

APPENDIX D. TRAVEL CONCEPTS AND GLOSSARY OF TERMS

TRAVEL CONCEPTS

PERSON TRIP

DEFINITION - A trip by one person in any mode of transportation. This is the most basic and universal measure of personal travel. Each record in the Travel Day and Travel Period files in the NPTS dataset represents one person trip.

EXAMPLES - Two people travelling together in one car are counted as two person trips. Three people walking to the store together are counted as three person trips.

WHEN TO USE -The unit of person trips must be used when comparing travel by various modes (e.g., private vehicles, public transportation, walking, school bus, air, etc.). It is the appropriate unit of measure for the movement of people, as opposed to vehicles, e.g., "the High Occupancy Vehicle (HOV) lanes carry 42 percent of all person trips to the central city."

HOW TO COMPUTE - Because the person trip is the basic unit of measure on the Travel Day files, to obtain total person trips, the user should sum the weighted travel day records, i.e. sum WTTRDFIN. The resulting estimate is 378,930,000,000 person trips made by U.S. residents in the course of a year.

PERSON MILES OF TRAVEL (PMT)

DEFINITION - The number of miles travelled by each person on a trip.

EXAMPLES - If two people travelling together take a six-mile subway trip to the airport, that trip results in 12 person miles of travel. A four-mile van trip with a driver and three passengers counts as 16 person miles of travel.

WHEN TO USE - As with person trips, person miles must be used when analyzing travel by the various modes of transport. It is the appropriate measure when the topic of analysis is the miles travelled by people, not vehicles.

ALIAS - Person miles is often called Passenger Miles, particularly in the transit and airline industries.

HOW TO COMPUTE- Multiply each weighted person trip (WTTRDFIN) by the trip distance in miles (TRPMILES). When this is done for all trips on the Travel Day file with miles reported, the resulting estimate is 3,411,122 million person miles of travel by U.S. residents in the course of a year.

WARNING - When computing TRPMILES, be sure to exclude entries of:

9998, miles not ascertained, and
9999, refused to report miles.

Also, remember to convert any special codes, such as:

9996, less than one block, to some appropriate measure such as 0.06 mile, and
9997, half a mile, to 0.5 miles.

VEHICLE TRIPS

DEFINITION - A trip by a single privately operated vehicle (POV) regardless of the number of persons in the vehicle.

EXAMPLES - Two people travelling together in a car would be counted as one vehicle trip. Four people going to a restaurant in a van is considered one vehicle trip.

NPTS MODE RESTRICTIONS - To be considered a vehicle trip in NPTS, the trip must have been made in a privately operated vehicle, namely a household-based car, van, sport utility vehicle, pickup truck, other truck, recreational vehicle, motorcycle or other POV. The vehicle does not need to belong to the household.

Trips made in other highway vehicles, such as buses, streetcars, taxis, and school buses are collected in the NPTS, but these are shown as person trips by those modes. The design of the NPTS is such that it does not serve as a source for vehicle trips in modes such as buses, because there is no way to trace the movement of the bus fleet throughout the day. Those interested in vehicle trips by buses, taxis, etc. need to use a data source that relies on reports from the fleet operators of those vehicles. The Section 15 report published by the Federal Transit Administration is one such source.

WHEN TO USE - The unit of vehicle trips is most appropriately

used when considering POV travel, e.g., “ 20 percent of all POV trips are for commuting to and from work.”

HOW TO COMPUTE -The variable VTR_FLG was created to allow the data user to select the vehicle trip records from the travel day file. The typical manner of computing vehicle trips from the NPTS file is to impose two limits on the full universe of Travel Day trips:

- travel mode must be POV (TRPTRANS = 01 -08), and
- only the driver's trip is captured (DRVR_FLG = 01).

The second limitation is to insure that the trip is counted only once. Remember that the NPTS Travel Day file is a person trip file, so if three household members went somewhere by car, that trip is reflected in three travel day trip records. To insure that it is only counted once as a vehicle trip, the driver's record is used.

To obtain the total of all vehicle trips, sum all weighted trips that meet the two conditions above, i.e., where VTR_FLG = 01. The resulting estimate is 229,745,000,000 vehicle trips made by U.S. residents in the course of a year.

VEHICLE MILES OF TRAVEL (VMT)

DEFINITION - One vehicle mile of travel is the movement of one privately operated vehicle (POV) for one mile, regardless of the number of people in the vehicle.

EXAMPLES- When one person drives her car 12 miles to work, 12 vehicle miles of travel have been made. If two people travel three miles by pickup, three vehicle miles of travel have been made.

SAME MODE RESTRICTIONS - For NPTS data, vehicle miles are restricted to the same privately-operated vehicles as vehicle trips(see above), that is a household-based car, van, sport utility vehicle, pickup truck, other truck, recreational vehicle, or other POV. .

WHEN TO USE- Vehicle miles of travel (VMT) are a very commonly used measure of highway travel. This measure is particularly important when analyzing highway capacity, congestion and air quality.

HOW TO COMPUTE - Multiply each weighted vehicle trip by the distance. In terms of NPTS variables, this would look like

(VTR_FLG=01 times WTTTRDFIN) times TRPMILES.

WARNING - When computing TRPMILES, be sure to exclude entries of:

9998, miles not ascertained, and

9999, refused to report miles.

Also, remember to convert any special codes, such as:

9996, less than one block, to some appropriate measure such as 0.06 mile, and

9997, half a mile, to 0.5 miles.

The annual estimate for VMT from the 1995 NPTS is 2,068,368 million vehicle miles.

VEHICLE OCCUPANCY

DEFINITION - For NPTS data, vehicle occupancy is generally computed as person miles of travel per vehicle mile (referred to as the travel method) . Note that the other commonly-used definition of vehicle occupancy is persons per vehicle trip (referred to as the trip method) .

COMMENTS - Because longer trips often have higher occupancies, the travel method generally yields a higher rate (1.59 for the 1995 NPTS) than the trip method (1.50). The calculation of the travel method requires that trip miles be reported, thus it is calculated on a slightly smaller number of trips than the trip method.

HOW TO COMPUTE - The four variables that may be used in the computation are described earlier in this section. Just remember to limit the denominator to person trips or person miles **in POVs**.

GLOSSARY

This glossary provides the most common terms used in the NPTS and definitions of those terms. These definitions are provided to assist the user in the interpretation of the NPTS data.

Adult

For NPTS, this is defined as a person 18 years or older.

Block Group

A subdivision of a Census tract that averages 1000 to 1100 people, and approximately 400-500 housing units.

Census Region and Division

The Census Bureau divides the states into four regions and nine divisions. Note that the divisions are wholly contained within a region, i.e., region lines do not split division lines. The regions and their component divisions are:

Northeast Region

New England Division: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Middle Atlantic Division : New Jersey, New York, Pennsylvania

North Central Region

East North Central Division: Illinois, Indiana, Michigan, Ohio, Wisconsin

West North Central Division: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

South Region

South Atlantic Division: Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia

East South Central Division: Alabama, Kentucky, Mississippi, Tennessee

West South Central Division: Arkansas, Louisiana, Oklahoma, Texas

West Region

Mountain Division: Arizona, Colorado, Idaho, Montana,

Nevada, New Mexico, Utah, Wyoming
Pacific Division: Alaska, California, Hawaii, Oregon,
Washington

Census Tract -	<p>A small subdivision of a county, containing approximately 4,000 persons. Tracts can range in population from 2,500 to 8,000. The geographic size of the tract may vary considerably, depending on population density. Tracts were designed to be homogeneous in regard to population characteristics, economic status and living conditions when they were first delineated. Since the first tracts were delineated for the 1890 Census, today's tracts may be far from homogeneous.</p>
Consolidated Metropolitan Statistical Area (CMSA)	<p>A large metropolitan complex of 1 million or more population, containing two or more identifiable component parts designated as primary metropolitan statistical areas (PMSAs). For example, the Boston CMSA is composed of six PMSAs.</p>
Destination	<p>For travel day trips, the destination is the point at which there is a break in travel, except if the break is only to change vehicles or means of transport.</p> <p>For travel period trips, the destination is the farthest point of travel.</p>
Driver	<p>A driver is a person who operates a motorized vehicle. If more than one person drives on a single trip, the person who drives the most miles is classified as the principal driver.</p>
Employed	<p>A person is considered employed if he/she worked for pay, either full time or part time, during the week before the interview.</p>
Education Level	<p>The number of years of regular schooling completed in graded public, private, or parochial schools, or in colleges, universities, or professional schools, whether day school or night school. Regular schooling advances a person toward an elementary or high school diploma, or a college, university, or professional school degree.</p>

Household

A group of persons whose usual place of residence is a specific housing unit; these persons may or may not be related to each other. The total of all U.S. households represents the total civilian non-institutionalized population. A household does not include group quarters (i.e., 10 or more persons living together, none of whom are related).

Household Income

Household income is the money earned by all family members in a household, including those temporarily absent. Annual income consisted of the income earned 12 months preceding the interview. Household income includes monies from all sources, such as wages and salary, commissions, tips, cash bonuses, income from a business or farm, pensions, dividends, interest, unemployment or workmen's compensation, social security, veterans' payments, rent received from owned property (minus the operating costs), public assistance payments, regular gifts of money from friends or relatives not living in the household, alimony, child support, and other kinds of periodic money income other than earnings. Household income excludes in-kind income such as room and board, insurance payments, lump-sum inheritances, occasional gifts of money from persons not living in the same household, withdrawal of savings from banks, tax refunds, and the proceeds of the sale of one's house, car, or other personal property.

Household Members

Household members include all people, whether present or temporarily absent, whose usual place of residence is in the sample unit. Household members also include people staying in the sample unit who have no other usual place of residence elsewhere.

Household Vehicle

A household vehicle is a motorized vehicle that is owned, leased, rented or company-owned and available to be used regularly by household members during the two-week travel period. Household vehicles include vehicles used solely for business purposes or business-owned vehicles, so long as they are driven home and can be used for the home to work trip, (e.g., taxicabs, police cars, etc.). Household vehicles include all vehicles that were owned or available for use by members of the household during the travel period, even though a vehicle may have been sold before the interview. Vehicles excluded from household vehicles are those which were not working and were not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.

Licensed Driver

A licensed driver is any person who holds a valid driver's license from any state.

Means of Transportation

A mode of travel used for going from one place (origin) to another (destination). A means of transportation includes private and public modes, as well as walking. For travel day trips, each new destination constitutes a separate trip, UNLESS it was to change vehicles or means of transport. A trip made to change means was given segmented treatment if one of the means used was public transportation or Amtrak (see discussion of segmented trips in Chapter 4, Section B of this Guide.)

The following transportation modes, grouped by major mode, are included in the NPTS data.

Private Vehicle

Automobile A privately owned and/or operated licensed motorized vehicle including cars and station wagons. Leased and rented cars are included if they are privately operated and not used for picking up passengers in return for fare.

Van A privately owned and/or operated van or minivan designed to carry 5 to 13 passengers, or to haul cargo.

Sport Utility Vehicle A privately owned and/or operated vehicle that is a hybrid of design elements from a van, a pickup truck and a station wagon. Examples include a Chevrolet Blazer, Ford Bronco, Jeep Cherokee, or Nissan Pathfinder.

Pickup Truck A pickup truck is a motorized vehicle, privately owned and/or operated, with an enclosed cab that usually accommodates 2-3 passengers, and an open cargo area in the rear. Pickup trucks usually have the same size of wheel-base as a full-size station wagon. This category also includes pickups with campers.

Other Truck This category consists of all trucks other than pickup trucks (i.e., dump trucks, trailer trucks, etc.).

RV or Motor Home An RV or motor home includes a self-powered recreational vehicle that is operated as a unit without being towed by another vehicle (e.g., a Winnebago motor home).

Motorcycle This category includes large, medium, and small motorcycles. Minibikes are excluded because they cannot be licensed for highway use.

Other POV A vehicle that cannot be classified into one of the categories above.

Public Transportation

Bus The bus category includes intercity buses, mass transit systems, and shuttle buses that are available to the general public. Also, Dial-A-Bus and Senior Citizen buses that are available to the public are included in this category. However, shuttle buses operated by a government agency or private industry for the convenience of employees, contracted or chartered buses, or school buses are excluded from this category.

Commuter Train This category includes commuter trains and passenger trains other than elevated rail trains and subways. Commuter Train also includes local and commuter train service. Amtrak intercity service is excluded from this category.

Streetcar/Trolley This category includes trolleys, street-cars, and cable cars.

Elevated Rail/Subway This category includes elevated railways and subway trains in a city.

Other Modes

Amtrak Amtrak is defined as the U.S. national passenger railroad service providing intercity train service. Amtrak intercity service is excluded from the commuter train data.

Airplane Airplanes include commercial airplanes and smaller planes that are available for use by the general public in exchange for a fare. Private planes and helicopters are included under “Other.”

Taxi Taxis include the use of a taxicab by a driver for hire, or by a passenger for fare, and airport limousines. The taxi category does not include rental cars if they are privately operated and not picking up passengers in return for fare.

Bicycles This category includes bicycles of all speeds and sizes that do not have a motor.

Walk This category includes walking and jogging.

School Bus This category includes county school buses, private school buses, and buses chartered from private companies for the express purposes of carrying students to or from school and/or school-related activities.

Moped (Motorized Bicycle) This category includes motorized bicycles equipped with a small engine, typically characteristic of a two horsepower motor or less. Minibikes, dirt bikes, and trail bikes are excluded from this category. Note that a motorized bicycle may or may not be licensed for highway use.

Other Includes any types of transportation not previously listed, e.g. ferry boat.

**Metropolitan
Statistical
Area (MSA)**

Except in the New England States, a Metropolitan Statistical Area is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or “twin cities” with a combined population of at least 50,000. In addition, contiguous counties are included in an MSA if, according to certain criteria, they are socially and economically integrated with the central city. In the New England States, MSA’s consist of towns and cities instead of counties.

**Motorized
Vehicle**

Motorized vehicles are all vehicles that are licensed for highway driving. Snow mobiles and minibikes are specifically excluded.

Occupancy	Occupancy is the number of persons, including driver and passenger(s) in a vehicle. NPTS occupancy rates are generally calculated as person miles divided by vehicle miles.
Origin	Origin is the starting point of a trip.
Overlap Trip	A travel period trip that occurs on travel day, and is thus collected in both portions of the NPTS questionnaire. To insure that this trip is not counted twice, eliminate overlap trips from travel day data when travel day and travel period data will be added together.
Passenger	For a specific trip, a passenger is any occupant of a motorized vehicle, other than the driver.
Person Miles of Travel (PMT)	PMT is a primary measure of person travel. When one person travels one mile, one person mile of travel results. Where 2 or more persons travel together in the same vehicle, each person makes the same number of person miles as the vehicle miles. Therefore, four persons traveling 5 miles in the same vehicle results in 20 person miles ($4 \times 5 = 20$).
Person Trip	A person trip is a trip by one or more persons in any mode of transportation. Each person is considered as making one person trip. For example, four persons traveling together in one auto are counted as four person trips.
POV	A privately-owned vehicle or privately-operated vehicle. Either way, the intent here is that this is not a vehicle available to the public for a fee, such as a bus, subway, taxi, etc.
Travel Day	A travel day is a 24-hour period from 4:00 a.m. to 3:59 a.m. designated as the reference period for studying trips and travel by members of a sampled household.

Travel Period A travel period consists of 14 days. The travel period is the 13 day period which precedes the travel day, and includes the 14th day as the travel day for a sampled household.

Travel Day Trip A travel day trip is defined as any time the respondent went from one address to another by private motor vehicle, public transportation, bicycle, walking, or other means. However, a separate trip is not counted in two instances:

1. When the sole purpose for the trip is to get to another vehicle or mode of transportation in order to continue to the destination.
2. Travel within a shopping center, mall or shopping areas of 4-5 blocks is to be considered as travel to one destination.

Travel Period Trip A travel period trip is a roundtrip of 75 miles or more with the return home portion taking place during the 14-day travel period. The outgoing portion of this trip can take place at any time, but the return must be within the 14-day period. Note that a trip made to move the household to a new residence would be counted as a travel period trip, even though it is not a roundtrip.

Trip Purpose A trip purpose is the main reason that motivates a trip. There are 17 trip purposes used in the 1995 NPTS. For travel day trips, if there is more than one reason, and the reasons do not involve different destinations, then only the main reason is chosen. If there are two or more reasons, and they each involve different destinations, then each reason is classified as a separate trip. For travel period trips, if there is more than one reason, the primary reason is collected.

For the 1995 survey, trip purposes were collected using a From-To approach. For each trip, the origin and destination are on the file in generic terms, e.g. from work to shopping.

Note that there are two major purpose categories, Family and Personal Business and Social and Recreational, that are used to group like purposes. The 17 trip reasons are defined as follows:

To or From Work Travel between home and a place where one

reports for work.

Work-Related Trips for the respondent's job or business, other than to or from the workplace. Examples: a plumber drives to a wholesale dealer to purchase supplies for his business, or a company executive travels from his office to another firm to attend a business meeting. Out-of-town business trips and professional conventions are included in this category.

Return to Work Returning to the workplace after leaving for some reason. Examples: returning to work from lunch, shopping, a meeting, etc.

FAMILY AND PERSONAL BUSINESS:

Shopping Trips to purchase commodities such as groceries, furniture, clothing, etc. for use or consumption elsewhere. This purpose also includes window-shopping and trip made to shop even if nothing is purchased.

Doctor/Dentist This category includes trips made for medical, dental, or psychiatric treatment, or other related professional services.

Take someone somewhere (Dropoff) Escorting someone else to their destination. Examples: taking a child to school or daycare, taking someone to a friend's house, a doctor's appointment, etc.

Pick up someone Escorting someone on the return from their trip destination. Examples: return from school or daycare, a friend's house, a doctor's appointment, etc.

Other Family or Personal Business This category includes the purchase of services such as dry cleaning, auto repair, haircuts, banking, legal services, etc.

School Trips to school, college or university classes, or attending school-related functions, such as PTA meetings, seminars, etc. Community meetings or activities that use the school building are not considered trips to school.

Religious Activities Trips to attend religious services or to participate in other religious activities. Social activities that take

place at a house of worship, but cannot be classified as religious, are not included in this category.

SOCIAL AND RECREATIONAL:

Visit Friends or Relatives Trips made primarily to visit friends or relatives.

Out to Eat Trips made to go to restaurants or other eating establishments, such as coffee shops, ice cream shops, bagel shops, etc. Note that trips made to purchase food for take-out are not included here, they are considered shopping trips.

Vacation This category is for trips reported by the respondent as their vacation.

Other Social or Recreational Trips taken to enjoy some form of social activity involving friends or acquaintances. This category includes trips for general entertainment or recreation (as an observer or a participant.) Examples: movies, video rentals, plays, parties, dancing, sporting events, sightseeing.

Return home - A trip made to go to the respondent's residence .

Other Trips that do not fit in any of the other trip purposes above.

For more on trip purpose coding and variables, see **Appendix M**.

Urbanized Area

An urbanized area consists of the built up area surrounding a central core (or central city), with a population density of at least 1,000 persons per square mile. Urbanized areas do not follow jurisdictional boundaries, thus it is common for the urbanized area boundary to divide a county.

For the 1995 NPTS, an approximate classification of sample households was based upon the population density of the Census block group containing the household. Households in block groups estimated to have at least 1,000 persons per square mile were classed as urban; those in block groups with less than 1,000 persons per square miles were classed as not urban.

Vehicle	In the 1995 NPTS, the term vehicle includes autos, passenger vans, sport utility vehicles, pickups and other light trucks, RV's, motorcycles and mopeds owned or available to the household. Note that in the 1969 NPTS, the term vehicle was limited to cars or passenger vans. Estimates show that in 1969 there were an additional 7.5 million pickups and other light trucks that are not reflected in the 1969 NPTS data.
Vehicle Miles of Travel (VMT)	VMT is a unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.
Vehicle Occupancy	Vehicle occupancy is the number of persons, including driver and passenger(s) in a vehicle; also includes persons who did not complete a whole trip. NPTS occupancy rates are generally calculated as person miles divided by vehicle miles.
Vehicle Trip	A trip by a single privately-operated vehicle (POV) regardless of the number of persons in the vehicle.
Vehicle Type	For purposes of the 1995 NPTS, one of the following: <ol style="list-style-type: none"> 1. Automobile (including station wagon) 2. Van 3. Sport Utility Vehicle 4. Pickup Truck (including pickup with camper) 5. Other Truck 6. RV or Motor Home 7. Motorcycle 8. Other See "Means of Transportation" for definitions of these vehicle types. For NPTS, vehicle types are limited to privately operated vehicles (POV) because other vehicles that the respondent may have rode in (e.g., bus) were not tracked throughout the day, as was the case with household vehicles.
Worker	See "Employed".