CHAPTER **2**

FORECASTING DEMAND

This chapter presents step-by-step instructions and sample computation forms for estimating passenger transportation demand. Blank computation forms are provided 1) to record demographic, program participation, and service provider inventory information and 2) to compute passenger transportation demand.

Two procedures are presented for demand estimation:

1. *Change to Existing Conditions*—methods that may be applied when programs or transportation services are already in place and the effects of changes are to be analyzed. Such changes might include changes in the population of the county, changes in the number of persons eligible for or participating in social service programs, or changes in the annual vehicle-miles or vehicle-kilometers of service available to one or more of the identified population segments.
2. *Planning a New Service*—methods that should be applied when a new social service program is proposed or when new transportation services or major changes in the miles operated by existing services are under study.

The following sections of this chapter describe the demand estimation procedures. The chapter is divided into four parts:

Part A: Basic Data
Part B: Estimating Demand for a Change to Existing Conditions
Part C: Estimating Demand for Planning a New Service
Part D: Methods for Estimating Required Data

Figure 1 illustrates the steps in assembling basic data. Figures 2 and 3 illustrate the steps in estimation demand for a change in existing conditions. Figures 4 and 5 illustrate the steps in planning a new service. The computation forms and worksheets used are indicated on the figures.

Chapter 3 presents several sample applications of the methodology using the worksheets.

PART A: BASIC DATA

Before developing demand forecasts for either changing existing conditions or planning a new service, it is necessary to assemble a) some basic data describing the area under study; b) the characteristics of the population within the service area; c) the social service programs being operated; and d) the transportation services being operated. Forms A-1 through A-5 are provided for recording these data.

Form A-1 is used to record basic county (or service area) data including

- Size of the service area (square-miles or square-kilometers) and
- Population
  —Total
  —Aged 60 and over
  —Aged 16 to 64 with a mobility limitation
  —Under age 65 residing in a family with income below the poverty level.

In addition, if passenger transportation demand related to a specific social program is to be analyzed, the following population data are needed:

—Persons aged 16 and over,
—Total persons with a mobility limitation,
—Families in poverty,
—Persons aged 3 and 4,
—Persons aged 16 to 59,
—Persons aged 16 to 64,
—Persons aged 65 and over, and
—Persons aged 75 and over.

All of these population data are provided in U.S. Census reports. The data should be available from local or regional planning agencies of the state data center. Appendix D provides additional information on obtaining data from the Bureau of the Census.

Form A-2 is used to identify the nature of social service programs being operated or planned for operation within the service area. Obtaining information about programs and services will typically require direct contact—phone calls or visits—to each identified agency. The social service program types addressed by this Workbook are defined in Table 1.

Forms A-3a to **A-3f** are used to record specific information about each social service program including

- Number of participants;
- Provision of transportation for participants; and
- Agency provided
  —Annual vehicle-miles or vehicle-kilometers
  —Annual one-way passenger trips.

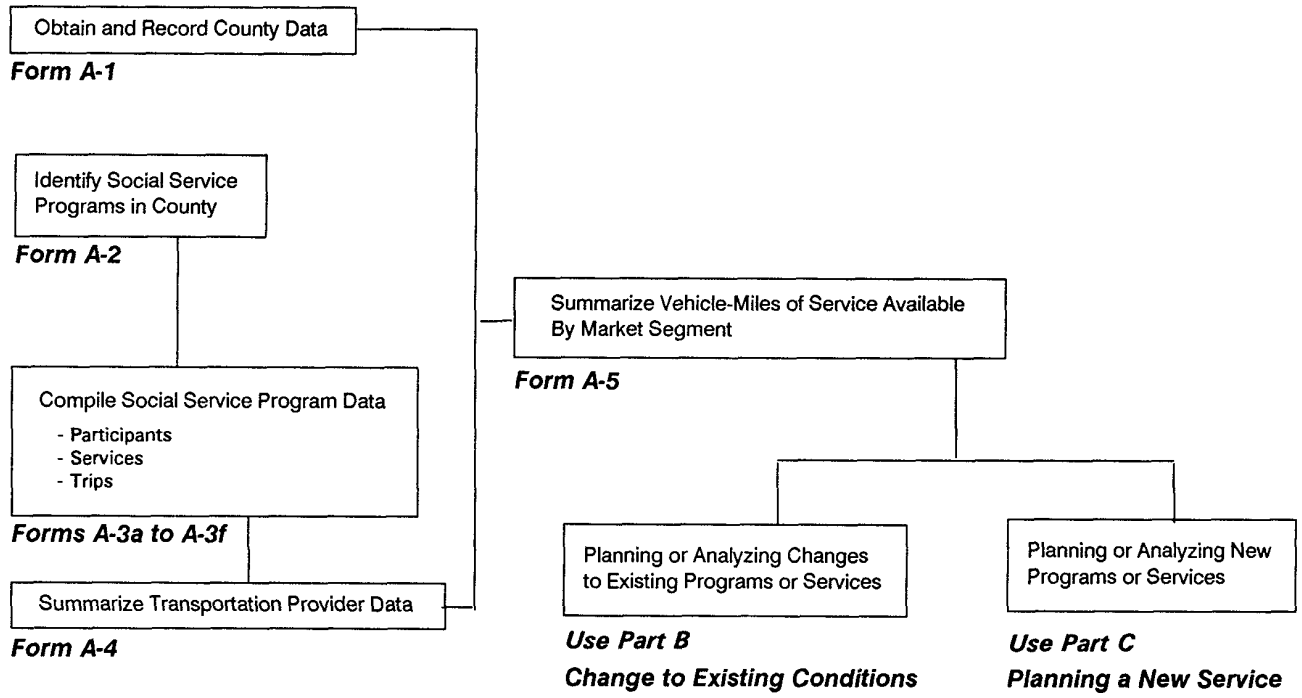

Figure 1. Part A: Assembly of basic data.

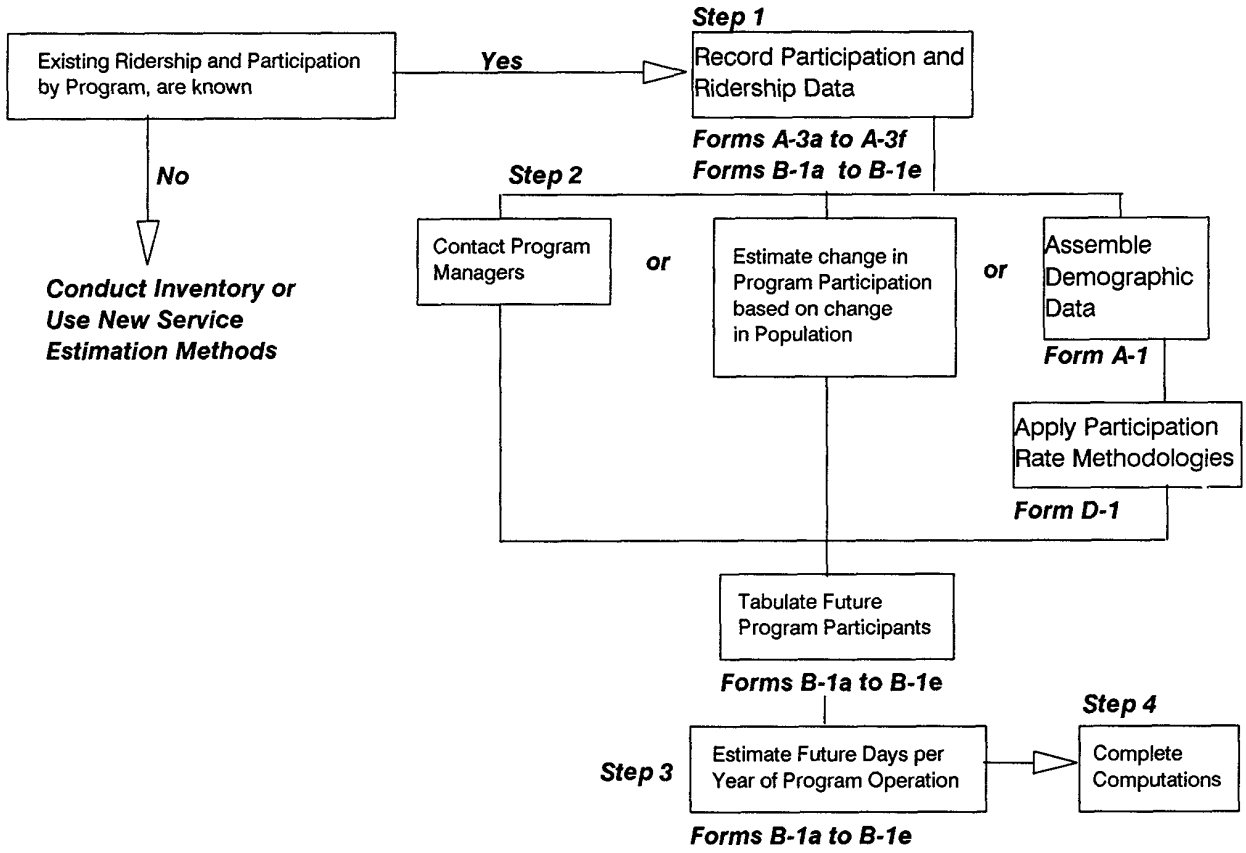

Figure 2. Part B: Change from existing conditions—estimation of program trips.

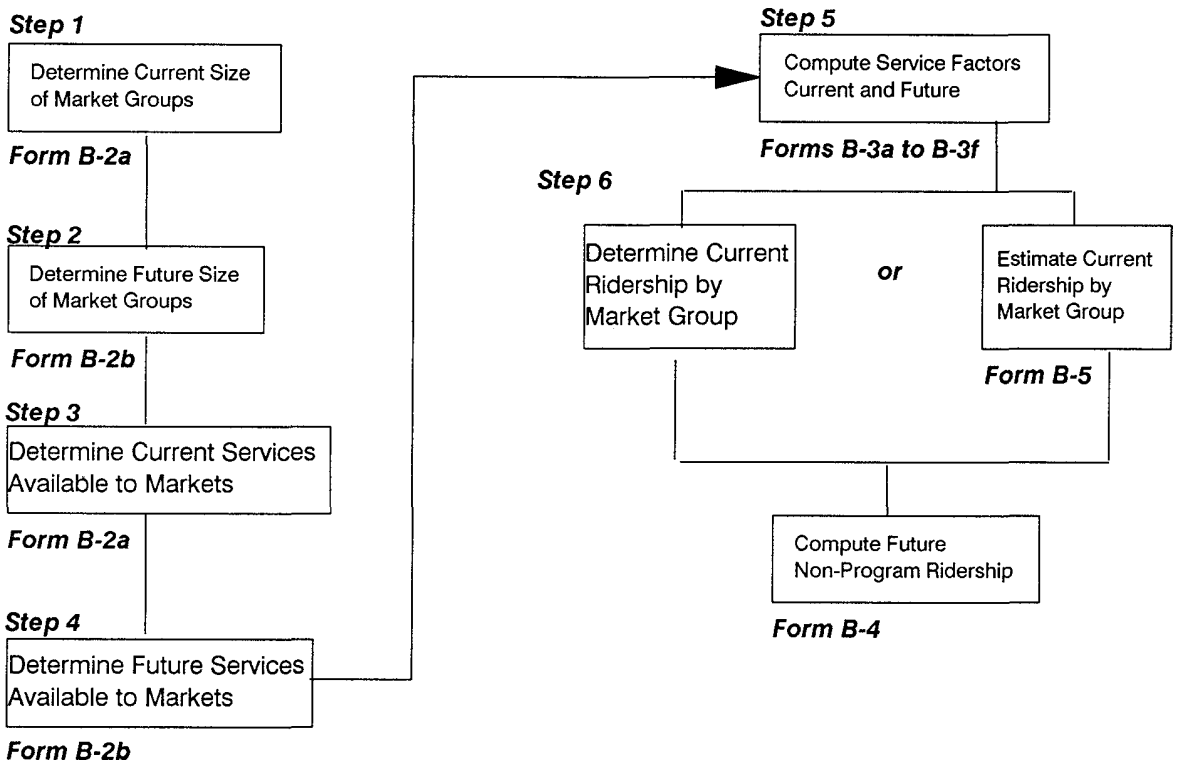

Figure 3. Part B: Change from existing conditions—estimation of non-program trips.

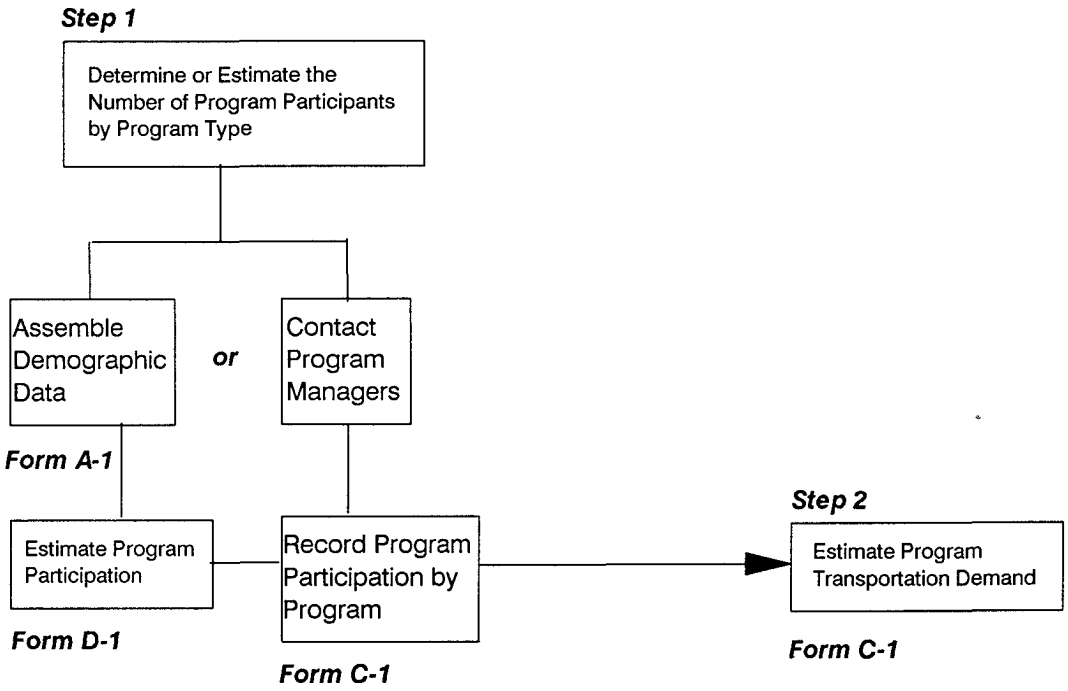

Figure 4. Part C: Planning a new service—estimation of program trips.

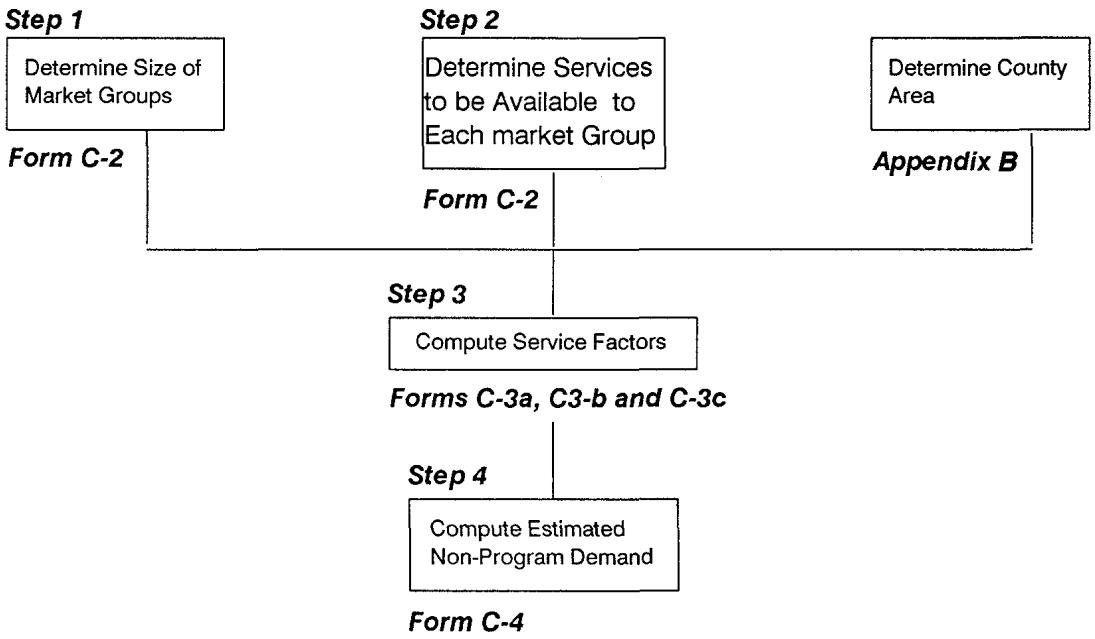

Figure 5. Part C: Planning a new service—estimation of program trips.

Form A-4 is used to summarize the transportation provided by each agency or transportation provider and to allocate the annual vehicle-miles or vehicle-kilometers operated into program-related or non-program-related services.

Form A-5 is used to record and summarize non-program-related annual vehicle-miles. A metric version of Form A-5 is included in Appendix E for recording vehicle-kilometers. In addition, the non-program-related services are allocated to the following categories:

- Available to persons aged 60 or over,
- Available to persons with disabilities, and
- Available to persons in families below the poverty level. This category may be considered as "services available to the general public." Taxi services that provide Medicaid transportation should be included in this category.

Taxi services available to persons below the poverty level are adjusted by a factor of 0.75. This factor is included to reflect the fact that a large proportion of trips on rural taxi services made by low-income persons are medical trips that are paid for or reimbursed under the Medicare program. Trips for non-medical purposes would require payment of full fare. Full-fare taxi services are essentially "unavailable" to lowincome persons for most trips.

- **Developmental Services:** Transportation is provided for persons with developmental disabilities. This type of transportation is multipurpose, whereas transportation for sheltered workshops is specifically for a day program (home to center) and can be for mentally ill or developmentally disabled persons.

- **Group Home:** Transportation is provided for residents of a group home. Residents—generally adults—are usually developmentally disabled, or mentally or emotionally ill. Shelters for battered women or homeless persons would also be categorized under group home, although transportation is usually more limited in these circumstances. Transportation for group homes is multipurpose, possibly including trips for shopping, doctors' appointments, counseling and case management, recreation, and work or daily activity trips.

- **Head Start:** Transportation is provided to participants of a Head Start program. Head Start is a pre-school program for low-income children aged 4 (children aged 3 and 5 years who are age 4 for the majority of the year may be included). There are two major programs: 1) centers and 2) homebase programs.
  -*Centers* operate 4 or 5 days per week, and transportation is usually provided for those who need it both to and from the center. Transportation is also provided by some centers for annual or bi-annual medical and doctor appointments. Field trips may be provided with transportation, usually from one to four times per month.
  -*Homebase programs* are outreach programs and typically the only transportation provided is for the children to receive dental and medical care, usually twice per year. In some cases, the children are brought to centers with their parents twice per month. Parents may also be transported, with or without their children, for parenting classes and/or counseling.

- **Job Training:** Transportation is provided to participants of a job training or educational training program. Most often, participants are low income, and typically women with dependent children. In some cases, job training is provided for disabled persons. In a few cases, job training is for elderly persons participating in a volunteer job network.

- **Mental Health Services:** Similar to developmental services, this type of transportation is multipurpose. Transportation is provided to persons with mental or emotional disabilities or illnesses, and is usually tied to a program such as federally operated Mental Health Services. Trips are often for case management or counseling, but for more severely disabled, may include transportation to and from day programs, doctors' appointments, and recreational activities.

- **Nursing Home:** Transportation is provided to residents of nursing homes. While mostly elderly, older adults (40 years and up) who are disabled may also be residents. Transportation is usually provided for a small portion of residents who are somewhat ambulatory, and typically trips are social and recreational, although some medical trips may be made as well.

- **Substance Abuse:** Transportation is provided to participants of a substance abuse/rehabilitation program, usually for the purpose of counseling or rehabilitation activities.

- **Senior Nutrition:** Transportation is provided to seniors from their homes to a congregate meal site. Pick-ups are usually in the mid-morning on weekdays and returns are in the early afternoon.

- **Sheltered Workshop:** Transportation is provided for participants from their homes to a sheltered workshop. Life skills and job training or employment are offered at the workshops. Participants generally are developmentally disabled, physically disabled, or mentally or emotionally disabled. Programs are typically operated 5 or 6 days per week, from between 8:00-9:00 AM to between 3:00-5:00 PM.

NOTE: It is important to consider that a single transportation provider may provide two or more individual program transportation services. In addition, a single provider may provide both program service and non-program service. Careful disaggregation of provider data is therefore necessary in order to accurately categorize existing trip-making.

FORM A-1

SERVICE AREA CHARACTERISTICS DATA COLLECTION FORM

Size of Service Area		or	
	Square Miles		Square Kilometers

Population Characteristics	Current or Base Year	Forecast Design Year(*)
Total Population		
Persons Age 60 or Over		
Persons Age 16-64 with a Mobility Limitation		
Persons Age 64 or Less Residing in Households with Incomes Below Poverty Level		

Data below are needed only if the indicated type of social program operates in the service area AND the number of participants is unknown.

	Current	Forecast	Program Type
Persons Age 16 and Over			Developmental Services: Adult
Total Persons with a Mobility Limitation			Dev. Services: Pre-School OR Group Home OR Mental Health Service
Families in Poverty			Headstart OR Headstart: Homebase
Persons Age 3 and 4			Headstart: Other
Persons Age 16 to 59			Job Training OR Sheltered Workshop
Persons Age 16 to 64			Mental Health Services: Case Management
Persons Age 75 and Over			Nursing Home, Senior Nutrition

*: If only a total population estimate is available for the Forecast Design Year, estimate other population characteristics by multiplying the current year figure by the Forecast Design Year total population and dividing the result by the Current Year total population.

FORM A-2
PROGRAM INVENTORY CHECKLIST

Agency	Program Type: Developmental Services	Developmental Services (Case Mgmt)	Developmental Services (Preschool)	Group Home	Headstart	Headstart Home Base	Headstart Other	Job Training	Mental Health Services	Mental Health Services Case-Mgmt	Nursing Home	Senior Nutrition	Sheltered Workshop

Use '✓' To Denote Program Services. Use additional pages if necessary.

FORM A-3a -- PROGRAM INVENTORY

DEVELOPMENTAL SERVICES: ADULT

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

DEVELOPMENTAL SERVICES: CASE MANAGEMENT

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

DEVELOPMENTAL SERVICES: CHILDREN

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

FORM A-3b -- PROGRAM INVENTORY

DEVELOPMENTAL SERVICES: PRE-SCHOOL

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

GROUP HOME

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

HEADSTART

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

FORM A-3c -- PROGRAM INVENTORY

HEADSTART: HOME BASE

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

HEADSTART: OTHER

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

HOMELESS TRANSPORTATION

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

FORM A-3d -- PROGRAM INVENTORY

JOB TRAINING

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

MENTAL HEALTH SERVICES

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

MENTAL HEALTH SERVICES: CASE MANAGEMENT

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

FORM A-3e -- PROGRAM INVENTORY

NURSING HOME

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

SENIOR NUTRITION

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

SHELTERED WORKSHOP

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

FORM A-3f -- PROGRAM INVENTORY

SUBSTANCE ABUSE

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

OTHER PROGRAMS

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

OTHER PROGRAMS

Program Name	Number of Participants	Transportation Provided (Yes or No)	Transportation Provided by Program Agency Annual Vehicle-Miles	Transportation Provided by Program Agency Annual One-Way Trips	Transportation Provided by Contractor Annual Vehicle-Miles	Transportation Provided by Contractor Annual One-Way Trips

FORM A-4
TRANSPORTATION PROVIDER SUMMARY

Transportation Provider	Services Provided	Annual One-Way Trips			Annual Vehicle Miles/Kilometers Operated		
		Program Related	Non-Program	Total	Program Related	Non-Program	Total
Subtotal							

Use additional copies of form as required.

FORM A-5
ANNUAL VEHICLE MILES OF SERVICE
NON-PROGRAM SERVICES ONLY

(A) Operator	(B) Is this a TAXI Service? (Yes/No)	(C) Annual Non-Program Vehicle-Miles Operated	(D) Vehicle-Miles Available to Persons Age 60 and Over	(E) Vehicle-Miles Available to Persons with Disabilities	(F) Vehicle-Miles Available to Persons in Households Below Poverty Level	(G) = (F) IF TAXI SERVICE (G) = (F) x 0 75 ADJUSTED Vehicle-Miles Available to Persons in Households Below Poverty Level
Example number 1	No	10,000	7,000	5,000	1,000	1,000
Example number 2	Yes	20,000	20,000	20,000	20,000	15,000
TOTALS						

PART B: ESTIMATING DEMAND FOR A CHANGE TO EXISTING CONDITIONS

The premise for this approach to forecasting passenger transportation demand is that the use of programs and services as operated today reflects many factors specific to the area under study. The current passenger transportation demand is the best starting point for estimating how demand will change if there are small changes in program participation or services provided.

Program-Related Transportation Demand

Step 1—Current Program Participants

Forms A-3a through A-3f were used to record data on the number of participants in each existing program and the number of one-way trips served. Transfer these data for each program to Forms B-1a through B-1e.

Step 2—Future Program Participants

Determine or estimate the probable number of persons who will participate in each type of program for the analysis year. This estimate can be done in several ways:

a. Direct contact with program managers.

b. Data based on the expected change in population either in total or for the population segments served by each program. These data may be available from state or regional planning agencies.

c. Use of the program participation rate methodologies presented in Table 2 and Form D-1 of this Workbook.

Enter these data on Forms B-1a through B-1e.

Step 3—Future Number of Days of Operations

For certain program types, the annual ridership is related to the number of days each year the program is in operation. For these programs—indicated on Forms B-1a through B-1e—determine the current days of operation and the projected future days of operation. Enter these data on the forms. The procedures provide for analysis based on the number of days of operation only for those program types for which a daily trip analysis was supported by data available for methodology development. If users of this Workbook have daily trip rate data for programs in the analysis area, those data should be used, as appropriate.

Step 4—Complete the Computations

TABLE 2 Program participants estimation methodologies

Program Type	Best Estimation Technique: Criteria	Best Estimation Technique: Formula	If Best Data Unavailable, Use...: Criteria	If Best Data Unavailable, Use...: Formula
Developmental Services: Adult	All	Age 16 & Above x 2.15	All	Total Population x 1.76
Developmental Services: Case Mgmt	All	Mobility Limited 16 to 64 x 29.8	All	Total Population x 0.50
Developmental Services: Children	All	Total Population x 1.08	All	--
Developmental Services: Pre-School	All	Total Mobility Limited x 13.2	All	Total Population x 0.56
Group Home	< 1,500 Mobility Limited	Total Mobility Limited x 10.96	< 30,000 Tot Pop	Total Population x 0.54
	>= 1,500 Mobility Limited	Total Mobility Limited x 2.28 + 5.78	>= 30,000 Tot Pop	Total Population x 0.22 + 10.9
Headstart	< 1,500 Families in Poverty	Families In Poverty x 56.1	All	Total Population x 3.30
	>= 1,500 Families in Poverty	Families In Poverty x 26.6 + 46.0		
Headstart: Home Base	All	Families In Poverty x 18.1	All	Total Population x 1.12
Headstart-Other	All	Age 3 to 4 x 123	All	Total Population x 2.81
Homeless Transportation	All	Population In Poverty x 24.6	All	Total Population x 3.50
Job Training	All	Age 16 to 59 x 5.60	All	Total Population x 3.66
Mental Health Services	< 1,700 Mobility Limited	Total Mobility Limited x 30.3	All	Total Population x 1.61
	>= 1,700 Mobility Limited	Total Mobility Limited x 52.9 - 40.4		
Mental Health Services: Case Mgmt	All	Age 16 to 64 x 8.40	All	Total Population x 4.89
Nursing Home	All	Age 75 & Above x 28.7	All	Total Population x 2.03
Senior Nutrition	All	Age 75 & Above x 72.2	All	Total Population x 3.57
Sheltered Workshop	< 15,000 Pop Age 16 to 59	Age 16 to 59 x 2.94	< 20,000 Tot Pop	Total Population x 1.75
	>= 15,000 Pop Age 16 to 59	Age 16 to 59 x 1.01 + 23.8	>= 20,000 Tot Pop	Total Population x 0.69 + 22.3
Substance Abuse	All	Total Population x 0.87	All	--
ALL OTHER PROGRAM TYPES: Develop estimate on case-by-case basis.				

FORM B-1a
PROGRAM TRIP ESTIMATION
CHANGES TO EXISTING PROGRAMS

DEVELOPMENTAL SERVICES: ADULT

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

DEVELOPMENTAL SERVICES: CASE MANAGEMENT

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

DEVELOPMENTAL SERVICES: PRE-SCHOOL

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

FORM B-1b
PROGRAM TRIP ESTIMATION
CHANGES TO EXISTING PROGRAMS

GROUP HOME

Current Trips ____ X (Future Participants ____ / Current Participants ____) X (Future Number of Operating Days ____ / Current Number of Operating Days ____) = Forecast Ridership ____

HEADSTART

Current Trips ____ X (Future Participants ____ / Current Participants ____) X (Future Number of Operating Days ____ / Current Number of Operating Days ____) = Forecast Ridership ____

HEADSTART: HOME BASE

Current Trips ____ X (Future Participants ____ / Current Participants ____) X (Future Number of Operating Days ____ / Current Number of Operating Days ____) = Forecast Ridership ____

FORM B-1c
PROGRAM TRIP ESTIMATION
CHANGES TO EXISTING PROGRAMS

HEADSTART: OTHER

Current Trips ____ X (Future Participants ____ / Current Participants ____) X (Future Number of Operating Days ____ / Current Number of Operating Days ____) = Forecast Ridership ____

JOB TRAINING

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

MENTAL HEALTH SERVICES

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

FORM B-1d
PROGRAM TRIP ESTIMATION
CHANGES TO EXISTING PROGRAMS

MENTAL HEALTH SERVICES: CASE MANAGEMENT

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

NURSING HOME

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

SENIOR NUTRITION

Current Trips ____ X (Future Participants ____ / Current Participants ____) = Forecast Ridership ____

FORM B-1e
PROGRAM TRIP ESTIMATION
CHANGES TO EXISTING PROGRAMS

SHELTERED WORKSHOP

Current Trips		Future Participants / Current Participants		Future Number of Operating Days / Current Number of Operating Days		Forecast Ridership
	X		X		=	

OTHER PROGRAM

Current Trips		Future Participants / Current Participants		Future Number of Operating Days / Current Number of Operating Days		Forecast Ridership
	X		X		=	

OTHER PROGRAM

Current Trips		Future Participants / Current Participants		Future Number of Operating Days / Current Number of Operating Days		Forecast Ridership
	X		X		=	

Non-Program-Related Transportation Demand

Step 1—Current Market Size

Determine the number of persons currently within the county in each of the three population groups:

- Persons aged 60 or over,
- Persons aged 16 to 64 having a mobility limitation, and
- Persons aged 64 or under residing in households with incomes below the poverty level.

Appendix D contains detailed instructions on how to develop this information from U.S. Census data files. For most counties, the most recent Census data will be a reasonable estimate of the number of persons in each market. If it is known that the county's population has changed significantly, current year market estimates may be developed by multiplying the Census value by the ratio of current population to 1989 population.

Enter these data on Form B-2a.

Step 2—Future Market Size

Determine the number of persons for the analysis year projected to be within the county in each of the three population groups:

- Persons aged 60 or over,
- Persons aged 16 to 64 having a mobility limitation, and
- Persons residing in households with incomes below the poverty level.

Enter these data on Form B-2b.

Step 3—Current Service Availability

Determine the annual vehicle-miles or vehicle-kilometers of service currently available to each of the population groups:

- Persons aged 60 or over,
- Persons aged 16 to 64 having a mobility limitation, and
- Persons residing in households with incomes below the poverty level.

Enter these data on Form B-2a. If metric units are being used, use the metric version of Form B-2a found in Appendix E.

Step 4—Future Service Availability

Determine or estimate the annual vehicle-miles or vehicle-kilometers of service projected to be available in the design year to each of the population groups:

- Persons aged 60 or over,
- Persons aged 16 to 64 having a mobility limitation, and
- Persons residing in households with incomes below the poverty level.

Enter these data on Form B-2b. If metric units are being used, use the metric version of Form B-2b found in Appendix E.

Step 5—Current and Future Service Factors

Transfer the appropriate data from Forms B-2a and B-2b (county area and vehicle-miles of service, both current and future) to Forms B-3a, B-3b, B-3c, B-3d, B-3e, and B-3f). If metric units are being used, use the metric versions of these forms found in Appendix E. Compute the current and future Service Factors for each population group. Enter the results on Form B-4.

Step 6—Current Ridership

If possible, determine the non-program ridership for each population group and enter the results on Form B-4. Otherwise, use Form B-5 to estimate current ridership by population group, and enter the results on Form B-4.

If use of Form B-5 to estimate current ridership by market group is necessary, tabulate current non-program-related ridership using the data from Form A-3. Enter the results on Form B-5. Enter on Form B-5, the number of persons in each market group (from Form A-1) and the current service factors computed on Forms B-3a, B-3b, and B-3c. Complete the computations on Form B-5 and transfer the results to Form B-4.

Step 7—Compute Estimated Future Non-Program Demand

Use Form B-4 to compute the estimated non-program demand for passenger transportation under the assumed future conditions.

FORM B-2a
ESTIMATION OF NON-PROGRAM DEMAND
COUNTY AND SERVICE SUMMARY DATA -- CURRENT YEAR

BASIC DATA FOR THE COUNTY (or Service Area):

Size of County in square miles (from Form A-1): (H) _____

PERSONS AGE 60 AND OVER

Number of Persons Age 60 or Over:	Vehicle Miles Available From column (D) total, Form A-5	Vehicle Miles Available Per Square Mile
(I) _____	(J) _____	(K) = (J)/(H) _____

PERSONS WITH MOBILITY LIMITATIONS

Number of Persons with Mobility Limitations Age 16-64	Vehicle Miles Available From column (E) total, Form A-5	Vehicle Miles Available Per Square Mile
(L) _____	(M) _____	(N) = (M)/(H) _____

PERSONS RESIDING IN FAMILIES WITH INCOMES BELOW THE POVERTY LEVEL

Number of Persons, age 64 or less, residing in households with income below the poverty level	ADJUSTED Vehicle Miles Available From column (G) total, Form A-5	ADJUSTED Vehicle Miles Available Per Square Mile
(O) _____	(P) _____	(Q) = (P)/(H) _____

FORM B-2b
ESTIMATION OF NON-PROGRAM DEMAND
COUNTY AND SERVICE SUMMARY DATA -- FORECAST YEAR

BASIC DATA FOR THE COUNTY (or Service Area):

Size of County in square miles (from Form A-1): (H) ____

PERSONS AGE 60 AND OVER

Number of Persons Age 60 or Over:	Vehicle-Miles To be Available	Vehicle-Miles Available Per Square Mile
(I) ____	(J) ____	(K) = (J)/(H) ____

PERSONS WITH MOBILITY LIMITATIONS

Number of Persons with Mobility Limitations Age 16-64	Vehicle-Miles To Be Available	Vehicle-Miles Available Per Square Mile
(L) ____	(M) ____	(N) = (M)/(H) ____

PERSONS RESIDING IN FAMILIES WITH INCOMES BELOW THE POVERTY LEVEL

Number of Persons, age 64 or less, residing in households with income below the poverty level	ADJUSTED Vehicle-Miles To Be Available	ADJUSTED Vehicle-Miles Available Per Square Mile
(O) ____	(P) ____	(Q) = (P)/(H) ____

FORM B-3a
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR
CURRENT YEAR

PERSONS AGE 60 OR OVER

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (K) on Form B-2a

	(K)						(R)
If less than 4,000		X	2.682	+	376	=	
If 4,000 to 7,000		X	13.693	-	43,668	=	(R)
If 7,000 to 10,000		X	50.727	-	302,908	=	(R)
If 10,000 to 12,000		X	113.010	-	925,740	=	(R)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR (R)/1,000,000

FORM B-3b
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR
CURRENT YEAR

PERSONS WITH MOBILITY LIMITATIONS

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (N) on Form B-2a

	(N)						(T)
If less than 4,000		X	1.570	+	1,010	=	
If 4,000 to 7,000		X	5.823	-	16,003	=	(T)
If 7,000 to 10,000		X	17.700	-	99,140	=	(T)
If 10,000 to 12,000		X	42.590	-	348,040	=	(T)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR	(T)/1,000,000	

FORM B-3c
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR
CURRENT YEAR

PERSONS RESIDING IN FAMILIES BELOW POVERTY LEVEL

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (Q) on Form B-2a

	(Q)						(V)
If less than 4,000		X	2.450	+	525	=	
If 4,000 to 7,000		X	8.828	-	24,988	=	(V)
If 7,000 to 10,000		X	45.647	-	282,717	=	(V)
If 10,000 to 12,000		X	99.520	-	821,450	=	(V)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR (V)/1,000,000

FORM B-3d
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR
FUTURE YEAR

PERSONS AGE 60 OR OVER

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (K) on Form B-2b

	(K)						(R)
If less than 4,000		X	2.682	+	376	=	
If 4,000 to 7,000		X	13.693	-	43,668	=	(R)
If 7,000 to 10,000		X	50.727	-	302,908	=	(R)
If 10,000 to 12,000		X	113.010	-	925,740	=	(R)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR	(R)/1,000,000	

FORM B-3e
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR
FUTURE YEAR

PERSONS WITH MOBILITY LIMITATIONS

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (N) on Form B-2b

	(N)						(T)
If less than 4,000		X	1.570	+	1,010	=	
If 4,000 to 7,000		X	5.823	-	16,003	=	(T)
If 7,000 to 10,000		X	17.700	-	99,140	=	(T)
If 10,000 to 12,000		X	42.590	-	348,040	=	(T)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR	(T)/1,000,000	

FORM B-3f
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR
FUTURE YEAR

PERSONS RESIDING IN FAMILIES BELOW POVERTY LEVEL

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (Q) on Form B-2b

	(Q)						(V)
If less than 4,000		X	2.450	+	525	=	
If 4,000 to 7,000		X	8.828	-	24,988	=	(V)
If 7,000 to 10,000		X	45.647	-	282,717	=	(V)
If 10,000 to 12,000		X	99.520	-	821,450	=	(V)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR (V)/1,000,000

FORM B-4
COMPUTATION OF FUTURE DEMAND
CHANGE FROM EXISTING SERVICE

POPULATION AGE 60 OR OVER

From Surveys or Form B-5 Current Ridership		From Form A-1 Future Population / From Form A-1 Current Population		From Form B-3d Future Service Factor / From Form B-3a Current Service Factor		Forecast Ridership
	X		X		=	

POPULATION WITH MOBILITY LIMITATIONS

From Surveys or Form B-5 Current Ridership		From Form A-1 Future Population / From Form A-1 Current Population		From Form B-3e Future Service Factor / From Form B-3b Current Service Factor		Forecast Ridership
	X		X		=	

POPULATION RESIDING IN FAMILIES WITH INCOME BELOW THE POVERTY LEVEL

From Surveys or Form B-5 Current Ridership		From Form A-1 Future Population / From Form A-1 Current Population		From Form B-3f Future Service Factor / From Form B-3c Current Service Factor		Forecast Ridership
	X		X		=	

TOTAL FORECAST NON-PROGRAM RIDERSHIP

FORM B-5
ESTIMATION OF CURRENT NON-PROGRAM RIDERSHIP BY POPULATION GROUP

	(A) Number of Persons	(B) Service Factor From Form B-3a	(C)=(A)x(B)	Trip Allocation (K)=(C)/(J)	Total Non-Program Trips	Trips by Population Group (O)=(K)x(N)
Persons Age 60 and Over						
	(D)	(E) From Form B-3b	(F)=(D)x(E)	(L)=(F)/(J)	From Form A-4 (N)	(P)=(L)x(N)
Persons Age 16-64 With a Mobility Limitation						
	(G)	(H) From Form B-3c	(I)=(G)x(H)	(M)=(I)/(J)		(Q)=(M)x(N)
Persons Under Age 65 Residing in Households With Income Below the Poverty Level						
			(J)=(C)+(F)+(I)			(O)+(P)+(Q)
Total					Total Non-Program Demand	should equal (N)

USE THIS FORM WHEN THE TOTAL CURRENT NON-PROGRAM RIDERSHIP IS KNOWN, BUT THE RIDERSHIP BY POPULATION GROUP IS NOT KNOWN.

PART C: ESTIMATING DEMAND FOR PLANNING A NEW SERVICE

The methods described in this section are to be used when 1) a social service program that has not heretofore existed within the county of interest is being considered, or 2) a new transportation service is being considered that would be available for use by a population group not presently served.

Program-Related Transportation Demand

Step 1—Determine or Estimate the Number of Program Participants

For each program expected to be in operation and to provide transportation service, determine the expected number of program participants. This estimation may be done by direct contact with sponsoring agencies or program directors (this is the recommended approach) or by using the Program Participants Estimation Worksheet (Form D-1). Enter the number of participants in each program on Form C-1.

Step 2—Estimate Program Demand

Complete the computations on Form C-1 for each program type. Sum the results.

The trip rates in the equations on Form C-1 are based on a sample of programs in 39 counties across the United States. Users of this Workbook who have information on program trip rates that are believed to be more appropriate for the area under study (e.g., trip rates for similar programs within the state) may substitute those rates or other values consistent with local conditions.

FORM C-1
ANNUAL PROGRAM TRIP ESTIMATION WORKSHEET -- PAGE ONE

Developmental Services: Adult

If # of participants is less than 25, use: [ ] # Participants X 358 = [ ]

or

If at least 25, use: [ ] # Participants X 430 - 1,686 = [ ]

Developmental Services: Case Management

In all cases, use: [ ] # Participants X 39.2 = [ ]

Developmental Services: Pre-School

In all cases, use: [ ] # Participants X 224 = [ ]

Group Home

If you know the number of days per year transportation is provided, and the # of participants is less than 10, use: [ ] # Participants X 2.05 X [ ] # of days = [ ]

or

If you know the number of days and the # of participants is at least 10, use: ([ ] # Participants X 1.42 + 5.94) X [ ] # of days = [ ]

or

If you don't know the number of days, and the # of participants is less than 10, use: [ ] # Participants X 615 = [ ]

or

If you don't know the number of days, and the # of participants is at least 10, use: [ ] # Participants X 291 + 3,760 = [ ]

Headstart

In all cases, use: [ ] # Participants X 263 = [ ]

Headstart: Home Base

If you know the number of days per year the program operates, use: [ ] # Participants X 0.16 X [ ] # of days = [ ]

or

If you don't, use: [ ] # Participants X 30.5 = [ ]

Headstart-Other

In all cases, use: [ ] # Participants X 1.86 = [ ]

TOTAL FOR PAGE ONE: [ ]

FORM C-1
ANNUAL PROGRAM TRIP ESTIMATION WORKSHEET -- PAGE TWO

Job Training

In all cases, use: [ ] # Participants X 137 = [ ]

Mental Health Services

In all cases, use: [ ] # Participants X 347 = [ ]

Mental Health Services: Case Mgmt

In all cases, use: [ ] # Participants X 6.35 = [ ]

Nursing Home

If the # of participants is less than 50, use: [ ] # Participants X 9.10 = [ ]

or

If the # of participants is at least 50, use: [ ] # Participants X 12.5 - 173 = [ ]

Senior Nutrition

In all cases, use: [ ] # Participants X 248 = [ ]

Sheltered Workshop

If you know the number of days per year the program operates, use: [ ] # Participants X 1.58 X [ ] # of days = [ ]

or

If you don't, use: [ ] # Participants X 384 = [ ]

ALL OTHER PROGRAM TYPES: Develop estimate on case-by-case basis.

Program: _____ [ ]

Program: _____ [ ]

Program: _____ [ ]

TOTAL FOR PAGE TWO: [ ]

+

ENTER TOTAL FROM PAGE ONE HERE: [ ]

=

TOTAL ANNUAL PROGRAM TRIP ESTIMATION: [ ]

Non-Program-Related Transportation Demand

Step 1—Determine Market Size

Determine the number of persons for the analysis year projected to be within the county in each of the three population groups:

- Persons aged 60 or over,
- Persons aged 16 to 64 having a mobility limitation, and
- Persons residing in households with incomes below the poverty level.

Enter these data on Form C-2. A metric version of Form C-2 is found in Appendix D.

Step 2—Future Service Availability

Determine or estimate the annual vehicle-miles or vehicle-kilometers of service projected to be available in the design year to each of the population groups:

- Persons aged 60 or over,
- Persons aged 16 to 64 having a mobility limitation, and
- Persons residing in households with incomes below the poverty level.

Enter these data on Form C-2. A metric version of Form C-2 is found in Appendix D.

Step 3—Compute Service Factors

Transfer appropriate data from Form C-2 (county area and vehicle-miles or vehicle-kilometers of service) to Forms C-3a, C-3b, and C-3c. If metric units are used, use the metric versions of these forms found in Appendix D. Compute the service factors for each population group and enter the results on Form C-4.

Step 4—Compute Estimated Non-Program Demand

Use Form C-4 to compute the estimated non-program demand for passenger transportation under the assumed conditions.

Alternative Procedure

1. Complete Steps 1 and 2 described above, documenting market size and services available to each market.
2. Use Figures 6 and 7 to determine the annual trip rates per person for each population segment.
3. Multiply the population in each segment by the appropriate trip rate and sum the resulting values to yield a total non-program demand estimate.

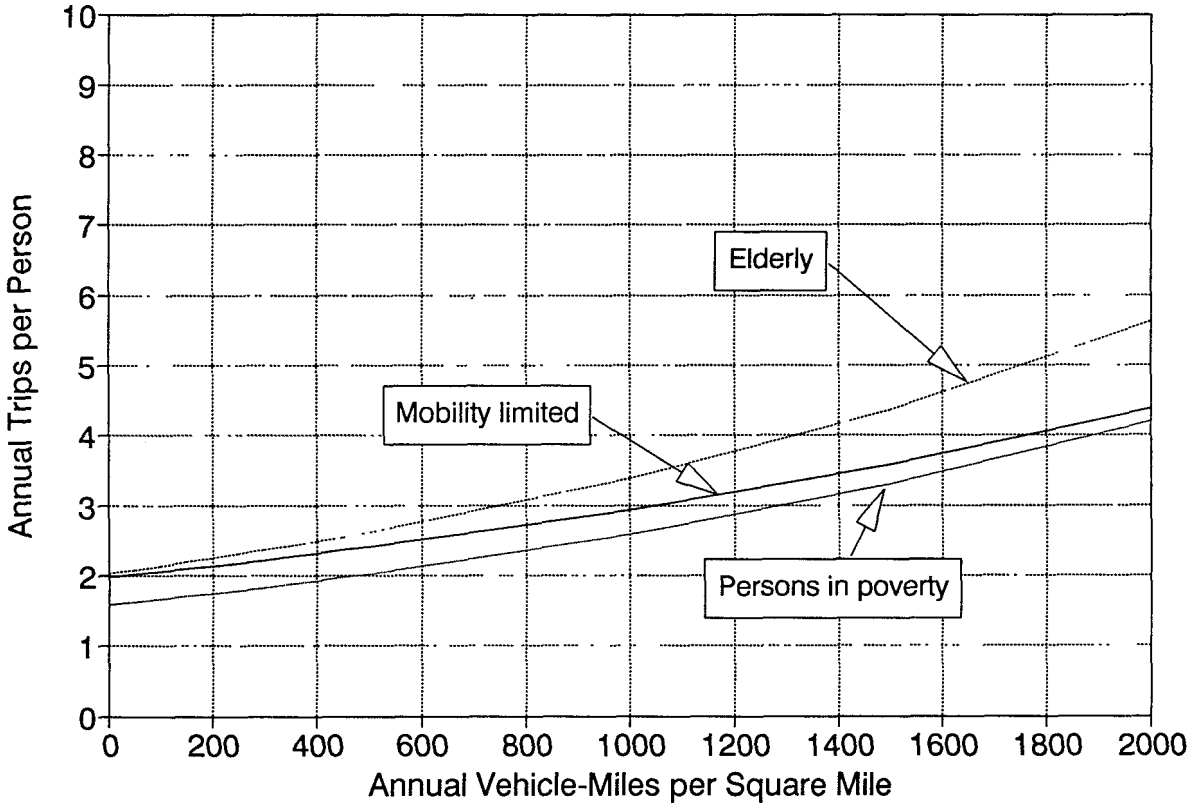

Figure 6. Non-program trip rates versus service provided (0 to 2,000 annual vehicle-mi per sq mi).

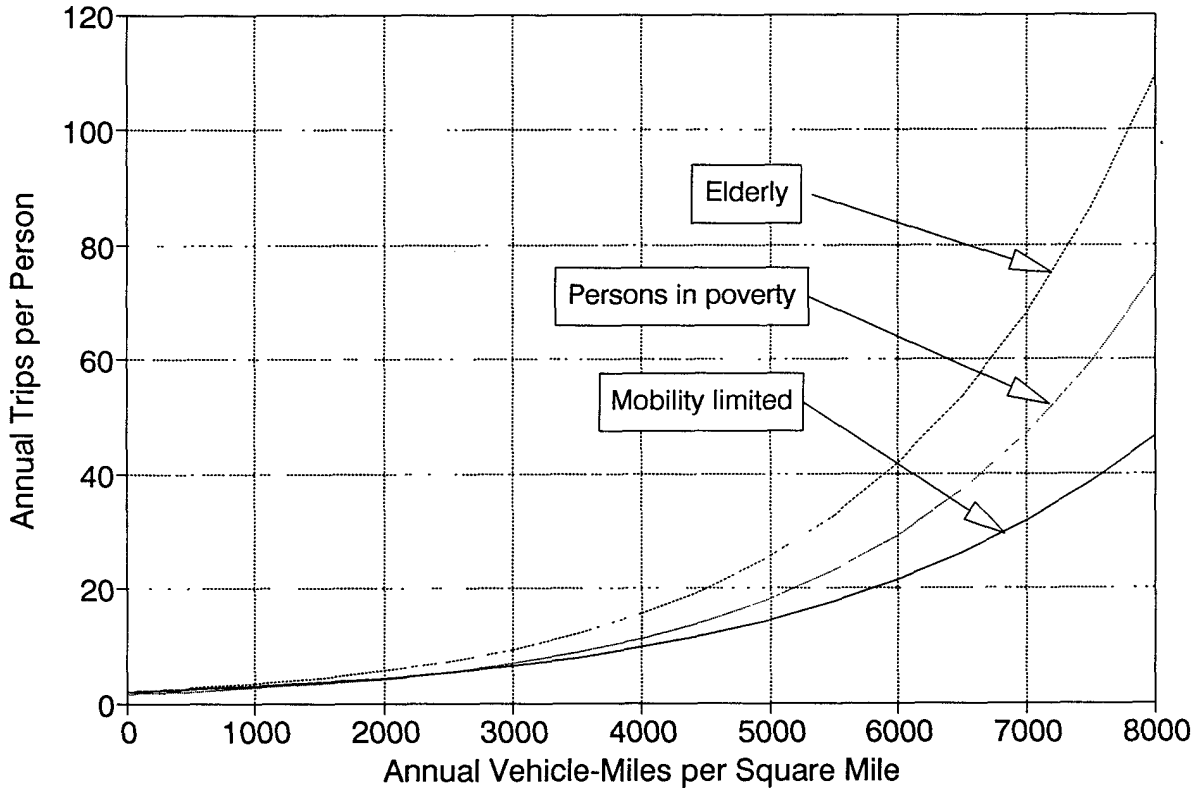

Figure 7. Non-program trip rates versus service provided (0 to 8,000 annual vehicle-mi per sq mi).

FORM C-2
ESTIMATION OF NON-PROGRAM DEMAND
COUNTY AND SERVICE SUMMARY DATA

BASIC DATA FOR THE COUNTY (or Service Area):

Size of County in square miles (from Form A-1): (H) _____

PERSONS AGE 60 AND OVER

Number of Persons Age 60 or Over:	Vehicle-Miles Available *	Vehicle-Miles Available Per Square Mile
(I) _____	(J) _____	(K) = (J)/(H) _____

PERSONS WITH MOBILITY LIMITATIONS

Number of Persons with Mobility Limitations Age 16-64	Vehicle-Miles Available *	Vehicle-Miles Available Per Square Mile
(L) _____	(M) _____	(N) = (M)/(H) _____

PERSONS RESIDING IN FAMILIES WITH INCOMES BELOW THE POVERTY LEVEL

Number of Persons, age 64 or less, residing in households with income below the poverty level	ADJUSTED Vehicle-Miles Available *	ADJUSTED Vehicle-Miles Available Per Square Mile
(O) _____	(P) _____	(Q) = (P)/(H) _____

* From Form A-5, columns (D), (E) and (F) totals or estimates of services to be provided.

FORM C-3a
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR

PERSONS AGE 60 OR OVER

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (K) on Form C-2

	(K)						(R)
If less than 4,000		X	2.682	+	376	=	
If 4,000 to 7,000		X	13.693	-	43,668	=	(R)
If 7,000 to 10,000		X	50.727	-	302,908	=	(R)
If 10,000 to 12,000		X	113.010	-	925,740	=	(R)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR	(R)/1,000,000	

FORM C-3b
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR

PERSONS WITH MOBILITY LIMITATIONS

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (N) on Form C-2

	(N)						(T)
If less than 4,000		X	1.570	+	1,010	=	
If 4,000 to 7,000		X	5.823	-	16,003	=	(T)
If 7,000 to 10,000		X	17.700	-	99,140	=	(T)
If 10,000 to 12,000		X	42.590	-	348,040	=	(T)
If over 12,000	Use Exponential Method (See Appendix)						

SERVICE FACTOR	(T)/1,000,000	

FORM C-3c
ESTIMATION OF NON-PROGRAM DEMAND SERVICE FACTOR

PERSONS RESIDING IN FAMILIES BELOW POVERTY LEVEL

Service Factor:

Vehicle-Miles Available
Per Square Mile
Item (Q) on Form C-2

	(Q)						(V)
If less than 4,000		X	2.450	+	525	=	
							(V)
If 4,000 to 7,000		X	8.828	-	24,988	=	
							(V)
If 7,000 to 10,000		X	45.647	-	282,717	=	
							(V)
If 10,000 to 12,000		X	99.520	-	821,450	=	

If over 12,000 Use Exponential Method (See Appendix)

SERVICE FACTOR (V)/1,000,000

FORM C-4
COMPUTATION OF FUTURE PASSENGER DEMAND
NON-PROGRAM RELATED

POPULATION AGE 60 OR OVER

		From Form C-2 Population		From Form C-3a Service Factor		Forecast Ridership
1,200	X		X		=	

POPULATION WITH MOBILITY LIMITATIONS

		From Form C-2 Population		From Form C-3b Service Factor		Forecast Ridership
1,200	X		X		=	

POPULATION RESIDING IN FAMILIES WITH INCOME BELOW THE POVERTY LEVEL

		From Form C-2 Population		From Form C-3c Service Factor		Forecast Ridership
1,200	X		X		=	

TOTAL FORECAST NON-PROGRAM RIDERSHIP

PART D: METHODS FOR ESTIMATING REQUIRED DATA

The data required to estimate passenger transportation demand using the procedures described previously are of several types:

- Population size and characteristics,
- Program participation, and
- Vehicle-miles or vehicle-kilometers of service operated.

For the current year, the preferred way to obtain these data is from existing sources (e.g., U.S. Census reports) and from direct contact with program administrators and managers of transportation services. There will be situations when specific data are unavailable or operators will be unable or unwilling to disclose the necessary information. In these cases, and for future-year projections, it will be necessary to make estimates.

In most cases, local staff with knowledge of program operations and transportation services will be able to make informed judgments about participation rates and services. Presented below are a few guidelines developed from a sample of counties across the nation that may help in preparing estimates when exact information is unknown.

Program Participation

The procedures for estimating demand for program-related passenger transportation require knowledge of or estimates of the number of persons participating in programs of each type. In many cases, the individuals responsible for providing transportation services will be affiliated with one or more of these programs or will interact on a regular basis with program staff. In these situations, information about the number of persons enrolled in the programs should be relatively easy to obtain.

In other cases, persons using this Workbook will find it necessary to contact each of the programs operating in the county—by phone or in person—to obtain information on program participation.

When possible, obtaining information on program participation directly from the agency operating the program is preferred. In some cases, however, the information will not be available or, for a new or proposed program, may not yet be known. In these cases, an estimate will need to be made.

Table 2 on page 24 provides two methods for estimating program participation. Form D-1 may be used to estimate program participation using these methods. These rates were developed from the same dataset as was used for developing the demand estimation method. The rates reflect the experience of a sample of counties across the nation. The rates should be used with care as local circumstances can lead to significantly different participation.

The "Best Estimation Technique" estimates program participation based on the size of the population segment that is typically the target group for program activities. The technique to be used when "Best Data" are not available is based solely on total population.

Vehicle-Miles of Service

Taxi Operations

- Taxis in rural areas operate 35,000-40,000 mi (56,000-65,000 km) per vehicle per year.

Paratransit Services

- Vehicles operated in a demand-responsive mode in rural areas operate, on average, 14,000 mi (23,000 km) per vehicle per year.

Vehicle-Miles per Square Mile

Non-Program Related

- The range of service density observed in the county level dataset was from 22 to 3,400 non-program-related annual vehicle-mi per square mile (14 to 2,100 vehicle-km per square kilometer). The mean value was 572 annual vehicle-mi per square-mile (355 vehicle-km per square kilometer). Rates significantly greater than 4,000 annual vehicle-mi per square mile (2,500 vehicle-km per square kilometer) per year should be viewed with caution.

FORM D-1
PROGRAM PARTICIPANTS ESTIMATION WORKSHEET

NOTE: ALL POPULATION FIGURES SHOULD BE IN THOUSANDS (,000)

Developmental Services: Adult

If you know the population age 16 and above, use: [ ] Population Age 16 and Above X 2.15 = [ ]

or

If you dont, use: [ ] Total Population X 1.76 = [ ]

Developmental Services: Case Mgmt

If you know the mobility limited population age 16 to 64, use: [ ] Mobility Limited Age 16-64 X 26.6 = [ ]

or

If you dont, use: [ ] Total Population X 0.50 = [ ]

Developmental Services: Children

In all cases, use: [ ] Total Population X 1.08 = [ ]

Developmental Services: Pre-School

If you know the mobility limited population, use: [ ] Total Mobility Limited X 10.8 = [ ]

or

If you dont, use: [ ] Total Population X 0.56 = [ ]

Group Home

If you know the mobility limited population and it is less than 2,000, use: [ ] Total Mobility Limited X 9.66 = [ ]

or

If you know the mobility limited population and it is at least 2,000, use: [ ] Total Mobility Limited X 5.57 + 7.33 = [ ]

or

If you don't, and total population is less than 30,000, use: [ ] Total Population X 0.54 = [ ]

or

If you don't, and total population is at least 30,000, use: [ ] Total Population X 0.22 + 10.9 = [ ]

Headstart

If you know the number of families in poverty and it is less than 1,500, use: [ ] Families In Poverty X 52.4 = [ ]

or

If you know the number of families in poverty and it is at least 1,500, use: [ ] Families In Poverty X 36.2 + 24.4 = [ ]

or

If you don't, use: [ ] Total Population X 3.30 = [ ]

FORM D-1 (Continued)
PROGRAM PARTICIPANTS ESTIMATION WORKSHEET

NOTE: ALL POPULATION FIGURES SHOULD BE IN THOUSANDS (,000)

Headstart: Home Base

If you know the number of families in poverty, use: [ ] Families In Poverty X 15.2 = [ ]

or

If you don't, use: [ ] Total Population X 1.12 = [ ]

Headstart-Other

If you know the population age 3 to 4, use: [ ] Age 3 to 4 X 123 = [ ]

or

If you don't, use: [ ] Total Population X 2.81 = [ ]

Homeless Transportation

If you know the population in poverty, use: [ ] Population In Poverty X 24.6 = [ ]

or

If you don't, use: [ ] Total Population X 3.50 = [ ]

Job Training

If you know the population age 16 to 59, use: [ ] Age 16 to 59 X 5.60 = [ ]

or

If you don't, use: [ ] Total Population X 3.66 = [ ]

Mental Health Services

If you know the mobility limited population and it is less than 2,000, use: [ ] Total Mobility Limited X 27.6 = [ ]

or

If you know the mobility limited population and it is at least 2,000, use: [ ] Total Mobility Limited X 45.9 - 36.4 = [ ]

or

If you don't, use: [ ] Total Population X 1.61 = [ ]

Mental Health Services: Case Mgmt

If you know the population age 16 to 64, use: [ ] Age 16 to 64 X 8.40 = [ ]

or

If you don't, use: [ ] Total Population X 4.89 = [ ]

FORM D-1 (Concluded)
PROGRAM PARTICIPANTS ESTIMATION WORKSHEET

NOTE: ALL POPULATION FIGURES SHOULD BE IN THOUSANDS (,000)

Nursing Home

If you know the population age 75 and above, use: [ ] (Age 75 & Above) X 28.7 = [ ]

or

If you don't, use: [ ] (Total Population) X 2.03 = [ ]

Senior Nutrition

If you know the population age 65 and above, use: [ ] (Age 65 and up) X 30.1 = [ ]

or

If you don't, use: [ ] (Total Population) X 3.57 = [ ]

Sheltered Workshop

If you know population age 16 to 59 and it is less than 15,000, use: [ ] (Age 16 to 59) X 2.94 = [ ]

or

If you know population age 16 to 59 and it is at least 15,000, use: [ ] (Age 16 to 59) X 1.01 + 23.8 = [ ]

or

If you don't, and total population is less than 20,000, use: [ ] (Total Population) X 1.75 = [ ]

or

If you don't, and total population is at least 20,000, use: [ ] (Total Population) X 0.69 + 22.3 = [ ]

Substance Abuse

For all cases, use: [ ] (Total Population) X 0.87 = [ ]

ALL OTHER PROGRAM TYPES: Develop estimate on case-by-case basis.

Program: _____ [ ]

Program: _____ [ ]

Program: _____ [ ]