheel) <input type="checkbox"/> social service <input type="checkbox"/> agency vehicle <input type="checkbox"/> taxi <input type="checkbox"/> Magic Carpet <input type="checkbox"/> auto driver <input type="checkbox"/> auto passenger <input type="checkbox"/> PAT bus or streetcar <input type="checkbox"/> jitney <input type="checkbox"/> other, specify	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
	Number & Street:	____:____ p.m.			
	City or Town:				



C.21

ALWAYS RECORD YOUR RETURN TRIPS AND TRIPS BACK HOME.

APPENDIX D
CENSUS DATA APPLICATION FORMS

Customer Services (Publications)					Date	M
	Name				RETURN TO:	
	Organization				Data User Services Division	
	Address				Customer Services	
	City, State, ZIP				Bureau of the Census	
					Washington, D.C. 20233	
					Phone: 301/763-4100	
	Census Bureau Series No.	Quantity Desired	Title of Publication	Amount	CUSTOMER Make check or money order payable to Superintendent of Documents, but mail remittance to address shown. If to be charged to Supt. of Docs. account, indicate Deposit Account No.	
				TOTAL \$		

Customer Services (Microfiche and Tapes)					RETURN TO:		Date	M
	Name				Data User Services Division		CHECK ONE <input type="checkbox"/> Enclosed is check or money order, payable to "Commerce-Census" <input type="checkbox"/> Charge to Census Bureau Deposit Account No. <u>9</u>	
	Organization				Customer Services			
	Address				Bureau of the Census			
	City, State, ZIP				Washington, D.C. 20233			
	Telephone				Phone: 301/763-4100			
	Name of Data File, Documentation* or Microfiche		Order No.	No of Reels	No. of Microfiche	No. of Document copies	Cost	
*One copy of the Technical Documentation is sent at no extra charge With tape orders; additional copies are \$5.00 each.						TOTAL \$		
Characteristics of Tape (Check One): <input type="checkbox"/> 9 track, 1600 bpi, EBCDIC <input type="checkbox"/> 9 track, 6250 bpi, EBCDIC <input type="checkbox"/> 9 track, 1600 bpi, ASCII <input type="checkbox"/> 9 track, 6250 bpi, ASCII				Labeling (Check One): <input type="checkbox"/> Standard <input type="checkbox"/> Unilabeled				
Other characteristics are available by special arrangement.								

GPO Order Form	Mail To: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402						
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	Name				Total charges \$ _____ Fill in the boxes below		
	Organization				Credit Card No. <input type="text"/>		
	Address				Expiration Date		
	City, State, ZIP				Month/Year <input type="text"/>		
					 		
	GPO Catalog No. or Stock No.	Quantity Desired	Title of Publication	Amount	Date		
					CUSTOMER Make check or money order payable to Superintendent of Documents. If to be charged to Supt. of Docs. account, indicate Deposit Account No.		
				TOTAL \$			

APPENDIX E

SAN DIEGO ELDERLY AND HANDICAPPED
DATA COLLECTION SYSTEM STUDY FORMS

SAN DIEGO ELDERLY AND HANDICAPPED
DATA COLLECTION SYSTEM STUDY FORMS

INTRODUCTION

In 1980, the San Diego Association of Governments conducted a study, funded under a special grant from the Urban Mass Transportation Administration, to develop, test, and evaluate a data collection system to provide the data needed to plan effectively for the transportation of mobility-limited persons.(9) The study considered a wide variety of data collection techniques, including:

- . secondary data gathering from income tax and social security records;
- . self-identification survey conducted through social service agencies;
- . telephone survey of persons identified by social service agencies; and
- . application of demographic data to an urban area to locate residential concentrations of transportation-handicapped people.

STUDY FINDINGS

The San Diego study concluded that none of these techniques "provided a clear-cut, problem-free approach to identifying the transportation-handicapped and their transportation needs."(9, p.4) The study also found that:

- . most secondary data sources do not specifically identify the transportation-handicapped population and are, therefore, of limited value;
- . while self-identification surveys conducted through social service agencies can yield response rates of 15 to 25 percent, the results do not appear to yield a representative sample of the total transportation-handicapped population;
- . self-identification techniques appear most effective when used as a marketing tool once service is available;
- . clients of social service agencies do not appear to replicate the total transportation-handicapped population;

- . residential distribution of the transportation-handicapped population only crudely corresponds to their demographic characteristics; and
- . demographic indicators are best used to help focus telephone or home interview surveys of transportation-handicapped people.

STUDY RECOMMENDATIONS

Based on these findings, the San Diego study recommended a data collection system that will:

- . develop estimates of the number of transportation-handicapped people in a local area based upon national incidence rates;
- . use standardized demographic indicators to distribute spatially the transportation-handicapped population within the local area and to project the size and distribution of this group into the future;
- . conduct telephone surveys of transportation-handicapped people in high-incidence subareas to collect information on the actual incidence, travel characteristics, and transportation needs of these individuals; and
- . use self-identification surveys of social service agency clients to develop client lists and refine service parameters.

DATA COLLECTION FORMS

This appendix contains copies of the data collection forms developed and used in the San Diego study. Four forms are included:

- . Social Service Agency Transportation Needs Inventory;
- . Social Service Agency Transportation Service Inventory;
- . Transportation-Handicapped Survey; and
- . Elderly and Handicapped Callback Survey.

The Social Service Agency Transportation Needs Inventory survey was administered to each social service agency contacted at the start of the study to determine the size of the agency's clientele and the nature of the transportation services provided, if any. This information was collected by telephone and used to select agencies for participation in the study, based upon the number of client visits to the agency or the transportation services provided by the agency.

Each social service agency selected for participation in the study was subsequently visited by a member of the study team who restated the objectives of the study, reviewed the preliminary forms to be used in surveying their clients, and conducted a more detailed survey of the agency's transportation service and fleet characteristics. The latter information was recorded on the Social Service Agency Transportation Service Inventory forms.

The Transportation Handicapped Survey was issued in postcard form to clients of social service agencies. This form represented the primary self-identification element of the San Diego data collection system focusing on social service agency clients. The form was designed to collect the following three types of information about these clients:

- . disability information;
- . demographic information (such as household size); and
- . address and telephone number (to facilitate follow-up surveys and geographic distribution of results).

These forms were either mailed, handed out, or included in agency newsletters.

The Elderly and Handicapped Callback Survey was designed as a follow-up to the postcard Transportation-Handicapped Survey. The callback survey was conducted by telephone and requested more detailed information about the transportation-handicapped people who had responded to the initial postcard survey. This information included these individuals' travel behavior, transportation needs, and trip patterns.

ALL AGENCIES
TELEPHONE

No. _____

Date _____

Interviewer _____

SOCIAL SERVICE AGENCY
TRANSPORTATION NEEDS INVENTORY

1. AGENCY NAME _____

2. AGENCY ADDRESS _____

3. CONTACT PERSON _____ PHONE: _____

4. CATEGORY: _____ Private Nonprofit Agency
_____ Private Profit Agency
_____ Public Agency
_____ Other _____

5. What service is generally provided by your agency? (Note primary function, if applicable)

_____ Child Care	_____ Nursing Care
_____ Counseling	_____ Nutritional
_____ Direct Employer	_____ Recreational/Social
_____ Educational	_____ Therapy
_____ Employment Services	_____ Transportation
_____ Family Support	_____ Other _____
_____ Medical-Dental	

6. What type of clientele does your agency serve? (Percentage if possible)

_____ Elderly (age 60 and over)
_____ Financially Disadvantaged
_____ Minority
_____ Youth (under 18)
_____ Other _____
_____ Disabled
_____ Arthritis
_____ Blindness/partial sight
_____ Cardiovascular
_____ Cerebral Palsy
_____ Deafness
_____ Epilepsy
_____ M.S./M.D.
_____ Respiratory
_____ Spinal Cord/Orthopedic
_____ Mental Retardation
_____ Other: _____

7. Number of clients your agency serves per month _____ (or per week _____).

Agency Name _____

8. Does your agency provide any type of transportation service?

Yes
 No

9. Does your agency refer clients to agencies that provide transportation?

Yes. What agencies? _____
 No

10. Do your clients normally come into your agency or do you provide services at the client home or other location?

Agency
 Client Home
 Other _____

11. What types of transportation do your clients use to reach your agency?
(Percentage)

<input type="checkbox"/> Walking	<input type="checkbox"/> Volunteer Autos
<input type="checkbox"/> Public Transit	<input type="checkbox"/> Clients' Autos
<input type="checkbox"/> Shared Ride Plan	<input type="checkbox"/> Dial-a-Ride (_____)
<input type="checkbox"/> Agency Autos and Vans	<input type="checkbox"/> Taxis specify
<input type="checkbox"/> School Bus	<input type="checkbox"/> Other _____
<input type="checkbox"/> Private Bus	

12. What percentage of your clients could use:

Existing types of bus service
 Lift-equipped regular bus service
 Door-to-door sedan or van (without a lift)
 Lift-equipped door-to-door service

13. For what types of trips do your clients most need additional transportation? (Percentage)

Educational
 Emergency
 Employment
 Medical
 Shopping
 Social/Recreation
 Other (specify) _____

14. Estimate the number of additional trips (if any) needed per month:

by the agency in serving your clients
 by your clients

ON-SITE PROVIDERS

SOCIAL SERVICE AGENCY
TRANSPORTATION SERVICE INVENTORY

No. _____
Date: _____
Interviewer: _____

1. Agency name: _____

2. Person interviewed: _____
3. What are the trip purposes which your agency serves? (percentage)
 to agency
 medical/therapy
 shopping
 recreational/social
 nutritional program
 church attendance
 child care
 educational
 other _____
4. In which geographic area does your agency provide transportation service? _____

5. Is there a need to expand your transportation service?
 yes Please explain: _____
 no _____
6. Is your transportation service available to other agencies? yes no
 Please list: _____

7. What hours do your vehicles operate?
 24 hours every day
 Monday-Friday, business hrs (8:00-5:00)
 Weekday evenings (5:00-11:00 PM)
 Weekday early mornings (4:00-8:00 AM)
 Weekends
8. Who is eligible to use your service?
 only your clients
 non-clients meeting your criteria.
 Pls state criteria: _____
 Other non-clients.
9. How many one-way person trips are made each week?
 a. In agency vehicles: _____
 b. In volunteer or staff vehicles: _____
10. Average number of persons (excluding the driver) per trip: _____
11. Transportation costs are funded in your agency by: (Please indicate amount)
 Contribution rec'd from another agency.
 Contributions rec'd from individuals.
 Client billings & fares
 Client donations

11. Continued.
 Local gov't (specify: _____)
 State gov't (specify: _____)
 Fed. gov't (specify: _____)
 Volunteer participants (not directly related to client-recipient)
 Other: _____
12. Do you charge a fare for your service?
 Yes (Amount: _____)
 No
13. Do you ask for a donation? Yes No
14. Does your agency contract for transportation service or operate with your own agency transportation service?
 Contract Own service
15. If transportation was contracted, what is agency cost per mile (or other basis, as passenger, trip, time period)?
 Pls specify type of contractual agreement: _____
16. Do you use volunteer or staff-owned vehicles for client transportation? Yes No
17. If so, how many are available?
 Total _____ Avg. workday _____
18. Are the volunteer or staff drivers reimbursed for the use of their vehicles?
 a. Mileage at _____/mile.
 b. \$ _____ per day
 c. None _____
19. What type of drivers do you use?
 Volunteer Designated drivers
 Staff Other: _____
20. Is there a drivers training program?
 hours of initial classroom training
 hours of initial in-vehicle training
 hours per year of refresher training
21. Transportation costs: _____ year
 actual
 budgeted
 Capital expenditures: _____
 Depreciation: _____
 Maintenance: _____
 Fuel: _____
 Salaries: _____
 Allocated Overhead: _____
 Vehicles Related Insurance: _____
 Other (Identify) _____
 Total: _____
22. Cost per mile to operate: _____

TRANSPORTATION HANDICAPPED SURVEY

We need accurate information to aid in improving transportation services for you. Please complete this card and mail it. No postage is required. For assistance in completing this form please call CPO collect at 236-5378. If you are not transportation handicapped, please pass this form along to someone who is.

6

1. DO YOU EXPERIENCE DIFFICULTY IN:
(Check all that apply)

- Walking
- Riding the Bus
- Driving a Vehicle
- Riding in a Vehicle

10

2. WHAT IS YOUR PRIMARY DISABILITY: (one response only)

- Arthritis
- Blindness/Partial Sight
- Cardio-Vascular
- Cerebral Palsy
- Epilepsy
- Mental Retardation
- M.S./M.D.
- Respiratory
- Spinal Cord/Orthopedic
- Other (Specify) _____

12

3. BY WHAT MEANS DO YOU TRAVEL MOST OFTEN? (One response only)

- Bus
- Taxi
- Dial-a-Ride
- Drive Yourself
- Social Service Agency Vehicle
- Passenger in Vehicle Driven by Household Member
- Passenger in Vehicle Driven by Non-Household Member
- Walk
- Other (Specify) _____

13

4. HOW MANY TRIPS DO YOU NEED TO MAKE?

_____ PER MONTH

16

5. HOW MANY ROUND TRIPS DO YOU CURRENTLY MAKE PER MONTH?

6. FOR WHAT MAIN PURPOSE DO YOU NEED TO TRAVEL?

19

7. WHAT IS YOUR SEX? _____

21

8. WHAT IS YOUR AGE? _____

22

9. HOW MANY VEHICLES ARE OWNED BY MEMBERS NOW LIVING IN YOUR HOUSE?

24

10. HOW MANY PERSONS INCLUDING YOURSELF LIVE IN YOUR HOUSE?

25

11. WHAT TYPE OF HOUSING DO YOU LIVE IN?

26

- Single Family
- Mobile Home
- Apartment
- Condominium
- Townhouse
- Duplex
- Group Facilities
- Other _____

12. WHAT ARE THE LAST FOUR DIGITS OF YOUR SOCIAL SECURITY NUMBER? (For Statistical purposes only.)

27

13. PHONE: _____

31

14. PLEASE WRITE YOUR NAME AND RETURN ADDRESS ON THE ENCLOSED ENVELOPE AND RETURN TO CPO.

Thank You For Participating!

If you receive more than one copy of this survey please return only one copy for each person.

**TRANSPORTATION HANDICAPPED
SURVEY FORM CONTROL**

Form Numbers	Agency Name	Agency Number	Surveyor	Date Forms Delivered

ELDERLY AND HANDICAPPED CALLBACK SURVEY

Interviewer:

I.D. # on Postcard

(Col. 1-5)

Date:

(Col 6-8; 105 = Jan 5)

Day of Week:

(Col 9; 1=Sun., 7=Sat.)

Time:

HELLO, MY NAME IS _____ FROM THE SAN DIEGO ASSOCIATION OF GOVERNMENTS. MAY I PLEASE SPEAK TO _____?

(See Name on back of Postcard).

- . If that person is not available, set up a time when we can call back. Date: _____ Time: _____.
- . When the person who filled out the survey is reached, reintroduce yourself and continue

THIS IS A FOLLOW-UP CALL FROM THE TRANSPORTATION HANDICAPPED SURVEY YOU FILLED OUT AND RETURNED TO US ABOUT A YEAR AGO. WE WOULD APPRECIATE A FEW MORE MINUTES OF YOUR TIME TO ANSWER SOME ADDITIONAL QUESTIONS.

- . If this not a convenient time, set up a time when we can call back. Date: _____ Time: _____.

1. YOU INDICATED ON THE SURVEY YOU RETURNED TO US THAT YOUR PRIMARY DISABILITY IS _____. IS THIS CORRECT?

Col. 10, 11. Code one response

Code

- | | |
|-----------------------------------|--|
| 01 ___ Blind or partially sighted | 10 ___ General problems associated with age. |
| 02 ___ Cardio-Vascular | 11 ___ Other |
| 03 ___ Arthritis | |
| 04 ___ Cerebral Palsy | |
| 05 ___ Spinal Cord/Orthopedic | |
| 06 ___ M.S./M.D. | |
| 07 ___ Respiratory | |
| 08 ___ Mental Retardation | |
| 09 ___ Epilepsy | |

2. DOES YOUR DISABILITY MAKE IT DIFFICULT TO RIDE A PUBLIC BUS?

Col. 12

Code

01 ___ Yes

02 ___ No, (go to Q4)

3. WHAT IS THE PRIMARY DIFFICULTY YOU EXPERIENCE WHEN RIDING A BUS?

Col. 13, 14. Code one response

Code

01 ___ Getting to and from the bus stop.

02 ___ Waiting for a bus while standing.

03 ___ Waiting for a bus while sitting.

04 ___ Seeing the name or route number on a bus.

05 ___ Getting up or down the steps on a bus.

06 ___ Asking the driver or someone else for information or assistance.

07 ___ Hearing what the driver or someone else is saying.

08 ___ Putting coins in the farebox.

09 ___ Getting in and out of a seat on a bus.

10 ___ Holding on to the handrail on a bus.

11 ___ Riding in a bus while sitting.

12 ___ Riding in a bus while standing.

13 ___ Holding on to personal belongings while riding in a bus.

14 ___ Knowing where to get off a bus.

15 ___ Reaching and pulling the signal cord on a bus.

16 ___ Pushing open the exit doors on a bus.

17 ___ No Bus in Area

18 ___ Never Used Bus/Don't know how to use bus.

(QUESTIONS 4 and 5 WILL EACH BE CODED ON A SEPARATE CARD)

4. WHAT TRIPS DID YOU MAKE YESTERDAY?

Ask for specific destinations and for each trip. Obtain the time of day, the distance one way, and how he/she got there. Limit to 7 trips. LAST TRIP SHOULD BE TRIP HOME.

	TRIP TYPE (PURPOSE OF DESTINATION) CODE	TIME OF DAY (24 Hr. Clock)	DISTANCE (miles one way)	MODE	CODE
1.					
2.					
3.					
4.					
5.					
6.					
7.					

TRIP TYPES
(Destinations)

Code

- 01 Work
- 02 School/Training
- 03 Grocery Shopping
- 04 Shopping for goods other than food
- 05 Health Care or physical therapy
- 06 Eating meals at a restaurant/nutrition program
- 07 Social, religious or recreational activities
- 08 Personal Business (library, bank, etc.)
- 09 Airport, bus or train depot
- 10 Other
- 11 Home
- 12 Did not make any trips

MODES

Code

- 01 Drove an automobile
- 02 Passenger in auto driven by household member
- 03 Passenger in auto driven by non-household member
- 04 Dial-A-Ride
- 05 Taxi
- 06 Bus
- 07 Social Service Agency Vehicle
- 08 Walk
- 09 Other

Use 8 columns for each trip beginning in column 11. Example:

col.	0	3	1	2	10.	0	3	
	11	12	13	14	15	16	17	18

The respondent went shopping at 12:00 PM. The distance was 10 miles, the respondent was a passenger in an auto driven by a non-household member.

Beginning Column

1	Postcard I.D. NO.
11, 21, 31, 41, 51, 61, 71	Purpose of Destination
13, 23, 33, 43, 53, 63, 73	Time of Day (24 hr. clock) 12 AM = 2400, 12 noon = 1200, 6 pm - 1800)
15, 25, 35, 45, 55, 65, 75	Distance (round to nearest mile)
18, 28, 38, 48, 58, 68, 78	Mode

5. WHAT TRIPS DID YOU MAKE THE DAY BEFORE YESTERDAY?

Again, for each trip obtain the time, distance, and mode.

See Q. 4 for coding instructions.

	TRIP TYPE (PURPOSE OF DESTINATION) CODE	TIME OF DAY (24 Hr. Clock)	DISTANCE (miles one way)	MODE	CODE
1.					
2.					
3.					
4.					
5.					
6.					
7.					

6. I WILL READ TO YOU A LIST OF TRIP TYPES. PLEASE INDICATE THE NUMBER OF TIMES IN THE LAST MONTH THAT YOU MADE THAT TYPE OF TRIP.

COL. 15-34. Code 00 if no trips were made, 01 if one trip was made, etc., for each trip type.

<u>TRIP TYPE</u>	<u># TIMES LAST MONTH</u>
Work	_____
School or Training	_____
Grocery shopping	_____
Shopping for goods other than food	_____
Health care of physical therapy	_____
Eating meals at a restaurant or at a nutrition program	_____
Social, religious, or recreational activities	_____
Personal Business (library, bank, etc.)	_____
Airport, bus or train depot	_____
Other	_____

7. HAVE YOU EVER USED DIAL-A-RIDE?

Col 35.

Code

- 01 ___ Yes (Continue with Q8)
- 02 ___ No (go to Q10)
- 03 ___ Has never heard of Dial-A-Ride
(go to Q10)

8. HAVE YOU HAD ANY PROBLEMS USING DIAL-A-RIDE?

Col 36.

Code

- 01 ___ Yes (Go to Q9)
- 02 ___ No (Go to Q10)

9. WHAT IS THE MAJOR PROBLEM YOU HAVE HAD?

Col 37. Code one response

Code

- 01 ___ Scheduling
- 02 ___ Unreliable Service (ask for specific instances)

- 03 ___ Hours of Operation
- 04 ___ Qualifying for service
- 05 ___ Necessary equipment not available
- 06 ___ Too Crowded
- 07 ___ Other (Specify) _____

10. ARE YOU SATISFIED WITH YOUR CURRENT TRANSPORTATION ARRANGEMENTS?

Col. 38

Code

- 01 ___ Yes
- 02 ___ No (Ask for specific problems) _____

11. ARE THERE TRIPS WHICH YOU WANT OR NEED TO MAKE BUT ARE NOT ABLE TO BECAUSE TRANSPORTATION IS NOT AVAILABLE?

Col. 39

Code

01 ___ Yes (Continue with Q12)

02 ___ No (Go to Q13)

12. DURING THE LAST MONTH, WHAT TYPES OF TRIPS DID YOU WANT TO MAKE? HOW OFTEN? WHAT TIME OF DAY?

Col. 40-74. If respondent lists more than 7 trips, code first 7 only. Use 5 columns for each trip: first 2 for trip type (see codes below), next 2 for frequency, and 1 column for time of day (see codes below). Code "00" under how often if no trips of a given type were desired.

<u>Code</u>	<u>Trip Types:</u>	<u>How Often</u>	<u>Time of Day</u>
01	Work		
02	School or training		
03	Grocery Shopping		
04	Shopping for goods other than food		
05	Health Care or physical therapy		
06	Eating meals at a restaurant or at a nutrition program		
07	Social, religious, or recreational activities		
08	Personal Business (library, bank, etc.)		
09	Airport, bus or train depot		
10	Other		

Code Time of Day

01 Morning

02 Afternoon

03 Evening

13. WHAT IS THE HIGHEST GRADE OF SCHOOL YOU COMPLETED?

Col. 75, 76. Code year completed.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17+

14. I WILL READ A LIST OF INCOME RANGES. PLEASE INDICATE THE RANGE THAT DESCRIBES THE INCOME OF YOUR ENTIRE HOUSEHOLD IN 1980 BEFORE TAXES. Col. 77,78.

Code

01 ___ \$0 - 3,000

02 ___ \$3,000 - 5,000

03 ___ \$5,000 - 7,000

04 ___ \$7,000 - 10,000

05 ___ \$10,000 - 15,000

06 ___ \$15,000 - 20,000

07 ___ \$20,000 - 25,000

08 ___ \$25,000 - 40,000

09 ___ \$40,000 or over

10 ___ Don't know

11 ___ Refused

APPENDIX F

TACOMA SELF-IDENTIFICATION TECHNIQUES STUDY FORMS

TACOMA SELF-IDENTIFICATION TECHNIQUES STUDY FORMS

INTRODUCTION

In 1979, the City of Tacoma, through its transit operator, Tacoma Transit System, performed a study to demonstrate the use of self-identification techniques to collect information on the location and travel needs of transportation-handicapped people.(12) The study used several ongoing data collection techniques, including a written survey that was completed in conjunction with registration for Tacoma Transit's specialized transportation services, as well as individual and group summaries of trips made using these services. The study also used data on the transportation-handicapped population collected from periodic counts of fixed-route bus passengers, passenger comments sent to the operators of specialized transportation services, and other data and studies prepared by social service providers and other planning organizations. The report resulting from this study was intended to serve as a model for others considering the use of self-identification techniques for collecting information on transportation-handicapped people.

STUDY FINDINGS

Based on the Tacoma study, the following primary findings were developed:

- . no single source of data will yield the amount or variety of data necessary to plan and provide effective specialized transportation services; and
- . one-time data collection efforts yield data which is only valid for one or two years.

STUDY RECOMMENDATIONS

The Tacoma study made the following recommendations for those collecting information for use in planning transportation services for transportation-handicapped people:

- . transportation providers should determine exactly what pieces of information they need prior to beginning a data collection effort.
- . a combination of data sources should be used to gather a broad base of valid information for use in planning for the needs of transportation-handicapped people.

- . self-identification questionnaires should be:
 - . of reasonable length so as not to discourage accurate completion;
 - . easy to read and to fill out;
 - . based whenever possible on "closed form" questions;
 - . simply worded to ensure comprehension by the respondent;
 - . tactfully phrased; and
 - . concerned only with information that is considered necessary.
- . data collection methods should be ongoing, permitting the regular collection of new information and the updating of existing information.

DATA COLLECTION FORMS

The data collection program utilized during the Tacoma study dealt with both secondary and primary data. Secondary data included:

- . input provided by local citizens groups representing the disabled;
- . monthly counts of transportation-handicapped people using the local fixed-route bus service;
- . records of passenger compliments, complaints, and suggestions; and
- . information and special studies prepared by local social services providers and other planning organizations dealing with transportation-handicapped people.

The primary data collection methods involved the use of several ongoing survey techniques, including:

- . client registration forms;
- . trip tickets; and
- . trip rosters.

The client registration form was a survey questionnaire designed for persons seeking to use specialized transportation services provided by the local transit operator. The purposes of the two-page form were:

- . to establish the client's eligibility for the specialized services;
- . to enable elderly and handicapped persons to identify themselves and their transportation needs; and
- . to provide input to the transit operator's data management system which was designed to maintain client records, analyze data, and monitor program operations.

The client registration form requested information concerning each registrant and his or her disability(ies), travel habits, travel problems, and travel needs. The forms were completed by telephone, mail, or in-person with the help of a trained staff person. In addition to the local transit operator, the client registration forms were completed by several local social service organizations which agreed to fill out the forms for their clients. This increased the data base resulting from the collection of client registration forms.

A copy of the client registration form and description of the specific data elements requested by the form are contained at the end of this appendix.

The trip ticket represented the second primary data collection device used during the Tacoma study. Its purpose was:

- . to provide information to drivers of specialized transportation vehicles regarding their passengers and their trip requirements; and
- . to establish a permanent record of all trips made on specialized transportation vehicles.

A trip ticket was prepared for each person-trip and included information concerning the client's name, origin, destination, appointment time, and special requirements. A separate trip ticket was completed for each direction of a round trip, with a staff person completing one portion of the trip ticket and the driver completing the remainder.

Trip tickets provided a continuous record of all individual trips using specialized transportation vehicles. They were used primarily for persons making medical and therapy trips where origins, destinations, and appointment times vary from client to client, thus making individual trip records necessary.

A copy of the trip ticket and descriptions of the specific data elements requested by the form are contained at the end of this appendix, following the client registration form and data element descriptions.

The trip roster was the third source of primary data about the transportation-handicapped population used in the Tacoma study. It summarized many-person, one-way trips provided by specialized transportation vehicles serving pre-routed, subscription travel by four or more passengers. Typical destinations included meal sites, activity centers, and grocery stores.

The trip roster included information concerning the client's name, origin, and trip schedule. Like the travel ticket, trip rosters were partially completed by staff and partially completed by the drivers.

A copy of the trip roster and descriptions of the specific data elements requested by the form are contained at the end of this appendix, following the trip ticket form and data element descriptions.

Client No.

TS001X02
CITY OF TACOMA
TRANSIT DEPARTMENT
E+H TRANSPORTATION REGISTRATION FORM
(Confidential)

Prepared By _____
Verified By _____

C 5

1. NAME _____ 2. DATE _____

3. ADDRESS _____

4. CITY and STATE _____

- 5. Do You Have A Drivers License Or A Permit?
(Y or N)
- 6. Do You Own A Vehicle?
(Y or N)
- 7. Do You Drive Your Own Vehicle Or Any Vehicle?
(Y or N)

- 8. If You Don't Drive, Why?
A. Unable To Drive
B. Can't Afford To Operate and Maintain
A Vehicle
C. Can't Obtain Insurance
D. Don't Wish To Drive
E. Other _____

- 9. How Far Do You Live From The
Nearest Bus Stop?
A. 0-1 Blocks
B. 1-2 Blocks
C. 2-3 Blocks
D. 3-4 Blocks
E. Over 4 Blocks

10.

N	N	A	A

1. _____
2. _____
Which Bus Routes Are You Closest To?

11. Can You Use The Present Bus System? (Y or N)

12. Do You Have Any Of The Following Problems If You Use or Would Like To Use The Bus System? (Circle All The Applicable Answers)

- A. None
- B. Difficulty Getting To Bus
- C. Difficulty Getting On Bus
- D. Difficulty Getting From Bus To Destination
- E. Difficulty Making Transfers
- F. Infrequent Service
- G. Buses Don't Go Where I Want Or Need To Go
- H. Don't Understand How To Use The Bus
- I. Other _____

- 13. When Taking Local Trips
Which Do You Use Most Often?
A. City Bus
B. Taxi
C. Family
D. Your Own Vehicle
E. Walking
F. Social Service Agencies
G. Friends
H. Other _____

- 14. What Is Your 2nd Most Common
Way For Trips?
A. City Bus
B. Taxi
C. Family
D. Your Own Vehicle
E. Walking
F. Social Service Agencies
G. Friends
H. Other _____

- 15. How Often Do You Need To Take Local Trips?
A. Everyday
B. Almost Everyday
C. 1 or 2 Times Per Week
D. 1 or 2 Times Per Month
E. Other _____

- 16. What Is Your Greatest Need For Transportation?
A. Employment
B. Shopping
C. Medical
D. Recreation
E. Other _____

17. Do You Ever Use Other Social Service Agencies For Your Transportation Needs? (Y or N)

- 17A. If Yes, Which Ones: A. _____
- 17B. B. _____
- 17C. C. _____

18. Where Do You Go Most Often (Doctor's Office, Grocery Store, etc.)?
(List Major Problem When Taking Each Trip, If Any)

	DESTINATION 1	Code/Census Tract
18A. NAME	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
18B. ADDRESS	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
18C. PROBLEM	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>

	DESTINATION 2 (If Any)	Code/Census Tract
18D. NAME	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
18E. ADDRESS	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>
18F. PROBLEM	<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>

TACOMA CLIENT REGISTRATION FORM DATA ELEMENTS

CLIENT NUMBER: A five-digit identification number assigned to each client by Specialized Transportation.

PREPARED BY: Name of the individual completing the form. This may be a SHUTTLE staff person or any other person.

VERIFIED BY: Name of the individual verifying that the form has been completed correctly. This must always be a SHUTTLE staff person.

C/ /1: Transaction-type code box. The code "A" is placed in this box to indicate that the information is to be added into the computer.

NAME: Name of the individual registering for service.

DATE: Date of registration.

ADDRESS: Home address of the client.

APT.: Apartment number of the client. When not applicable, this item may be left blank.

CITY: Name of the city in which the client lives.

STATE: Washington.

ZIP CODE: Zip code of the client.

C/ /2 Transaction-type code box. The code "A" is placed in this box to indicate that the information is to be added into the computer.

PHONE: Telephone number of the client. When not applicable, this item is completed with the word NONE.

DATE OF BIRTH: Month, day, and year the client was born.

AGE: Age of the client.

SEX: Sex of the client.

ETHNIC GROUP: Ethnic group or race of the client.

IN EMERGENCY NOTIFY:	Name of a relative, friend, or neighbor who may be contacted in the event of an emergency. This person would be contacted if the client named on the form were involved in an accident while riding in a Tacoma Transit vehicle, or if the client were to become ill while using a Tacoma Transit service.
PHONE:	Telephone number of the person listed as the client's emergency contact.
SPECIAL INSTRUCTION TO LOCATE ADDRESS;	Includes such things as "Use alley entrance", or "Orchard Village Nursing Home". When not applicable, this item may be left blank.
SPECIAL INSTRUCTIONS IF ASSISTANCE NEEDED:	Includes such things as "Needs lift-equipped vehicle" or "Must have an escort". When not applicable, this item may be left blank.
C/ /3:	Transaction-type code box. The code "A" is placed in this box to indicate that the information is to be added into the computer.
EMPLOYMENT STATUS:	Employment status of the client.
UNEMPLOYED, RETIRED, OR VOLUNTEER:	This section is completed only if the client is unemployed, retired, or a volunteer. When not applicable, this item may be left blank.
EMPLOYED:	This section is completed only if the client is employed. When not applicable, this item may be left blank. NOTE: Either "UNEMPLOYED, RETIRED, OR VOLUNTEER" or "EMPLOYED", whichever applies, <i>must</i> be completed by each client.
HOUSING STATUS:	Housing status of the client.
DO YOU LIVE WITH OTHERS?:	Whether or not the client lives alone or with other people.
HOW MANY?:	The number of people with whom the client lives.
INCOME STATUS:	Annual or monthly income of the client.
DISABILITY STATUS:	Whether the client has no disability or, if the client does have a disability, whether the disability is permanent or temporary.

ADAPTIVE ITEMS NEEDED:	Whether the client uses no adaptive items or, if the client does use one or more adaptive items, specifically which items are needed.
YOUR MAJOR DISABILITY IS:	Whether the client has no disability or, if the client does have one or more disabilities, specifically what the client's major disability is. (When a client has more than one disability, the major disability is used to answer the question, and all other disabilities are circled on the form.)
MOBILITY LIMITATIONS:	Specific information regarding the client's mobility limitations.
RANK THE FOLLOWING:	This item asks the client to rank eight items according to which is most important to him/her.
SIGNATURE:	Signature of the client.
CENSUS TRACT:	The number of the census tract in which the client lives.
ELIGIBILITY CLASS:	Whether the client is handicapped, elderly, or elderly with a handicap.
BUS PASS TYPE:	Whether the client's bus pass is permanent, temporary, or a replacement.
BUS PASS NUMBER:	The control number printed on the client's <i>permanent</i> bus pass. When not applicable, this item may be left blank.
EXPIRATION DATE:	The date that the client's <i>temporary</i> bus pass will expire. When not applicable, this item may be left blank.
PROOF OF AGE:	The name of the document submitted as proof of age when the client applied for his/her senior citizen bus pass. Not applicable to persons with handicapped bus passes or to persons with no bus pass.
PROOF OF CONDITION:	The name of the document submitted as proof of condition when the client applied for his/her handicapped bus pass. For example, a doctor's statement or Social Security Disability Award letter. Not applicable to persons with senior citizen bus passes, or to persons with no bus pass.
C/ /4:	Transaction type code box. The code "A" is placed in this box to indicate that the information is to be added into the computer.

PROGRAM: The Specialized Transportation program or programs for which the client is registering.

DAY OF WEEK: The days of the week on which the client requests service. Only applicable to clients requesting congregate (meal site) or home-delivered meals.

START DATE: The month, day and year on which the client is to begin receiving service. Only applicable to clients requesting congregate (meal site) or home-delivered meals.

END DATE: The month, day, and year on which the client is to stop receiving service. Only applicable to clients requesting congregate (meal site) or home-delivered meals.

PAGE 2

CLIENT NUMBER: Same as page one. Only completed on Client Registration Forms consisting of two pages stapled together. Not applicable on forms which are printed on both sides of one sheet of paper.

PREPARED BY: Same as above.

VERIFIED BY: Same as above.

C/ /5: Transaction type code box. The code "A" is placed in this box to indicate that the information is to be added into the computer.

NAME: Same as above.

DATE: Same as above.

ADDRESS: Same as above.

CITY AND STATE: Same as above.

DO YOU HAVE A DRIVER'S LICENSE OR A PERMIT?: Whether the client possesses a valid driver's license.

DO YOU OWN A VEHICLE?: Whether the client owns a vehicle.

DO YOU DRIVE YOUR OWN VEHICLE OR ANY VEHICLE?: Whether the client drives, regardless of driver's license or vehicle ownership.

IF YOU DON'T
DRIVE, WHY?:

Reason that the client does not drive a vehicle.
When not applicable, this item may be left blank.

HOW FAR DO
YOU LIVE FROM
THE NEAREST
BUS STOP?:

The distance, in blocks, between the client's home
and the nearest bus stop.

WHICH BUS
ROUTES ARE
YOU CLOSEST
TO?:

The names of two bus routes (if any) that are
nearest to the client's home.

CAN YOU USE
THE PRESENT
BUS SYSTEM?:

Whether the client is able to use the existing bus
system.

DO YOU HAVE
ANY OF THE
FOLLOWING
PROBLEMS IF
YOU USE OR
WOULD LIKE TO
USE THE BUS
SYSTEM?:

Whether the client has no problems using the bus, or
if the client does have one or more problems,
specifically what those problems are.

WHEN TAKING
LOCAL TRIPS,
WHICH DO YOU
USE MOST
OFTEN?:

The mode of travel most commonly used by the
client for local trips.

WHAT IS YOUR
SECOND MOST
COMMON WAY
FOR TRIPS?:

The second most common mode of travel used by
the client for local trips.

HOW OFTEN DO
YOU NEED TO
TAKE LOCAL
TRIPS?:

Average frequency of the client's local trips.

WHAT IS YOUR
GREATEST NEED
FOR
TRANSPORTATION?:

The type of trip for which the client most needs
transportation.

DO YOU EVER
USE OTHER
SOCIAL SERVICE
AGENCIES FOR
YOUR
TRANSPORTATION
NEEDS?:

Whether the client uses any social service transportation program other than Pierce Transit's SHUTTLE service.

IF YES, WHICH
ONES?:

Name of the social service agency transportation services used by the client. When not applicable, this item may be left blank.

WHERE DO YOU
GO MOST
OFTEN?:

Specific information about the client's first and second most common destinations.

NAME:

Name of the doctor, grocery store, church, etc. , to which the client goes most often.

ADDRESS:

Address, name of the facility, or intersecting streets nearest the location of the client's most common destination.

PROBLEM:

Any *transportation* problem the client has in going to his/her most common destination.

NAME:

Name of the doctor, grocery store, church, etc., that is the client's second most common destination.

ADDRESS:

Address, name of the facility, or intersecting streets nearest the location of the client's second most common destination.

PROBLEM:

Any *transportation* problem the client has in going to his/her second most common destination.

Type	Card ID	Rt. ID	Rt.#
A	T 0 1		

Trip Typ

TRIP TICKET

Will Call

58152

TS003X01

Driver ID	Vehicle ID

- | | | | |
|----|-----------------|----|------------|
| AC | Activity Center | RC | Recreation |
| ED | Education | RL | Religion |
| EM | Employment | SH | Shopping |
| ET | Entertainment | TH | Therapy |
| HD | Home Delivery | VS | Visiting |
| MD | Medical | OT | Other |
| MS | Meal Site | | |

Date	Time	CORR
M M D D	H H M M	CODE

Client ID	CLIENT NAME (Last, First Initial)

Card ID
T 0 2

FROM

Name
Address
Apt/Bldg

SPECIAL INSTRUCTIONS

<input type="checkbox"/> Wheelchair	<input type="checkbox"/> Walker	<input type="checkbox"/> Driver Escort Needed
<input type="checkbox"/> Front Entrance	<input type="checkbox"/> Back Entrance	<input type="checkbox"/> Side Entrance
<input type="checkbox"/> Use Alley	<input type="checkbox"/> Extra Passenger	
OTHER:		

TO

Name
Address
Apt/Bldg

	Time	Mileage
Day Start		
Trip Start		
Trip End		
Day End		

Cancel Reasons

- A Not Home
- B In Hospital
- C Moved
- D Deceased
- E No Show
- F Notified Off.
- G Notified Dr.
- H Holiday
- I Illness
- J Other
- K Transfer

Contract Vehicles Only	
Fare	Driver Name
Total Fare	
- Adj.	Miles
Net Fare	

Cancel Reason	Day Trip Seq. Nr

<input type="checkbox"/> Client Problem	<input type="checkbox"/> Complaint	<input type="checkbox"/> Other

DRIVER REMARKS

TACOMA TRIP TICKET DATA ELEMENTS

- TYP A:** Transaction type. This code will always be "A" for add. This tells Data Processing staff that the information from this trip ticket is to be added to the computer records.
- CARD ID/** Card identification. The code "T" indicates that the information following is from a trip ticket. The number 01 identifies the information as being from the upper half of the trip ticket.
- RT. ID:** Each regular subscription route, including meal site, activity center, home delivered meals, and shopping trips have been assigned an identification number. This number is written on a trip ticket only when the client is being transported to or from one of the destinations served by a regular route. Not applicable to regular demand response trips or to contract vehicles.
- RT. #:** This item is filled in with the code "A" when the driver is assisting another driver with his/her route.
- TRIP TYPE:** The purpose of this trip. The list of codes used to complete this item is shown directly below the TRIP TYPE code box. The list includes AC Activity Center, ED - Education, EM - Employment, HD -Home Deliver (of meals), MD - Medical, MS - Meal Site, and SH - Shopping.
- WILL CALL:** A check mark in this box indicates that the trip ticket is being used to record a home-bound (return) trip.
- DRIVER ID:** Each SHUTTLE driver has been assigned an identification number. The number is written in this box to identify the driver who provided the trip. Trips provided by contract vehicles are identified by one number, regardless of individual driver.

VEHICLE ID: Each SHUTTLE vehicle has been assigned an identification number. The number is written in this box to identify the vehicle used to provide the trip. One number has been assigned to identify contract vehicles.

DATE: The month and day that the trip is provided.

TIME: The hour and minutes, in military time, that the client is scheduled to be picked up.

CORR CODE: Correction code. The code "C" is written in this box when the trip ticket is resubmitted to Data Processing with one or more corrections.

CLIENT ID: The five-digit identification number assigned to the client by Specialized Transportation.

CLIENT NAME: The last name and first initial of the client taking the trip.

CARD ID/T02: Card identification. The code "T" indicates that the information following is from a trip ticket. The number "02" identifies the information as being from the lower half of the trip ticket.

**FROM/NAME/ADDRESS/
APT/BLDG:** This section is used to identify the location where the client is picked up. One or more spaces may be filled out, depending on the amount of information necessary for a positive identification of the location. For example, if the client is to be picked up at a well-known location such as a hospital, only the name of the facility is necessary. If the client is to be picked up at his/her home, only the address and apartment number (if any) are necessary.

SPECIAL INSTRUCTIONS: Special circumstances that the SHUTTLE driver should be aware of. A check mark is placed in each applicable box. For example, check marks might be placed in the boxes for "Wheelchair" and "Driver Escort Needed:"

**TO/NAME/ADDRESS/
APT/BLDG:** Similar to FROM above. This item identifies the client's destination.

DAY/START/TIME: The hour and minutes, in military time, that the driver leaves the Tacoma Transit garage to begin the first trip of the day. This item is only filled out on the trip ticket (or trip roster) used to record the first trip of the day. Not applicable to contract vehicles.

DAY START MILEAGE: The odometer reading when the driver leaves the Tacoma Transit garage to begin the first trip of the day. This item is only filled out on the trip ticket (or trip roster) used to record the first trip of the day. Not applicable to contract vehicles.

TRIP START/TIME: The hour and minutes, in military time, that the trip is completed. This includes the time needed for the driver to escort the client to the door. Not applicable to contract vehicles.

TRIP START/MILEAGE: The odometer reading when the driver arrives at the client's pick up location. Not applicable to contract vehicles.

TRIP END/TIME: The hour and minutes, in military time, that the trip is completed. This includes the time needed for the driver to escort the client to the door. Not applicable to contract vehicles.

TRIP END/MILEAGE: The odometer reading when the driver arrives at the client's destination. Not applicable to contract vehicles.

DAY END/TIME: The hour and minutes, in military time, that the driver returns to the Tacoma Transit garage. This item is only filled out on the trip ticket (or trip roster) used to record the last trip of the day. Not applicable to contract vehicles.

DAY END/MILEAGE: The odometer reading when the driver returns to the Tacoma Transit garage. This item is only filled out on the trip ticket (or trip roster) used to record the last trip of the day. Not applicable to contract vehicles.

CONTRACT VEHICLES ONLY/TOTAL FARE: The total charge for the trip provided by a contract vehicle (taxi).

-ADJ.: Minus adjustment. The adjustment is the portion of the contract vehicle fare that is paid by the client. The amount of the adjustment is 50¢ for the client and 10¢ per additional passenger.

NET FARE: The difference of TOTAL FARE less ADJUSTMENT. This portion of the fare is paid by Tacoma Transit.

DRIVER NAME: The last name of the contract vehicle driver.

MILES: The exact number of miles traveled by the contract vehicle for the trip.

CANCEL REASON: The explanation given when the trip is cancelled. The list of cancellation reasons and codes is shown to the left of the CONTRACT VEHICLES ONLY section.

DAY TRIP SEQ. NR.: Day trip sequence number. This item is used to record the sequence of all trips provided by an individual SHUTTLE driver. The day trip sequence number of a driver's first trip of the day is 01, the second trip of the day is 02, and so forth. The sequence numbers of trips are maintained whether the trip data is recorded on trip tickets, trip rosters, or a combination of the two. Not applicable to contract vehicles.

CLIENT PROBLEM/
COMPLAINT/OTHER/
DRIVER REMARKS: This section is used by the SHUTTLE driver to record any problems, complaints or other comments regarding the client. Not applicable to contract vehicles.

- TRIP ROSTER -

ROSTER NR TRANS. TYPE ROUTE ID ADDED ROUTE TRIP TYPE

CARD ID	DRIVER	VEHICLE	DATE			DAY START (RUN 1)		TRIP START		TRIP END		DAY END		DAY TRIP NR
			M	M	D	D	TIME	MILEAGE	TIME	MILEAGE	TIME	MILEAGE	TIME	
H01	M													
H02	T													
H03	W													
H04	T													
H05	F													

START (RUN 2)

H06	M													
H07	T													
H08	W													
H09	T													
H10	F													

CARD ID	CLIENT NUMBER	CLIENT NAME (Last, First Initial)	CLIENT ADDRESS (St. #, Dir., Name, Type St.)	SCHEDULED TRIPS					CANCEL-LATIONS					SPECIAL REMARKS, INSTRUCTIONS OR DRIVER COMMENTS	
				M	T	W	T	F	M	T	W	T	F		
L01															
L02															
L03															
L04															
L05															
L06															
L07															
L08															
L09															
L10															
L11															
L12															
L13															
L14															
L15															
L16															
L17															
L18															
L19															
L20															

CANCEL REASONS:

- a. NOT HOME
- b. IN HOSPITAL
- c. MOVED
- d. DECEASED
- e. NO SHOW
- f. NOTIFIED OFFICE
- g. NOTIFIED DRIVER
- h. HOLIDAY
- i. ILLNESS
- j. OTHER

TOTALS

TACOMA TRIP ROSTER DATA ELEMENTS

- ROSTER NR:** Roster number. The five-digit control number assigned to every trip roster by Specialized Transportation.
- TRANS TYPE:** Transaction type. This code will always be "A" for ADD. This tells Data Processing that the information from this trip roster is to be added to the computer records.
- ROUTE ID:** Each regular subscription route, including meal site, activity center, home-delivered meal, and shopping trips, has been assigned an identification number.
- ADDED ROUTE:** This item is filled out with the code "A" when the driver assists another driver with his/her route. When the roster is used for the driver's regular route, this item is left blank.
- TRIP TYPE:** The purpose of the trip. For example, AC - Activity Center, HD - Home Delivery (of meals), MS - Meal Site, and SH - Shopping.
- CARD ID/H01/H02/ETC.:** Card identification. The code "H" indicates that the information following is from the header section (upper half) of a trip roster. Because each line on the trip roster is keypunched on a separate IBM card, the numbers H01, H02, etc. are keypunched to identify the proper sequence of data on the trip roster.
- DRIVER:** The identification number of the driver who provided the trip. The driver's identification number must be written on the line corresponding to the day of the week that the trip is to be provided.
- For example, Driver 25 transported clients to a meal site on Tuesday. The code "25" must be written on header line 02, Tuesday.
- VEHICLE:** The identification number of the SHUTTLE vehicle used to provide the trip. The vehicle identification number must be written on the line corresponding to the day of the week that the trip is to be provided.
- DATE:** The month and day that the trip is to be provided.

DAY START/TIME: The hour and minutes, in military time, that the driver leaves the Tacoma Transit garage to begin the first trip of the day. This item is only filled out on the trip roster (or trip ticket) used to record the first trip of the day.

(RUN 1): Indicates that the information following reflects the first run (trip) of each route. The (Run 2) section below is used only when a route has too many passengers for one trip.

DAY START/MILEAGE: The odometer reading when the driver leaves the Tacoma Transit garage to begin the first trip of the day. This item is only filled out on the trip roster (or trip ticket) used to record the first trip of the day.

TRIP START/TIME: The hour and minutes, in military time, that the driver arrives at the pick-up location of the first client on the route.

TRIP START/MILEAGE: The odometer reading when the driver arrives at the pick-up location of the first client on the route.

TRIP END/TIME: The hour and minutes, in military time, that the passengers on the first run of the route have been transported to their destination.

TRIP END/MILEAGE: The odometer reading when the passengers on the first run of the route have been transported to their destination.

DAY END/TIME: The hour and minutes, in military time, that the driver returns to the Tacoma Transit garage. This item is only filled out on the trip roster (or trip ticket) used to record the last trip of the day.

DAY END/MILEAGE: The odometer reading when the driver returns to the Tacoma Transit garage. This item is only filled out on the trip roster used to record the last trip of the day.

DAY TRIP NR: Day trip sequence number. This item is used to record the sequence of all trips provided by an individual SHUTTLE driver. The day trip sequence number of a driver's first trip of the day is 01, the second trip is 02, and so forth. The sequence numbers of trips are maintained whether trip data is recorded on trip tickets, trip roster, or a combination of the two.

(RUN 2): This section is filled out only when a route has too many passengers for one trip.

CARD ID/L01/L02/ETC.: Card identification. The code "L" indicates that the information following is from the detail section (lower half) of the trip roster. Because each line on the trip roster is keypunched on a separate IBM card, the numbers are keypunched to identify the proper sequence of data on the trip roster.

CLIENT NUMBER: The five-digit identification number assigned to each client by Specialized Transportation.

CLIENT NAME: The last name and first initial of each client taking the trip.

CLIENT ADDRESS: The home address of each client taking the trip.

SCHEDULE TRIPS
M T W T F: An "O" is placed in each box corresponding to the day of the week in which the client is scheduled to be picked up. Cancellations of scheduled trips are indicated by an "X" over the "O", with the appropriate cancellation code (see explanation below) being written in the next column.

CANCELLATIONS
M T W T F: Whenever a scheduled trip is cancelled, a code indicating the reason must be written in the box corresponding to the day of the week in which the trip was scheduled to take place. The cancellation reasons and codes are shown on the lower left portion of the trip roster.

SPECIAL REMARKS,
INSTRUCTIONS OR
DRIVER COMMENTS: This section is used to record any special instructions to the SHUTTLE driver, such as "Wheelchair" or "Driver Escort Needed." This section is also used by the SHUTTLE driver to record any problems, complaints, or other comments regarding the client.

TOTALS: This section is used to record the total number of scheduled trips and cancellations for each day.

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