

# **APTA 1999**

## **Transit Fact Book**



**American Public Transit Association  
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# TRANSIT FACT BOOK

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Director - Information Services

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1999

**American Public Transit Association**

1201 New York Ave., N.W., Suite 400  
Washington, DC 20005

TELEPHONE: (202) 898-4000  
FAX: (202) 898-4070  
EMAIL: info@apta.com  
WEB SITE: www.apta.com

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# What Is APTA?

File: APTA

The American Public Transit Association (APTA) is a nonprofit international organization, governed by an elected Board of Directors, of over 1,000 transit systems, planning, design, construction, and finance firms, product and service providers, academic institutions, and state associations and departments of transportation. APTA members serve the public interest by providing safe, efficient, and economical transit services, and by improving those services to meet national energy, environmental, and financial concerns. Over ninety percent of persons using public transit in the United States are carried by APTA members. APTA's objectives are:

- to represent the public interest in improving transit for all;
- to represent the interests, common policies, requirements, and purposes of the operators of public transit;
- to provide a medium for exchange of experiences, discussion, and comparative study of public transit affairs;
- to promote research and investigation to the end of improving public transit;
- to aid members in dealing with special issues;
- to encourage cooperation among its members, their employees, and the general public;
- to encourage compliance with the letter and spirit of equal opportunity principles;
- to collect, compile, and make available to members data and information relative to public transit;
- to assist in the training, education, and professional development of all persons involved in public transit; and,
- to engage in any other activities which will serve the members and promote public transit.

# Notes

File: NOTES

The **Transit Fact Book** was first published in 1943. 1999 is the 50<sup>th</sup> edition since there were a few years in which the book was not published. Available data are expanded by standard statistical methods to estimate U.S. national totals. *All data are for the U.S. only, except for the section on Canada.* Data for Canada were provided by the Canadian Urban Transit Association (CUTA), except as noted for fixed guideway data.

This book includes only transit data and excludes taxicab, unregulated jitney, school, sightseeing, intercity, military, and non-public service (e.g., governmental and corporate shuttles), and special application systems (e.g., amusement parks, airports, and international, rural, rural interstate, island, and urban park ferries).

Data are based on the annual National Transit Database (NTD) report published by the Federal Transit Administration (FTA). APTA supplements these data with special surveys. Bus and demand response data are calculated based on 1980 U.S. Census Bureau urbanized area population categories; beginning in 1990, urbanized areas designated by the 1990 census are used.

The number of employees is based on the concept of employee equivalents where each employee equivalent is equal to 2,080 labor hours. Beginning in 1993, the number of employees is based on the actual number of persons at the end of the fiscal year. Data are not continuous between 1992 and 1993.

Federal government funding data are based on reports prepared by the United States Department of Transportation.

Because of the time required to compile the large amount of data for this book, data for the last calendar year reported are preliminary and will be refined when additional data become available.

## SECTION I

File: SUMMARY

# Summary

## 1. WHAT IS TRANSIT?

Transit includes all multiple-occupancy-vehicle passenger services of a local and regional nature provided for general public use such as:

public bus, rail, and water services;  
private bus, rail, and water services;  
AMTRAK and intercity bus carrier service under contract to a transit agency;  
vanpools operated by or under contract to a transit agency;  
taxi services under contract to a transit agency; and,  
non-profit agency transportation for the aged, disabled, disadvantaged.

## 2. TYPES OF SERVICE

Different types of transit service are called modes, which are defined in the back of this book. All operate on a specific route except demand response and vanpool.

Road modes include bus, trolleybus, vanpool, jitney, and demand response.

Rail modes include heavy rail, light rail, commuter rail, automated guideway transit, inclined plane, cable car, monorail, and aerial tramway.

Water modes include ferryboat.

### 3. NUMBER OF AGENCIES

There are almost 6,000 transit agencies in the U.S. About 2,250 operate bus service, 5,200 operate demand response service, and about 150 operate other modes. Most operate more than one mode. Almost two-thirds are non-profit elderly and disabled service agencies. The number of providers actually operating transit service is significantly greater since many agencies have several or even dozens of contractors.

### 4. FIXED GUIDEWAYS

All rail, ferryboat, and trolleybus modes operate on fixed guideways. The small portion of bus service operating on high-occupancy-vehicle lanes is also considered fixed guideway service. Most fixed guideway mileage is commuter rail (3,163 miles), followed by bus (1,198), heavy rail (738), ferryboat (414), light rail (386), trolleybus (263), and all other modes (22).

Under construction are 179 miles of bus fixed guideway, 63 miles of light rail, 191 miles of commuter rail, 43 miles of heavy rail, 8 miles of trolleybus, and 10 miles of automated guideway transit.

### 5. FUNDING SOURCES

Capital funds are used to fund transit infrastructure. Federal law provides for federal funding to be a maximum of 80% of the project cost, with the remainder to be provided by state and local governments. However, some projects are entirely funded at the local or state level, and many areas provide more than the minimum requirement. Thus, only 54% of transit capital funding comes from the federal government. Transit agencies raise 22% from taxes, tolls, and fees they levy plus non-governmental sources. States contribute 13%; local governments 11%.

In 1997, \$7.7 billion was received from all sources. 39% was for bus-related projects, 37% for rail modernization, 23% for new start transit projects, and 1% for planning.

About 77% of transit operating funds come from the area in which the service is provided: 40% comes from the passengers, 21% from local governments, and 16% from non-government sources and taxes, tolls, and fees levied directly by transit agencies. State and federal governments contribute 20% and 3%, respectively.

Table 1

Source of Transit Operating Funding, 1984 and 1995

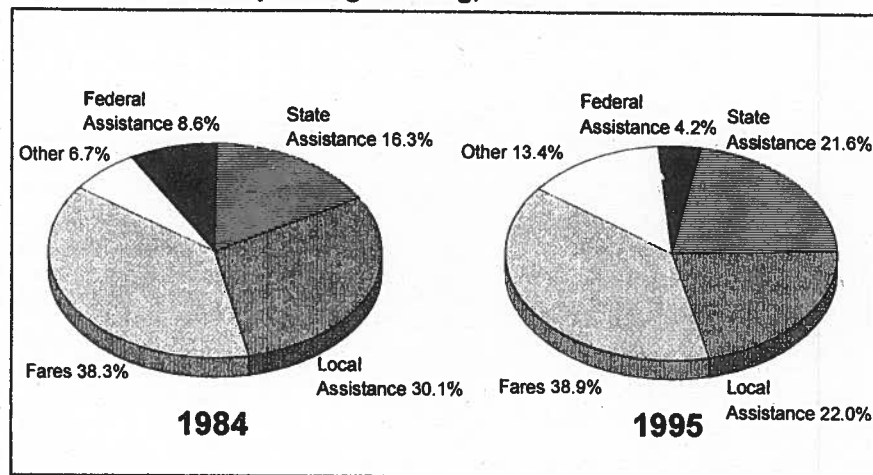
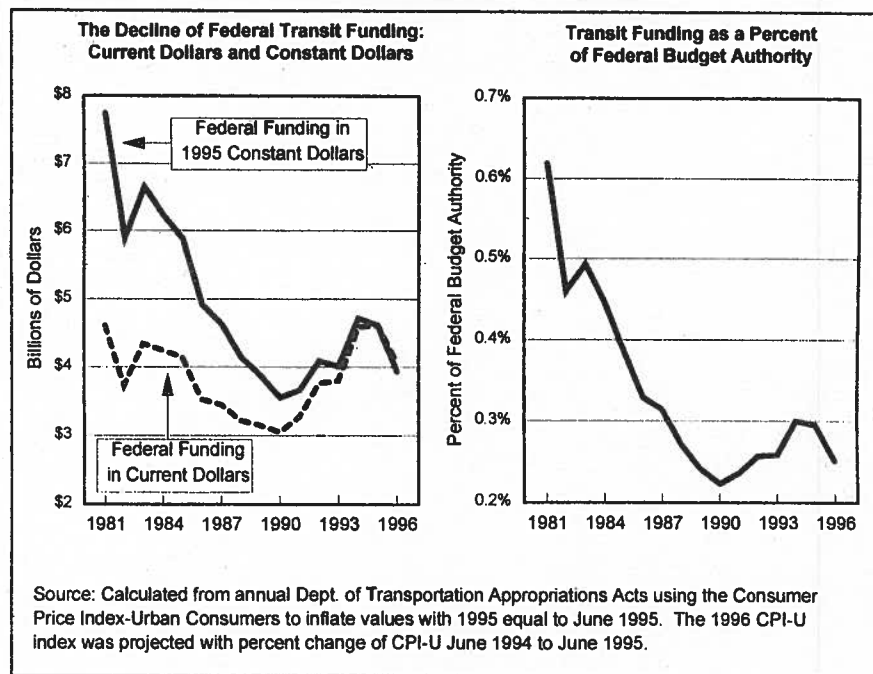


TABLE 2

Real Value of Federal Transit Assistance, 1981-1996





The average adult base cash fare in 1997 was \$1.06, but most passengers pay more when zone and other surcharges are included. Average fare paid per unlinked trip was \$0.47 for trolleybus, \$0.53 for light rail, \$0.70 for bus, \$0.97 for heavy rail, \$1.83 for demand response, and \$3.30 for commuter rail. Other modes ranged from \$0.66 to \$1.34.

## 6. GOVERNMENTAL FINANCIAL ASSISTANCE

Transit, like all public services and many private segments of the U.S. economy, receives governmental financial assistance. Governmental aid comes in two forms: general appropriations taken from all funds received, and funds specifically dedicated to transit by law such as a one-half cent sales tax or a one cent gas tax.

While transit assistance is explicitly identified in government budgets and appropriations, governmental assistance to many other segments, such as automobile owners, is largely indirect and not identified as such. Examples are the large tax write-offs that may total several thousand dollars a year for employer-provided or paid free parking and the hidden costs of highways (parking lots and garages, maintenance, police, insurance, licensing, etc.) that are paid by virtually all taxpayers rather than just the users of the highways.

Part of the governmental assistance to transit is required to cover a government-induced gap between expenses and funding. Numerous federal regulations and court decisions require the provision of services for the aged and disabled. Most of these are operated as expensive demand response service and wheelchair-accessible buses and rail vehicles. Regardless of these requirements, the regulations require reduced fares for the aged and disabled during off-peak periods.

Additional regulations regarding low-polluting bus engines, safety features, etc. also lead to more expensive vehicles and operating practices. Large transit agencies also require extensive security forces because of the huge numbers of people that patronize them.

Another reason for public assistance is that transit is considered a necessary public service. Transit agencies must operate non-profitable routes, sometimes even during late-night hours.

## 7. EXPENSES

Capital expenses are monies paid for transit infrastructure and its planning, design, land acquisition, and related costs). In 1997, 30% of the \$7.7 billion total went for vehicles, 57% for facilities, and 13% for equipment and services. 31% was spent on heavy rail, 30% for bus, 24% on commuter rail, 11% on light rail, and the remainder on other modes.

Operating expense in 1997 was \$19.0 billion. Bus accounted for 58%, heavy rail for 18%, commuter rail for 12%, demand response for 7%, light rail for 3%, and other modes for the rest.

The largest types of expenses were salaries and wages (48%), fringe benefits (25%), purchased transportation (9%), and fuel and supplies (9%). Services, utilities, insurance, and other costs made up the remainder. Transit is among the most labor-intensive of governmental services, since labor expenses (salaries and wages, fringe benefits, services and an estimated 75% of purchased transportation) account for over 80% of all expenses.

About 47% of expenses are devoted to scheduling and operation of revenue vehicles, 18% to their maintenance, 10% to non-vehicle (primarily facilities) maintenance, 9% to purchased transportation, and 16% to general administration.

## 8. PASSENGERS

About 8.6 billion trips were taken on transit in 1997. Of these, 61% were bus trips, 28% heavy rail, 4% commuter rail, 3% light rail, and the remainder on other modes. Over 6 million people used transit each weekday. About 5% of all commuters use transit, but in most large cities 15%-50% do.

Average trip length is longest for vanpools (33.1 miles). Commuter rail was 22.5 miles, demand response 9.7 miles, ferryboat 6.5 miles, heavy rail 5.0 miles, bus 3.9 miles, light rail 3.9 miles, and other modes 1.6 miles or less.

54% of transit trips are worktrips, 15% for school, 9% for shopping, 9% social, and 5.5% medical. 7% are 65 or older and 10% are 18 and under. 52% are by women, 45% by whites, 31% by blacks, 18% by Hispanics, and 6% by Asians or Native Americans. 27% are by those with family incomes below \$15,000, 17% by those whose family income is over \$50,000, and the majority by those in between. 1.5% are by the disabled,

according to an APTA report (*Americans in Transit: A Profile of U.S. Transit Passengers*, October 1992).

Transit serves two markets:

People in the transit-dependent market have no personal transportation, no access to such transportation, or are unable to drive. Included are those with low incomes, the disabled, elderly, children, families whose travel needs cannot be met with only one car, and those who opt not to own personal transportation. In 1988, the U.S. Energy Department estimated that 13% of the 91.6 million U.S. households did not own a car, truck, van, motorcycle, or motor scooter, and that another 34% owned only one vehicle.

People in the transit-choice market are workers, environmentalists, travelers, and people on recreational, social, medical, or other journeys who do not have to use transit, but do so for reasons of speed, comfort, convenience, traffic avoidance, or environmental principle.

## 9. EFFECTS OF FARE INCREASES ON RIDERSHIP

There is a direct relationship between transit fares and ridership. An APTA study, "Effects of Fare Changes on Bus Ridership" (May 1991), found that on the average, a 10% increase in bus fares would result in a 4% decrease in ridership.

The study also found that bus riders in small cities are more responsive to fare increases than those in large cities are, and peak-hour commuters are much less responsive to fare changes than other passengers.

## 10. SERVICE PROVIDED

In 1997, 3.8 billion miles and 255 million hours of service were operated. Buses operated 60% of the miles and 68% of the hours, heavy rail 15% of the miles and 11% of the hours, demand response 16% of the miles and 16% of the hours, and commuter rail 7% of the miles and 3% of the hours.

Average revenue service speed was highest for vanpools at 36.1 m.p.h. Commuter rail was 33.8, heavy rail 20.7, demand response 15.3, light rail 15.5, bus 13.0, trolleybus 7.6, ferryboat 7.5, and other modes 6.6.

## 11. VEHICLES

Transit fleets contain about 124,000 active vehicles. About 58% were buses, 25% demand response vehicles, 8% heavy rail cars, and 4% commuter rail cars.

Average age was 8.6 years for buses, 3.5 years for demand response vehicles, 21.0 years for commuter rail cars, 21.6 years for heavy rail cars, and 19.8 years for light rail cars.

Average bus length is 39.3 feet, demand response vehicles 21.6 feet, commuter rail cars 84.9 feet, heavy rail cars 61.6 feet, and light rail cars 70.3 feet.

6.5% of buses and 13.2% of demand response vehicles use alternative power. Over 2,600 use compressed natural gas or CNG blends, about 475 use propane, and over 400 use liquefied natural gas and LNG blends.

Most vehicles are wheelchair accessible—72.4% of buses, 93.0% of demand response vehicles, 71.9% of commuter rail cars, 94.2% of heavy rail cars, and 73.2% of light rail cars.

Each year 150 to 350 new rail cars and 5,500 to 6,500 buses and demand response vehicles are purchased. About 3,000 of the buses are 40-45 feet long, about 2,000 (primarily demand response) are 27.5 feet or less, and most of the remainder are in the 30-35 foot range.

The average new 40-foot bus costs \$277,000, while rail cars vary widely from \$1.0 million to \$2.5 million apiece.

## 12. EMPLOYEES

It takes over 326,000 employees to operate, maintain, and administer transit service. 61% are employed in bus service, 14% in heavy rail, 15% in demand response, 7% in commuter rail, and the balance in other modes. Of the total, operators and conductors on board the vehicles comprise 50%, other vehicle operations personnel 14%, vehicle maintenance personnel 17%, non-vehicle maintenance personnel 9%, and general administration personnel 10%.

In addition, there are about 13,000 capital employees. Perhaps 10,000 to 20,000 other persons are employed by manufacturers of transit equipment, consultants, engineering firms, local governments, and other

transit-related businesses that perform work under contract to transit agencies.

The average compensation of a transit employee (salaries and fringe benefits) is over \$40,000 per year.

### 13. ENERGY CONSUMPTION

Transit vehicles used 768 million gallons of fossil fuels and 5.0 billion kilowatt-hours of electricity in 1997, which is less than 1% of all the energy consumed in this country.

89% of the fossil fuels used was diesel, and of that 82% was used by buses, 9% by commuter rail, 5% by demand response, and 4% by ferryboats. 49% of the other fossil fuels was gasoline, 29% compressed natural gas, 6% propane, and 5% liquefied natural gas.

Most electricity is used by heavy rail (65%), while commuter rail used 26% and light rail 7%.

### 14. TRANSIT VS. AUTOMOBILE COSTS

For many persons, transit is much more economical than driving to work alone, especially those commuting to central business districts. Annual costs for transit range from just less than \$200 to over \$2,000, depending on mileage traveled, and whether time-of-day, express, transfer, and parking charges are applicable.

The American Automobile Association in 1998 estimated the annual cost to a single-occupant driver to be \$4,660 for a small car up to \$9,441 for a large car, depending on mileage driven.

Each year society pays \$2 to \$3 trillion for highways and motor vehicle use, but only 53% to 68% of that amount is paid by users.

The following examples illustrate daily costs for a ten-mile trip:

	Daily Cost (Dollars)
<b><u>Walking to transit stop and taking transit</u></b>	
Fares (\$1.50 each way)	\$ 3.00

<b><u>Driving alone</u></b>	
Gasoline & oil (\$0.06/mile)	\$1.20
Maintenance & tires (\$0.04/mile)	0.80
<u>Parking (APTA estimate)</u>	<u>5.00</u>
Total	7.00

#### **Driving 3 miles to a park-and-ride lot and using transit for the remainder of the trip**

Fares	\$3.00
Gasoline & oil	0.36
<u>Maintenance &amp; tires</u>	<u>0.24</u>
Total	3.60

Gasoline, oil, maintenance, and tire costs based on American Automobile Association data. APTA estimates central business district parking costs to be \$5.00/day and the average transit commuting fare to be \$3.00 per day. (Purchase of a monthly pass could reduce the \$3.00 by 10% to 30% or more.) In many large cities, bridge, tunnel, and/or highway tolls could add \$2.00 to \$6.00 per day.

These amounts do not include the fixed cost to own an automobile that AAA estimates at \$12.34-\$17.07 per day (based on 15,000 miles per year). These costs include insurance, license, registration, taxes, depreciation, and finance charges.

Also excluded from the costs listed above are costs to build, maintain, and operate highways, parking facilities, and transit agencies. These costs are mostly paid by all citizens through taxes and are not directly related to use of an automobile or transit.

### 15. BENEFITS OF TRANSIT

Transit use has many benefits to society:

### 1. *Reduced energy consumption*

Transit's energy efficiency and conservation potential are considerable:

Based on U.S. Department of Energy data, APTA estimates fuel efficiency of transit compared to the average commuter auto:

- 1 bus with 7 passengers equals 1 auto.
- 1 full bus equals 6 autos.
- 1 full rail car equals 15 autos.

Annual gasoline savings possible from transit use are:

- 200 gallons for each person switching from driving alone;
- 85 million gallons for a 10% increase in transit ridership in the five largest U.S. cities; and,
- 135 million gallons for a 10% nationwide increase in transit ridership.

In 1989, 21% of this country's energy and 49% of its petroleum consumption was by motor vehicles, according to the U.S. Departments of Energy and Transportation. However, transit vehicles are more efficient than automobiles when passenger miles are considered. The Energy Department estimated the following 1989 energy consumption rates:

	<u>BTU/Passenger Mile</u>
Automobile	4,063
Transit bus	3,711
Transit rail	3,397
Commuter rail	3,102

A BTU (British Thermal Unit) is a measure of energy consumption regardless of whether it is fossil-fuel, nuclear, electric, water power, or some other type. Passenger miles are the number of passengers times the miles they travel.

### 2. *Rational development*

One only has to look at the development patterns of a metropolitan area from the air to see the relationship between development and transit. Office buildings, residential complexes or buildings, hospitals, universities, shopping areas, and large manufacturing plants all generate large amounts of traffic. High-capacity vehicle access (i.e., transit) is the only way such areas can avoid gridlock due to the limited capacity of streets,

highways, and parking facilities. In the most highly developed cities such as New York and Chicago, 75% or more of all people arrive on transit: street and parking capacity cannot handle more than a small fraction of the vehicles needed to convey the numbers of people involved.

### 3. *Mobility*

The ability to travel freely is one of the hallmarks of a free society. Yet millions of people have restricted mobility because they do not own a motor vehicle, cannot afford to drive, or are physically unable to drive. Transit is the only means of mobility for most of these people--to jobs, medical services, recreation, and shopping.

### 4. *Greater retail sales*

Numerous estimates have been made around the country that retail sales --especially in central business districts--are enhanced by the presence of good transit service. There are several reasons:

- a. A high proportion of commuters in large cities use transit to shop near work, before or after work, or during their lunch hours.
- b. The transit-dependent shop in locations they can get to by transit.
- c. Many department stores, urban malls, and commercial areas are located in congested areas adjacent to rail stations, bus terminals, and transit routes.

An APTA study, "National Impacts of Transit Capital and Operating Expenditures on Business Revenues," estimates that a dollar invested in transit results in a \$3 to \$3.50 increase in business revenues nationwide.

### 5. *Less traffic congestion*

One full 40-foot bus equals a line of moving automobiles stretching:

- 6 city blocks (if traffic operates at 25 mph)
- 4.5 blocks (if traffic operates at 15 mph)

One full six-car heavy rail train is equivalent to a line of moving automobiles stretching:

- 95 city blocks (if traffic operates at 25 mph)
- 68 blocks (if traffic operates at 15 mph)

A full 40-foot bus holds about 70 people including standees. At the estimated national average of 1.2 persons per automobile, one bus is equivalent to 58 automobiles. A full heavy rail car accommodates about 180 people including standees; a train of six cars carries 1,080 people, thus replacing 900 automobiles. There are normally ten city blocks per mile. Average automobile length is estimated at 16 feet, and a one-car-length-per-each-ten-mile-per-hour following length is assumed.

#### 6. Creation of jobs

In addition to the over 300,000 people directly employed by transit, tens of thousands of others are dependent on transit for their livelihood. These include engineering and construction workers planning and building transit facilities, transit consultants, manufacturers of transit vehicles, equipment and parts, retail employees serving transit passengers, and employees in all sectors of the U.S. economy indirectly supporting transit activities.

It is estimated that 2,400 direct and 5,800 total jobs are created by each \$100 million transit capital investment. Operating expenditures of \$100 million would generate 3,100 direct and 7,300 total jobs.

#### 7. Mobility during crises

During snow and ice storms, transit patronage often rises as numerous people avoid driving under such conditions.

After the 1989 San Francisco earthquake the entire city was paralyzed, but the BART rail system resumed operations after a few hours to check for damage. Service was expanded to 24-hours-per-day since the bridge connecting San Francisco and Oakland was closed for several weeks.

#### 8. Less air pollution

Transit vehicles contribute far less atmospheric pollution than automobiles. The following is derived from U.S. Department of Energy data.

##### Pollution by Mode of Travel

For typical work trips based on national average vehicle occupancy rates, pollutant emissions in grams per passenger mile are:

<u>Mode</u>	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>
Electric Rail	0.01	0.02	0.47
Bus	0.20	3.05	1.54
Vanpool	0.36	2.42	0.38
Carpool	0.70	5.02	0.69
Single-person Auto	2.09	15.06	2.06

##### Reduction in pollution when riding transit instead of driving

<u>Mode</u>	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>
Electric Rail	99%	99%	60%
Bus	90%	75%	10-15%
Vanpool	80%	80%	80%

#### 9. Safety

Transit is one of the safest methods of passenger travel, according to the National Safety Council. The 1994-1996 average death rates in terms of 100 million passenger miles are as follows:

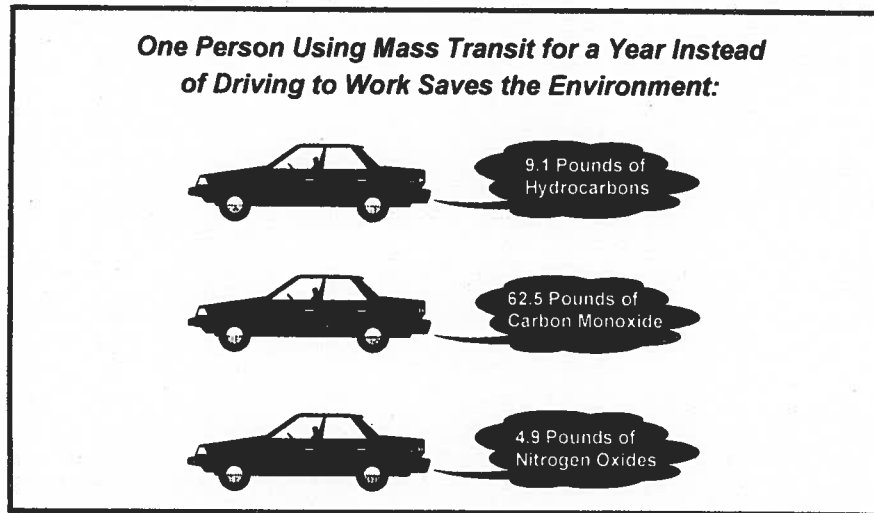
	<u>Death Rate</u>
Automobiles	0.94
Intercity & commuter railroads	0.04
Airlines	0.06
Intercity buses	0.01
School buses	0.01
Transit buses	0.02
Heavy, light, & other rail vehicles	Not reported

#### 10. Increased Productivity

Investment in transit is estimated to improve worker output of about \$520 billion over the next 10 years, assuming an investment of \$100 billion. The better facilities and services provided by the investment result in more efficient movement of people and goods, which saves time, reduces costs and increases productivity. This finding is from "Transportation Spending and Economic Growth," a 1991 study by Professor David A. Aschauer.

TABLE 3

Adverse Environmental Impact of Automobiles



Source: APTA, *Mass Transit - The Clean Air Alternative*, 1991.

SECTION II

Profile of U.S. Transit

TABLE 4

File: AGENCIES

Number of Transit Agencies by Mode

MODE	NUMBER
Aerial Tramway	1
Automated Guideway Transit	6
Bus	2,250
Cable Car	1
Commuter Rail	18
Demand Response	5,214
Ferryboat (b)	25
Heavy Rail	14
Inclined Plane	5
Light Rail	22
Monorail	2
Trolleybus	5
Vanpool	55
<b>TOTAL (a)</b>	<b>5,975</b>

(a) Total is not sum of all modes since many agencies operate more than one mode.

(b) Excludes international, rural, rural interstate, island, and urban park ferries.

TABLE 5

File: BYSTATE

## Number of Transit Agencies By State (a)

STATE	FEDERALLY FUNDED AGENCIES				OTHER AGENCIES (e)	TOTAL
	URBANIZED AREA AGENCIES (b)	RURAL AGENCIES (c)	SPECIALIZED TRANSPORTATION AGENCIES (d)			
	Alabama	13	21	52		
Alaska	1	3	17	11	32	
Arizona	11	12	61	5	89	
Arkansas	4	9	159	6	178	
California	77	72	200	121	470	
Colorado	6	13	16	28	63	
Connecticut	23	4	58	11	96	
Delaware	3	0	41	1	45	
District of Columbia	1	0	24	0	25	
Florida	22	32	139	23	216	
Georgia	9	54	77	13	153	
Hawaii	1	3	28	0	32	
Idaho	3	6	33	6	48	
Illinois	15	29	99	8	151	
Indiana	28	17	77	17	139	
Iowa	10	23	0	14	47	
Kansas	3	91	56	15	165	
Kentucky	6	17	6	9	38	
Louisiana	12	36	81	12	141	
Maine	9	10	0	5	24	
Maryland	7	16	46	4	73	
Massachusetts	14	5	31	6	56	

(continued on next page)

TABLE 5 (continued)

## Number of Transit Agencies By State (a)

STATE	FEDERALLY FUNDED AGENCIES				OTHER AGENCIES (e)	TOTAL
	URBANIZED AREA AGENCIES (b)	RURAL AGENCIES (c)	SPECIALIZED TRANSPORTATION AGENCIES (d)			
	Michigan	16	52	42		
Minnesota	5	52	99	18	174	
Mississippi	3	16	40	5	64	
Missouri	6	30	154	12	202	
Montana	3	9	51	4	67	
Nebraska	2	54	61	14	131	
Nevada	3	2	53	6	64	
New Hampshire	3	6	19	4	32	
New Jersey	4	13	111	7	135	
New Mexico	3	10	55	21	89	
New York	54	35	271	45	405	
North Carolina	15	27	55	12	109	
North Dakota	3	27	15	3	48	
Ohio	19	31	221	31	302	
Oklahoma	2	13	115	7	137	
Oregon	4	15	70	11	100	
Pennsylvania	22	17	105	63	207	
Rhode Island	1	1	24	0	26	
South Carolina	10	5	59	4	78	
South Dakota	2	11	57	8	78	
Tennessee	9	11	90	5	115	
Texas	32	39	247	27	345	

(continued on next page)

TABLE 5 (continued)

## Number of Transit Agencies By State (a)

STATE	FEDERALLY FUNDED AGENCIES			OTHER AGENCIES (e)	TOTAL
	URBANIZED AREA AGENCIES (b)	RURAL AGENCIES (c)	SPECIALIZED TRANSPORTATION AGENCIES (d)		
Utah	2	3	51	2	58
Vermont	1	10	29	6	46
Virginia	13	13	40	22	88
Washington	15	15	4	20	54
West Virginia	5	12	73	6	96
Wisconsin	17	29	69	13	128
Wyoming	2	43	13	5	63
Total	554	1,074	3,594	753	5,975

(a) Agencies operating in two or more states are counted in the state in which they operate the largest portion of their service.

(b) Agencies that have reported data for U.S. Federal Transit Administration Annual National Transit Database Report.

(c) Data from *Directory of Rural Public Transportation Providers Funded by FTA's Section 18 Program*, U.S. Department of Transportation, October 1994. Excludes agencies included in Urbanized Area Agencies.

(d) Data from *Directory of Specialized Transportation Providers Funded by FTA's Section 16 Program*, U.S. Department of Transportation, December 1994. Excludes agencies included in Urbanized Area Agencies and Rural Agencies.

(e) Data from various federal and state sources, *Bus Ride Magazine Bus Industry Directory*, and other sources. Several hundred of these agencies do not appear in any current directory or reporting system, and some may not exist. Conversely, numerous other agencies exist that have never made it into any data source. Data should be considered estimates only.

TABLE 6

File: 35LGEAG

## 35 Largest Transit Agencies, Fiscal Year 1997, Ranked by Number of Unlinked Passenger Trips (a)

RANK	TRANSIT AGENCY	URBANIZED AREA
1	Metropolitan Transportation Authority (includes MTA New York City Transit, MTA Long Island Rail Road, MTA Metro-North Railroad, MTA Long Island Bus, and MTA Staten Island Railway)	New York, NY
2	Regional Transportation Authority (includes Chicago Transit Authority, Northeast Illinois Regional Commuter Railroad Corporation, and PACE Suburban Bus)	Chicago, IL
3	Los Angeles County Metropolitan Transp Authority	Los Angeles, CA
4	Washington Metropolitan Area Transit Authority	Washington, DC
5	Massachusetts Bay Transportation Authority	Boston, MA
6	Southeastern Pennsylvania Transp Authority	Philadelphia, PA
7	San Francisco Municipal Railway	San Francisco, CA
8	New Jersey Transit Corporation	New York, NY
9	Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA
10	Mass Transit Administration, Maryland Dept of Trp	Baltimore, MD
11	New York City Department of Transportation	New York, NY
12	King County Department of Transportation	Seattle, WA
13	Metropolitan Transit Authority of Harris County	Houston, TX
14	San Francisco Bay Area Rapid Transit District	San Francisco, CA
15	Miami-Dade Transit Agency	Miami, FL
16	Port Authority of Allegheny County	Pittsburgh, PA
17	Tri-County Metropolitan Transp District of Oregon	Portland, OR
18	Regional Transportation District	Denver, CO
19	Milwaukee County Department of Transportation	Milwaukee, WI
20	Port Authority of New York and New Jersey	New York, NY
21	City & County of Honolulu Dept of Transp Services	Honolulu, HI
22	Greater Cleveland Regional Transit Authority	Cleveland, OH
23	Alameda-Contra Costa Transit District	San Francisco, CA
24	Metro Transit	Minneapolis, MN
25	Dallas Area Rapid Transit Authority	Dallas, TX
26	San Diego Metropolitan Transit Development Board (includes San Diego Transit Corporation and San Diego Trolley)	San Diego, CA
27	Regional Transit Authority of Orleans and Jefferson	New Orleans, LA
28	City of Detroit Department of Transportation	Detroit, MI
29	Santa Clara Valley Transportation Authority	San Jose, CA
30	Bi-State Development Agency	Saint Louis, MO
31	Orange County Transportation Authority	Los Angeles, CA
32	Regional Transportation Comm of Clark County	Las Vegas, NV
33	VIA Metropolitan Transit	San Antonio, TX
34	Capital Metropolitan Transportation Authority	Austin, TX
35	City of Phoenix Public Transit Department	Phoenix, AZ

(a) Excludes commuter-type services operated independently by Amtrak.



TABLE 7

File: GUIDMILE

## Fixed Guideway Mileage and Status of Future Projects (a)

MODE (b)	STATUS	MILES (c)
?	design	5.3
?	planning	138.0
?	proposed	48.6
<b>? TOTAL</b>		<b>381.2</b>
AG	construction	1.1
AG	design	1.0
AG	open	12.2
AG	planning	29.7
<b>AG TOTAL</b>		<b>57.5</b>
CC	open	4.5
<b>CC TOTAL</b>		<b>4.5</b>
CR	construction	107.0
CR	design	36.0
CR	open	3,162.6
CR	planning	1,255.4
CR	proposed	718.2
<b>CR TOTAL</b>		<b>6,489.2</b>
FB	open	414.3
FB	planning	26.8
FB	proposed	25.0
<b>FB TOTAL</b>		<b>466.1</b>
HR	construction	8.0
HR	design	6.8
HR	open	737.8
HR	planning	74.9
HR	proposed	26.5
<b>HR TOTAL</b>		<b>919.1</b>
IP	open	1.5
<b>IP TOTAL</b>		<b>1.5</b>
LR	construction	2.0
LR	design	65.9
LR	open	386.1
LR	planning	333.7
LR	proposed	47.6
<b>LR TOTAL</b>		<b>1,399.3</b>
MB	construction	6.4

TABLE 7

File: GUIDMILE

## Fixed Guideway Mileage and Status of Future Projects (a)

MODE (b)	STATUS	MILES (c)
MB	design	36.4
MB	open	1,198.1
MB	planning	195.9
MB	proposed	13.1
<b>MB TOTAL</b>		<b>2,100.4</b>
MO	open	2.7
MO	planning	2.6
MO	proposed	37.0
<b>MO TOTAL</b>		<b>42.3</b>
TB	construction	6.8
TB	design	6.1
TB	open	263.4
TB	planning	2.2
TB	proposed	
<b>TB TOTAL</b>		<b>376.4</b>
TR	open	0.6
TR	proposed	
<b>TR TOTAL</b>		<b>0.6</b>

? = Uncertain, unknown, or not reported; AG=automated guideway transit; CC=cable car; CR=commuter rail; FB=ferryboat; HR=heavy rail; IP=inclined plane; IR=intermediate rail; LR=light rail; MB=bus; MO=monorail; TB=trolleybus; TR=aerial tramway.

(a) Data as of July 1998, plus updated information where known.

(b) Bus data includes only fixed guideways 1.0 miles in length or longer; data for all other modes includes all guideways.

(c) Excludes data for a few guideways for which mileage was not reported.

Source: APTA survey

TABLE 8

Title: GUIDECON

**Fixed Guideways Under Construction (a)**

LOCATION	MILES
<b>AUTOMATED GUIDEWAY</b>	
Jacksonville, FL	1.5
New York, NY	8.4
<b>TOTAL</b>	<b>9.9</b>
<b>BUS</b>	
Charlotte, NC	2.9
Dallas, TX	11.1
Denver, CO	3.3
Houston, TX	21.6
Los Angeles, CA	43.5
Minneapolis, MN	0.9
Nashville, TN	18.0
New York, NY	10.0
Norfolk, VA	4.4
Pittsburgh, PA	6.0
Salt Lake City, UT	19.0
San Bernardino, CA	9.9
San Diego, CA	1.5
San Jose, CA	2.0
Seattle, WA	11.8
Washington, DC	13.0
<b>TOTAL</b>	<b>178.9</b>
<b>COMMUTER RAIL</b>	
Burlington, VT	20.0
New York, NY	6.2
Portland, ME	78.1
Stockton, CA	85.0
Syracuse, NY	2.0
<b>TOTAL</b>	<b>191.3</b>
<b>HEAVY RAIL</b>	
Atlanta, GA	2.0
Los Angeles, CA	10.9
New York, NY	0.4

TABLE 8

Title: GUIDECON

**Fixed Guideways Under Construction (a)**

LOCATION	MILES
San Francisco, CA	8.7
San Juan, PR	10.7
Washington, DC	10.2
<b>TOTAL</b>	<b>42.9</b>
<b>LIGHT RAIL</b>	
Dallas, TX	3.1
Denver, CO	8.7
New York, NY	9.6
Saint Louis, MO	17.4
Salt Lake City, UT	15.0
San Francisco, CA	2.0
San Jose, CA	7.6
<b>TOTAL</b>	<b>63.4</b>
<b>TROLLEYBUS</b>	
Boston, MA	1.0
Dayton, OH	6.8
<b>TOTAL</b>	<b>7.8</b>

(a) Data as of July 1998, plus updated information where known.

Source: APTA survey

TABLE 9

Title: GUIDEBUS

## Bus Fixed Guideways 5.0 Miles or More in Length (a)

LOCATION	GUIDEWAY	SEGMENT	MILES
Atlanta, GA	I 20 East HOV Lanes	Hill St-Columbia Drive	9.0
Atlanta, GA	I 75 HOV Lanes	I 285-Chattahoochee River	17.0
Atlanta, GA	I 85 North HOV Lanes	Buford Hwy-I 285	11.0
Atlanta, GA	I 85 South HOV Lanes	I 285-Brookwood Station	11.0
Boston, MA	I 93 South HOV Lane	Freepport St-Furnace Brook Parkway	6.0
Dallas, TX	I 30 East Interim HOV Lanes	Central Expressway-Jim Miller Rd	5.2
Dallas, TX	I 35E North Interim HOV Lanes	I 635-Round Grove Rd	7.3
Dallas, TX	I 635 Interim HOV Lanes	US 75-I 35E	6.8
Denver, CO	I 25 North HOV Lanes	Union Terminal-70th	6.8
Denver, CO	Santa Fe Blvd HOV Lanes	I 25-Chenango St	6.0
Fort Lauderdale, FL	I 95 HOV Lanes	Dade County Line-Palm Beach County Line	26.5
Hartford, CT	I 84 East HOV Lanes	East Hartford-Vernon	9.5
Hartford, CT	I 91 North HOV Lanes	Hartford-Windsor Locks	10.0
Honolulu, HI	I H1 HOV Lanes	Waiawa-Keehi	8.9
Honolulu, HI	I H2 HOV Lanes	Miiliani-Waiawa	5.3
Houston, TX	I 10 West HOV Lanes	TX 6-West Loop Terminus	13.0
Houston, TX	I 45 North HOV Lanes	I 10-Aldine-Bender	13.5
Houston, TX	I 45 South HOV Lanes	US 59-Dixie-Farm Rd	15.5
Houston, TX	US 290 Northwest HOV Lanes	I 10-FM 1960	13.5
Houston, TX	US 59 South HOV Lanes	Shepherd-Fort Bend County Line	12.3
Los Angeles, CA	CA 118 HOV Lanes	I 5-Ventura County Line	11.4
Los Angeles, CA	CA 134 HOV Lanes	US 101/CA 170-I 210	12.9

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TABLE 9

Title: GUIDEBUS

## Bus Fixed Guideways 5.0 Miles or More in Length (a)

LOCATION	GUIDEWAY	SEGMENT	MILES
Los Angeles, CA	CA 14 HOV Lanes	CA 126-Sand Canyon	6.4
Los Angeles, CA	CA 170 HOV Lanes	I 5-US 101/CA 134	6.1
Los Angeles, CA	CA 55 HOV Lanes	CA 91-CA 73	11.0
Los Angeles, CA	CA 57 HOV Lanes	CA 22-Los Angeles Co Line	11.7
Los Angeles, CA	CA 91 HOV Lanes	I 110-Orange County Line	14.3
Los Angeles, CA	CA 91 HOV Lanes	Riverside County Line-CA 57	12.8
Los Angeles, CA	I 10 HOV Lanes	Alameda/Arcadia-Baldwin Ave	16.5
Los Angeles, CA	I 105 HOV Lanes	I 605-I 405	16.5
Los Angeles, CA	I 110 HOV Lanes	CA 91-Adams	11.1
Los Angeles, CA	I 210 HOV Lanes	CA 134-Sunflower	18.5
Los Angeles, CA	I 405 HOV Lanes	CA 22-I 5	20.5
Los Angeles, CA	I 405 HOV Lanes	I 105-I 110	9.2
Los Angeles, CA	I 405 HOV Lanes	I 710-Orange County Line	7.6
Los Angeles, CA	I 405 HOV Lanes Extension	I 5-US 101	10.1
Los Angeles, CA	I 5 HOV Lanes	CA 1-CA 22/CA 57	27.3
Los Angeles, CA	I 605 HOV Lanes	I 10-South St	16.4
Memphis, TN	I 40 East HOV Lanes	Mt Juliet Rd-Old Hickory Blvd	8.0
Miami, FL	I 95 HOV Lanes	Broward County Line-FL 112	11.2
Miami, FL	South Dade Busway	Dadeland South-Cutler Ridge	8.4
Minneapolis, MN	I 35W South HOV Lanes Extension S/B	66th St-MN 13	7.4
Minneapolis, MN	I 394 HOV Lanes	N. 12th St-I 494	9.0
Minneapolis, MN	I 94/I 694 HOV Lanes Westbound	Brooklyn Blvd-Weaver Lake Rd	6.3

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TABLE 9

Title: GUIDEBUS

## Bus Fixed Guideways 5.0 Miles or More in Length (a)

LOCATION	GUIDEWAY	SEGMENT	MILES
Minneapolis, MN	MN 47 HOV Lanes	37th Ave NE-85th Ave NE	6.4
Nashville, TN	I 65 South HOV Lanes	Army Dr-Concord Rd	8.0
New York, NY	I 287 HOV Lanes	I 80-I 78	21.0
New York, NY	I 80 HOV Lanes	I 287-NJ 15	10.0
New York, NY	Long Island Expressway HOV Lanes	NY 25-NY 454	20.0
New York, NY	New Jersey Turnpike HOV Lanes	Woodbridge-Newark	13.0
Norfolk, VA	I 64 HOV Lanes	VA 44/I 264-Battlefield Blvd	8.0
Norfolk, VA	I 64/I 564 HOV Lanes	VA 407-Taussig Blvd	10.3
Norfolk, VA	VA 44 HOV Lanes	I 64-Rosemont Rd	11.0
Phoenix, AZ	AZ 202 HOV Lanes	I 10-AZ 101	9.0
Phoenix, AZ	I 10 HOV Lanes	91st Ave-Chandler Blvd	28.0
Phoenix, AZ	I 17 HOV Lanes	Dunlap Ave-Beardsley Rd	7.0
Pittsburgh, PA	I 279-I 579 HOV Lanes	Bedford Ave-Perrysville Ave	6.9
Pittsburgh, PA	M.L. King Jr. East Busway	Liberty Ave/Grant St-Wilkinsburg	7.8
San Bernardino, CA	CA 60 HOV Lanes	Los Angeles Co Line-Riverside Co Line	10.2
San Bernardino, CA	CA 71 HOV Lanes Extension	Los Angeles Co Line-Riverside Co Line	9.5
San Diego, CA	I 15 HOV Lanes	CA 163-CA 56	7.6
San Francisco, CA	I 80/Bay Bridge HOV Lanes	San Francisco-CA 4	17.4
San Francisco, CA	I 880 HOV Lanes	Milpitas-San Leandro	20.0
San Francisco, CA	US 101 HOV Lanes	Marin Co Civic Center-CA 37	6.5
San Francisco, CA	CA 237 HOV Lanes	I 880-Mathilda	5.5
San Jose, CA	CA 85 HOV Lanes	CA 237-US 101 South	22.0

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TABLE 9

Title: GUIDEBUS

## Bus Fixed Guideways 5.0 Miles or More in Length (a)

LOCATION	GUIDEWAY	SEGMENT	MILES
San Jose, CA	Capitol Expressway HOV Lanes	US 101-I 680	5.0
San Jose, CA	I 280 HOV Lanes	Magdalena Ave-Bascorn Ave	10.5
San Jose, CA	Lawrence Expressway HOV Lanes	CA 237-I 280	6.0
San Jose, CA	Montague Expressway HOV Lanes	US 101-I 680	6.0
San Jose, CA	San Tomas Expressway HOV Lanes	CA 17-US 101	8.0
San Jose, CA	US 101 HOV Lanes	Bernal Rd-San Mateo County Line	25.0
Seattle, WA	I 405 HOV Lanes	I 5 South-NE 160th St	22.5
Seattle, WA	I 5 HOV Lanes	I 90-WA 516	14.9
Seattle, WA	I 5 HOV Lanes	King County Line-164th St SW	6.3
Seattle, WA	I 90 Center HOV Lanes	S. Rainier Ave-S. Bell Way	6.2
Seattle, WA	I 90 HOV Lanes	E. Mercer Way-WA 900	7.3
Seattle, WA	WA 167 HOV Lanes Extension	84th Ave S.-15th NW	5.6
Tucson, AZ	Broadway Blvd Bus Lanes	4th Ave-Alvorna	5.0
Washington, DC	I 270 HOV Lanes	I 495-MD 121	19.0
Washington, DC	I 66 HOV Lanes	VA 110-VA 234	27.5
Washington, DC	I 95/I 395 HOV Lanes	Eads St-Quantico Creek	30.1
Washington, DC	US 29 Shoulder Bus Lanes	MD 650-MD 198	5.9
West Palm Beach, FL	I 95 HOV Lanes	Broward County-Delray Bch Congress Ave	7.5

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(a) Data as of July 1998, plus updated information where known.

Source: APTA survey

TABLE 10

File: AIRPORT

**Airports With Direct Rail Transit Access Operating or Under Construction (a)**

CITY	AIRPORT	RAIL TYPE	STATUS
Atlanta, GA	Atlanta International	HR	Open
Baltimore, MD	Baltimore-Washington International	LR	Open
Chicago, IL	Midway	HR	Open
Chicago, IL	O'Hare International	HR	Open
Cleveland, OH	Cleveland-Hopkins International	HR	Open
New York, NY	John F. Kennedy International	HR	Open
Newark, NJ	Newark International	AG	Construction
Philadelphia, PA	Philadelphia International	AG	Construction
Saint Louis, MO	Lambert-St. Louis International	CR	Open
San Francisco, CA	San Francisco International	LR	Open
South Bend, IN	Michiana Regional	HR	Construction
Washington, DC	Washington National	CR	Open
		HR	Open

AG = automated guideway, HR = heavy rail, LR = light rail, CR = commuter rail  
 (a) Excludes airports that require a bus or van ride between the station and terminal and airports that only have internal non-transit rail circulation systems.

**SECTION III**

File: FUNDCAP

**Funding, Capital***Highlights. . . . .*

- \$7.7 billion was received from all sources in 1997.
- 53.7% came from the federal government, 13.2% from state governments, 11.3% from local governments, 21.8% was raised by transit agencies from directly-levied taxes, advertising, interest income, and other sources.
- Federal capital and operating appropriations total \$5.4 billion for 1999.
- Federal capital grant approvals for 1997 totaled \$4.0 billion.
- 39.1% of capital grants went for bus-related projects, 37.1% for rail modernization, 22.8% for new start transit projects, 1.0% for other planning projects.

TABLE 11

### Capital Funding Sources, Millions of Dollars

File: CAPFUND

CALENDAR YEAR	FEDERAL ASSISTANCE	STATE ASSISTANCE	LOCAL ASSISTANCE	DIRECTLY GENERATED (a)	LOCAL PLUS DIRECTLY GENERATED	TOTAL
1988	2,519.5	489.6	769.0	86.5	855.5	3,864.6
1989	2,426.5	665.5	802.6	118.3	920.9	4,012.9
1990	2,872.5	696.8	1,176.9	189.3	1,366.2	4,935.5
1991	2,773.5	695.4	1,012.3	1,074.5	2,086.8	5,555.7
1992	2,673.0	801.0	830.0	1,131.7	1,961.8	5,435.7
1993	2,432.4	1,325.5	1,079.6	1,002.1	2,081.7	5,839.6
1994	2,622.8	1,047.8	997.9	1,164.2	2,162.1	5,832.7
1995	3,422.2	1,020.3	888.2	1,899.6	2,787.8	7,230.3
1996	3,592.8	915.9	926.0	1,649.1	2,575.1	7,083.8
1997 P	4,120.5	1,012.9	867.8	1,671.7	2,539.5	7,672.9
1997 % of Total	53.7%	13.2%	11.3%	21.8%	33.1%	100.0%
P = Preliminary						

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(a) Includes non-governmental funding, subsidies from non-transit sectors of a transit agency's operations, and, beginning in 1991, taxes levied directly by a transit agency and bridge and tunnel tolls.

TABLE 12

### Federal Transit Appropriations, Fiscal Years 1992-1999, Millions of Dollars

File: FEDAPP

PROGRAM	1992	1993	1994	1995	1996	1997	1998	1999
<b>MAJOR CAPITAL INVESTMENT PROGRAM:</b>								
New Starts/Extensions	1,346.2	1,725.0	1,785.0	1,724.9	1,665.0	1,900.0	2,000.0	2,257.0
Fixed-Guideway Modernization	538.9	721.8	667.9	646.6	666.0	760.0	800.0	902.8
Bus/Bus Facility	538.9	666.3	760.1	725.0	666.0	760.0	800.0	902.8
	268.4	336.9	357.0	353.3	333.0	380.0	400.0	451.4
<b>FORMULA PROGRAM:</b>								
Urbanized Area	1,983.7	1,700.0	2,414.9	2,491.9	2,052.9	2,149.2	2,500.0	2,850.0
Nonurbanized Areas	1,822.8	1,560.5	2,226.6	2,299.8	1,891.2	1,978.0	2,303.7	2,548.2
Elderly & Disabled	106.1	90.8	129.6	132.9	110.1	115.1	134.1	177.9
Clean Fuels Vehicle Grants	54.9	48.6	58.7	59.2	51.6	56.0	62.2	67.0
Rural Transportation Access	--	--	--	--	--	--	--	50.0
Alaska Railroad	--	--	--	--	--	--	--	2.0
	--	--	--	--	--	--	--	4.8
<b>PLANNING &amp; RESEARCH:</b>								
Metropolitan Planning	109.1	85.0	92.2	93.1	85.5	85.5	92.0	98.0
Rural Transit Assistance Program	43.7	38.3	41.5	41.5	39.5	39.5	39.5	43.8
All Other Research & Training	5.0	4.3	4.6	4.6	4.5	4.5	4.5	5.3
	60.4	42.5	46.1	47.0	41.5	41.5	48.0	48.9
University Research Centers	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Access to Jobs/Reverse Commute	--	--	--	--	--	--	--	75.0
Interstate Transfer	160.0	75.0	45.0	48.0	--	--	--	--
Washington DC Metro	124.0	170.0	200.0	200.0	200.0	200.0	200.0	50.0
FTA Administration	37.0	38.2	39.5	42.3	40.7	41.0	45.7	54.0
<b>TOTAL</b>	<b>3,767.0</b>	<b>3,799.2</b>	<b>4,582.6</b>	<b>4,606.2</b>	<b>4,050.1</b>	<b>4,381.7</b>	<b>4,843.7</b>	<b>5,390.0</b>

Source: U.S. Department of Transportation, Federal Transit Administration.

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TABLE 13

File: CAPUSE

**Federal Capital Grant Approvals by Use, Millions of Dollars**

FISCAL YEAR	BUS	RAIL MODERNIZATION	NEW STARTS	OTHER (a)	TOTAL
1984	1,039.6	1,110.0	709.9	16.5	2,876.0
1985	921.2	1,080.2	490.2	18.7	2,510.3
1986	1,022.7	869.1	1,228.3	17.2	3,137.3
1987	864.3	975.5	617.7	17.2	2,474.7
1988	820.0	1,145.7	538.2	16.9	2,520.8
1989	789.7	1,105.1	671.2	23.5	2,589.5
1990	760.9	998.9	603.7	16.5	2,380.0
1991	826.0	1,029.2	515.2	26.0	2,396.4
1992	941.7	1,153.8	492.5	24.9	2,612.9
1993	1,295.2	1,145.9	996.5	27.5	3,465.1
1994	1401.6	1474.3	657.2	44.2	3,577.3
1995	1,988.7	1,767.1	1,677.7	47.7	5,481.2
1996	1,465.7	1,482.3	1,109.3	67.8	4,125.1
1997	1,582.6	1,502.0	922.4	41.7	4,048.7
1997 % of Total	39.1%	37.1%	22.8%	1.0%	100.0%

(a) Planning grants from Urbanized Area and Rural formula funds and Interstate Transfer only.

Source: U.S. Department of Transportation, Federal Transit Administration.

TABLE 14

File: CAPPROG

**Federal Capital Grant Approvals by Program, Millions of Dollars**

FEDERAL FISCAL YEAR	CAPITAL INVESTMENT (a)	FORMULA (b)	OTHER (c)	TOTAL
1984	1,096.0	1,339.2	440.8	2,876.0
1985	727.7	1,491.6	291.0	2,510.3
1986	1,132.3	1,324.8	680.2	3,137.3
1987	694.5	1,376.5	403.7	2,474.7
1988	875.4	1,380.6	264.8	2,520.8
1989	1,199.7	967.7	422.1	2,589.5
1990	1,169.4	982.6	248.0	2,380.0
1991	1,108.4	1,035.0	253.0	2,396.4
1992	1,027.3	1,207.7	377.9	2,612.9
1993	1,792.8	1,426.5	245.8	3,465.1
1994	1,606.0	1,647.4	323.9	3,577.3
1995	2,666.2	2,462.4	352.6	5,481.2
1996	1,742.5	2,067.6	315.0	4,125.1
1997	1,771.6	2,074.7	202.4	4,048.7
1997 % of Total	43.8%	51.2%	5.0%	100.0%

(a) 49 USC 5309 and 5310 through 1991; 49 USC 5309 only beginning in 1992.

(b) Federal Transit Act Sections 5 and 9A and 49 USC 5311 and 5336 through 1991; 49 USC 5311 and 5336 beginning in 1992.

(c) Federal Aid Highway Act of 1973, as amended; Federal Aid Urban Systems and Interstate Transfer; and National Capital Transportation Act of 1969, as amended.

Source: U.S. Department of Transportation, Federal Transit Administration.

TABLE 15

File: FLEXFUND

**Flexible Highway Funds Obligated to Transit, Millions of Dollars (a)**

FISCAL YEAR	CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT PROGRAM	SURFACE TRANSPORTATION PROGRAM	INTERSTATE SUBSTITUTE & EARMARKED FEDERAL HIGHWAY ADMINISTRATION FUNDS	TOTAL
1992	176.9	25.1	101.7	303.7
1993	298.4	146.9	23.9	469.2
1994	317.0	183.2	109.5	609.7
1995	484.1	200.3	117.4	801.8
1996	344.6	324.2	111.3	780.1
1997	257.9	207.9	48.3	514.1
1998	223.3	243.8	0.2	467.3
1998 % of Total	47.8%	52.2%	0.0%	100.0%

(a) Under Provisions of Intermodal Surface Transportation Efficiency Act of 1991.  
Source: U.S. Department of Transportation, Federal Transit Administration.

TABLE 16

File: CFSTATE

**Federal Obligations by State, 1997, Millions of Dollars**

Alabama	13.6
Alaska	6.6
Arizona	33.7
Arkansas	10.1
California	642.8
Colorado	32.1
Connecticut	43.6
Delaware	5.4
District of Columbia	80.0
Florida	161.6
Georgia	46.3
Hawaii	16.1
Idaho	6.3
Illinois	298.1
Indiana	39.5
Iowa	26.6
Kansas	6.9
Kentucky	21.0
Louisiana	47.4
Maine	5.1
Maryland	111.2
Massachusetts	179.5
Michigan	67.2
Minnesota	61.3
Mississippi	5.5
Missouri	109.5
Montana	3.8
Nebraska	9.9
Nevada	25.7
New Hampshire	2.3
New Jersey	350.0
New Mexico	15.9
New York	805.7
North Carolina	29.1
North Dakota	6.6
Ohio	132.7
Oklahoma	12.2
Oregon	196.8
Pennsylvania	254.8
Rhode Island	18.2
South Carolina	9.1
South Dakota	2.5
Tennessee	24.7
Texas	144.1
Utah	56.1
Vermont	18.9
Virginia	53.4
Washington	103.5
West Virginia	12.5
Wisconsin	48.1
Wyoming	1.6
Puerto Rico & Territories	36.0
<b>TOTAL</b>	<b>4,450.3</b>

Source: Federal Transit Administration.



TABLE 17

File: COSTIMP

**Cost to Improve Transit Conditions and Performance, 1996-2016, Millions of 1995 Dollars**

CATEGORY	Costs to Maintain Conditions & Performance	Incremental Cost to Improve Conditions & Maintain Performance	Incremental Cost to Improve Conditions & Performance	Total
<b>BUS</b>				
Vehicles (Replacement and Rehabilitation)	1,113	87	0	1,200
Non-Vehicles (Guideway, Facilities, Systems, Stations)	862	17	0	880
Fleet Expansion (Vehicles and Non-Vehicles)	1,116	0	0	1,116
New Bus (Vehicles and Non-Vehicles)	0	0	505	505
Elderly and Disabled Vehicles and Facilities	334	87	0	421
Nonurbanized Area Vehicles and Facilities	167	42	0	209
Subtotal Bus	3,592	233	505	4,330
<b>RAIL</b>				
Vehicles (Replacement and Rehabilitation)	1,277	210	0	1,488
Non-Vehicles (Guideway, Facilities, Systems, Stations)	3,277	764	0	4,041
Fleet Expansion (Vehicles and Non-Vehicles)	1,548	0	0	1,548
New Rail (Vehicles and Non-Vehicles)	0	0	2,815	2,815
Subtotal Rail	6,103	974	2,815	9,892
<b>TOTAL</b>	<b>9,696</b>	<b>1,207</b>	<b>3,320</b>	<b>14,223</b>

Source: U.S. Department of Transportation, 1997 Status of the Nation's Surface Transportation System, Condition and Performance.

SECTION IV

File: EXCAP

**Expenses, Capital***Highlights. . . . .*

- \$7.7 billion was spent in 1997.
- 29.6% was used for rolling stock, 57.1% for facilities, 13.3% for other capital expenses.
- 30.0% was used for bus projects, 23.6% for commuter rail, 30.6% for heavy rail, 10.7% for light rail.

## Notes on Capital Costs

File: CAFCOST

Capital expense costs reported to the Federal Transit Administration exclude expenses of purchased transportation contractors. Data in the following tables include APTA estimates for such expenses.

Because most capital projects take several years to complete, and data are reported each year as spent, it is not possible to correlate data to particular projects. Yearly totals rise and fall based on construction schedules, so comparison of data for various years has little value because of the differing projects included in each year.

**Bond Expenses** are not considered capital expenses by the FTA. Interest payments are considered a reconciling item for operating expenses. Principal repayments are not reported since the funds from bond issues have already been spent on rolling stock, facilities, and other equipment.

**Rolling Stock** expenses include revenue vehicles and locomotives only. Service vehicles are included in "other." They do not include fare collection or revenue vehicle movement control equipment (radios or cellular phones) or leased tires and tubes. They include replacement, rehabilitation, remanufacture, fleet expansion, major component (engines, transmissions, etc.), and rail overhaul costs.

**Facilities** include construction and rehabilitation of maintenance facilities, crime prevention and security equipment, service and support equipment, operational support (computer hardware and software, bus diagnostic equipment, etc.), transit malls, transfer facilities, intermodal terminals, shelters, passenger stations, depots, terminals, HOV facilities, transit ways, park-and-ride facilities, track, line equipment and structures, signals and communications, and power equipment and substations. Design, engineering, demolition, land acquisition, and relocations costs are included.

**Other** includes service vehicles, construction of general administration facilities, furniture, equipment not an integral part of buildings and structures, data processing equipment, fare collection equipment, and revenue vehicle movement control equipment (radios, cellular phones).

TABLE 18

### Capital Expense by Mode, Millions of Dollars

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1992	1,301.9	1,310.5	67.6	2,054.1	494.9	34.8	171.9	5,435.7
1993	1,567.3	1,645.1	91.8	1,901.5	488.3	18.8	126.8	5,839.6
1994	1,470.3	1,436.4	99.3	2,070.1	544.1	57.4	155.1	5,832.7
1995	2,050.8	1,689.2	86.2	2,560.5	688.4	15.5	139.7	7,230.3
1996	2,035.6	1,690.1	105.2	2,228.0	849.9	19.2	155.8	7,083.8
1997 P	2,299.3	1,814.4	113.7	2,346.1	818.4	54.1	226.9	7,672.9
1997 % of Total	30.0%	23.6%	1.5%	30.6%	10.7%	0.7%	2.9%	100.0%

P= Preliminary

File: CAPEXMOD

TABLE 19

File: CAPEXTYP

**Capital Expense by Type, Millions of Dollars**

CALENDAR YEAR	ROLLING STOCK	FACILITIES	OTHER	TOTAL
1992	1,347.7	2,986.9	1,101.1	5,435.7
1993	1,616.2	2,826.3	1,397.1	5,839.6
1994	1,340.6	3,159.2	1,332.9	5,832.7
1995	1,834.5	3,836.9	1,558.9	7,230.3
1996	1,834.4	3,810.7	1,438.7	7,083.8
1997 P	2,274.5	4,379.6	1,018.8	7,672.9
1997 % of Total	29.6%	57.1%	13.3%	100.0%

P = Preliminary

TABLE 20

File: CAPEXM&amp;T

**Capital Expense by Mode and Type, 1997, Millions of Dollars**

TYPE	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
Rolling Stock	1,178.7	372.4	71.6	288.3	199.2	9.0	145.3	2,274.5
Facilities	724.4	1,329.6	21.5	1,602.6	588.7	41.8	71.0	4,379.6
Other	396.2	112.4	20.6	445.2	30.5	3.3	10.6	1,018.8
TOTAL	2,299.3	1,814.4	113.7	2,346.1	818.4	54.1	226.9	7,672.9
% of Total	30.0%	23.6%	1.5%	30.6%	10.7%	0.7%	2.9%	100.0%

All data are preliminary

Although data for transit infrastructure construction costs (e.g., new rail lines, high-occupancy-vehicle lanes, and busways) are reported to the Federal Transit Administration National Transit Database, data are not reported by complete project--only by year by mode, which could cover several projects being constructed simultaneously. Also, most projects are constructed over a period of several years, and only broad category data (vehicles, facilities, and other) are reported. Details on mileage, number of stations, size of parking lots, and other variables are not reported. Dozens of variables impact the cost of a project, and some costs, such as the quality of construction and the artistic beauty of a project, cannot be accurately measured. A few of those variables include:

- 1) land acquisition,
- 2) land clearance and demolition,
- 3) relocation of existing businesses and residences,
- 4) availability of "free" or low-cost right-of-way such as abandoned railroads,
- 5) utility relocation,
- 6) number, size, and length of stations,
- 7) number of tracks or lanes,
- 8) length of trackage or roadway,
- 9) number and size of maintenance yards and facilities,
- 10) proportion in deep tunnel, shallow tunnel, on the surface, and elevated,
- 11) number and size of parking lots or garages,
- 12) number and size of bridges,
- 13) station and right of way enhancements such as landscaping, works of art, information kiosks, benches, telephones, concession booths, fountains, etc.,
- 14) type and number of fare vending and collection machines,
- 15) inflation over the several-year time period needed for most projects,
- 16) the going labor costs for and number of construction workers,
- 17) type and number of propulsion, signal, communication, and other operating systems,
- 18) when the project was constructed,
- 19) the number of vehicles required,
- 20) interest and other financing charges.

For these reasons, it is not possible to develop accurate comparative construction cost data on a per-mile or any other basis since the detailed data on the above (and other) variables are not reported to allow identification of comparable projects.

**SECTION V****Funding, Operating***Highlights. . . . .*

- \$19.0 billion was received from all sources in 1997.
- 40.1% came from passengers,
  - 20.9% from local governments,
  - 20.4% from state governments,
  - 3.0% from the federal government,
  - 15.6% is raised by transit agencies from directly-levied taxes, advertising, interest income, and other sources.
- Average adult base cash fare was \$1.06.
- Average fare paid per unlinked trip was \$0.93.
  - for bus it was \$0.70,
  - commuter rail \$3.30,
  - demand response \$1.83,
  - ferryboat \$0.89,
  - heavy rail \$0.97,
  - light rail \$0.53,
  - trolleybus \$0.47,
  - vanpool \$1.34,
  - other modes \$0.66.

### Operating Funding Sources, Millions of Dollars

CALENDAR YEAR	DIRECTLY GENERATED FUNDS (c)			GOVERNMENT FUNDS				TOTAL PUBLIC FUNDS (e)	TOTAL
	PASSENGER FARES (a)	OTHER	TOTAL	LOCAL (c)	STATE	FEDERAL	TOTAL		
1984	4,447.7	780.5	5,228.2	5,399.1 (b)	(b)	995.8	6,394.9	6,394.9	11,623.1
1985	4,574.7	701.8	5,276.5	5,978.5 (b)	(b)	939.6	6,918.1	6,918.1	12,194.6
1986	5,113.1	737.3	5,850.4	4,244.5	2,305.6	941.2	7,491.3	7,491.3	13,341.7
1987	5,114.1	776.6	5,890.7	4,680.6	2,564.6	955.1	8,200.3	8,200.3	14,091.0
1988	5,224.6	840.7	6,065.3	4,893.1	2,677.1	905.1	8,471.3	8,471.3	14,536.6
1989	5,419.9	836.7	6,256.6	4,995.4	2,796.3	936.6	8,728.3	8,728.3	14,984.9
1990	5,890.8	895.0	6,785.8	5,326.8	2,970.6	970.0	9,267.4	9,267.4	16,053.2
1991	6,037.2	766.8	6,804.0	5,373.4	3,199.5	955.9	9,728.8	9,728.8	16,532.8
1992 (d)	6,152.5	645.9	6,798.4	5,268.1	3,879.5	969.1	10,116.7	10,116.7	16,915.1
1993	6,350.9	764.0	7,114.9	5,490.6	3,704.2	966.5	10,161.3	10,161.3	17,276.2
1994	6,756.0	2,270.6	9,026.6	4,171.2	3,854.4	915.6	8,941.2	8,941.2	17,967.8
1995	6,800.9	2,812.2	9,613.1	3,980.9	3,829.6	817.0	8,627.5	8,627.5	18,240.6
1996	7,416.3	2,928.2	10,344.5	4,128.5	4,081.8	596.4	8,806.7	8,806.7	19,151.2
1997 P	7,599.3	2,961.7	10,561.0	3,956.0	3,878.8	578.1	8,412.9	8,412.9	18,973.9
1997 % of Total	40.1%	15.6%	55.7%	20.9%	20.4%	3.0%	44.3%	44.3%	100.0%

P = Preliminary

(a) Includes fares retained by contractors; beginning 1991 includes fare subsidies formerly included in "other".

(b) "Local" and "state" combined.

(c) "Local" includes taxes levied directly by transit agency and other subsidies from local government such as bridge and tunnel tolls and non-transit parking lot funds. Beginning 1994, such funds reclassified from "local" to "other".

(d) Beginning 1992, "local" and "other" declined by about \$500 million due to change in accounting procedures at New York City Transit Authority.

(e) Includes "Total Government Funds" plus that portion of "Other Directly Generated Funds" included in "Local Government Funds" beginning in 1994 consisting of transit agency-raised taxes, tolls, and other dedicated funds.

TABLE 22

File: FAREMODE

### Passenger Fares by Mode, Millions of Dollars (a)

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1990	2,966.8	952.2	40.9	1,740.8	82.6	45.8	61.7	5,890.8
1991 (b)	3,098.4	958.0	68.9	1,700.6	97.8	51.6	61.9	6,037.2
1992	3,058.8	970.1	75.8	1,830.3	97.8	48.7	71.0	6,152.5
1993	3,116.7	995.5	93.9	1,913.3	102.5	52.4	76.6	6,350.9
1994	3,249.5	1,083.1	170.7	1,975.7	135.1	54.5	87.4	6,756.0
1995	3,287.2	1,077.5	146.3	2,018.2	126.5	54.0	91.2	6,800.9
1996	3,515.0	1,145.6	156.9	2,321.5	144.2	54.7	78.4	7,416.3
1997 P	3,620.4	1,178.3	173.8	2,350.9	138.6	56.9	80.4	7,599.3
1997 % of Total	47.7%	15.5%	2.3%	30.9%	1.8%	0.7%	1.1%	100.0%

P = Preliminary

(a) These data are not available from the Federal Transit Administration National Transit Database reports. Estimates made by APTA from transit agency estimates, which are made according to each agency's procedures.

(b) Beginning in 1991 includes fare subsidies formerly classified as "Other" Operating Funding.

## Passenger Fares Summary

CALENDAR YEAR	PASSENGER FARES RECEIVED PER UNLINKED TRIP	ADULT BASE CASH FARE (a)		PER CENT OF SYSTEMS WITH (c)		
		HIGHEST	AVERAGE (b)	PEAK PERIOD SURCHARGES	TRANSFER SURCHARGES	ZONE OR DISTANCE SURCHARGES
1984	0.503	1.50	0.569	9.5	36.6	34.0
1985	0.530	1.50	0.584	8.6	37.0	33.1
1986	0.583	2.10	0.617	8.8	30.7	27.9
1987	0.585	2.75	0.634	8.4	29.5	33.1
1988	0.603	2.75	0.662	7.8	30.2	33.2
1989	0.607	2.75	0.670	6.4	27.7	31.5
1990	0.669	2.75	0.730	6.5	28.8	38.9
1991	0.704	6.00	0.823	5.5	24.2	39.4
1992	0.724	6.00	0.860	5.6	26.6	39.0
1993	0.773	6.00	0.860	5.6	26.6	39.0
1994	0.850	6.00	0.955	6.4	25.2	37.7
1995	0.876	7.00	0.992	6.5	23.8	36.9
1996	0.933	7.00	1.047	7.0	22.9	32.6
1997	0.888	7.00	1.058	7.0	22.9	32.6
1998	NA	7.00	1.065	6.1	21.9	32.9

P = Preliminary

(a) Lowest base fare is \$0.00 (free).

(b) Unweighted average of adult base cash fares; excludes surcharges; each transit agency counted equally.

(c) Per cents represent an approximately 300-transit-agency sample, not estimated for all transit agencies.

TABLE 24

File: FAREAVG

## Average Passenger Fare Per Unlinked Passenger Trip by Mode, 1997, Dollars

MODE	FARE PER UNLINKED PASSENGER TRIP
Bus	0.70
Commuter Rail	3.30
Demand Response	1.83
Ferryboat	0.89
Heavy Rail	0.97
Light Rail	0.53
Trolleybus	0.47
Vanpool	1.34
Other (a)	0.66
TOTAL	0.89

All data are preliminary

(a) Includes aerial tramway, automated guideway transit, cable car, inclined plane, and monorail.

(b) Excludes international, rural, rural interstate, island, and urban park ferries.

TABLE 25

## Federal Operating Grant Approvals for Urbanized Areas, Millions of Dollars

FISCAL YEAR	GRANT APPROVALS UNDER FEDERAL TRANSIT ACT
1984	922.4
1985	881.1
1986	872.5
1987	820.4
1988	780.0
1989	779.1
1990	765.4
1991	779.4
1992	768.4
1993	795.7
1994	757.4
1995	763.9
1996	416.7
1997	450.2

Source: U.S. Department of Transportation, Federal Transit Administration.

## Expenses, Operating

### *Highlights. . . . .*

- \$19.0 billion was spent in 1997.
- 47.0% was for vehicle operations,  
18.3% for vehicle maintenance,  
9.8% for non-vehicle maintenance,  
15.8% for general administration,  
9.1% for purchased transportation.
- 47.6% was for salaries and wages,  
24.6% for fringe benefits,  
5.6% for services,  
about 75% of the 9.1% for purchased transportation was labor-related,  
over 80% of all costs were labor-related.
- 9.4% was for materials and supplies,  
3.7% for utilities,  
2.7% for casualty and liability costs.
- 58.0% was for buses,  
18.3% for heavy rail,  
12.0% for commuter rail,  
6.8% for demand response,  
2.5% for light rail.

### Operating Expense for 1997 By Function and Object Class, Millions of Dollars

FUNCTION AND OBJECT CLASS	VEHICLE OPERATIONS	VEHICLE MAINTENANCE	NON-VEHICLE MAINTENANCE	GENERAL ADMINISTRATION	PURCHASED TRANSPORTATION	TOTAL
Salaries & Wages	4,809.1	1,837.8	1,260.5	1,153.0	0.0	9,060.4
Fringe Benefits	2,498.6	885.0	654.0	638.9	0.0	4,676.5
Services	89.3	170.4	124.9	689.2	0.0	1,073.8
Fuels & Lubricants	455.0	61.8	2.4	0.0	0.0	519.2
Tires & Tubes	68.5	1.4	0.0	0.0	0.0	69.9
Materials & Supplies	30.7	732.3	192.8	251.3	0.0	1,207.1
Utilities	119.2	40.3	346.4	189.1	0.0	695.0
Casualty & Liability	33.4	7.6	11.7	458.4	0.0	511.1
Purchased Transp.	0.0	0.0	0.0	-368.3	1,720.8	1,720.8
Other	827.3	-250.9	-727.0	0.0	0.0	-518.9
Total	8,931.1	3,485.7	1,865.7	3,011.6	1,720.8	19,014.9

#### PER CENT

Salaries & Wages	25.29%	9.67%	6.63%	6.06%	0.00%	47.65%
Fringe Benefits	13.14%	4.65%	3.44%	3.36%	0.00%	24.59%
Services	0.47%	0.90%	0.66%	3.62%	0.00%	5.65%
Fuels & Lubricants	2.39%	0.33%	0.01%	0.00%	0.00%	2.73%
Tires & Tubes	0.36%	0.01%	0.00%	0.00%	0.00%	0.37%
Materials & Supplies	0.16%	3.85%	1.01%	1.32%	0.00%	6.35%
Utilities	0.63%	0.21%	1.82%	0.99%	0.00%	3.66%
Casualty & Liability	0.18%	0.04%	0.06%	2.41%	0.00%	2.69%
Purchased Transp.	0.00%	0.00%	0.00%	0.00%	9.05%	9.05%
Other	4.35%	-1.32%	-3.82%	-1.94%	0.00%	-2.73%
Total	46.97%	18.33%	9.81%	15.84%	9.05%	100.00%

TABLE 27

### Operating Expense by Function Class, Millions of Dollars

CALENDAR YEAR	VEHICLE OPERATIONS	VEHICLE MAINTENANCE	NON-VEHICLE MAINTENANCE	GENERAL ADMINISTRATION	PURCHASED TRANSPORTATION	OPERATING EXPENSE	DEPRECIATION & AMORTIZATION	OTHER RECONCILING ITEMS	TOTAL EXPENSE
1984	5,141.9	2,149.4	912.3	2,914.7	455.7	11,574.0	885.5	497.6	12,957.1
1985	5,654.7	2,522.6	1,149.6	2,505.3	548.7	12,380.9	1,097.6	598.6	14,077.1
1986	5,690.6	2,733.6	1,295.2	2,748.0	484.3	12,951.7	1,148.2	626.2	14,726.1
1987	5,790.3	2,730.2	1,363.5	2,869.4	718.7	13,472.1	1,212.5	720.7	15,405.3
1988	6,052.3	2,865.1	1,447.6	3,077.8	844.5	14,287.3	1,377.6	776.9	16,441.8
1989	6,275.3	2,942.3	1,550.5	3,251.0	953.2	14,972.3	1,502.5	693.9	17,168.7
1990	6,653.3	3,038.8	1,592.0	3,449.9	1,008.1	15,742.1	1,593.1	643.9	17,979.1
1991	6,726.6	2,992.4	1,604.7	3,584.5	1,008.1	15,742.1	1,763.3	1,027.2	19,331.9
1992 (a)	7,659.7	3,047.5	1,783.9	2,674.2	1,616.1	16,541.4	2,033.9	1,218.3	20,033.6
1993	7,941.4	3,049.3	1,845.0	2,714.0	1,800.1	17,349.8	2,479.3	850.1	20,679.2
1994	8,211.9	3,184.5	1,819.4	2,752.0	1,952.1	17,919.9	2,768.6	964.1	21,652.6
1995	8,281.9	3,218.2	1,829.0	2,589.5	1,930.1	17,848.7	2,600.6	1,090.6	21,539.9
1996	8,331.9	3,295.1	1,802.2	2,744.3	2,167.2	18,340.7	2,885.0	1,034.4	22,260.1
1997 P	8,931.1	3,485.7	1,865.7	3,011.6	1,720.8	19,014.9	3,118.4	1,114.3	23,247.6
1997 % of Total	47.0%	18.3%	9.8%	15.8%	9.1%	100.0%	16.4%	5.9%	122.3%

P = Preliminary

(a) Beginning 1992, operating expense declined about \$400 million due to change in accounting procedures at New York City Transit Authority.



### Operating Expense by Object Class, Millions of Dollars

CALENDAR YEAR	SALARIES & WAGES	FRINGE BENEFITS	SERVICES	MATERIALS & SUPPLIES	UTILITIES	CASUALTY & LIABILITY	PURCHASED TRANSPORTATION	OTHER	TOTAL
1984	5,487.8	2,716.7	469.2	1,462.2	465.7	328.5	455.7	188.2	11,574.0
1985	5,943.1	2,868.3	491.9	1,561.2	494.7	347.1	548.7	225.9	12,380.9
1986	6,119.2	3,125.9	583.8	1,524.3	497.1	491.4	484.3	125.7	12,951.7
1987	6,324.1	3,266.9	655.5	1,421.0	509.2	536.1	718.7	40.6	13,472.1
1988	6,675.0	3,528.9	715.3	1,446.2	503.9	527.8	844.5	45.7	14,287.3
1989	6,997.7	3,737.3	765.0	1,507.6	540.2	559.4	953.2	11.9	14,972.3
1990	7,226.3	3,986.0	794.3	1,608.4	552.9	640.5	1,008.1	-74.4	15,742.1
1991	7,394.5	3,998.4	818.0	1,559.7	575.9	625.6	1,633.2	-63.9	16,541.4
1992 (a)	7,670.5	4,318.6	907.8	1,529.1	608.5	557.8	1,616.1	-427.0	16,781.4
1993	7,932.1	4,400.3	914.0	1,536.1	624.0	587.8	1,800.1	-444.6	17,349.8
1994	8,223.8	4,451.7	849.3	1,593.9	644.0	614.2	1,952.1	-409.1	17,919.9
1995	8,213.1	4,484.0	849.3	1,613.4	628.9	512.8	1,930.1	-382.9	17,848.7
1996	8,437.6	4,401.4	923.9	1,677.0	667.2	502.7	2,167.2	-436.3	18,340.7
1997 P	9,060.4	4,676.5	1,073.8	1,796.2	695.0	511.1	1,720.8	-518.9	19,014.9
1997 % of Total	47.6%	24.6%	5.6%	9.4%	3.7%	2.7%	9.1%	-2.7%	100.0%

P = Preliminary

(a) Beginning 1992, operating expense declined about \$400 million due to change in accounting procedures at New York City Transit Authority.

TABLE 29

### Operating Expense by Mode, Millions of Dollars

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1988	8,136.4	1,675.3	462.6	3,521.7	198.4	101.7	191.2	14,287.3
1989	8,415.1	1,841.4	481.1	3,701.0	210.8	105.5	217.4	14,972.3
1990	8,903.1	1,938.5	517.8	3,825.0	237.1	108.6	212.0	15,742.1
1991	9,501.4	1,942.4	608.5	3,858.6	291.1	113.5	225.9	16,541.4
1992 (a)	9,881.2	2,012.6	667.3	3,555.1	308.9	124.4	231.9	16,781.4
1993	10,109.6	2,088.4	793.0	3,668.6	315.9	131.9	242.5	17,349.8
1994	10,144.1	2,227.8	942.7	3,786.2	412.8	132.9	273.4	17,919.9
1995	10,320.5	2,211.2	1,000.4	3,522.9	376.1	138.9	278.7	17,848.7
1996	10,574.9	2,294.1	1,186.6	3,401.9	441.6	134.6	307.0	18,340.7
1997 P	11,034.5	2,278.7	1,283.2	3,473.7	478.0	140.2	326.6	19,014.9
1997 % of Total	58.0%	12.0%	6.8%	18.3%	2.5%	0.7%	1.7%	100.0%

P = Preliminary

(a) Beginning 1992, operating expense declined about \$400 million due to change in accounting procedures at New York City Transit Authority.

Transit Managers are constantly faced with demands from units of government, voters, the media, and others to operate more efficiently. All too often, the demand is to "cut costs". What does this really mean?

Casualty and liability costs comprise 2.9% of the total, but efforts to reduce risk exposure (fewer miles operated, fewer accidents, and/or fewer employees) and therefore premiums and claims are often overwhelmed by litigation awards, inflation and state- or regionwide premium increases to cover insurer losses elsewhere.

Utility costs cover another 3.5% of the total. A large portion is for propulsion power to operate electric rail cars and trolleybuses. More efficient electric motors and propulsion systems are resulting in lower unit costs, but the total savings are modest. Some non-propulsion costs (heat and air-conditioning) are weather-related and uncontrollable. Others (lights, telephone, water, trash removal) are relatively fixed.

Fuel costs are 2.4% of expenses, but are hard to control due to unstable oil prices and consumption being partly a function of weight (the number of people on the vehicle). Some efficiency improvements in engines have been made, but the only way to really cut fuel costs is to operate fewer miles.

Tires, tubes, and other materials and supplies comprise 6.7% of costs. Buying fewer office supplies, spare parts, and cleaning supplies can be done, but with the result of decreased efficiency, delays in repairs, and postponing costs to the future when they will be more expensive due to inflation. Safety may suffer if too-bare-bones-an-approach results.

The bottom line, then, is that the only way to make substantial cost savings is to cut labor costs, which add up to almost 85% of all costs. They are comprised of salaries and wages (46.6%) and fringe benefits (25.7%), plus an estimated 75% of services (5.0%) and purchased transportation (9.2%) which are labor-related. There are 4 ways to do this: reduce the amount of service operated and therefore the number of employees needed, improve efficiency so that fewer employees are needed, reduce salaries, wages, and fringe benefits, and convert some functions or service operated to services or purchased transportation. Because labor contracts usually prohibit or severely restrict the last two options, it is seldom possible to reduce compensation (except by lowering rates for future employees) or to contract out services or transportation.

The almost unavoidable result is fewer miles and hours operated, which almost inevitably means fewer riders. It is a vicious cycle that has plagued transit throughout its history.

## Passengers

### Highlights . . . . .

- 8.6 billion unlinked trips were taken in 1997,  
60.7% were by bus,  
28.4% by heavy rail,  
all other modes totaled only 10.9%.
- 58.9% of bus trips were in urbanized areas of 2,000,000 population or more,  
26.5% in areas between 500,000 and 1,999,999,  
only 14.6% in areas below 500,000 population.
- Average trip length was longest for vanpools at 33.1 miles, commuter rail trips averaged 22.5 miles, demand response trips 9.7 miles, ferryboat trips 6.5 miles, heavy rail trips 5.0 miles, bus trips 3.9 miles, light rail trips 3.9 miles, all other modes did not exceed 1.6 miles.
- 52% of trips are taken by women,  
7% by those 65 and older,  
10% by those 18 and under,  
31% by African Americans,  
18% by Hispanics,  
6% by Asian-heritage and Native Americans.  
54% are work-related,  
15% school-related,  
9% shopping-related,  
5.5% medically-related,  
9% socially-related,  
27% are by those with family incomes below \$15,000,  
55% by those with family incomes from \$15,000-\$50,000,  
17% by those with family incomes over \$50,000.  
Only a little over 1% by people with disabilities.

## Number of People Using Transit

File: PEOPLE

All ridership data reported in this book relate to trips taken--not to people--because that is how data is collected and reported. The heavy use of passes, transfers, joint tickets, and cash by people transferring from one vehicle to another, one mode to another, and from one transit agency to another makes it impossible to count people. Only boardings (called unlinked passenger trips) can be counted with any accuracy. At the largest transit agencies, even the number of boardings may be estimated for at least a portion of the ridership (e.g., free shuttle vehicles without fareboxes and light rail service using the "proof-of-payment" system).

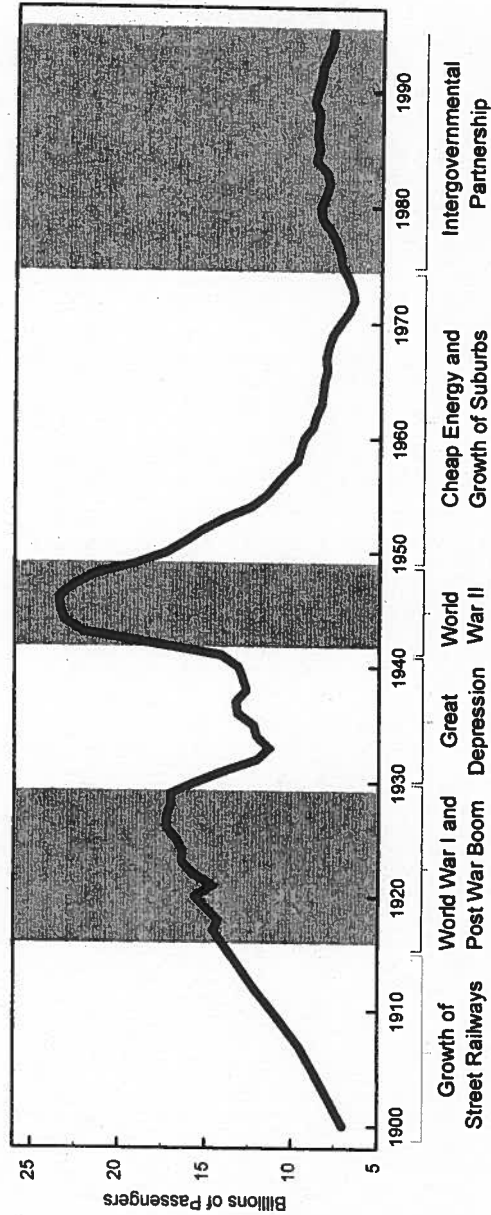
The vast majority of people using transit take two trips per day (one to work in the morning and one home in late afternoon or evening). A small proportion--perhaps 1 or 2%--make only one transit trip (e.g., they ride transit to the airport and then fly out of town, or they ride transit in the morning to work, but ride home with a friend in an automobile at night). A somewhat larger proportion (primarily the transit dependent) take 4, 6, 8, or even 10 trips per day.

At most agencies perhaps 20% to 50% of riders must transfer to a second (and sometimes a third) vehicle to reach their final destination. Some transfer from bus to bus, from bus to train, from one agency's vehicle to another agency's vehicle, etc.; thus, there is a large amount of double-counting of people.

APTA's best estimate, taking these factors into account, is that the number of people using transit on any day is perhaps only one-third the number of trips reported. Perhaps 6 million people use transit on a typical weekday. Saturday ridership is normally about one-half weekday ridership, and Sunday ridership is often one-half to two-thirds of Saturday ridership. In many smaller cities, transit service does not operate on Sundays; in a lesser number, there is no Saturday service.

TABLE 30

### Major Trends of Transit Ridership



Transit ridership has gone through six major cycles of growth and decline during the Twentieth Century influenced by social and economic forces external to transit. From 1900 to 1929 transit ridership grew steadily; first due to technical innovation and investment opportunities during the early development of street railways and then due to the economic boom of World War I and the post-war period. The Great Depression caused a steep decline in ridership between 1929 and 1939 as people made fewer work trips and often could not afford to take pleasure trips. A new federal law limiting utilities' ability to subsidize transit, as had been normal practice, led to a decline in transit capital facilities. World War II caused motor fuel rationing and an economic boom that led to a new rapid growth cycle in transit ridership. Ridership quickly declined from artificially high war levels as people fled to suburbs spurred on by cheap fuel and government policy favoring low-density suburban growth. In 1973 the ridership cycle reversed again and transit began a modest growth based on a partnership of local, state, and federal government committed to improving America's transportation infrastructure.

## Passenger Trips by Mode, Millions

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL (a)
1907	---	---	0	675	8,868	0	---	9,543
1912	---	---	0	1,041	11,109	---	---	12,150
1917	---	---	0	1,332	13,193	---	---	14,525
1918	---	---	0	1,385	12,876	---	---	14,261
1919	---	---	0	1,505	13,430	---	---	14,935
1920	---	---	0	1,792	13,770	---	---	15,562
1921	---	---	0	1,909	12,688	---	---	14,597
1922	404	---	0	1,942	13,413	---	---	15,759
1923	661	---	0	2,081	13,593	---	---	16,335
1924	989	---	0	2,207	13,130	---	---	16,326
1925	1,484	---	0	2,264	12,924	---	---	16,672
1926	2,009	---	0	2,350	12,895	---	---	17,254
1927	2,301	---	0	2,451	12,489	---	---	17,221
1928	2,470	---	0	2,492	12,044	3	---	17,009
1929	2,623	---	0	2,571	11,804	5	---	17,003
1930	2,481	---	0	2,559	10,530	16	---	15,586
1931	2,315	---	0	2,408	9,191	28	---	13,942
1932	2,138	---	0	2,204	7,662	37	---	12,041
1933	2,077	---	0	2,133	7,086	45	---	11,341
1934	2,376	---	0	2,206	7,404	68	---	12,054
1935	2,625	---	0	2,236	7,286	96	---	12,243

--- Data not available; no data were collected for these modes in years indicated.

(a) Excludes modes with "—" entries.

TABLE 31 (continued)

## Passenger Trips by Mode, Millions

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL (a)
1936	3,188	---	0	2,323	7,512	143	---	13,166
1937	3,500	---	0	2,307	7,174	289	---	13,270
1938	3,488	---	0	2,236	6,552	395	---	12,671
1939	3,866	---	0	2,368	6,178	452	---	12,864
1940	4,255	---	0	2,382	5,951	542	---	13,130
1941	4,948	---	0	2,421	6,085	669	---	14,123
1942	7,264	---	0	2,566	7,290	918	---	18,038
1943	9,070	---	0	2,656	9,150	1,220	---	22,096
1944	9,713	---	0	2,621	9,516	1,292	---	23,142
1945	9,946	---	0	2,698	9,426	1,298	---	23,368
1946	10,247	---	0	2,835	9,027	1,354	---	23,463
1947	10,374	---	0	2,756	8,096	1,398	---	22,624
1948	10,759	---	0	2,606	6,506	1,558	---	21,429
1949	10,193	---	0	2,346	4,839	1,691	---	19,069
1950	9,447	---	0	2,264	3,904	1,686	---	17,301
1951	9,227	---	0	2,189	3,101	1,658	---	16,175
1952	8,901	---	0	2,124	2,477	1,666	---	15,168
1953	8,280	---	0	2,040	2,036	1,587	---	13,943
1954	7,643	---	0	1,912	1,489	1,387	---	12,431
1955	7,269	---	0	1,870	1,207	1,223	---	11,569
1956	7,062	---	0	1,880	876	1,163	---	10,981

--- Data not available; no data were collected for these modes in years indicated.

(a) Excludes modes with "—" entries.

TABLE 31 (continued)

## Passenger Trips by Mode, Millions

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL (a)
1957	6,903	---	0	1,843	679	1,003	---	10,428
1958	6,540	---	0	1,815	572	843	---	9,770
1959	6,498	---	0	1,828	521	749	---	9,596
1960	6,425	---	0	1,850	463	657	---	9,395
1961	5,993	---	0	1,855	434	601	---	8,883
1962	5,865	---	0	1,890	393	547	---	8,695
1963	5,822	---	0	1,836	329	413	---	8,400
1964	5,813	---	0	1,877	289	349	---	8,328
1965	5,814	---	0	1,858	276	305	---	8,253
1966	5,764	---	0	1,753	282	284	---	8,083
1967	5,723	---	0	1,938	263	248	---	8,172
1968	5,610	---	0	1,928	253	228	---	8,019
1969	5,375	---	0	1,980	249	199	---	7,803
1970	5,034	---	---	1,881	235	182	---	7,332
1971	4,699	---	---	1,778	222	148	---	6,847
1972	4,495	---	---	1,731	211	130	---	6,567
1973	4,642	---	---	1,714	207	97	---	6,660
1974	4,976	---	---	1,726	150	83	---	6,935
1975	5,084	---	---	1,673	124	78	---	6,972
1976	5,247	---	---	1,632	112	75	---	7,081

--- Data not available; no data were collected for these modes in years indicated.

(a) Excludes modes with "..." entries.

TABLE 31 (continued)

## Passenger Trips by Mode, Millions

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL (a)
1977 (b)	4,949	---	---	2,149	103	70	---	7,286
1978	5,142	---	---	2,285	104	70	---	7,616
1979	5,552	---	---	2,381	107	75	---	8,130
1980	5,837	280	---	2,108	133	142	67	8,567
1981	5,594	268	---	2,094	123	138	67	8,284
1982	5,324	259	---	2,115	136	151	67	8,052
1983	5,422	262	---	2,167	137	160	55	8,203
1984	5,908	267	62	2,231	135	165	61	8,829
1985	5,675	275	59	2,290	132	142	63	8,636
1986	5,753	306	63	2,333	130	139	53	8,777
1987	5,614	311	64	2,402	133	141	70	8,735
1988	5,590	325	73	2,308	154	136	80	8,666
1989	5,620	330	70	2,542	162	130	77	8,931
1990	5,677	328	68	2,346	175	126	79	8,799
1991	5,624	318	71	2,172	184	125	81	8,575
1992	5,517	314	72	2,207	188	126	77	8,501
1993	5,381	322	81	2,046	188	121	78	8,217
1994	4,871	339	88	2,169	284	118	80	7,949
1995	4,848	344	88	2,033	251	119	80	7,763
1996	4,887	352	93	2,157	261	117	81	7,948
1997 P	5,199	357	95	2,430	263	121	93	8,558
1997 % of Total	60.7%	4.2%	1.1%	28.4%	3.1%	1.4%	1.1%	100.0%

--- Data not available; no data were collected for these modes in years indicated.

(a) Excludes modes with "..." entries.

(b) Beginning 1977, data are for unlinked passenger trips, which are not comparable to prior years.

**Bus Passenger Trips by Population of Urbanized Area, Millions**

CALENDAR YEAR	2,000,000 AND OVER	500,000 - 1,999,999	250,000 - 499,999	100,000 - 249,999	50,000 - 99,999	LESS THAN 50,000	TOTAL
1984 (a)	3,488	1,627	294	210	90	199	5,908
1985	3,338	1,557	295	214	86	185	5,675
1986	3,297	1,586	333	239	99	199	5,753
1987	3,197	1,504	312	221	96	284	5,614
1988	3,178	1,519	306	222	92	273	5,590
1989	3,185	1,512	322	226	95	280	5,620
1990 (b)	3,604	1,270	230	227	89	257	5,677
1991	3,537	1,261	233	230	95	268	5,624
1992	3,447	1,244	232	239	95	260	5,517
1993	3,323	1,253	231	237	94	243	5,381
1994	3,034	1,126	183	208	75	245	4,871
1995	3,003	1,128	182	207	77	251	4,848
1996	2,960	1,215	176	207	77	252	4,887
1997 P	3,062	1,380	175	221	86	275	5,199
1997 % of Total	58.9%	26.5%	3.4%	4.2%	1.7%	5.3%	100.0%

P = Preliminary

(a) Transit agencies assigned by population of urbanized area based on 1980 United States Census.

(b) Beginning in 1990 transit agencies assigned by population of urbanized area based on 1990 United States Census.

**Passenger Miles by Mode, Millions**

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1984	21,595	6,207	349	10,111	416	364	382	39,424
1985	21,161	6,534	364	10,427	350	306	439	39,581
1986	21,395	6,723	402	10,649	361	305	369	40,204
1987	20,970	6,818	374	11,198	405	223	360	40,348
1988	20,753	6,964	441	11,300	477	211	434	40,580
1989	20,768	7,211	428	12,030	509	199	458	41,603
1990	20,981	7,082	431	11,475	571	193	410	41,143
1991	21,090	7,344	454	10,528	662	195	430	40,703
1992	20,336	7,320	495	10,737	701	199	453	40,241
1993	20,247	6,940	562	10,231	705	188	511	39,384
1994	18,832	7,996	577	10,968	833	187	492	39,585
1995	18,818	8,244	607	10,559	860	187	533	39,808
1996	19,096	8,351	656	11,530	957	184	604	41,378
1997 P	20,357	8,038	928	12,056	1,039	189	699	43,306
1997 % of Total	47.0%	18.6%	2.2%	27.8%	2.4%	0.4%	1.6%	100.0%

P = Preliminary

TABLE 34

Profiles of Transit Passengers

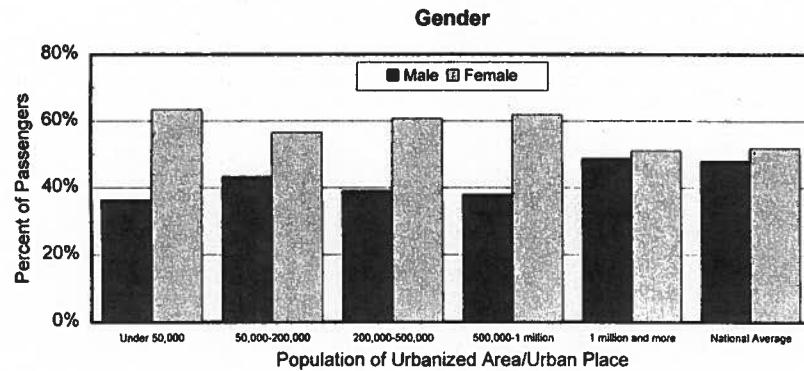
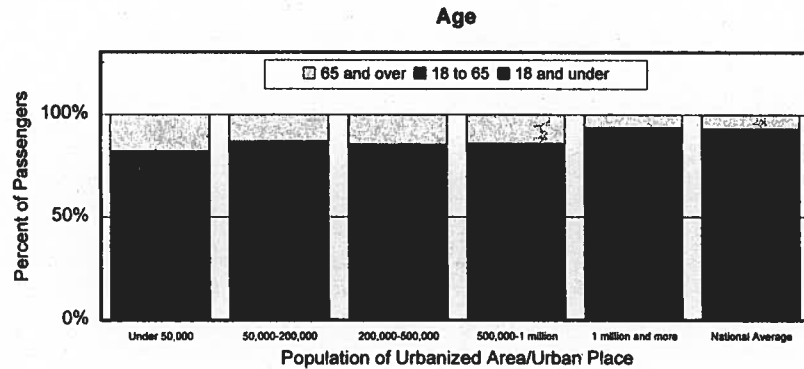
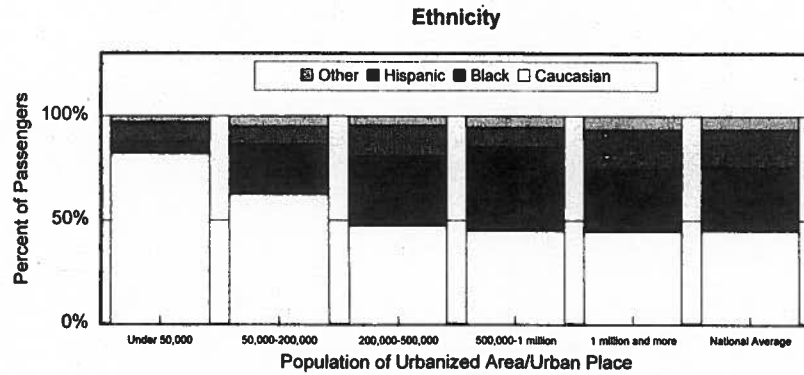
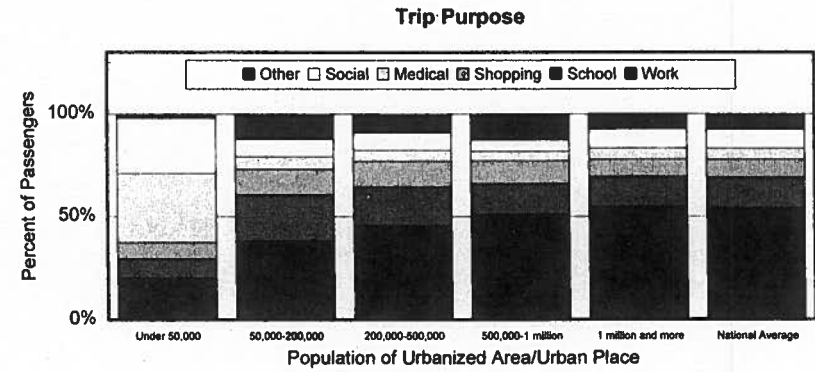
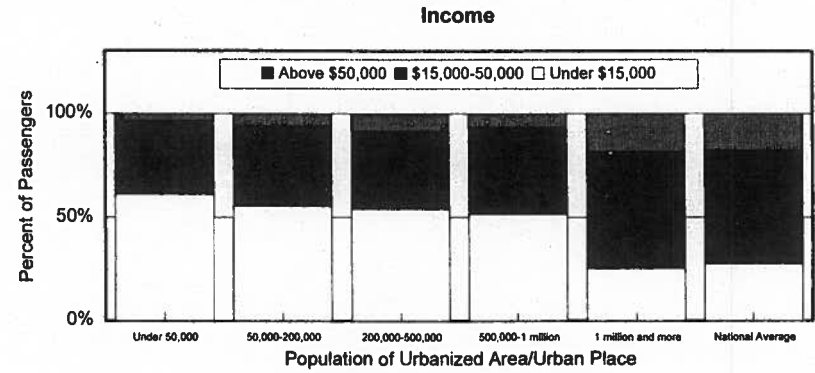


TABLE 34

Profiles of Transit Passenger (continued)



Passengers with Disabilities

Population of Urbanized Area/Urban Place	Percent with Disabilities
National Average	1.2%
1 million and more	1.1%
500,000-1 million	1.4%
200,000-500,000	2.5%
50,000-200,000	6.0%
Under 50,000	5.2%

Source: APTA, *Americans in Transit*, 1992.

TABLE 35

File: PROPEN

**Socioeconomic Characteristics Indicating a High Propensity for Transit Use**

CHARACTERISTIC	TRANSIT SHARE PERCENT
Central city dweller	11.5
Renter	9.5
Household with no vehicles	39.1
Women	6.0
Young (21-24 years)	6.4
Older (75+ years)	6.4
High income	
\$75,000-\$99,000	6.6
Over \$100,000	5.8
1-worker household	6.1
4-worker household	7.5
Female worker living alone in a central city	16.3
Black	14.8
Asian	11.0
Hispanic	8.8
ALL COMMUTERS	5.1

Source: *Commuting in America II: The Second National Report on Commuting Patterns and Trends*, Eno Transportation Foundation, Inc., Lansdowne, VA, © 1996.

TABLE 36

**Travel Time by Mode, 1990**

MODE	TRAVEL TIME (MINUTES)
ALL COMMUTERS	22
Drive alone	21
2-person carpool	24
3-person carpool	29
4-person carpool	35
Bus, trolleybus	38
Heavy rail, light rail	45
Commuter rail	59
Bike, walk	11
Taxi	17
Ferryboat	58
Motorcycle	23

Source: *Commuting in America II: The Second National Report on Commuting Patterns and Trends*, Eno Transportation Foundation, Inc., Lansdowne, VA, © 1996.

TABLE 37

Title: TRLENGTH

**Average Trip Length by Mode, 1997**

MODE	AVERAGE TRIP LENGTH (MILES)
Bus	3.9
Commuter Rail	22.5
Demand Response	9.7
Ferryboat (b)	6.5
Heavy Rail	5.0
Light Rail	3.9
Trolleybus	1.6
Vanpool	33.1
Other (a)	1.0
TOTAL	5.1

(a) Includes aerial tramway, automated guideway transit, cable car, inclined plane, and monorail.

(b) Excludes international, rural, rural interstate, island, and urban park ferries.

TABLE 38

**Means of Transportation to Work, 1990**

MEANS	PER CENT
Automobiles/Vans/Motorcycles	
Single-occupant	73.4%
2-person carpool	10.5%
3-or-more-person carpool/vanpool	2.8%
Transit	5.1%
Walked	3.9%
Worked at home	3.0%
Bicycle	0.4%
Taxi	0.2%
All Other	0.7%
TOTAL	100.0%

Source: Federal Highway Administration, *New Perspectives in Commuting*, 1992.



TABLE 39

File: HIGHEST

**Cities with Highest Percentage of Workers Using Public Transportation, 1990**

CITY	PER CENT USING PUBLIC TRANSPORTATION
New York, NY	53.4
Hoboken, NJ	51.0
Jersey City, NJ	36.7
Washington, DC	36.6
San Francisco, CA	33.5
Boston, MA	31.5
Chicago, IL	29.7
Philadelphia, PA	28.7
Atlantic City, NJ	26.2
Arlington, VA	25.4
Newark, NJ	24.6
Cambridge, MA	23.5
Pittsburgh, PA	22.2
Baltimore, MD	22.0
Evanston, IL	20.9
Atlanta, GA	20.0
White Plains, NY	19.1
Camden, NJ	18.1
Oakland, CA	17.9
Hartford, CT	17.1
New Orleans, LA	16.9
Idaho Falls, ID	16.5
Minneapolis, MN	16.0
Seattle, WA	15.9
Berkeley, CA	15.2
Albany, NY	15.1

Source: U.S. Census Bureau, 1990 Census, *Journey to Work, Characteristics of Workers in Metropolitan Areas*

## SECTION VIII

File: SERVICE

## Service Provided

### Highlights . . . . .

- 3.8 billion miles and 254.7 million hours of service were operated.
- Buses operated 60.1% of vehicle miles, heavy rail 14.5%, demand response 16.2% commuter rail 6.5%.
- Buses operated 67.5% of vehicle hours, demand response 15.8%, heavy rail 11.3%, commuter rail 2.9%.
- If all service had been operated by buses, twice as many bus miles would need to have been operated.
- Average revenue service speed was highest for vanpools at 36.1 m.p.h., commuter rail was 33.8 m.p.h., heavy rail 20.7 m.p.h., demand response 15.3 m.p.h., light rail 15.5 m.p.h., bus 13.0 m.p.h., trolleybus 7.6 m.p.h., ferryboat 7.5 m.p.h., all others were 6.6 m.p.h.

TABLE 40

File: VEHMILE

## Vehicle Miles Operated by Mode, Millions

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL	TOTAL BUS MILE EQUIVALENTS (a)
1984	1,844.7	167.9	256.1	435.8	16.8	15.3	13.0	2,749.5	3,461.9
1985	1,862.9	182.7	247.4	450.8	16.5	15.5	14.9	2,790.7	3,552.1
1986	2,002.3	188.6	274.5	475.8	17.0	14.7	12.9	2,985.8	3,765.7
1987	2,079.4	188.9	250.0	490.2	18.4	15.0	13.3	3,055.2	3,879.1
1988	2,097.3	202.2	288.9	517.4	20.8	14.7	16.0	3,157.3	4,011.2
1989	2,109.3	209.6	300.4	532.1	21.3	14.5	15.7	3,202.9	4,080.4
1990	2,129.9	212.7	305.9	536.7	24.2	13.8	18.3	3,241.5	4,127.5
1991	2,166.6	214.9	335.0	527.2	27.6	13.6	21.5	3,306.4	4,159.1
1992	2,178.0	218.8	363.5	525.4	28.6	13.9	26.4	3,354.6	4,187.0
1993	2,209.6	223.9	406.0	522.1	27.7	13.0	32.2	3,435.1	4,233.8
1994	2,162.0	230.8	463.7	531.8	34.0	13.7	31.5	3,467.5	4,248.2
1995	2,183.7	237.7	506.5	537.2	34.6	13.8	36.7	3,550.2	4,313.9
1996	2,220.5	241.9	548.3	543.1	37.6	13.7	45.2	3,650.3	4,397.2
1997 P	2,307.3	250.7	622.9	557.5	41.3	14.0	47.2	3,840.9	4,564.3
1997 % of Total	60.1%	6.5%	16.2%	14.5%	1.1%	0.4%	1.2%	100.0%	

P = Preliminary

(a) Estimate based on average seating plus standing capacity of vehicle compared to that of a bus (70 passengers): light rail = 1.7, heavy rail = 2.6, commuter rail = 2.2, trolleybus = 1.0, demand response = 0.2, other = 1.0.

TABLE 41

File: VEH HOUR

## Vehicle Hours Operated by Mode, Millions

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1986	153.7	5.8	21.7	25.6	1.5	1.9	0.8	211.0
1987	160.3	5.8	21.9	26.0	1.6	1.9	1.1	218.6
1988	160.5	6.4	23.5	27.4	1.8	1.9	1.2	222.7
1989	161.4	6.6	24.0	28.2	1.9	1.8	1.0	224.9
1990	163.0	6.5	24.4	28.4	2.0	1.8	1.4	227.5
1991	163.8	6.4	26.3	24.6	2.2	1.8	1.4	226.5
1992	165.1	6.5	28.7	25.6	2.2	1.8	1.6	231.5
1993	166.2	6.6	30.5	27.2	2.1	1.8	1.8	236.2
1994	162.1	6.9	32.6	27.3	2.5	1.8	1.5	234.7
1995	162.9	7.2	34.9	27.6	2.5	1.8	1.6	238.5
1996	165.5	7.3	37.0	28.0	2.7	1.8	1.9	244.2
1997 P	171.8	7.5	40.1	28.8	2.8	1.8	1.9	254.7
1997 % of Total	67.5%	2.9%	15.8%	11.3%	1.1%	0.7%	0.7%	100.0%

P = Preliminary

TABLE 42

Title: SPEED

**Average Vehicle Speed in Revenue Service by Mode, 1997**

MODE	AVERAGE SPEED (MILES PER HOUR)
Bus	13.0
Commuter Rail	33.8
Demand Response	15.3
Ferryboat (b)	7.5
Heavy Rail	20.7
Light Rail	15.5
Trolleybus	7.6
Vanpool	36.1
Other (a)	6.6
<b>TOTAL</b>	<b>14.9</b>

(a) Includes aerial tramway, automated guideway transit, cable car, inclined plane, and monorail.

(b) Excludes international, rural, rural interstate, island, and urban park ferries.

TABLE 43

**Vehicle Revenue Miles and Vehicle Revenue Hours by Mode, 1997**

MODE	VEHICLE REVENUE MILES (MILLIONS)	VEHICLE REVENUE HOURS (MILLIONS)
Bus	2,021.7	155.1
Commuter Rail	229.6	6.8
Demand Response	553.8	36.1
Ferryboat (b)	2.3	0.4
Heavy Rail	539.6	26.1
Light Rail	40.4	2.6
Trolleybus	13.4	1.8
Vanpool	39.4	1.1
Other (a)	2.9	0.4
<b>TOTAL</b>	<b>3,443.1</b>	<b>230.3</b>

(a) Includes aerial tramway, automated guideway transit, cable car, inclined plane, and monorail.

(b) Excludes international, rural, rural interstate, island, and urban park ferries.

**SECTION IX**

File: VEHICLES

**Vehicles***Highlights. . . . .*

- There were over 123,000 active vehicles providing transit service in 1997.
- Buses comprised 58.4%, demand response vehicles 24.8%, heavy rail cars 8.3%, commuter rail cars 4.0%, light rail cars 1.0%.
- Average age of buses was 8.6 years, demand response vehicles 3.5 years, commuter rail cars 21.0 years, heavy rail cars 21.6 years, light rail cars 19.8 years.
- Average length of buses was 39.3 feet, demand response vehicles 21.6 feet, commuter rail cars 84.9 feet, heavy rail cars 61.6 feet, light rail cars 70.3 feet.

- 6.5% of buses used alternative power, demand response vehicles 13.2%, commuter rail cars 48.7%, heavy and light rail cars and trolleybuses 100%.
- 72.4% of buses were wheelchair accessible, 93.0% of demand response vehicles, 71.9% of commuter rail cars, 94.2% of heavy rail cars, 73.2% of light rail cars.
- Over 2,000 buses and about 340 demand response vehicles used compressed natural gas, about 250 more used CNG blends, about 450 demand response vehicles and about 25 buses used propane, over 400 buses and demand response vehicles used liquefied natural gas and LNG blends.
- About 150 to 350 new rail cars are built each year, 5,500 to 6,500 buses and demand response vehicles, 3,000 of the buses are 40 to 45 feet in length, and about 2,000 are below 27.5 feet.
- The new bus market is dominated by 6 manufacturers, over 22% of new buses will have alternative power sources, about 71% will be 40 feet in length, the average 40-foot bus costs about \$277,000.
- The new rail car market is split among 6 major manufacturers, new rail cars cost from \$1.0 to \$2.5 million apiece, new locomotives exceed \$2.0 million for diesel to over \$5.0 million for electric.

TABLE 44

Active Passenger Vehicles by Mode

File: VEHACT

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1984	67,294	4,075	14,164	9,083	733	664	888	96,901
1985	64,258	4,035	14,490	9,326	717	676	867	94,368
1986	66,218	4,440	15,346	10,386	697	680	942	98,709
1987	63,017	4,686	15,944	10,168	766	671	875	96,127
1988	62,572	4,649	16,812	10,539	831	710	1,096	97,209
1989	58,919	4,472	15,856	10,506	755	725	1,060	92,293
1990	58,714	4,415	16,471	10,419	913	832	1,197	92,961
1991	60,377	4,370	17,879	10,331	1,095	752	1,595	96,399
1992	63,080	4,413	20,695	10,245	1,058	907	1,853	102,251
1993	64,850	4,494	23,527	10,261	1,025	851	2,308	107,316
1994	68,123	4,517	28,729	10,138	1,054	877	2,505	115,943
1995	67,107	4,565	29,352	10,157	999	885	2,809	115,874
1996	71,678	4,665	30,804	10,201	1,140	871	3,003	122,362
1997 P	72,170	4,943	30,697	10,242	1,229	859	3,440	123,580
1997 % of Total	58.4%	4.0%	24.8%	8.3%	1.0%	0.7%	2.8%	100.0%

P= Preliminary

TABLE 45

File: VEHAGE

## Average Vehicle Age by Mode

MODE	AVERAGE AGE (YEARS)
Bus	8.6
Commuter Rail	21.0
Commuter Rail Locomotive	18.7
Demand Response	3.5
Ferryboat	26.4
Heavy Rail	21.6
Light Rail	19.8
Other Rail	50.1
Trolleybus	15.8
Vanpool	3.2

Source: APTA survey. Data reported are not national totals.

TABLE 46

File: VEHLEN

## Average Vehicle Length by Mode

MODE	AVERAGE LENGTH (FEET)
Bus	39.3
Commuter Rail	84.9
Commuter Rail Locomotive	58.6
Demand Response	21.6
Ferryboat	228.5
Heavy Rail	61.6
Light Rail	70.3
Other Rail	42.2
Trolleybus	47.2
Vanpool	16.8

Source: APTA survey. Data reported are not national totals.

TABLE 47

File: VEHALPOW

## Alternative Power Vehicles by Mode

MODE	PER CENT USING ALTERNATIVE POWER
Bus	6.5%
Commuter Rail	48.7%
Commuter Rail Locomotive	39.8%
Demand Response	13.2%
Ferryboat	31.9%
Heavy Rail	100.0%
Light Rail	100.0%
Other Rail	50.5%
Trolleybus	100.0%
Vanpool	0.0%

(a) Alternative power includes all power except straight diesel and gasoline.

Source: APTA survey. Data reported are not national totals.

TABLE 48

Title: VEHACC%

## Accessible Vehicles by Mode

MODE	ACCESSIBLE VEHICLES (a)	VEHICLES REPORTED	PER CENT ACCESSIBLE (a)
Bus	36,564	50,447	72.5%
Commuter Rail	3,638	5,066	71.8%
Demand Response	7,526	8,094	93.0%
Ferryboat	8	47	17.0%
Heavy Rail	9,764	10,368	94.2%
Light Rail	1,016	1,389	73.1%
Other Rail	54	99	54.5%
Trolleybus	470	943	49.8%
Vanpool	33	2,298	1.4%

(a) Accessible vehicles include accessibility via lift, ramp, and station.

Source: APTA survey. Data reported are not national totals.

TABLE 49

File: ROADACC

**Road Vehicles by Type of Wheelchair Accessibility**

CALEN-DAR YEAR	BUS				DEMAND RESPONSE				TROLLEYBUS			
	LIFT	RAMP	NONE	TOTAL	LIFT	RAMP	NONE	TOTAL	LIFT	RAMP	NONE	TOTAL
	1993	26,087	123	25,415	51,625	4,031	246	772	5,049	453	0	510
1994	27,986	174	23,178	51,338	4,585	313	739	5,637	477	0	457	934
1995	30,841	351	20,995	52,187	5,391	412	708	6,511	523	0	502	1,025
1996	31,690	583	18,071	50,344	5,797	504	650	6,951	526	0	502	1,028
1997	32,629	1,050	16,162	49,841	6,449	514	541	7,504	489	0	512	1,001
1998	34,831	1,733	13,883	50,447	6,967	559	568	8,094	470	0	473	943
1998% of Total	69.0%	3.5%	27.5%	100.0%	86.1%	6.9%	7.0%	100.0%	49.8%	0.0%	50.2%	100.0%

88

Source: Data from APTA surveys of about 300 transit agencies; bus and demand response data are NOT national totals.

TABLE 50

File: CRHRACC

**Commuter and Heavy Rail Cars by Type of Wheelchair Accessibility**

CALEN-DAR YEAR	COMMUTER RAIL				HEAVY RAIL			
	LIFT	RAMP	STATION	TOTAL	LIFT	RAMP	STATION	TOTAL
	1993	10	63	1,359	3,117	0	0	8,614
1994	58	136	1,349	3,090	4	0	9,664	10,365
1995	58	234	1,717	2,643	4	0	9,655	10,357
1996	63	312	2,767	1,545	0	0	9,779	10,433
1997	87	660	2,662	1,429	0	0	9,740	10,391
1998	155	693	2,790	1,428	0	0	9,764	10,368
1998% of Total	3.1%	13.6%	55.1%	28.2%	0.0%	0.0%	94.2%	100.0%

89

Source: Data from APTA surveys. Commuter rail data represent 99% of rail cars; heavy rail data are national totals. "Lift" and "ramp" columns refer to on-vehicle lifts and ramps; "station" column includes car-floor-level platform boarding and platform lifts.

### Light and Other Rail Cars by Type of Wheelchair Accessibility (a)

CALENDAR YEAR	LIGHT RAIL			OTHER RAIL (a)			TOTAL			
	LIFT	RAMP	STATION	NONE	TOTAL	LIFT		RAMP	STATION	NONE
1993	71	0	435	738	1,244	0	0	37	46	83
1994	75	2	480	666	1,223	0	0	26	48	74
1995	96	11	498	624	1,229	0	0	35	48	83
1996	171	12	510	582	1,275	1	0	34	48	83
1997	123	65	549	575	1,312	1	0	42	45	88
1998	123	65	828	373	1,389	1	0	53	45	99
1998% of Total	8.9%	4.7%	59.6%	26.8%	100.0%	1.0%	0.0%	53.5%	45.5%	100.0%

Source: Data from APTA surveys. Light rail data represent 98% and other rail data represent 60% of national totals. "Lift" and "ramp" columns refer to on-vehicle lifts and ramps; "station" column includes car-floor-level platform boarding and platform lifts. (a) Includes aerial tramway, automated guideway, cable car, inclined plane, and monorail.

TABLE 52

### Passenger Vehicle Power Sources (a)

POWER SOURCE	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL CAR	COMMUTER RAIL LOCOMOTIVE	TROLLEY BUS	BUS	DEMAND RESPONSE	OTHER	TOTAL
Compressed Natural Gas	0	0	0	0	0	2,062	342	1	2,405
CNG Blends	0	0	0	0	0	86	167	1	254
Diesel	0	0	23	331	0	46,937	4,141	233	51,665
Diesel with Trap	0	0	0	0	0	237	0	0	237
Electric Battery	0	0	0	0	0	32	0	0	32
Electric Third Rail or Catenary	1,389	10,365	2,468	51	707	0	0	50	15,030
Electric & Diesel	0	0	0	178	236	0	0	14	428
Ethanol & Blends	0	0	0	0	0	395	15	0	410
Gasoline	0	0	0	0	0	250	2,884	2,095	5,229
Liquefied Natural Gas	0	0	0	0	0	64	82	0	146
LNG Blends	0	0	0	0	0	282	0	0	282
Methanol	0	0	0	0	0	19	0	0	19
Propane	0	0	0	0	0	12	451	0	463
Other (b)	0	0	0	0	0	71	12	0	83
Unpowered	0	3	2,575	15	0	0	0	50	2,643
<b>TOTAL</b>	<b>1,389</b>	<b>10,368</b>	<b>5,066</b>	<b>575</b>	<b>943</b>	<b>50,447</b>	<b>8,094</b>	<b>2,444</b>	<b>79,326</b>

(a) Data as of January 1, 1998 from APTA survey of about 300 transit agencies. Data are not national totals.

(b) Includes bio or soy diesel blends, hydrogen, jet fuel, and propane blends.

TABLE 53

File: BUSPOWER

**Bus Power Sources**

CALENDAR YEAR	CNG & BLENDS	DIESEL	ELECTRIC BATTERY	ETHANOL & BLENDS	GASOLINE	LNG & BLENDS	METHANOL	PROPANE	OTHER (a)	TOTAL
1993	225	50,595	18	86	257	80	160	28	176	51,625
1994	353	49,716	31	86	283	287	351	28	203	51,338
1995	678	50,158	37	82	243	357	399	31	202	52,187
1996	1,074	48,050	41	82	234	347	396	29	91	50,344
1997	1,562	47,177	24	347	230	347	63	25	66	49,841
1998	2,148	47,174	33	395	250	346	19	12	70	50,447
1998 % of Total	4.3%	93.5%	0.1%	0.8%	0.5%	0.7%	0.0%	0.0%	0.1%	100.0%

99 Source: Data from APTA surveys of about 300 transit agencies. Data are not national totals.

(a) Includes bio or soy diesel blends, hydrogen, jet fuel, and propane blends.

TABLE 54

File: NEWVEH

**New Passenger Vehicles Delivered by Mode**

CALENDAR YEAR	RAIL CARS (c)			BUSES & DEMAND RESPONSE (a)				TROLLEY BUS	TOTAL (b)
	COMMUTER RAIL	HEAVY RAIL	LIGHT RAIL	29 SEATS OR FEWER	30-39 SEATS	40 SEATS OR MORE	TOTAL		
1984	128	521	59	393	509	2,992	3,894	0	1,920
1985	179	441	63	353	220	2,794	3,367	0	1,013
1986	140	854	149	739	240	2,400	3,379	0	1,459
1987	198	758	51	1,091	429	2,704	4,224	47	2,425
1988	74	311	24	766	474	2,308	3,548	4	2,192
1989	56	207	52	1,353	771	2,836	4,960	0	3,666
1990	83	10	55	1,389	489	2,901	4,779	118	2,974
1991	187	6	17	1,781	411	2,530	4,722	149	3,163
1992	110	163	35	1,322	549	1,555	3,426	0	2,969
1993	8	260	54	1,919	566	2,351	4,836	24	3,641
1994	47	55	72	2,502	433	2,483	5,418	36	3,837
1995	38	72	38	2,823	733	2,466	6,022	3	6,173
1996	111	10	39	2,620	1,531	1,865	6,016	3	6,179
1997 P	198	34	76	2,745	1,188	2,616	6,549	0	6,857
1997 % of Total	2.9%	0.5%	1.1%	40.0%	17.3%	38.2%	95.5%	0.0%	100.0%

P = Preliminary

(a) Buses and demand response only; excludes vanpool vans. Bus comprises about 25% of the 29-seats-or-fewer size group and virtually 100% of the other size groups.

(b) Excludes vanpool vans, ferryboats, and other modes not listed.

(c) Source for rail modes; *Railway Age*, January issue.



TABLE 55

File: NEWBUSLG

**New Buses & Demand Response Vehicles Delivered by Length (a)**

CALENDAR YEAR	27'5" AND BELOW	27'6" - 32'5"	32'6" - 37'5"	37'6" - 45'0"	ARTICULATED/ DOUBLE DECKED	TOTAL
1988	599	250	518	2,181	0	3,548
1989	1,151	320	810	2,635	44	4,960
1990	932	450	567	2,782	48	4,779
1991	1,430	395	357	2,460	80	4,722
1992	968	338	584	1,482	54	3,426
1993	1,594	333	374	2,435	100	4,836
1994	2,333	147	350	2,513	75	5,418
1995	2,436	420	358	2,695	113	6,022
1996	2,282	383	405	2,885	61	6,016
1997 P	2,124	664	654	2,924	183	6,549
1997% of Total	32.4%	10.1%	10.0%	44.7%	2.8%	100.0%

(a) Buses comprise about 5% of the 27'5"-and-below size group and virtually 100% of the other size groups.  
P = Preliminary

TABLE 56

File: BUSMKTT

**New Bus and Trolleybus Market, 1997-2003 (a)**

CATEGORY	BUILT IN 1997		ON ORDER JAN-JUN 1998		POTENTIAL ORDERS (b)	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
	Total	3,993	100.0%	6,333	100.0%	14,903
With air conditioning	3,644	91.3%	5,332	84.2%	14,421	96.8%
Wheelchair accessibility						
Via lift	3,295	82.5%	4,086	64.5%	9,617	64.5%
Via ramp (low floor)	662	16.6%	2,246	35.5%	5,270	35.4%
Via stations	0	0.0%	0	0.0%	0	0.0%
Non-accessible	36	0.9%	1	0.0%	16	0.1%
Type						
Articulated (55'-60')	183	4.6%	503	7.9%	1,364	9.2%
Intercity (35'-40')	0	0.0%	74	1.2%	760	5.1%
Long (45')	103	2.6%	310	4.9%	149	1.0%
Large (37'6"-42'5")	2,527	63.3%	4,406	69.6%	10,252	68.8%
Medium (32'6"-37'5")	443	11.1%	427	6.7%	884	5.9%
Small (27'6"-32'5")	404	10.1%	436	6.9%	1,021	6.9%
Suburban (35'-40')	15	0.4%	33	0.5%	64	0.4%
Trolley Replica	50	1.2%	81	1.3%	33	0.2%
Van/Mini (<27'6")	268	6.7%	63	1.0%	376	2.5%

(a) Data from APTA survey including about 75% of buses and trolleybuses.

(b) DATA ARE TENTATIVE. SOME POTENTIAL ORDERS MAY NOT OCCUR.

TABLE 56 (continued)

File: BUSMKT2

**New Bus and Trolleybus Market, 1997-2003 (a)**

CATEGORY	BUILT IN 1997		ON ORDER JAN-JUN 1998		POTENTIAL ORDERS (b)	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	3,993	100.0%	6,333	100.0%	14,903	100.0%
Length						
55-60 feet	183	4.6%	503	7.9%	1,364	9.1%
45 feet	103	2.6%	310	4.9%	149	1.0%
38-41 feet	2,542	63.6%	4,513	71.3%	11,070	74.3%
33-37 feet	440	11.0%	431	6.8%	896	6.0%
28-32 feet	454	11.4%	507	8.0%	1,041	7.0%
18-27 feet	271	6.8%	69	1.1%	383	2.6%
Seating Capacity						
60 or more	183	4.6%	491	7.8%	1,214	8.2%
50-59 seats	103	2.6%	302	4.8%	330	2.2%
41-49 seats	2,087	52.3%	2,038	32.2%	5,886	39.5%
36-40 seats	643	16.1%	2,542	40.1%	5,218	35.0%
25-35 seats	685	17.1%	704	11.1%	1,623	10.9%
Below 25 seats	292	7.3%	256	4.0%	632	4.2%

(a) Data from APTA survey including about 75% of buses and trolleybuses.

(b) DATA ARE TENTATIVE; SOME POTENTIAL ORDERS MAY NOT OCCUR.

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TABLE 56 (continued)

File: BUSMKT3

**New Bus and Trolleybus Market, 1997-2003 (a)**

CATEGORY	BUILT IN 1997		ON ORDER JAN-JUN 1998		POTENTIAL ORDERS (b)	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	3,993	100.0%	6,333	100.0%	14,903	100.0%
Manufacturer						
Electric Transit	0	0.0%	304	4.8%	NA	NA
Gillig	831	20.8%	884	14.0%	NA	NA
Motor Coach Industries	105	2.6%	254	4.0%	NA	NA
Neoplan	237	5.9%	388	6.1%	NA	NA
New Flyer	695	17.4%	1,788	28.2%	NA	NA
North American Bus	354	8.9%	882	13.9%	NA	NA
Nova BUS	557	14.0%	1,299	20.5%	NA	NA
Orion	723	18.1%	171	2.7%	NA	NA
All others	491	12.3%	313	5.0%	NA	NA
Power Source						
Compressed natural gas	737	18.5%	845	13.3%	1,599	10.7%
Diesel (inc particulate trap)	3,234	81.0%	4,625	73.0%	10,839	72.8%
Dual-power	0	0.0%	61	1.0%	209	1.4%
Electric catenary	0	0.0%	304	4.8%	32	0.2%
Gasoline	10	0.2%	2	0.0%	18	0.1%
Liquefied natural gas	5	0.1%	422	6.7%	411	2.8%
Propane	0	0.0%	71	1.1%	5	0.0%
All others	7	0.2%	3	0.1%	32	0.2%
Undecided	NA	NA	NA	NA	1,758	11.8%

(a) Data from APTA survey including about 75% of buses and trolleybuses.

(b) DATA ARE TENTATIVE; SOME POTENTIAL ORDERS MAY NOT OCCUR.

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TABLE 57

File: RAILMKT1

**New Rail Car Market, 1997-2003 (a)**

CATEGORY	BUILT IN 1997			ON ORDER JAN-JUN 1998			POTENTIAL ORDERS (b)		
	NUMBER	PER CENT		NUMBER	PER CENT		NUMBER	PER CENT	
Total	370	100.0%		2,106	100.0%		2,078	100.0%	
With air conditioning	363	98.1%		2,106	100.0%		2,070	99.6%	
Wheelchair accessibility									
Via on-board lift	81	21.9%		88	4.2%		243	11.7%	
Via on-board ramp (low floor)	33	8.9%		293	13.9%		270	13.0%	
Via stations	249	67.3%		1,716	81.5%		1,545	74.3%	
Non-accessible	7	1.9%		9	0.4%		20	1.0%	
Type									
Single-deck articulated	108	29.2%		329	15.6%		311	15.0%	
Single-deck non-articulated	81	21.9%		1,566	74.4%		1,345	64.7%	
Double-deck	106	28.6%		208	9.9%		329	15.8%	
Triple-deck	75	20.3%		3	0.1%		93	4.5%	
Length									
86-99 feet	48	13.0%		159	7.6%		406	19.5%	
80-85 feet	214	57.8%		285	13.5%		987	47.5%	
70-79 feet	86	23.2%		368	17.5%		243	11.7%	
60-69 feet	0	0.0%		0	0.0%		135	6.5%	
40-59 feet	22	6.0%		1,294	61.4%		307	14.8%	

(a) Data from APTA survey including about 99% of commuter, heavy, light, and other rail cars.

(b) DATA ARE TENTATIVE; SOME POTENTIAL ORDERS MAY NOT OCCUR.

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TABLE 57 (continued)

File: RAILMKT2

**New Rail Car Market, 1997-2003 (a)**

CATEGORY	BUILT IN 1997			ON ORDER JAN-JUN 1998			POTENTIAL ORDERS (b)		
	NUMBER	PER CENT		NUMBER	PER CENT		NUMBER	PER CENT	
Total	370	100.0%		2,106	100.0%		2,078	100.0%	
Manufacturer									
ABB Daimler-Benz	24	6.5%		214	10.2%		NA	NA	
American Passenger Rail	81	21.9%		42	2.0%		NA	NA	
Bombardier	75	20.3%		740	35.1%		NA	NA	
Breda	66	17.8%		281	13.3%		NA	NA	
Kawasaki	67	18.1%		550	26.1%		NA	NA	
New Orleans RTA	7	1.9%		0	0.0%		NA	NA	
Kinki Sharyo	20	5.4%		79	3.8%		NA	NA	
Siemens	30	8.1%		181	8.6%		NA	NA	
Sumitomo	0	0.0%		19	0.9%		NA	NA	
Power Source									
Diesel	0	0.0%		0	0.0%		0	0.0%	
Electric	156	42.2%		1,835	87.1%		1,372	66.0%	
Unpowered	214	57.8%		271	12.9%		706	34.0%	

(a) Data from APTA survey including about 99% of commuter, heavy, light, and other rail cars.

(b) DATA ARE TENTATIVE; SOME POTENTIAL ORDERS MAY NOT OCCUR.

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**TABLE 58**  
**Average New Bus and Van Costs, 1997-1998, Thousands of Dollars (a)**

TYPE OF VEHICLE	BUS	TROLLEYBUS	DEMAND RESPONSE	VANPOOL
Number of orders	214	2	101	25
Articulated bus (55'-60')	376	NA	NA	NA
Intercity bus (35'-40')	354	NA	NA	NA
Large bus (37'-42'5")	277	642	NA	NA
Long bus (45')	368	NA	NA	NA
Medium bus (32'6"-37'5")	252	271	NA	NA
Small bus (27'6"-32'5")	205	NA	90	NA
Suburban bus (35'-42'5")	286	NA	NA	NA
Trolley replica bus	261	NA	NA	NA
Van/Mini (<27'6")	107	NA	60	22

(a) Data from APTA survey of 10% of non-rail transit agencies. Cost includes amount paid to manufacturer plus in-house and third-party costs. Not all orders were reported. Each year of a multi-year order is counted as a separate order.

**TABLE 59**  
**Average New Rail Vehicle Costs, 1997-1998, Thousands of Dollars (a)**

TYPE OF VEHICLE	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL CAR	COMMUTER RAIL LOCOMOTIVE	OTHER
Number of orders	9	4	15	5	1
1-level cab	NA	1,309	1,320	NA	NA
1-level non-cab	NA	NA	1,035	NA	912
2-level cab	NA	NA	1,682	NA	NA
2-level non-cab	NA	NA	1,539	NA	NA
3-level cab	NA	NA	1,617	NA	NA
3-level non-cab	NA	NA	1,511	NA	NA
Diesel	NA	NA	NA	2,158	NA
Diesel-electric	NA	NA	NA	2,839	NA
Electric	NA	NA	NA	NA	NA
Articulated cab	2,381	NA	NA	NA	NA

(a) Data from APTA survey of 90% of rail transit agencies. Cost includes amount paid to manufacturer plus in-house and

**SECTION X**

**Employees**

*Highlights. . . . .*

- There were over 326,000 operating employees, plus over 13,000 capital employees, in 1997.
- 50.4% were vehicle operators (including conductors), 14.2% other vehicle operations employees, 16.6% vehicle maintenance employees, 8.5% non-vehicle maintenance employees, 10.3% general administration employees.
- Bus employees were 60.6%, heavy rail 14.1%, demand response 14.6%, commuter rail 6.7%.
- Average compensation per employee (salaries and fringe benefits) was over \$40,000.

**Employees by Function (a) (b)**

CALENDAR YEAR	VEHICLE OPERATORS (c)	OTHER VEHICLE OPERATIONS	VEHICLE MAINTENANCE	NON-VEHICLE MAINTENANCE	GENERAL ADMINISTRATION	OPERATING TOTAL	CAPITAL	TOTAL
1984	122,843	32,397	31,420	43,227	25,522	255,409	7,788	263,197
1985	127,065	25,277	30,514	45,400	33,781	262,037	7,983	270,020
1986	129,263	24,543	33,621	45,629	36,052	269,108	8,746	277,854
1987	126,770	25,269	33,467	46,453	36,124	268,083	8,527	276,610
1988	126,565	25,149	33,743	44,054	35,971	265,482	10,101	275,583
1989	126,154	25,613	32,464	43,800	34,886	262,917	9,570	272,487
1990	127,039	23,517	31,424	44,282	35,914	262,176	10,663	272,839
1991	129,145	24,136	31,861	42,708	38,007	265,857	10,288	276,145
1992 (d)	130,312	39,237	48,270	24,062	25,221	267,102	11,893	278,995
1993	142,486	36,940	53,041	28,043	29,009	289,519	9,665	299,184
1994	145,102	38,571	51,405	27,004	32,005	294,087	10,207	304,294
1995	150,633	40,042	51,905	27,329	30,582	300,491	10,695	311,186
1996	155,700	43,915	54,645	27,239	33,445	314,944	11,682	326,626
1997 P	164,461	46,386	54,298	27,870	33,461	326,476	13,219	339,695
1997% of Total	50.4%	14.2%	16.6%	8.5%	10.3%	100.0%		

P = Preliminary

(a) Based on employee equivalents of 2,080 labor hours equals one employee; beginning 1993 equals actual employees. Series not continuous between 1992 and 1993.

(b) Excludes an estimated 10,000-20,000 individuals not employed by transit agencies and whose compensation is classified as "services."

(c) Includes conductors.

(d) Beginning 1992, ticketing, fare collection, and security employees reclassified from "General Administration" to "Other Vehicle Operations," and vehicle maintenance administrative and support employees reclassified from "Non-Vehicle Maintenance" to "Vehicle Maintenance."

**Operating Employees by Mode (a) (b)**

CALENDAR YEAR	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1984	154,326	21,884	23,798	47,047	3,242	2,012	3,100	255,409
1985	157,581	22,929	23,767	49,670	2,980	1,893	3,217	262,037
1986	165,839	22,414	20,664	51,028	3,511	2,140	3,512	269,108
1987	165,176	23,270	19,068	51,333	3,806	2,090	3,340	268,083
1988	165,407	23,188	21,391	46,212	3,922	2,039	3,323	265,482
1989	162,990	22,215	21,453	46,690	3,952	2,013	3,604	262,917
1990	162,189	21,443	22,740	46,102	4,066	1,925	3,711	262,176
1991	163,555	21,083	24,196	47,423	4,175	1,826	3,599	265,857
1992	163,387	21,151	25,863	47,493	3,849	1,691	3,668	267,102
1993	177,167	20,634	30,021	52,433	3,920	1,944	3,400	289,519
1994	174,373	22,596	35,450	51,062	5,140	1,848	3,618	294,087
1995	181,973	22,320	39,882	45,644	4,935	1,871	3,866	300,491
1996	190,152	22,604	44,667	45,793	5,728	2,084	3,916	314,944
1997 P	197,962	22,487	47,666	45,935	5,961	2,037	4,428	326,476
1997 % of Total	60.6%	6.9%	14.6%	14.1%	1.8%	0.6%	1.4%	100.0%

P = Preliminary

(a) Based on employee equivalents of 2,080 labor hours equals one employee; beginning 1993 equals actual employees. Series not continuous between 1992 and 1993.

(b) Excludes capital employees and an estimated 10,000-20,000 individuals not employed by transit agencies and whose compensation is classified as "services"—e.g. boiler repairman, marketing consultant, independent auditor.

Employee Compensation, Millions of Dollars

CALENDAR YEAR	NUMBER OF EMPLOYEES (a)(b)	SALARIES AND WAGES	FRINGE BENEFITS	COMPENSATION	COMPENSATION PER EMPLOYEE (ACTUAL DOLLARS)
1984	263,197	5,487.8	2,716.7	8,204.5	31,172
1985	270,020	5,843.1	2,868.3	8,711.4	32,262
1986	277,854	6,119.2	3,125.9	9,245.1	33,273
1987	276,610	6,324.1	3,266.9	9,591.0	34,673
1988	275,583	6,675.0	3,528.9	10,203.9	37,027
1989	272,487	6,897.7	3,737.3	10,635.0	39,029
1990	272,839	7,226.3	3,986.0	11,212.3	41,095
1991	276,145	7,394.5	3,998.4	11,392.9	41,257
1992	278,995	7,670.5	4,318.6	11,989.1	42,972
1993	299,184	7,932.1	4,400.3	12,332.4	41,220
1994	304,294	8,223.8	4,451.7	12,675.5	41,655
1995	311,186	8,213.1	4,484.0	12,697.1	40,802
1996	326,626	8,437.6	4,401.4	12,839.0	39,308
1997 P	339,695	9,060.4	4,676.5	13,736.9	40,439

P = Preliminary

(a) Based on employee equivalents of 2,080 labor hours equals one employee; beginning 1993 equals actual employees. Employee data not continuous between 1992 and 1993.

(b) Excludes an estimated 10,000-20,000 individuals not employed by transit agencies and whose compensation is classified as "services."

## SECTION XI

## Energy and Environment

## Highlights . . . . .

- About 768 million gallons of fossil fuels and 5.0 billion kilowatt-hours of electricity were used to move transit vehicles in 1997.
- 89.0% of all fossil fuels was diesel, 82.0% of all diesel was used by buses, 9.4% by commuter rail, 5.1% by demand response, 3.5% by ferryboats.
- 48.9% of the non-diesel fuel used was gasoline, 28.7% compressed natural gas, 6.3% propane, 4.8% liquefied natural gas.
- 64.8% of the electric power used was by heavy rail, 25.6% by commuter rail, 7.4% by light rail.
- Fully loaded buses are 6 times more fuel efficient than single-occupant automobiles, fully loaded rail cars are 15 times more fuel efficient, a commuter using transit saves 200 gallons of gasoline a year.
- Transit uses less than 1% of the energy consumed in this country.
- Buses emit only 20% as much carbon monoxide as single-occupant automobiles per passenger mile, only 10% as much hydrocarbons, only 75% as much nitrogen oxides, Rail transit emits 25% as much nitrogen oxides and almost no hydrocarbons and carbon monoxides

TABLE 63

File: FOSFUEL

## Fossil Fuel Consumption by Mode, Thousands of Gallons (a)

CALENDAR YEAR	DIESEL					NON-DIESEL (d)
	BUS	COMMUTER RAIL	DEMAND RESPONSE	FERRY BOAT (b)	OTHER	
1984	505,049	58,320	15,371 (c)	21,624	(c)	600,364
1985	518,137	55,372	14,482 (c)	20,747		608,738
1986	546,892	54,608	15,868	22,655	21	640,044
1987	543,314	51,594	15,393	19,901	71	630,273
1988	552,658	53,054	15,090	19,202	65	640,069
1989	551,156	52,516	14,824	19,402	118	638,016
1990	563,151	52,681	15,497	19,627	74	651,030
1991	572,861	54,315	17,422	20,465	95	665,158
1992	592,049	54,951	16,896	20,926	122	684,944
1993	575,740	59,766	22,890	19,968	147	678,511
1994	565,064	61,900	29,949	21,146	167	64,838
1995	563,767	63,064	28,958	22,307	190	678,286
1996	577,680	61,888	30,923	21,991	232	692,714
1997 P	563,512	64,357	35,284	23,711	225	687,089
1997 % of Total	82.0%	9.4%	5.1%	3.5%	0.0%	100.0%

P = Preliminary

--- Data not available

(a) Data includes passenger vehicles and locomotives; excludes non-passenger-vehicle and non-vehicle consumption.

(b) Excludes international, rural, rural interstate, island, and urban park ferries.

(c) Demand response and other combined.

(d) Prior to 1992, includes gasoline only. Series not continuous between 1991 and 1992.

TABLE 64

File: ALTFUEL

## Non-Diesel Fossil Fuel Consumption by Fuel, Thousands of Gallons (a)

CALENDAR YEAR	COMPRESSED NATURAL GAS	GASOLINE	LIQUIFIED NATURAL GAS	METHANOL	PROPANE (LIQUID PETROLEUM GAS)	OTHER	TOTAL
1992	1,009	32,906	191	1,583	2,487	12	38,188
1993	1,579	37,928	474	4,975	2,098	197	47,251
1994	4,835	43,921	1,450	12,269	1,871	492	64,838
1995	10,740	42,769	2,236	11,174	3,686	865	71,470
1996	15,092	41,495	2,862	7,268	5,235	4,353	76,305
1997 P	23,357	39,806	3,890	2	5,163	9,162	81,380
1997 % of Total	28.7%	48.9%	4.8%	0.0%	6.3%	11.3%	100.0%

P = Preliminary

(a) Data includes passenger vehicles; excludes non-passenger-vehicle and non-vehicle consumption.

TABLE 65

**Electric Power Consumption by Mode, Millions of Kilowatt Hours (a)**

CALENDAR YEAR	COMMUTER RAIL	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
1984	901	3,092		245 (b)		4,238
1985	1,043	2,928		245 (b)		4,216
1986	1,170	3,066				4,489
1987	1,155	3,219	173	70	10	4,656
1988	1,195	3,256	243	68	21	4,785
1989	1,293	3,286	242	68	23	4,912
1990	1,226	3,284	239	69	19	4,837
1991	1,239	3,248	274	72	20	4,853
1992	1,124	3,193	297	80	22	4,716
1993	1,196	3,287	281	79	22	4,865
1994	1,244	3,431	282	103	21	5,081
1995	1,253	3,401	288	100	26	5,068
1996	1,255	3,332	321	69	30	5,007
1997 P	1,282	3,253	372	78	33	5,018
1997 % of Total	25.6%	64.8%	7.4%	1.6%	0.6%	100.0%

P = Preliminary

(a) Data includes passenger vehicles and locomotives; excludes non-passenger-vehicle and non-vehicle consumption.  
(b) Light rail, trolleybus, and other combined.

File: ELECPWR

TABLE 66

**Energy Efficiency of Transit**

- A bus with as few as seven passengers is more fuel efficient than the average single-occupant auto used for commuting.
- The fuel efficiency of a fully-occupied bus is six times greater than that of the average commuter single-occupant auto.
- The fuel efficiency of a fully-occupied rail car is 15 times greater than that of the average commuter single-occupant auto.
- A single person commuting via transit instead of driving alone will save 200 gallons of gasoline in a year.
- A 10 percent increase in transit ridership in the five largest U.S. cities would save 85 million gallons of gasoline a year.

**Every Commuter Who Switches From Driving Alone to Transit Saves 200 Gallons of Gasoline Per Year!**

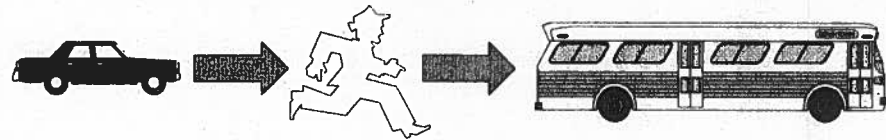
Source: APTA, *Public Transit - The Vehicle For Conserving Energy*, 1991.



TABLE 67

File: ENTRMODE

### Non-military Transportation Energy Use by Mode, 1996, Trillions of BTUs

	FUEL CONSUMPTION	PER CENT
Automobiles	8,621.7	34.9%
Transit Buses	85.0	0.3%
Other Buses	91.5	0.4%
Trucks (a)	9,922.8	40.2%
Motorcycles	24.8	0.1%
<b>TOTAL HIGHWAY</b>	<b>18,745.8</b>	<b>75.9%</b>
Off-highway	720.4	2.9%
Air	2,195.9	8.9%
Water	1,460.2	5.9%
Pipeline	983.5	4.0%
Transit Rail	43.0	0.2%
Commuter Rail	23.9	0.1%
Intercity Rail	12.1	0.0%
Freight Rail (b)	499.4	2.0%
<b>TOTAL</b>	<b>24,684.2</b>	<b>100.0%</b>

(a) Includes minivans and sport utility vehicles.

(b) Includes Class I railroads only.

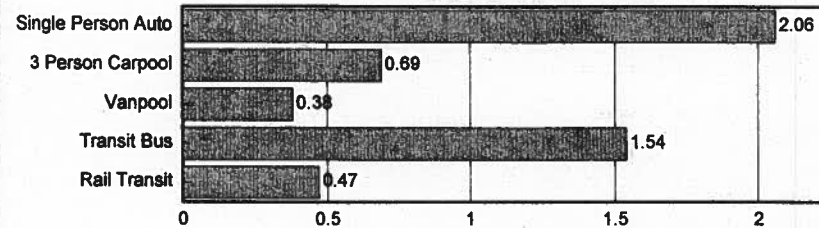
Source: U.S. Department of Energy, *Transportation Energy Data Book: Edition 18, Table 2.7.*

TABLE 68

### Pollution Reduction Resulting From Transit Use

#### Emissions of Nitrogen Oxides\*

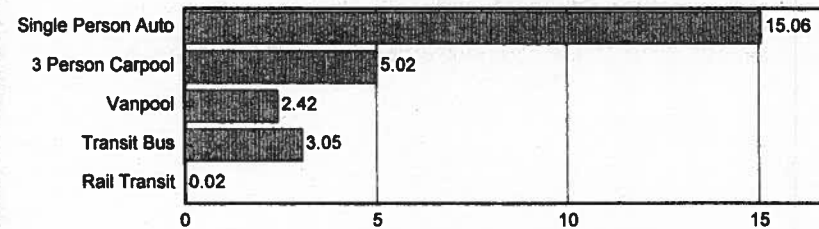
(Estimated grams/passenger-mile for work trips)



\*Damages lung tissues. Also precursor of ozone which irritates respiratory tract and eyes, decreases the lungs' working ability and causes both cough and chest pain.

#### Emissions of Carbon Monoxide\*

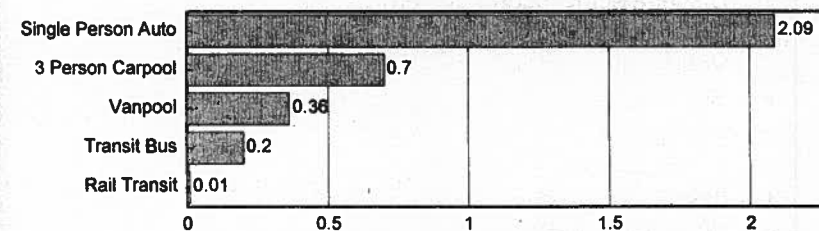
(Estimated grams/passenger-mile for work trips)



\*Limits blood's ability to transport oxygen to body tissues. Can cause dizziness, headaches, impaired coordination and death.

#### Emissions of Hydrocarbons\*

(Estimated grams/passenger-mile for work trips)



\*Precursor of ozone which irritates respiratory tract and eyes, decreases the lungs' working ability and causes both cough and chest pain.

Source: APTA, *Mass Transit - The Clean Air Alternative*, 1991.

TABLE 69

File: EMISSTD

**1998 New Bus Engine Emission Standards,  
Grams per Brake Horsepower-Hour (a)**

EMISSION	STANDARD
<b>POLLUTANTS</b>	
Hydrocarbons	1.30
Carbon Monoxide	15.50
Nitrogen Oxides	4.00
Particulate Matter	0.05
<b>SMOKE (b)</b>	
Acceleration Mode	20%
Lug Mode	15%
Peak during either mode	50%

(a) Nitrogen Oxides standard, currently 5.00, will be effective in 1998; all other standards have been in effect since 1994.

(b) Emissions measured in percent opacity during different operating modes.

Source: Federal Transit Administration, *Sourcebook on Transit-Related Environmental Regulations*, 1994.

### Other Environmental Requirements Affecting Transit

Transit agencies are also or will be subject to environmental regulations on the following:

- Diesel-electric locomotive emissions
- Scrap tires
- Vehicle air-conditioning system refrigerants
- Stormwater runoff from transit facilities
- Hazardous waste management
- Underground storage tanks
- Asbestos and lead-based paint removal
- Hazardous wastes in rights-of-way

## SECTION XII

File: SAFETY

# Safety and Security

## SAFETY

Transit safety data (incidents, fatalities, and injuries) have been collected by the Federal Transit Administration since 1979. However, these data for many transit agencies were incomplete or inaccurate because those systems were not in full compliance with the FTA reporting requirements. In addition, it has been impossible to separate out patron-only data for the various types of safety incidents because data reported combined patrons, employees, and other persons (e.g., automobile and other vehicle occupants, pedestrians, bicyclists). Only total patron fatalities data (which are zero 98% of the time) have been reasonably reliable.

In 1995, the FTA improved its efforts to ensure compliance and revised its reporting form to report patron, employee, and other data separately for each type of incident. By 1996 most of the reporting problems had been eliminated.

Great caution must be exercised in attempting to compare transit safety data to airlines, automobiles, intercity buses, intercity trains, school buses, and other modes of transportation. Transit's operating environment is unique compared to these other modes due to the unique nature of transit vehicles, stations, and methods of operation and the huge numbers of people involved. Among the unique factors are:

- No other mode of transportation operates in an environment so fraught with the potential for injury—twice a day for three or four hours a continuing flow of thousands of people bump into and jostle one another in the constricted spaces of transit vehicles and on the platforms, ramps, stairways, escalators, and elevators of transit stations and transfer centers.
- Most transit buses and vans have built-in lifts or ramps to accommodate those using wheelchairs, walkers, and other mobility aids, while most rail, bus, and ferry stations have stairways, escalators, or elevators. All these have a significant risk factor resulting in a disproportionate number of safety

incidents. No other mode of travel depends on such equipment to any significant extent.

- Minor incidents with less than \$1,000 in transit property damage are **not** counted as safety incidents unless a fatality, injury, or fire occurs. Such incidents (e.g., a 2-mile-an-hour collision with a post or another vehicle resulting in a dented bumper or broken taillight) are so common that they are considered "wear-and-tear" incidents that have no safety implications.
- A fatality is defined as a death confirmed within 30 days of an incident. Lingering injuries resulting in death months later are counted as injuries due to the impracticality of attempting to keep track of such injuries over long periods of time.
- All fires are counted even if they involve something as minor as a cigarette burning in a trash can.
- Heavy and commuter rail stations act as magnets for those contemplating suicide, with about one-third of all deaths reported to the FTA for these two modes being suicides. In addition, there are numerous injuries to persons failing in suicide attempts as well as to transit vehicle occupants (due to sudden braking) and to others in the wrong place at the wrong time. These casualties inflate the transit total, but are obviously beyond the transit agency's control.
- Unlike other transportation modes, the vast majority (over 80%) of safety incidents occur in urbanized areas with over 1,000,000 population.

## SECURITY

1995 was the first year data relating to incidents, fatalities, and injuries resulting from criminal or illegal activities were collected by the Federal Transit Administration. On the assumption that almost no crime exists in small communities, only data for transit agencies in or serving urbanized areas over 200,000 population were collected. Data are derived from the FBI Uniform Crime Reporting Program.

The data for 1995 were quite incomplete since many transit agencies had not complied with the prescribed definitions and procedures. Some larger transit agencies still have not solved these problems. Even when they do, there will be several inherent problems with the data that will

make much of it non-comparable:

- Some acts (such as drunkenness and loitering) are crimes in some states, counties, and cities, but not in others.
- Arrests may be handled by police forces in any of the dozens or hundreds of cities, towns, villages, and counties that the agency serves. A few of the largest agencies also have their own police forces. Accurate totals will require accumulation of data from each of these police forces, most of which probably cannot readily separate transit crimes from all other crimes in their jurisdiction. Failure of even one jurisdiction with numerous crime incidents to provide data will make the agency's data grossly inaccurate.
- Minor offenses such as trespassing and drunkenness are only counted if an arrest is made. When a citation or warning is issued, it is as if the incident never occurred. There will probably be considerable variances among police forces regarding the proportion of arrests vs. citations.
- Some crimes such as homicides have a high enforcement priority. Crimes low on the priority list such as drunkenness tend to be under-reported since scarce police resources have to be allocated to the most serious crimes, and the public, understanding that, does not report many less-serious crimes.

**Safety Summary by Mode, Directly Operated Service, 1996 (NOT National Totals)**

CATEGORY	BUS (a)	COMMUTER RAIL (a)	DEMAND RESPONSE (a)	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER (a)	TOTAL (a)
INCIDENTS (excluding suicides)								
Collisions	23,126	154	768	328	323	178	100	24,977
On-Vehicle (b)	15,588	725	467	2,407	584	338	221	20,330
Other (c)	1,178	1,547	49	10,955	443	47	85	14,304
Fires (d)	252	503	16	3,154	106	4	4	4,039
FATALITIES (excluding suicides)								
Patron Vehicle (e)	13	1	2	31	0	0	0	47
Patron Other (c)	8	18	1	9	0	0	1	37
Employees	10	2	1	2	0	0	0	15
Other Persons	67	28	7	1	6	2	0	111
INJURIES (excluding suicide attempts)								
Patron Vehicle (e)	27,366	446	552	1,838	1,040	390	176	31,808
Patron Other (c)	508	412	11	5,703	254	14	55	6,957
Employees	5,921	966	231	3,499	197	94	155	11,063
Other Persons	5,360	126	88	27	113	56	15	5,785

Source: Federal Transit Administration, National Transit Database. Data reported include about 450 of the largest transit agencies.

(a) Data may significantly understate total since purchased service not reported by the FTA comprises a significant portion of these modes.

(b) Includes derailments/vehicles going off road, and non-collision inside-vehicle, boarding/alighting, and in-vehicle fires.

(c) Includes non-collision parking facility, right-of-way, station/bus stop, and in-station and right-of-way fires.

(d) Excludes arson fires. All fires are double-counted in the other three categories.

(e) Includes collision, derailments/vehicles going off road, and non-collision inside-vehicle, boarding/alighting, and in-vehicle fires.

**Non-Suicide Vehicle-Related Safety Incidents by Mode, Directly Operated Service**

CALENDAR YEAR	BUS (a)	COMMUTER RAIL (a)	DEMAND RESPONSE (a)	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER (a)	TOTAL (a)
1995	40,764	1,141	1,129	3,045	925	546	497	48,047
1996	38,714	879	1,235	2,735	907	516	321	45,307
1996 % of Total	85.5%	2.0%	2.7%	6.0%	2.0%	1.1%	0.7%	100.0%

Source: Federal Transit Administration, National Transit Database. Data reported include about 450 of the largest transit agencies and are NOT national totals.

(a) Data may significantly understate total since purchased service not reported by the FTA comprises a significant portion of these modes.

TABLE 72

File: SAFEFATV

**Patron Non-Suicide Vehicle-Related Safety Fatalities by Mode, Directly Operated Service**

CALENDAR YEAR	BUS (a)	COMMUTER RAIL (a)	DEMAND RESPONSE (a)	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER (a)	TOTAL (a)
1995	13	0	1	41	1	0	0	56
1996	13	1	2	31	0	0	0	47
1996 % of Total	27.7%	2.1%	4.2%	66.0%	0.0%	0.0%	0.0%	100.0%

Source: Federal Transit Administration, National Transit Database. Data reported include about 450 of the largest transit agencies and are NOT national totals.

(a) Data may significantly understate total since purchased service not reported by the FTA comprises a significant portion of these modes.

TABLE 73

File: SAFEINJV

**Patron Non-Suicide Vehicle-Related Safety Injuries by Mode, Directly Operated Service**

CALENDAR YEAR	BUS (a)	COMMUTER RAIL (a)	DEMAND RESPONSE (a)	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER (a)	TOTAL (a)
1995	29,246	629	638	1,925	832	468	375	34,013
1996	27,366	446	552	1,838	1,040	390	176	31,808
1996 % of Total	86.0%	1.4%	1.7%	5.8%	3.3%	1.2%	0.6%	100.0%

Source: Federal Transit Administration, National Transit Database. Data reported include about 450 of the largest transit agencies and are NOT national totals.

(a) Data may significantly understate total since purchased service not reported by the FTA comprises a significant portion of these modes.

**Crime Incidents by Mode, Directly Operated Service, 1996 (NOT National Totals)**

TYPE OF CRIME	BUS (a)	COMMUTER RAIL (a)	DEMAND RESPONSE (a)	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER (a)	TOTAL (a)
VIOLENT CRIMES AGAINST PATRONS								
Homicide	7	0	0	8	1	0	0	16
Personal (c)	1,681	204	6	3,967	387	26	48	6,319
Property (d)	2,436	1,591	2	7,935	673	88	34	12,759
VIOLENT CRIMES AGAINST NON-PATRONS (EMPLOYEES AND OTHER PERSONS)								
Homicide	2	1	0	1	0	0	0	4
Personal (c)	880	111	10	290	52	19	4	1,366
Property (d)	1,278	796	7	553	71	18	17	2,740
OTHER CRIMES (b)								
Burglary & Arson	171	178	0	1,300	84	0	13	1,746
Disorderly Conduct (e)	5,025	1,085	8	19,183	800	19	58	26,178
Drunkenness (e)	3,936	23	2	1,617	1,305	3	35	6,921
Fare Evasion (e)	2,372	334	1	39,957	1,185	23	4,001	47,873
Vandalism (e)	6,167	309	17	1,339	609	135	51	8,627
Other (e)	4,880	1,262	1	4,201	1,463	132	394	12,333
<b>TOTAL</b>	<b>28,835</b>	<b>5,894</b>	<b>54</b>	<b>80,351</b>	<b>6,630</b>	<b>463</b>	<b>4,655</b>	<b>126,882</b>

Source: Federal Transit Administration, National Transit Database. Data reported include about 450 of the largest transit agencies.

(a) Data may significantly understate total since purchased service and data for urbanized areas under 200,000 population not reported by the FTA comprises a significant portion of these modes.

(b) Data include patrons and non-patrons. Patron-only data not collected.

(c) Includes forcible rape, robbery, aggravated assault.

(d) Includes larceny/theft and motor vehicle theft.

(e) Only includes incidents where arrests were made; when a citation is issued, the incident is not reported.

## SECTION XIII

File: MODESUM

## Mode Summaries

This section contains data presented elsewhere in this book arranged by mode. Also included are modal information on average fare per unlinked trip, operating expense object classes and functions, average weekday unlinked passenger trips, vehicles, employees, and energy consumption.

Lists of the 35 largest bus agencies, ferryboat agencies, and trolleybus agencies are provided, as are lists of commuter rail, heavy rail, light rail, and other rail agencies with the number of stations of each.

"Other Rail" includes aerial tramway, automated guideway transit, cable car, inclined plane, and monorail.

TABLE 75

File: BUSSUM

**Bus Summary Data, Fiscal Year 1997**

Agencies, Number of	2,257
Fares Collected, Passenger	\$3,620,325,000
Fare per Unlinked Trip, Average	\$0.70
Expense, Operating Total	\$11,034,559,000
Salaries and Wages	\$5,315,998,000
Fringe Benefits	\$2,687,591,000
Services	\$651,008,000
Fuel and Lubricants	\$435,353,000
Materials and Supplies, Other	\$754,019,000
Utilities	\$155,784,000
Casualty and Liability	\$311,857,000
Purchased Transportation	\$716,572,000
Other	(\$6,386,000)
Vehicle Operations	\$5,825,856,000
Vehicle Maintenance	\$2,174,823,000
Non-vehicle Maintenance	\$446,217,000
General Administration	\$1,871,091,000
Expense, Capital Total	\$2,299,245,000
Rolling Stock	\$1,178,659,000
Facilities	\$724,343,000
Other	\$396,242,000
Trips, Unlinked Passenger, Average Weekday	18,169,000
Trips, Unlinked Passenger, Annual	5,199,431,000
Miles, Passenger	20,356,893,000
Trip Length, Average (miles)	3.9
Miles, Vehicle Total	2,307,269,000
Miles, Vehicle Revenue	2,021,755,000
Hours, Vehicle Total	171,790,000
Hours, Vehicle Revenue	155,146,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	13.0
Vehicles, Total	74,710
Active	72,170
Age, Average (years)	8.6
Air-conditioned	88.4%
Fareboxes, registering	90.2%
Radios, 2-way	96.3%
Lifts, Wheelchair	69.0%
Ramps, Wheelchair	3.4%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	93.5%
Power Source, Alternative	6.5%
Rehabilitated	11.5%
Employees, Operating	197,962
Vehicle Operations	135,817
Vehicle Maintenance	34,329
Non-vehicle Maintenance	6,699
General Administration	21,118
Employees, Capital	5,167
Diesel Fuel Consumed (gallons)	563,512,000
Other Fuel Consumed (gallons)	33,138,000
Electricity Consumed (kwh)	112,000

TABLE 76

File: 35MBAG

**35 Largest Bus Transit Agencies, Fiscal Year 1997,  
Ranked by Number of Unlinked Passenger Trips**

RANK	TRANSIT AGENCY	URBANIZED AREA
1	Metropolitan Transportation Authority (includes MTA New York City Transit and MTA Long Island Bus)	New York, NY
2	Los Angeles County Metropolitan Transp Authority	Los Angeles, CA
3	Regional Transportation Authority (includes Chicago Transit Authority and PACE Suburban Bus)	Chicago, IL
4	Southeastern Pennsylvania Transp Authority	Philadelphia, PA
5	New Jersey Transit Corporation	New York, NY
6	Washington Metropolitan Area Transportation Auth	Washington, DC
7	Massachusetts Bay Transportation Authority	Boston, MA
8	San Francisco Municipal Railway	San Francisco, CA
9	Metropolitan Transit Authority of Harris County	Houston, TX
10	New York City Department of Transportation	New York, NY
11	Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA
12	Mass Transit Administration, Maryland Dept of Trp	Baltimore, MD
13	Milwaukee County Department of Transportation	Milwaukee, WI
14	King County Department of Transportation	Seattle, WA
15	City and County of Honolulu Dept of Trp Services	Honolulu, HI
16	Regional Transportation District	Denver, CO
17	Port Authority of Allegheny County	Pittsburgh, PA
18	Alameda-Contra Costa Transit District	San Francisco, CA
19	Metro Transit	Minneapolis, MN
20	Miami-Dade Transit Agency	Miami, FL
21	Tri-County Metropolitan Transp District of Oregon	Portland, OR
22	City of Detroit Department of Transportation	Detroit, MI
23	Greater Cleveland Regional Transit Authority	Cleveland, OH
24	Regional Transit Authority of Orleans and Jefferson	New Orleans, LA
25	Dallas Area Rapid Transit Authority	Dallas, TX
26	Orange County Transportation Authority	Los Angeles, CA
27	Santa Clara Valley Transportation Authority	San Jose, CA
28	Regional Transportation Comm of Clark County	Las Vegas, NV
29	San Diego Metropolitan Transit Development Board ( includes San Diego Transit Corporation)	San Diego, CA
30	Bi-State Development Agency	Saint Louis, MO
31	VIA Metropolitan Transit	San Antonio, TX
32	Capital Metropolitan Transportation Authority	Austin, TX
33	City of Phoenix Public Transit Department	Phoenix, AZ
34	Connecticut Transit	Hartford, CT
35	Westchester County Transit System	New York, NY

TABLE 77

File: CRSUM

**Commuter Rail Summary Data, Fiscal Year 1997**

Agencies, Number of	18
Fares Collected, Passenger	\$1,178,340,000
Fare per Unlinked Trip, Average	\$3.30
Expense, Operating Total	\$2,278,671,000
Salaries and Wages	\$934,699,000
Fringe Benefits	\$589,661,000
Services	\$135,724,000
Fuel and Lubricants	\$33,576,000
Materials and Supplies, Other	\$161,852,000
Utilities	\$161,362,000
Casualty and Liability	\$70,953,000
Purchased Transportation	\$277,827,000
Other	(\$86,983,000)
Vehicle Operations	\$814,228,000
Vehicle Maintenance	\$485,792,000
Non-vehicle Maintenance	\$347,637,000
General Administration	\$353,186,000
Expense, Capital Total	\$1,814,394,000
Rolling Stock	\$372,436,000
Facilities	\$1,329,572,000
Other	\$112,386,000
Trips, Unlinked Passenger, Average Weekday	1,271,000
Trips, Unlinked Passenger, Annual	357,239,000
Miles, Passenger	8,037,743,000
Trip Length, Average (miles)	22.5
Miles, Vehicle Total	250,704,000
Miles, Vehicle Revenue	229,615,000
Hours, Vehicle Total	7,504,000
Hours, Vehicle Revenue	6,801,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	33.8
Vehicles, Total (Passenger Cars Only)	5,144
Active	4,943
Age, Average (years)	21.0
Air-conditioned	100.0%
Fareboxes, registering	0.0%
Radios, 2-way	62.6%
Lifts, Wheelchair	3.1%
Ramps, Wheelchair	13.7%
Accessible Only via Stations	55.1%
Power Source, Diesel or Gasoline	0.5%
Power Source, Alternative	48.7%
Rehabilitated	54.6%
Employees, Operating	22,487
Vehicle Operations	8,611
Vehicle Maintenance	6,225
Non-vehicle Maintenance	4,939
General Administration	2,712
Employees, Capital	2,720
Diesel Fuel Consumed (gallons)	64,357,000
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	1,281,738,000

TABLE 78

**Commuter Rail Transit Agencies (a)**

File: CRAGENCY

CITY	TRANSIT AGENCY	DIRECT- IONAL ROUTE MILES	TRACK MILES	CROSS- INGS	STA- TIONS	ACCESS- IBLE STA- TIONS
Baltimore, MD	Mass Transit Administration, Maryland DOT	373.4	455.1	40	40	19
Boston, MA	Massachusetts Bay Transportation Authority	575.0	484.8	0	102	50
Chicago, IL	Northeast Illinois Regional Commuter Rail Corp	939.4	1,145.9	534	226	104
Chicago, IL	Northern Indiana Commuter Transp District	151.0	101.9	151	18	7
Dallas, TX	Dallas Area Rapid Transit Authority	13.7	17.6	13	3	3
Los Angeles, CA	Southern California Regional Rail Authority	758.8	565.6	400	45	45
Miami, FL	Tri-County Commuter Rail Authority	140.0	145.1	69	18	18
New Haven, CT	Connecticut Department of Transportation	101.2	103.9	3	8	8
New York, NY	Metropolitan Transp Auth Long Island Rail Road	638.2	701.1	406	134	15
New York, NY	Metropolitan Transp Auth Metro-North Railroad	535.4	796.4	104	106	19
New York, NY	New Jersey Transit Corporation	975.2	988.5	329	158	22
Philadelphia, PA	Pennsylvania Department of Transportation	144.0	144.0	7	14	3
Philadelphia, PA	Southeastern Pennsylvania Transportation Auth	419.2	671.2	116	177	30
San Diego, CA	North San Diego County Transit District	82.2	108.0	20	8	8
San Francisco, CA	Peninsula Corridor Joint Powers Board	153.6	129.5	52	34	14
Stockton, CA	Altamont Commuter Express	172.0	112.7	96	9	9
Syracuse, NY	ON TRACK	3.5	3.5	NA	3	3
Washington, DC	Virginia Railway Express	175.0	190.0	23	18	18
TOTAL		6,350.8	6,864.8	NA	1,118	392

(a) Excludes commuter-type services operated independently by AMTRAK.  
Source: Federal Transit Administration National Transit Database plus other sources.



TABLE 79

File: DRSUM

**Demand Response Summary Data, Fiscal Year 1997**

Agencies, Number of	5,236
Fares Collected, Passenger	\$173,810,000
Fare per Unlinked Trip, Average	\$1.83
<b>Expense, Operating Total</b>	<b>\$1,283,156,000</b>
Salaries and Wages	\$301,116,000
Fringe Benefits	\$122,796,000
Services	\$46,972,000
Fuel and Lubricants	\$25,476,000
Materials and Supplies, Other	\$31,875,000
Utilities	\$8,984,000
Casualty and Liability	\$21,579,000
Purchased Transportation	\$707,164,000
Other	\$17,194,000
Vehicle Operations	\$366,366,000
Vehicle Maintenance	\$78,081,000
Non-vehicle Maintenance	\$17,173,000
General Administration	\$114,372,000
<b>Expense, Capital Total</b>	<b>\$113,695,000</b>
Rolling Stock	\$71,576,000
Facilities	\$21,506,000
Other	\$20,614,000
Trips, Unlinked Passenger, Average Weekday	349,000
Trips, Unlinked Passenger, Annual	95,235,000
Miles, Passenger	927,895,000
Trip Length, Average (miles)	9.7
Miles, Vehicle Total	622,921,000
Miles, Vehicle Revenue	553,831,000
Hours, Vehicle Total	40,062,000
Hours, Vehicle Revenue	36,109,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	15.3
<b>Vehicles, Total</b>	<b>31,614</b>
Active	30,697
Age, Average (years)	3.5
Air-conditioned	98.8%
Fareboxes, registering	11.8%
Radios, 2-way	92.1%
Lifts, Wheelchair	86.1%
Ramps, Wheelchair	6.9%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	86.8%
Power Source, Alternative	13.2%
Rehabilitated	0.4%
<b>Employees, Operating</b>	<b>47,666</b>
Vehicle Operations	39,251
Vehicle Maintenance	3,803
Non-vehicle Maintenance	569
General Administration	4,044
<b>Employees, Capital</b>	<b>27</b>
Diesel Fuel Consumed (gallons)	35,284,000
Other Fuel Consumed (gallons)	45,238,000
Electricity Consumed (kwh)	48

TABLE 80

File: FBSUM

**Ferryboat Summary Data, Fiscal Year 1997**

Agencies, Number of	26
Fares Collected, Passenger	\$48,320,000
Fare per Unlinked Trip, Average	\$0.89
<b>Expense, Operating Total</b>	<b>\$238,673,000</b>
Salaries and Wages	\$125,634,000
Fringe Benefits	\$31,788,000
Services	\$7,392,000
Fuel and Lubricants	\$19,034,000
Materials and Supplies, Other	\$31,120,000
Utilities	\$3,430,000
Casualty and Liability	\$3,390,000
Purchased Transportation	\$13,793,000
Other	\$3,092,000
Vehicle Operations	\$167,563,000
Vehicle Maintenance	\$30,561,000
Non-vehicle Maintenance	\$12,663,000
General Administration	\$14,094,000
<b>Expense, Capital Total</b>	<b>\$173,660,000</b>
Rolling Stock	\$128,370,000
Facilities	\$38,722,000
Other	\$6,568,000
Trips, Unlinked Passenger, Average Weekday	159,000
Trips, Unlinked Passenger, Annual	54,027,000
Miles, Passenger	348,898,000
Trip Length, Average (miles)	6.5
Miles, Vehicle Total	2,343,000
Miles, Vehicle Revenue	2,330,000
Hours, Vehicle Total	321,000
Hours, Vehicle Revenue	310,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	7.5
<b>Vehicles, Total</b>	<b>118</b>
Active	118
Age, Average (years)	26.4
Air-conditioned	0.0%
Fareboxes, registering	0.0%
Radios, 2-way	8.5%
Lifts, Wheelchair	2.1%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	14.9%
Power Source, Diesel or Gasoline	68.1%
Power Source, Alternative	31.9%
Rehabilitated	0.0%
<b>Employees, Operating</b>	<b>3,385</b>
Vehicle Operations	2,738
Vehicle Maintenance	282
Non-vehicle Maintenance	184
General Administration	181
<b>Employees, Capital</b>	<b>201</b>
Diesel Fuel Consumed (gallons)	23,711,000
Other Fuel Consumed (gallons)	50,000
Electricity Consumed (kwh)	0

TABLE 81

File: FBAGENCY

## Ferryboat Transit Agencies (a)

URBANIZED AREA	TRANSIT AGENCY
Boston, MA	Massachusetts Bay Transportation Authority
Bremerton, WA	Kitsap Transit
Cincinnati, OH	Anderson Ferry Boat
Galveston, TX	Texas Department of Transportation
Hartford, CT	Connecticut Department of Transportation
Houston, TX	Texas Department of Transportation
Jacksonville, FL	Florida Department of Transportation
Los Angeles, CA	Balboa Island Ferry
New Orleans, LA	Louisiana Dept of Transportation and Development
New York, NY	New York City Department of Transportation
New York, NY	Port Authority of New York & New Jersey
Norfolk, VA	Tidewater Transportation District Commission
Philadelphia, PA	Riverbus
Port Townsend, WA	Washington State Department of Transportation
Portland, ME	Casco Bay Island Transit District
San Diego, CA	Harbor Excursion
San Francisco, CA	Alameda-Oakland Ferry Service
San Francisco, CA	Angel Island-Tiburon Ferry Company
San Francisco, CA	Golden Gate Bridge, Highway & Transportation Dist
San Francisco, CA	Harbor Bay Maritime
San Francisco, CA	Red & White Fleet
San Francisco, CA	Vallejo Transit
San Juan, PR	Puerto Rico Ports Authority
Seattle, WA	Washington State Department of Transportation
Tacoma, WA	Pierce County Ferry Operations
Tacoma, WA	Washington State Department of Transportation

(a) Excludes international, rural, island, and urban park ferries.

TABLE 82

## Trolleybus Transit Agencies

URBANIZED AREA	TRANSIT AGENCY
Boston, MA	Massachusetts Bay Transportation Authority
Dayton, OH	Miami Valley Regional Transit Authority
Philadelphia, PA	Southeastern Pennsylvania Transp Authority
San Francisco, CA	San Francisco Municipal Railway
Seattle, WA	King County Department of Transportation

TABLE 83

File: TBSUM

## Trolleybus Summary Data, Fiscal Year 1997

Agencies, Number of	5
Fares Collected, Passenger	\$56,861,000
Fare per Unlinked Trip, Average	\$0.47
Expense, Operating Total	\$140,189,000
Salaries and Wages	\$75,401,000
Fringe Benefits	\$42,590,000
Services	\$8,738,000
Fuel and Lubricants	\$63,000
Materials and Supplies, Other	\$6,774,000
Utilities	\$4,087,000
Casualty and Liability	\$3,500,000
Purchased Transportation	\$0
Other	(\$964,000)
Vehicle Operations	\$79,567,000
Vehicle Maintenance	\$25,331,000
Non-vehicle Maintenance	\$11,193,000
General Administration	\$24,097,000
Expense, Capital Total	\$54,117,000
Rolling Stock	\$9,043,000
Facilities	\$41,788,000
Other	\$3,286,000
Trips, Unlinked Passenger, Average Weekday	381,000
Trips, Unlinked Passenger, Annual	120,752,000
Miles, Passenger	189,170,000
Trip Length, Average (miles)	1.6
Miles, Vehicle Total	13,955,000
Miles, Vehicle Revenue	13,371,000
Hours, Vehicle Total	1,834,000
Hours, Vehicle Revenue	1,765,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	7.6
Vehicles, Total	943
Active	859
Age, Average (years)	15.8
Air-conditioned	9.5%
Fareboxes, registering	92.2%
Radios, 2-way	92.2%
Lifts, Wheelchair	49.8%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	0.0%
Employees, Operating	2,037
Vehicle Operations	1,418
Vehicle Maintenance	314
Non-vehicle Maintenance	126
General Administration	180
Employees, Capital	120
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	78,308,000

TABLE 84

File: HRSUM

## Heavy Rail Summary Data, Fiscal Year 1997

Agencies, Number of	14
Fares Collected, Passenger	\$2,350,916,000
Fare per Unlinked Trip, Average	\$0.97
Expense, Operating Total	\$3,473,707,000
Salaries and Wages	\$2,042,329,000
Fringe Benefits	\$1,063,539,000
Services	\$165,384,000
Fuel and Lubricants	\$2,775,000
Materials and Supplies, Other	\$254,223,000
Utilities	\$320,070,000
Casualty and Liability	\$81,865,000
Purchased Transportation	\$0
Other	(\$456,479,000)
Vehicle Operations	\$1,448,330,000
Vehicle Maintenance	\$569,820,000
Non-vehicle Maintenance	\$921,232,000
General Administration	\$534,326,000
Expense, Capital Total	\$2,346,098,000
Rolling Stock	\$298,327,000
Facilities	\$1,602,576,000
Other	\$445,195,000
Trips, Unlinked Passenger, Average Weekday	8,131,000
Trips, Unlinked Passenger, Annual	2,429,455,000
Miles, Passenger	12,056,068,000
Trip Length, Average (miles)	5.0
Miles, Vehicle Total	557,549,000
Miles, Vehicle Revenue	539,552,000
Hours, Vehicle Total	28,827,000
Hours, Vehicle Revenue	26,060,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	20.7
Vehicles, Total	10,366
Active	10,242
Age, Average (years)	21.6
Air-conditioned	97.3%
Fareboxes, registering	0.6%
Radios, 2-way	28.3%
Lifts, Wheelchair	0.0%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	94.2%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	47.3%
Employees, Operating	45,935
Vehicle Operations	19,965
Vehicle Maintenance	7,689
Non-vehicle Maintenance	13,839
General Administration	4,442
Employees, Capital	4,565
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	3,252,510,000

TABLE 85

## Heavy Rail Transit Agencies

CITY	TRANSIT AGENCY	DIRECT- IONAL ROUTE MILES	TRACK MILES	CROSS- INGS	STA- TIONS	ACCESS- IBLE STA- TIONS
Atlanta, GA	Metropolitan Atlanta Rapid Transit Authority	92.2	115.0	0	36	36
Baltimore, MD	Mass Transit Administration, Maryland DOT	29.4	34.4	0	14	14
Boston, MA	Massachusetts Bay Transportation Authority	75.8	107.7	0	53	33
Chicago, IL	Chicago Transit Authority	206.3	287.8	25	141	0
Cleveland, OH	Greater Cleveland Regional Transit Authority	38.2	41.9	0	18	6
Los Angeles, CA	Los Angeles County Metropolitan Transp Auth	10.0	12.2	0	8	8
Miami, FL	Metro-Dade Transit Agency	42.2	53.2	0	21	0
New York, NY	Metropolitan Transp Auth New York City Transit	492.9	834.2	0	468	30
New York, NY	Metropolitan Transp Auth Staten Island Railway	28.6	32.5	0	22	2
New York, NY	Port Authority of New York & New Jersey	28.6	43.1	2	13	6
Philadelphia, PA	Port Authority Transit Corp of PA & New Jersey	31.5	38.4	0	13	3
Philadelphia, PA	Southeastern Pennsylvania Transportation Auth	76.1	102.3	0	76	4
San Francisco, CA	San Francisco Bay Area Rapid Transit District	190.1	246.3	0	36	39
Washington, DC	Washington Metropolitan Area Transit Authority	184.9	198.7	0	75	75
TOTAL		1,526.8	2,147.7	27	997	256

Source: Federal Transit Administration National Transit Database plus other sources.

**Light Rail Summary Data, Fiscal Year 1997**

Agencies, Number of	23
Fares Collected, Passenger	\$138,620,000
Fare per Unlinked Trip, Average	\$0.53
Expense, Operating Total	\$477,968,000
Salaries and Wages	\$229,271,000
Fringe Benefits	\$121,981,000
Services	\$45,496,000
Fuel and Lubricants	\$356,000
Materials and Supplies, Other	\$31,590,000
Utilities	\$38,276,000
Casualty and Liability	\$13,400,000
Purchased Transportation	\$0
Other	(\$2,402,000)
Vehicle Operations	\$198,784,000
Vehicle Maintenance	\$107,400,000
Non-vehicle Maintenance	\$92,425,000
General Administration	\$77,359,000
Expense, Capital Total	\$818,436,000
Rolling Stock	\$199,157,000
Facilities	\$588,816,000
Other	\$30,462,000
Trips, Unlinked Passenger, Average Weekday	825,000
Trips, Unlinked Passenger, Annual	263,257,000
Miles, Passenger	1,038,893,000
Trip Length, Average (miles)	3.9
Miles, Vehicle Total	41,315,000
Miles, Vehicle Revenue	40,356,000
Hours, Vehicle Total	2,772,000
Hours, Vehicle Revenue	2,596,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	15.5
Vehicles, Total	1,413
Active	1,229
Age, Average (years)	19.8
Air-conditioned	69.0%
Fareboxes, registering	50.3%
Radios, 2-way	78.1%
Lifts, Wheelchair	8.9%
Ramps, Wheelchair	4.7%
Accessible Only via Stations	59.6%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	26.8%
Employees, Operating	5,961
Vehicle Operations	2,615
Vehicle Maintenance	1,436
Non-vehicle Maintenance	1,321
General Administration	589
Employees, Capital	380
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	371,567,000

TABLE 87

**Light Rail Transit Agencies**

File: LRAGENCY

CITY	TRANSIT AGENCY	DIRECT- IONAL ROUTE MILES	TRACK MILES	CROSS- INGS	STA- TIONS (a)	ACCESS- IBLE STATIONS (a)
Baltimore, MD	Mass Transit Administration, Maryland DOT	43.6	35.3	39	24	24
Boston, MA	Massachusetts Bay Transportation Authority	55.9	77.5	56	95	9
Buffalo, NY	Niagara Frontier Transit Metro System	12.4	14.1	8	14	7
Cleveland, OH	Greater Cleveland Regional Transit Authority	30.8	33.0	22	33	5
Dallas, TX	Dallas Area Rapid Transit Authority	40.8	46.7	66	20	20
Dallas, TX	McKinney Avenue Transit Authority	2.8	2.8	NA	0	0
Denver, CO	Regional Transportation District	10.6	12.7	33	15	15
Detroit, MI	Detroit Citizens Railway	1.2	1.2	NA	0	0
Fort Worth, TX	Tandy Center Subway	1.0	1.0	0	2	0
Galveston, TX	Island Transit	4.9	4.9	57	3	3
Los Angeles, CA	Los Angeles County Metropolitan Transp Auth	82.4	85.8	77	36	36
Memphis, TN	Memphis Area Transit Authority	4.3	4.0	25	20	20
New Orleans, LA	Regional Transit Authority of Orleans & Jefferson	16.0	13.7	124	9	9
New York, NY	New Jersey Transp Corporation	8.3	8.3	1	11	0
Philadelphia, PA	Southeastern Pennsylvania Transportation Auth	69.3	171.0	1,702	64	0
Pittsburgh, PA	Port Authority of Allegheny County	38.1	46.5	42	13	13
Portland, OR	Tri-County Metropolitan Transp Dist of Oregon	30.2	33.4	55	27	26
Sacramento, CA	Sacramento Regional Transit District	36.2	34.0	86	28	0
Saint Louis, MO	Bi-State Development Agency	34.0	36.2	12	18	18
San Diego, CA	San Diego Trolley	48.3	48.3	0	41	41
San Francisco, CA	San Francisco Municipal Railway	49.7	54.2	191	11	0
San Jose, CA	Santa Clara Valley Transportation Authority	39.0	41.1	64	34	5
Seattle, WA	King County Department of Transportation	3.7	2.1	14	14	14
TOTAL		663.5	807.8	NA	530	265

(a) Many light rail lines stop in the middle of the street and do not have stations.

Source: Federal Transit Administration National Transit Database plus other sources.

Other Rail Summary Data, Fiscal Year 1997

Agencies, Number of	12
Fares Collected, Passenger	\$19,055,000
Fare per Unlinked Trip, Average	\$0.66
Expense, Operating Total	\$64,008,000
Salaries and Wages	\$31,097,000
Fringe Benefits	\$14,556,000
Services	\$7,830,000
Fuel and Lubricants	\$23,000
Materials and Supplies, Other	\$4,425,000
Utilities	\$2,821,000
Casualty and Liability	\$2,607,000
Purchased Transportation	\$343,000
Other	\$306,000
Vehicle Operations	\$25,754,000
Vehicle Maintenance	\$10,230,000
Non-vehicle Maintenance	\$16,923,000
General Administration	\$10,757,000
Expense, Capital Total	\$40,002,000
Rolling Stock	\$6,437,000
Facilities	\$29,790,000
Other	\$3,774,000
Trips, Unlinked Passenger, Average Weekday	84,000
Trips, Unlinked Passenger, Annual	28,990,000
Miles, Passenger	29,301,000
Trip Length, Average (miles)	1.0
Miles, Vehicle Total	2,917,000
Miles, Vehicle Revenue	2,867,000
Hours, Vehicle Total	442,000
Hours, Vehicle Revenue	435,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	6.6
Vehicles, Total	198
Active	174
Age, Average (years)	50.1
Air-conditioned	50.5%
Fareboxes, registering	0.0%
Radios, 2-way	52.5%
Lifts, Wheelchair	1.0%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	53.5%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	50.5%
Rehabilitated	9.1%
Employees, Operating	863
Vehicle Operations	409
Vehicle Maintenance	199
Non-vehicle Maintenance	191
General Administration	64
Employees, Capital	14
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	33,936,000

TABLE 89

Other Rail Transit Agencies

File: ORAGENCY

RAIL TYPE (a)	CITY	TRANSIT AGENCY	DIRECT- IONAL ROUTE MILES	TRACK MILES	CROSS- INGS	STA- TIONS	ACCESS- IBLE STA- TIONS
AG	Detroit, MI	Detroit Transportation Corporation	2.9	3.0	0	13	13
AG	Jacksonville, FL	Jacksonville Transportation Authority	1.2	0.6	0	3	3
AG	Las Colinas, TX	Las Colinas Area Rapid Transit	2.8	1.4	0	4	4
AG	Miami, FL	Metro-Dade Transit Agency	8.5	9.4	0	21	0
AG	Morgantown, WV	West Virginia University	7.2	8.7	0	5	0
AG	Tampa, FL	Hillsborough Area Regional Transit Auth	0.9	0.4	0	2	2
CC	San Francisco, CA	San Francisco Municipal Railway	8.8	8.8	NA	0 (b)	0 (b)
IP	Chattanooga, TN	Chattanooga Area Regional Transp Auth	1.9	1.0	0	2	2
IP	Dubuque, IA	Fenelon Place Elevator	0.1	0.1	0	2	0
IP	Johnstown, PA	Cambria County Transit Authority	0.2	0.2	0	2	0
IP	Los Angeles, CA	Angels Flight Railway	0.1	0.1	0	2	2
IP	Pittsburgh, PA	Port Authority of Allegheny County	0.5	0.5	0	4	3
MO	Las Vegas, NV	Regional Transp Comm of Clark County	1.6	1.6	0	2	2
MO	Seattle, WA	City of Seattle	1.1	1.1	0	2	0
TR	New York, NY	Roosevelt Island Operating Corporation	1.2	0.6	0	2	0
	TOTAL		39.0	37.5	NA	66	31

(a) AG = automated guideway transit, CC = cable car, IP = inclined plane, MO = monorail, TR = aerial tramway  
 (b) Cable cars stop in the middle of the street and do not have stations.  
 Source: Federal Transit Administration National Transit Database plus other sources.

## Vanpool Summary Data, Fiscal Year 1997

Agencies, Number of	55
Fares Collected, Passenger	\$13,038,000
Fare per Unlinked Trip, Average	\$1.34
Expense, Operating Total	\$23,974,000
Salaries and Wages	\$4,967,000
Fringe Benefits	\$1,983,000
Services	\$5,243,000
Fuel and Lubricants	\$2,555,000
Materials and Supplies, Other	\$1,088,000
Utilities	\$194,000
Casualty and Liability	\$1,944,000
Purchased Transportation	\$5,071,000
Other	\$931,000
Vehicle Operations	\$4,640,000
Vehicle Maintenance	\$3,694,000
Non-vehicle Maintenance	\$268,000
General Administration	\$10,301,000
Expense, Capital Total	\$13,225,000
Rolling Stock	\$10,528,000
Facilities	\$2,481,000
Other	\$215,000
Trips, Unlinked Passenger, Average Weekday	38,000
Trips, Unlinked Passenger, Annual	9,701,000
Miles, Passenger	320,858,000
Trip Length, Average (miles)	33.1
Miles, Vehicle Total	41,897,000
Miles, Vehicle Revenue	39,422,000
Hours, Vehicle Total	1,155,000
Hours, Vehicle Revenue	1,091,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	36.1
Vehicles, Total	3,189
Active	3,148
Age, Average (years)	3.2
Air-conditioned	99.7%
Fareboxes, registering	0.0%
Radios, 2-way	0.0%
Lifts, Wheelchair	1.1%
Ramps, Wheelchair	0.3%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	100.0%
Power Source, Alternative	0.0%
Rehabilitated	0.0%
Employees, Operating	180
Vehicle Operations	24
Vehicle Maintenance	23
Non-vehicle Maintenance	2
General Administration	132
Employees, Capital	26
Diesel Fuel Consumed (gallons)	225,000
Other Fuel Consumed (gallons)	2,954,000
Electricity Consumed (kwh)	0

## SECTION XIV

## Transit vs. Automobile Costs

## Highlights . . . . .

- Typical cost to a user to ride transit for a year ranges from \$189 to \$2,077, depending on base fare, surcharges, and discounts available.
- Typical single-occupant personal vehicle driving costs range from \$4,660 per year for a small car to \$9,441 per year for a large car, depending on mileage.
- \$2 to \$3 billion per year is paid by society for highways and motor vehicle use, but only 53% to 68% of that amount is paid by users.

## Examples of Cost of Riding Transit

COST	COST				
	\$0.50 BASE FARE	\$0.75 BASE FARE	\$1.00 BASE FARE	\$1.25 BASE FARE	\$1.50 BASE FARE
BASE ANNUAL COST (472 TRIPS) No discounted fare media used Monthly passes with 20% discount used	236.00 188.80	354.00 283.20	472.00 377.60	590.00 472.00	708.00 566.40
ADDITIONAL ANNUAL COSTS (including 20% discount) \$ .25 surcharge to transfer to another vehicle \$2.00 zone or distance surcharge (\$.50 each for 4 zones) \$ .50 peak-hour surcharge \$ .25 surcharge for express service \$2.00 per day parking surcharge	94.40 755.20 188.80 94.40 755.20	94.40 755.20 188.80 94.40 755.20	94.40 755.20 188.80 94.40 755.20	94.40 755.20 188.80 94.40 755.20	94.40 755.20 188.80 94.40 755.20
TOTAL ANNUAL COST (including 20% discount) Including transfer surcharge only Including distance surcharge only Including distance and peak-hour surcharges Including distance and express surcharges Including distance and parking surcharges	283.20 944.00 1,132.80 1,038.40 1,699.20	377.60 1,038.40 1,227.20 1,132.80 1,793.60	472.00 1,132.80 1,321.60 1,227.20 1,888.00	566.40 1,227.20 1,416.00 1,321.60 1,982.40	660.80 1,321.60 1,510.40 1,416.00 2,076.80

Annual number of trips estimate based on 365 days minus 52 Saturdays minus 52 Sundays minus 7 holidays minus 10 days vacation minus 8 days sick leave times 2 trips per day.

TABLE 92

## Automobile Driving Costs, 1998

CATEGORY	SMALL CAR	MIDSIZE CAR	LARGE CAR	SPORT UTILITY VEHICLE	VAN
OPERATING COSTS (cents per mile)					
Gasoline & Oil	5.0	6.3	7.4	7.2	6.8
Maintenance	2.9	3.1	3.2	3.4	3.2
Tires	1.3	1.4	1.5	1.4	1.3
SUBTOTAL	9.2	10.8	12.0	12.0	11.3
OWNERSHIP COSTS (cost per year)					
Insurance	912	856	933	1,312	950
License, registration, taxes	175	223	279	396	379
Depreciation	2,819	3,294	3,979	3,556	3,409
Finance charge	598	802	1,040	929	885
SUBTOTAL	4,504	5,175	6,231	6,193	5,623
DEPRECIATION FOR EXCESS MILEAGE (per 1000 miles over 15,000 miles annually)	146	156	162	126	154
TOTAL ANNUAL COST					
10,000 miles per year	4,660	5,483	6,872	6,410	5,771
15,000 miles per year	5,884	6,795	8,031	7,993	7,318
20,000 miles per year	7,074	8,115	9,441	9,223	8,653

Source: American Automobile Association and Runzheimer International, *Your Driving Costs, 1998 Edition*. Data for a popular model of each type listed with ownership costs based on 60,000 miles before replacement.

TABLE 93

File: PUBCOST

**Cost of Motor Vehicle Use in 1990, Billions of Dollars (a)**

	LOW	HIGH
<b>1. NATIONAL PAYMENTS</b>		
New Vehicles & financing costs	265.4	265.4
Gasoline & oil	124.0	124.0
Other automobile	167.3	179.8
Highway freight transportation	278.1	278.1
Less taxes also reported in item 2	-39.2	-39.2
TOTAL	795.6	808.2
<b>2. TAXES &amp; OTHER FEES PAID BY USERS</b>	70.3	72.3
<b>3. HIDDEN PRIVATE SECTOR EXPENDITURES</b>		
Free nonresidential parking (excluding taxes)	101.4	217.8
Other hidden costs	45.1	71.1
Less payments for parking	-57.9	-32.6
TOTAL	88.6	256.3
<b>4. PUBLIC EXPENDITURES FOR HIGHWAY INFRASTRUCTURE &amp; SERVICES</b>		
Highway construction, maintenance, services, and administration	76.5	76.5
Police	7.9	12.6
Fire	1.4	3.2
Court, judicial system, and corrections	6.5	13.5
Other public expenditures	10.6	30.1
TOTAL	103.0	135.9
Less taxes also reported in item 2	-70.3	-72.3
NET TOTAL	32.6	63.6
<b>5. NONMONETARY EXTERNAL COSTS</b>		
Congestion time costs on others	128.9	149.5
Pain & suffering inflicted on others due to accidents	132.1	138.8
Mortality & morbidity effects of air pollution	40.0	200.0
Other external costs	25.5	96.7
TOTAL	326.5	585.0
<b>6. NONMONETARY PERSONAL COSTS</b>		
Personal pain & suffering due to accidents	132.1	138.8
Travel time excluding external congestion & paid freight drivers	677.7	814.3
Other nonmonetary personal costs	40.9	97.9
TOTAL	850.7	1,051.0
<b>TOTAL COSTS OF MOTOR VEHICLE USE</b>	<b>2,164.3</b>	<b>2,836.4</b>
<b>PER CENT PAID BY USERS</b>		
Motor vehicle user fees (Item 2 total) divided by public expenditures (Item 4 total)	68.3%	53.2%

Source: *Saving Energy in U.S. Transportation*, Office of Technology Assessment, Congress of the United States, July, 1994.

**SECTION XV****Federal Legislation****History and Provisions of the Federal Transit Act And Other Major Laws Affecting Transit**

File: FTA

In 1964 the United States Congress found that "the welfare and vitality of urban areas, the satisfactory movement of people and goods within such areas, and the effectiveness of housing, urban renewal, highway, and other federally aided programs were being jeopardized by the deterioration or inadequate provision of urban transportation facilities and services. . . ." In response, Congress enacted the Urban Mass Transportation Act of 1964, which provided federal aid to transit systems for capital equipment purchases.

Continuing this commitment into its fourth decade, Congress enacted the Transportation Equity Act for the 21<sup>st</sup> Century (TEA 21). TEA 21 authorizes higher levels of funding for transit than any previous law, with the major portion of funding guaranteed to be included in budget amounts available for annual appropriations. It also continues and improves provisions of prior authorizing laws that are important to the continuing Federal commitment to improve transit service throughout America.

Landmarks in the evolution of the federal transit assistance program over the years include:

1961: The Housing and Urban Development Act of 1961 provided transit demonstration funding and mass transportation project loans.

1964: The Urban Mass Transportation Act of 1964 established the Urban Mass Transportation Administration (UMTA) within the Department of Housing and Urban Development to provide capital grants to transit systems.

1966: The Urban Mass Transportation Act of 1966 expanded capital funding and allowed funding for research, planning, and training. UMTA was moved to the newly created Department of Transportation (DOT).



1970: The Urban Mass Transportation Assistance Act of 1970 authorized a \$3.1 billion program of capital grants.

1973: The Federal-Aid Highway Act of 1973 increased the federally funded portion of transit capital projects from 66 2/3% to 80% and authorized the use of Federal-Aid Urban Systems highway funds and Interstate Highway Transfers for qualifying transit projects.

1974: The National Mass Transportation Assistance Act of 1974 increased authorizations for discretionary capital funding and created a formula grant program to allocate funding directly to urbanized areas that could be used for either operations or capital projects.

1978: The Federal Public Transportation Act of 1978, Title III of the Surface Transportation Assistance Act of 1978 divided the formula grant program into categorical programs that included capital grants for bus purchases and additional operating grants for fixed guideway systems and places outside of urbanized areas.

1982: The Federal Public Transportation Act of 1982, Title III of the Surface Transportation Assistance Act of 1982 provided that 1 cent of a 5 cents per gallon increase in the Highway Trust Fund tax on motor fuels would be placed into a Mass Transit Account for capital projects, increased the portion of all funding allocated through the formula grant program, and altered the formula grant program allocation formula to include transit service data as well as population data.

1984: The Tax Reform Act of 1984 allowed employees to receive a *de minimis*, up to \$15 per month, tax-free fringe benefit in the form of an employer-provided transit subsidy or pass.

1987: The Federal Mass Transportation Act of 1987, Title III of the Surface Transportation and Uniform Relocation Assistance Act of 1987 provided that a portion of the Highway Trust Fund Mass Transit Account would be allocated by formula for capital purposes.

1990: The Omnibus Budget Reconciliation Act of 1990 raised to 1.5 cents per gallon the portion of the Highway Trust Fund tax on motor fuels to be placed in the Mass Transit Account.

1990: The Americans with Disabilities Act of 1990 (ADA) required transit systems to provide service accessible to persons with disabilities.

1990: The Clean Air Act Amendments of 1990 recast transportation planning to provide for improved air quality.

1991: The Federal Transit Act Amendments of 1991, Title III of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) extended transit assistance through FY 1997, increased the amounts authorized, re-named the transit law the Federal Transit Act and the Urban Mass Transportation Administration the Federal Transit Administration, and converted the rail modernization portion of Section 5309 major capital funds to a formula basis.

Surface Transportation, Title I of ISTEA provided that specific funds authorized through Federal-Aid Highways programs may be used for either transit or highway projects. These flexible funds are to be used for the mode of transportation best suited to meeting the needs of individual areas and states.

1991: The Omnibus Transportation Employee Testing Act of 1991 mandated the establishment of anti-drug and alcohol misuse programs for safety-sensitive employees of recipients and contractors to recipients of Major Capital Investment, Urbanized Area Formula, and Rural Area Formula transit funds.

1992: The Energy Policy Act of 1992 increased the tax-free amount of the transit commuter fringe benefit to \$60 per month with an inflation provision, removed the cliff provision which had made the entire benefit taxable if the monthly limit was exceeded, and extended the benefit to vanpools.

1993: The Omnibus Budget Reconciliation Act of 1993 raised to 2 cents per gallon the portion of the Highway Trust Fund tax on motor fuels to be placed in the Mass Transit Account, effective October 1, 1995.

1994: The Federal Transit Act was codified as Title 49, Chapter 53--Mass Transportation, of the United States Code.

1997: The Taxpayer Relief Act of 1997 raised to 2.86 cents per gallon the portion of the Highway Trust Fund tax on motor fuels to be placed in the Mass Transit Account, effective October 1, 1997.

1997: Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) was extended through March 31, 1998.

1998: The Federal Transit Act of 1998, Title III of the Transportation Equity Act for the 21st Century (TEA 21) extends the transit program through FY 2003. TEA 21 increases transit funding authorizations, up to 70 percent above ISTEA appropriation levels if all authorized amounts are appropriated. A total of \$41 billion is authorized for the six-year period, of which \$36 billion is guaranteed. Guaranteed amounts are protected in the budget process and can only be appropriated for transit uses. The guaranteed amounts, however, are subject to annual appropriation by the Congress.

TEA 21 retains and improves many provisions of ISTEA including the transportation planning process and flexible funding. The distribution of formula funds among sections 5307, 5310, and 5311 is revised. The definition of eligible uses of Urbanized Area Formula capital funds is expanded to include preventive maintenance and ADA related expenditures for all urbanized areas and to include operating expenditures for urbanized areas under 200,000 population. The Rail Modernization program formula is adjusted to increase the proportion of new funds for newer fixed-guideway systems. The transit commuter benefit is expanded to include employee purchase of transit passes with pre-tax dollars.

Two new programs are created. The Clean Fuels Formula Grant program provides funds for adoption of clean fuel technologies including purchase or lease of clean fuel buses and facilities. The Job Access and Reverse Commute program funds projects that improve job access for current and former welfare recipients and other eligible low-income individuals.

### **Funding Provisions of the Federal Transit Act**

Funds for federal transit assistance come from two sources. Money from general governmental revenues is appropriated each year by Congress. As part of that process Congress sets a limit on the amount of money from the Highway Trust Fund Mass Transit Account that can be used to fund transit projects during the next year.

Transit systems receive funds from several Federal Transit Act programs, which allocate funding to urbanized areas or states by formula or for specific projects through discretionary processes. The largest are:

**Capital Investment, 49 USC 5309:** Original grant program, begun in FY 1964, provides capital assistance to eligible transit projects in three categories: (1) construction of new fixed-guideway systems or extensions of existing systems called "New Starts," (2) modernization of existing

fixed-guideway systems called "Rail Modernization," and (3) major bus related construction projects or equipment acquisition called "Bus Capital."

*Status:* Authorized through FY 2003.

*Recipients of Funds:* State or local public bodies and agencies.

*Eligible Expenditures:* Capital projects only.

*Method of Allocation:* Rail Modernization funds are distributed to urbanized areas with fixed-guideway systems in operation for at least seven years on a formula basis. New Start and Bus Capital funds are distributed to specific projects at the discretion of the Congress or the Federal Transit Administration if the Congress does not specify a distribution. Eligible New Start projects for FY 1998 through FY 2003 and some Bus Capital project amounts for FY 1999 and FY 2000 are authorized in TEA 21. Amounts for individual projects are specified in annual appropriations laws. Authorizing legislation designates 40% of the funds for New Starts, 40% for Rail Modernization, and 20% for Bus Capital.

*Matching Ratio:* 80% federal, 20% state and local.

**Urbanized Area Formula (UAF), 49 USC 5307 and 5336:** Apportions operating and capital assistance on a formula basis to urbanized areas.

*Status:* Authorized through FY 2003.

*Recipients of Funds:* Directly to urbanized areas of at least 200,000 population, through state governors to urbanized areas under 200,000 population.

*Eligible Expenditures:* For urbanized area of at least 200,000 population, capital expenditures by local decision. Eligible capital expenditures include acquisition of transit vehicles, construction of facilities including fixed-guideway rights-of-way, purchase of equipment, rehabilitation of buses, overhaul of rail vehicles, preventive maintenance, up to 10 percent of the apportioned amount for non-fixed-route ADA paratransit service, and other uses. For urbanized areas under 200,000 population, capital expenditures as for larger urbanized areas and operating expenditures.

*Method of Allocation:* By six formulas based on urbanized area population and mode of transit service. Amount is 91.23% of total UAF, RAF, and

Elderly and Disabled funds beginning in FY 1999. These formulas are:

(1) Fixed guideway operations in urbanized areas of at least 200,000 population, basic formula, 28.87% of the UAF. The formula is 60% fixed guideway revenue vehicle miles operated and 40% fixed guideway route miles. Urbanized areas of at least 750,000 population that have commuter rail operations receive a minimum of 0.75% of this formula.

(2) Fixed guideway operations in urbanized areas of at least 200,000 population, incentive formula, 1.32% of the UAF. The formula is the number of fixed guideway passenger miles traveled multiplied by the number of fixed guideway passenger miles traveled per dollar of operating cost. Urbanized areas of at least 750,000 population that have commuter rail operations receive a minimum of 0.75% of this formula.

(3) Bus operations in urbanized areas of at least 1,000,000 population, basic formula, 40.31% of the UAF. The formula is 50% bus revenue vehicle miles operated, 25% urbanized area population, and 25% urbanized area population density weighted by population.

(4) Bus operations in urbanized areas from 200,000 to 999,999 population, basic formula, 14.61% of the UAF. The formula is 50% bus revenue vehicle miles operated, 25% urbanized area population, and 25% urbanized area population density weighted by population.

(5) Bus operations in urbanized areas of at least 200,000 population, incentive formula, 5.57% of the UAF. The formula is the number of bus passenger miles traveled multiplied by the number of bus passenger miles traveled per dollar of operating cost.

(6) Mass transportation operations in urbanized areas under 200,000 population, 9.32% of the UAF. The formula is 50% urbanized area population and 50% urbanized area population density weighted by population.

*Matching Ratios:* Operating assistance: 50% federal, 50% state and local. Capital assistance: 80% federal, 20% state and local.

**Elderly and Disabled Persons, 49 USC 5310:** Established by the UMT Act of 1970 to assure mass transportation availability to elderly and disabled persons.

*Status:* Authorized through FY 2003.

*Recipients of Funds:* Private, non-profit corporations and associations providing mass transportation services for the elderly and disabled or public bodies coordinating such service or providing service where no non-profit service is available, through state governors.

*Eligible Expenditures:* For capital equipment and cost of leased or contracted service.

*Method of Allocation:* Allocated by formula to states based on of elderly and disabled population. Amount is 2.4% of total UAF, RAF, and Elderly and Disabled funds beginning in FY1999.

*Matching Ratio:* 80% federal, 20% state and local.

**Rural Area Formula (RAF), 49 USC 5311:** Established by the STA Act of 1978 to apportion funds for mass transportation in rural areas outside of urbanized areas.

*Status:* Authorized through FY 2003.

*Recipients of Funds:* Mass transportation providers outside of urbanized areas through state governors.

*Eligible Expenditures:* Operations or capital projects.

*Method of Allocation:* Formula based on non-urbanized area population of each state. Amount is 6.37% of total UAF, RAF, and Elderly and Disabled funds beginning in FY 1999.

*Matching Ratio:* Operating assistance: 50% federal, 50% state and local. Capital assistance: 80% federal, 20% state and local.

**Rural Transit Assistance Program, 49 USC 5311(b)(2):** Established by the FMT Act of 1987 to provide research, technical assistance, and training grants and related support services to non-urbanized areas. Allocated separately from funds in remainder of section 5311.

**Clean Fuels Formula Program, 49 USC 5308:** Established by TEA 21 to expedite the adoption of clean fuels bus technologies.

*Status:* Authorized through FY 2003.

*Recipients of Funds:* Designated recipients in urbanized areas that make application for funds by January 1 of each fiscal year.

*Eligible Expenditures:* To purchase or lease clean fuel vehicles and related facilities, to improve existing facilities for clean fuel buses, and to re-power, retrofit, or rebuild pre-1993 engines under certain conditions. Eligible clean fuels include compressed natural gas, liquefied natural gas, biodiesel fuels, batteries, alcohol-based fuels, hybrid electric, fuel cell, clean diesel, and other low or zero emissions technology.

*Method of Allocation:* Funds are apportioned to grant applicants in air-quality non-attainment and maintenance areas under a formula that weighs bus fleet size and bus passenger miles by severity of non-attainment. Two thirds of funds must go to urban areas with at least 1,000,000 population and one third to urban areas under 1,000,000 population.

*Matching Ratio:* 80% federal, 20% state and local.

**Job Access and Reverse Commute Program, Section 3037 of TEA 21:** Established by TEA 21 to improve job access for current and former welfare recipients and eligible low-income individuals.

*Status:* Authorized through FY 2003.

*Recipients of Funds:* Local governmental authorities and agencies or nonprofit organizations selected by Metropolitan Planning Organizations in urbanized areas of at least 200,000 population and selected by the chief executive officer of the state for urbanized areas under 200,000 population.

*Eligible Expenditures:* Capital and operating costs of equipment, facilities, and associated capital maintenance items related to providing access to jobs, promoting transit use by workers with non-traditional work schedules, promoting the use of vouchers by appropriate agencies, the purchase or lease of vehicles for shuttle service at suburban locations, costs associated with adding reverse commute service or to otherwise facilitate transportation to suburban job opportunities, and promoting the use of employer provided transportation and transit pass benefits. Planning and coordination activities are not eligible.

*Method of Allocation:* Awarded to eligible applicants on a competitive basis with consideration given to several factors including percentage of the population that are welfare recipients, need for additional services,

coordination and use of existing services, proposal of innovative approaches, and other factors.

*Matching Ratio:* 50% federal, 50% state and local. Federal funds from agencies outside of the Department of Transportation that are eligible for use for transportation expenditures can be used for the state and local match.

### **Provisions of Other Major Federal Laws Affecting Transit**

**Americans with Disabilities Act of 1990**, prohibits discrimination based on disabilities in the areas of employment, public services, public accommodations and services operated by private entities, public transit, and telecommunications.

Employers are prohibited from discriminating against any qualified individual with a disability in regard to job application procedures, the hiring, advancement or discharge of employees, employee compensation, job training, and other terms, conditions, or privileges of employment. All private company, state and local government, employment agency, and labor union employers with 15 or more employees had to comply by July 26, 1994.

All programs, activities and services provided or made available by state and local government, including public transportation, are prohibited from discriminating on the basis of disability, regardless of whether or not those entities receive federal financial assistance.

All new transit buses and rail cars must be accessible to the mobility, hearing, and sight-impaired. At least one car on every train must be accessible. All new passenger stations must be accessible, and older "key" stations must be retrofitted for accessibility, unless an extension was granted for extraordinarily expensive retrofitting. These provisions and those requiring complementary paratransit service for those unable to use fixed-route service were fully effective January 26, 1997.

**Clean Air Act Amendments of 1990**, recast transportation planning to ensure that, in areas experiencing air quality problems, planning is geared to improved air quality as well as mobility. State and local officials are required to find ways to reduce emissions from vehicles (including transit buses), to develop projects and programs that will alter driving patterns to reduce the number of single-occupant vehicles, and to make alternatives such as transit a more important part of the transportation network. The

Act focuses on the issue of "conformity", which is a determination made by the metropolitan planning organization and the U.S. Department of Transportation that transportation plans and programs in non-attainment areas meet the requirement of reducing pollutant emissions.

The Environmental Protection Agency imposed emissions standards as a result of the Act that require transit bus engines to meet increasingly strict emission standards, culminating in the following in 1998: nitrogen oxides--4.0 grams/brake horsepower-hour (a 33% reduction from the 1990 pre-law standard), and particulate matter (soot)--.05 g/bhh (a 92% reduction).

No reductions in the 1990 carbon monoxide and hydrocarbon emissions levels of 15.5 g/bhh and 1.3 g/bhh were mandated, since they are not feasible due to technological limitations.

**Omnibus Transportation Employee Testing Act of 1991**, mandates regulations requiring recipients of financial assistance under the Capital Investment, Urbanized Area Formula, and Rural Area Formula sections of the Federal Transit Act and Section 103(e)4 of Title 23 of the United States Code to establish multifaceted anti-drug and alcohol-misuse programs for their own as well as contracted safety-sensitive employees. All transit systems were required to implement such programs by January 1, 1996.

Safety-sensitive positions include revenue vehicle operators, dispatchers, maintenance staff, non-revenue vehicle operators if a Commercial Driver's License is required, police and security personnel carrying a firearm, and supervisors when performing safety-sensitive functions.

Commuter rail employees are exempt, since they are covered by Federal Railroad Administration regulations. Ferryboat employees are covered, but are also subject to Coast Guard regulations.

## SECTION XVI

File: HISTORY

# History

Transit, except for ferryboats, was not a part of life until the 19th century, since home, work, and recreation were almost always within walking distance of each other.

Today's transit evolved from three European developments in the late 18th and early 19th centuries: distances between housing and work in larger cities increased so that walking was no longer feasible for many people, horse-pulled stagecoaches were introduced to meet this need for the few who could afford it, and the railroad was invented. The horsecar--initially a horse-pulled stagecoach body on special wheels that ran on rails--was devised to operate on the unpaved or poorly paved streets of that era.

As technology developed, elevated steam railroads, cable-pulled cars, electric streetcars, and underground electric trains all became common, and many of these developments were pioneered in the U.S. All operated on rails, and it wasn't until the 1910-1920 period that improved street pavement and internal combustion engines led to the widespread introduction of buses. Only the largest cities today need the high-capacity rail vehicles developed in the 1800s.

The following pages highlight the most important milestones in U.S. transit history. It should be noted that some of these developments were preceded by similar developments in Europe and thus are not world "firsts."

**Milestones in U.S. Transit History**

1630	Boston--reputed first publicly operated ferryboat
1740	New York--reputed first use of ox carts for carrying of passengers
1811	New York--first mechanically operated (steam-powered) ferryboat
1827	New York--first horse-drawn urban stagecoach line (Dry Dock & East Broadway)
1830	Baltimore--first railroad (Baltimore & Ohio Railroad Co.)
1832	New York--first horse-drawn street railway line (New York & Harlem Railroad Co.)
1835	New Orleans--oldest street railway line still operating (New Orleans & Carrollton line)
1838	Boston--first commuter fares on a railroad (Boston & West Worcester Railroad)
1850	New York--first use of exterior advertising on street railways
1856	Boston--first fare-free promotion
1861	New York--first failed attempt to form street railway labor organization
1868	New York--first cable-powered (& first elevated) line (West Side & Yonkers Patent Railway)
1870	New York--first pneumatic-powered (& first underground) line (Beach Pneumatic Railroad Co.)
1870	Pittsburgh--first inclined plane
1871	New York--first steam-powered elevated line (New York Elevated Railroad Co.)
1872	Great Epizootic horse influenza epidemic in eastern states kills thousands of horses (the motive power for most street railways)
1873	San Francisco--first successful cable-powered line (Clay St. Hill Railroad)
1882	Boston--American Street Railway Association (APTA's original predecessor) formed
1883	New York--first publicly operated cable-powered line (Brooklyn Bridge)
1883	New York--first surviving street railway labor organization (Knights of Labor Local 2878)
1884	Cleveland--first electric street railway line (East Cleveland Street Railway)

TABLE 94 (continued)

**Milestones in U.S. Transit History**

1884	first transit-only publication (The Street Railway Journal)
1885	New York--first recorded strike by street railway workers (Third Avenue & Sixth Avenue Elevateds)
1886	Montgomery, AL--first semi-successful citywide street railway transit agency (Capital City Street Railway Co.)
1888	Richmond, VA--first successful electric street railway transit agency (Union Passenger Railway)
1889	New York--first major strike by street railway workers
1892	Indianapolis--first national street railway labor union founded (Amalgamated Association of Street Railway Employees of America, now called the Amalgamated Transit Union)
1893	Portland, OR--first interurban rail line (East Side Railway Co.)
1894	Boston--first public transit commission (Boston Transit Commission)
1895	Chicago--first electric elevated rail line (Metropolitan West Side Elevated Railway)
1897	Boston--first electric underground (& first publicly-financed) street railway line (West End Street Railway)
1898	Chicago--first electric multiple-unit controlled rail line (Chicago & South Side Rapid Transit Railroad Co.)
1904	Bismarck, ND--first state-operated street railway (State of North Dakota Capital Car Line)
1904	New York--first electric underground (& first 4-track express) heavy rail line (Interborough Rapid Transit Co.)
1905	New York--first public takeover of a private transit company (Staten Island Ferry)
1905	New York--first bus line (Fifth Avenue Coach Co.)
1906	Monroe, LA--first municipal takeover of a street railway
1908	New York--first interstate underground heavy rail line (Hudson & Manhattan Railroad to New Jersey)
1910	Hollywood, CA--first trolleybus line (Laurel Canyon Utilities Co.)
1912	San Francisco--first publicly operated street railway in a large city (San Francisco Municipal Railway)
1912	Cleveland--first street railway to operate buses (Cleveland Railway)

TABLE 94 (continued)

**Milestones in U.S. Transit History**

1914	Los Angeles--first jitney
1916	Saint Louis--first public bus-only transit agency (St. Louis Division of Parks and Recreation Municipal Auto Bus Service)
1917	New York--last horse-drawn street railway line closed
1918	New York--APTA's predecessor organization first calls for public takeover of transit
1920	first bus not based on truck chassis (Fageol Safety Coach)
1921	New York--first successful trolleybus line
1923	Bay City, MI, Everett, WA, Newburgh, NY--first cities to replace all streetcars with buses
1926	highest peacetime transit ridership before World War II (17.2 billion)
1927	Detroit--first bus without cowi-type engine
1927	Philadelphia--first automobile park and ride lot and first bus-rail transfer facility for a non-commuter rail line
1932	New York--first publicly operated heavy rail line (Independent Subway)
1933	San Antonio--first large city to replace all streetcars with buses
1934	New York--Transport Workers Union of America founded
1935	Washington--Public Utility Holding Company Act of 1935 enacted requiring most power companies to divest themselves of transit operations and eliminating much private transit financing
1936	bus manufacturers began to assume control of or influence street railways, leading to rapid replacement of streetcars with buses
1938	New York--first industry-developed standardized standardized street railway car (P.C.C. car) (Brooklyn & Queens Transit System)
1939	Chicago--first use of federal capital funding to build a transit rail line
1940	Chicago--first street with designated bus lane
1940	first time bus ridership exceeded street railway ridership
1940	San Francisco becomes last surviving cable car transit agency

TABLE 94 (continued)

**Milestones in U.S. Transit History**

1943	Los Angeles--first rail line in expressway median (Pacific Electric Railway)
1943	New York--first issue of <i>Transit Fact Book</i> (then called "The Transit Industry of the United States, Basic Data and Trends")
1946	highest-ever transit ridership (23.4 billion)
1952	San Francisco--last new PCC car for U.S. transit agency placed in service
1961	Washington--first significant federal transit legislation (Housing & Urban Development Act of 1961)
1962	Seattle--first monorail (Seattle World's Fair)
1962	New York--first automated heavy rail line (Grand Central Shuttle)
1963	Chicago becomes last surviving city with interurban line (Chicago, South Shore, & South Bend Railroad)
1964	Washington--creation of Urban Mass Transportation Administration (Urban Mass Transportation Act of 1964)
1966	New York--first public takeover of commuter railroad (Long Island Rail Road Co.)
1966	Providence--first statewide transit agency (Rhode Island Public Transit Authority)
1966	Washington--Urban Mass Transportation Administration moved to new Department of Transportation
1968	Minneapolis--first downtown transit mall (Nicollet Mall)
1968	Cleveland--first rail station at an airport opened
1969	Washington--first transitway (Shirley Highway)
1969	Philadelphia--first modern heavy rail transit agency replacing former rail line (Port Authority Transit Corporation)
1970	Fort Walton Beach, FL--first dial-a-ride demand response transit agency
1971	Washington--first federally subsidized intercity passenger railroad (AMTRAK)
1972	San Francisco--first computer-controlled heavy rail transit agency (Bay Area Rapid Transit District)
1972	transit ridership hits all-time low (6.6 billion)
1973	Washington--some transit service required to be accessible to disabled (Rehabilitation Act of 1973)

TABLE 94 (continued)

**Milestones in U.S. Transit History**

1973	Boston, Dayton, OH, Philadelphia, San Francisco, & Seattle become last surviving trolleybus systems
1974	Boston, Cleveland, Newark, New Orleans, Philadelphia, Pittsburgh, & San Francisco become the last street railway systems
1974	Washington--first federal transit operating assistance legislation (National Mass Transportation Assistance Act of 1974)
1974	American Public Transit Association formed from merger of 2 organizations
1975	Morgantown, WV--first automated guideway transit agency (West Virginia University)
1977	San Diego--first wheelchair-lift-equipped fixed-route bus
1979	Washington--first standardized transit data accounting system (Section 15)
1980	San Diego--first completely new light rail transit agency in decades (San Diego Trolley)
1983	Washington--transit trust fund for capital projects created thru dedication of one cent of federal gas tax
1989	Miami--first completely new commuter rail transit agency in decades (Tri-County Commuter Rail Authority)
1990	Washington--virtually all transit services required to be accessible to disabled (Americans with Disabilities Act of 1990)
1990	Washington--one cent dedicated portion of federal fuel tax increased to 1.5 cents
1991	Washington--transit buses subject to strict pollution controls (Clean Air Act of 1990)
1991	Washington--federal government allowed to subsidize its employees' commuting costs
1991	Washington--first general authorization of use of highway funds for transit (Intermodal Surface Transp. Efficiency Act of 1991)
1992	Washington--first limitation on amount of tax-free employer-paid automobile parking benefits and tripling of value of tax-free benefit for transit use (National Energy Policy Strategy Act)
1993	Washington--transit workers in safety-sensitive positions subjected to drug and alcohol testing
1995	Washington--1.5 cents dedicated portion of federal fuel tax increased to 2 cents
1998	Washington--major expansion and restructuring of federal transit program (Transp. Equity Act for the 21 <sup>st</sup> Century)

**Canadian Statistics**

Data in this section are extracted from the **Summary of Canadian Transit Statistics** and predecessor documents published each year by APTA's Canadian counterpart, the Canadian Urban Transit Association. Although definitions of terms are generally similar to U.S. terms, many are somewhat different, and comparison of Canadian and U.S. data can be misleading as a result.

Transit use in Canada (as well as in the rest of the world) has historically been much greater than the U.S. because it has a less automobile-dependent culture than the U.S. Consequently, measures of transit use will be considerably higher than the U.S.



## Canadian Fixed-Route Summary Statistics, Millions

CALENDAR YEAR	NUMBER OF AGENCIES (a)	REVENUE PASSENGER TRIPS	VEHICLE MILES	NON-GOVT OPERATING FUNDING (b)	OPERATING EXPENSE (b)
1984	78	1,371.6	427.0	871.8	1,630.9
1985	70	1,434.1	444.4	932.0	1,680.4
1986	73	1,521.3	477.5	1,060.7	1,853.2
1987	72	1,500.0	443.7	1,085.5	1,969.8
1988	74	1,538.4	479.6	1,163.2	2,114.0
1989	76	1,519.3	468.4	1,241.3	2,260.6
1990	77	1,532.4	487.1	1,312.9	2,451.4
1991	92	1,450.0	484.0	1,401.0	2,518.6
1992	92	1,398.7	467.5	1,404.8	2,644.0
1993	91	1,370.1	483.4	1,457.8	2,719.7
1994	88	1,353.2	482.2	1,465.0	2,707.4
1995	88	1,354.2	486.9	1,496.5	2,716.4
1996	86	1,347.5	469.1	1,576.2	2,752.1

(a) Number of agencies is actual number.

(b) Monetary data are Canadian Dollars.

Source: Canadian Urban Transit Association.

## Canadian Fixed-Route Active Passenger Vehicles by Mode

CALENDAR YEAR	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL	TROLLEY BUS	BUS	OTHER	TOTAL
1984	405	1,619 (a)	(a)	600	10,538	2	13,164
1985	398	1,574 (a)	(a)	552	10,114	75	12,713
1986	507	1,558 (a)	(a)	551	10,284	80	12,980
1987	516	1,449 (a)	(a)	513	10,434	77	12,989
1988	524	1,439 (a)	(a)	523	10,492	76	13,054
1989	593	1,652 (a)	(a)	488	9,961	235	12,929
1990	532	1,381 (a)	(a)	472	10,626	446	13,457
1991	527	1,379 (a)	(a)	272	10,992	372	13,542
1992	500	1,724 (a)	(a)	358	10,507	119	13,208
1993	547	1,679 (a)	(a)	308	10,776	255	13,565
1994	547	1,381	331	345	10,560	179	13,343
1995	548	1,381	359	305	10,542	85	13,220
1996	520	1,373	359	320	10,502	73	13,147

(a) Prior to 1994, heavy rail and commuter rail combined.

Source: Canadian Urban Transit Association.

TABLE 97

File: CANNEWWE

**Canadian Fixed-Route New Passenger Vehicle Purchases by Mode**

CALENDAR YEAR	LIGHT RAIL	HEAVY RAIL	TROLLEY BUS	BUS	OTHER	TOTAL
1984	29	0	24	340	0	393
1985	0	0	0	407	0	407
1986	0	0	0	326	0	326
1987	0	0	0	500	0	500
1988	0	0	0	354	0	354
1989	20	77	0	641	15	753
1990	0	0	0	487	67	554
1991	0	0	0	528	8	536
1992	16	0	0	549	60	625
1993	0	0	0	163	45	208
1994	0	0	0	250	37	287
1995	20	0	0	348	61	429
1996	0	18	0	517	64	599

Source: Canadian Urban Transit Association.

TABLE 98

File: CANFARES

**Canadian Fixed-Route Passenger Fares (a)**

CALENDAR YEAR	AVERAGE PASSENGER FARE PER REVENUE PASSENGER TRIP	ADULT BASE CASH FARE		
		HIGH	LOW	AVERAGE
1984	0.64	1.00	0.50	0.74
1985	0.65	1.50	0.50	0.79
1986	0.70	1.50	0.50	0.86
1987	0.72	1.50	0.60	0.90
1988	0.76	1.50	0.50	0.95
1989	0.82	1.50	0.50	1.01
1990	0.86	1.75	0.50	1.07
1991	0.97	2.00	0.75	1.18
1992	0.97	2.50	0.75	1.22
1993	1.03	2.60	0.75	1.31
1994	1.05	2.60	0.05	1.35
1995	1.07	2.60	0.05	1.45
1996	1.14	3.00	0.05	1.57

(a) Data reported in Canadian dollars.

Source: Canadian Urban Transit Association.

TABLE 99

File: CAEMMP

## Canadian Fixed-Route Employees by Type

CALENDAR YEAR	VEHICLE OPERATORS	OTHER VEHICLE OPERATIONS	VEHICLE MAINTENANCE	NON-VEHICLE MAINTENANCE	GENERAL ADMINISTRATION	TOTAL
1984	19,804 (a)	(a)	5,486	2,537	6,301	34,128
1985	20,505 (a)	(a)	5,976	2,782	5,550	34,813
1986	19,206	2,840	6,824	3,174	3,952	39,996
1987	19,951	2,902	6,939	3,165	4,061	37,018
1988	20,402	3,028	7,235	3,031	4,297	37,993
1989	20,739	2,870	7,374	3,262	5,061	39,306
1990	21,040	3,223	7,336	3,569	4,560	39,728
1991	21,502	3,135	7,936	2,641	4,364	39,578
1992	21,316	2,621	7,195	2,820	5,378	39,330
1993	21,240	2,619	6,657	3,272	4,283	38,071
1994	21,475	2,806	6,845	3,282	4,747	39,218
1995	21,495	2,835	6,964	3,227	4,477	38,976
1996	20,807	2,749	6,988	3,286	4,559	38,386

(a) Vehicle operators and other vehicle operations combined.  
Source: Canadian Urban Transit Association.

TABLE 100

File: GUIDMILE

## Fixed Guideway Mileage and Status of Future Projects (a)

MODE (b)	STATUS	MILES (c)
AG	design	4.0
AG	open	17.9
AG	planning	8.7
<b>AG TOTAL</b>		<b>49.2</b>
CR	open	337.6
CR	proposed	5.0
<b>CR TOTAL</b>		<b>342.6</b>
FB	open	4.1
<b>FB TOTAL</b>		<b>4.1</b>
HR	construction	4.0
HR	open	72.5
HR	proposed	7.4
<b>HR TOTAL</b>		<b>83.9</b>
IP	open	0.1
<b>IP TOTAL</b>		<b>0.1</b>
IR	open	4.0
IR	proposed	1.9
<b>IR TOTAL</b>		<b>5.9</b>
LR	design	0.5
LR	open	96.3
LR	planning	4.0
LR	proposed	31.8
<b>LR TOTAL</b>		<b>132.6</b>
MB	construction	3.7
MB	design	1.5
MB	open	99.1
MB	proposed	6.8
<b>MB TOTAL</b>		<b>150.5</b>
TB	open	210.3
<b>TB TOTAL</b>		<b>210.3</b>

**Fixed Guideway Mileage and Status of Future Projects (a)**

MODE (b)	STATUS	MILES (c)
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? = Uncertain, unknown, or not reported; AG=automated guideway transit; CC=cable car; CR=commuter rail; FB=ferryboat; HR=heavy rail; IP=inclined plane; IR=intermediate rail; LR=light rail; MB=bus; MO=monorail; TB=trolleybus; TR=aerial tramway.

- (a) Data as of July 1998, plus updated information where known.
- (b) Bus data includes only fixed guideways 1.0 miles in length or longer; data for all other modes includes all guideways.
- (c) Excludes data for a few guideways for which mileage was not reported.

Source: APTA survey

TABLE 101

**Bus Fixed Guideways 5.0 Miles or More in Length (a)**

File: GUIDEBUS

LOCATION	GUIDEWAY	SEGMENT	MILES
Montreal, PQ	Pie IX Bus Lanes	Pierre de Coubertin-D'Amos	5.3
Ottawa, ON	East Transitway	Laurier-Blair	5.7
Ottawa, ON	Southeast Transitway	Hurdman-South Keys	5.1
Ottawa, ON	West Transitway	Lebreton-Baseline	7.3
Vancouver, BC	Barnet Highway HOV Lanes	Port Moody-Boundary Rd	18.2

(a) Data as of July 1998, plus updated information where known.

Source: APTA survey

Canadian Services for Disabled Summary Statistics, Millions

CALENDAR YEAR	NUMBER OF AGENCIES (a)	REVENUE PASSENGER TRIPS	VEHICLE MILES	NON-GOVT OPERATING FUNDING (b)	OPERATING EXPENSE (b)
1991	47	4.6	17.0	15.9	64.4
1992	47	5.2	18.7	17.9	75.6
1993	50	7.2	29.3	19.2	118.3
1994	46	8.0	26.8	11.0	141.9
1995	49	8.6	28.8	12.9	144.9
1996	49	8.6	23.4	13.1	145.6

(a) Number of agencies is actual number.

(b) Monetary data are Canadian Dollars.

Source: Canadian Urban Transit Association.

## SECTION XVIII

## Definitions

File: DEFINE

Definitions of terms defined by the Federal Transit Administration National Transit Database are from the latest NTD Reporting Manual. "(APTA)" indicates a term defined by APTA in the absence of an NTD definition.

## GENERAL

**Commuter (APTA)**--A person who travels regularly between home and work or school.

**Intermodal (APTA)**--Those issues or activities which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes. Also known as "multimodal."

**Mass Transit (APTA)**--Another name for "Mass Transportation."

**Mass Transportation**--Transportation by bus, or rail, or other conveyance, either publicly or privately owned, providing to the public general or special service (but not including school buses or charter or sightseeing service) on a regular and continuing basis. Also known as "mass transit", "public transportation", and "transit".

**Multimode Transit Agency (APTA)**--A transit agency operating more than one mode of service.

**Multimodal (APTA)**--Another name for "intermodal".

**National Transportation System (APTA)**--An intermodal system consisting of all forms of transportation in a unified, interconnected manner to reduce energy consumption and air pollution while promoting economic development and supporting the Nation's preeminent position in international commerce. The NTS includes the National Highway System (NHS), public transportation and access to ports and airports.

**Public Transit Agency**--A public entity responsible for administering and managing transit activities and services. Public transit agencies can directly operate transit service or contract out for all or part of the total transit service provided.

**Public Transportation (APTA)**--Another name for "Mass Transportation."

**Reverse Commuting (APTA)**--Movement in a direction opposite the main flow of traffic, such as from the central city to a suburb during the morning peak period.

**Ridesharing (APTA)**--A form of transportation, other than a transit agency, in which more than one person shares the use of the vehicle, such as a van or car, to make a trip. Also known as "carpooling" or "vanpooling."

**Transit (APTA)**--Another name for "Mass Transportation."

**Transit Agency (APTA)**--An entity (public or private) responsible for administering and managing transit activities and services. Transit agencies can directly operate transit service or contract out for all or part of the total transit service provided.

## GEOGRAPHY

**Urban Place (APTA)**--A U.S. Bureau of the Census-designated area (less than 50,000 population) consisting of closely settled territory not populous enough to form an urbanized area.

**Urbanized Area (UZA)**--An area (50,000 or more population) so designated by the U.S. Bureau of the Census.

## INFRASTRUCTURE

**Accessible Station**--A public transportation passenger facility which provides ready access, is usable, and does not have physical barriers that prohibit and/or restrict access by individuals with disabilities, including individuals who use wheelchairs.

**Bus Lane (APTA)**--Another name for "Busway".

**Busway**--A roadway reserved for buses only. It may be a grade separated or controlled access roadway. Also known as "Bus Lane".

**Commuter Lane (APTA)**--Another name for "High-Occupancy Vehicle Facility."

**Contraflow Lane (APTA)**--Reserved lane for buses on which the direction of bus traffic is opposite to the flow of traffic on the other lanes.

**Controlled Access Right-of-Way**--Lanes restricted for at least a portion of the day for use by transit vehicles and/or other high occupancy vehicles. Use of controlled access lanes may also be permitted for vehicles preparing to turn. The restriction must be sufficiently enforced so that 95 percent of vehicles using the lanes during the restricted period are authorized to use them.

**Exclusive Right-of-Way**--Roadway or other right-of-way reserved at all times for transit use and/or other high occupancy vehicles. The restriction must be sufficiently enforced so that 95 percent of vehicles using the right-of-way are authorized to use it.

**Fixed Guideway**--Any public transportation facility utilizing and occupying a separate right-of-way or rails for the exclusive use of public transportation service including, but not limited to, fixed rail, automated guideway transit, and exclusive facilities for buses and other high-occupancy vehicles; and also means a public transportation facility using a fixed catenary system and right-of-way useable by other forms of transportation.

**High-Occupancy Vehicle (HOV) Facility**--An exclusive or controlled access right-of-way which is restricted to high occupancy vehicles at all times or for a set period of time. The designation of a HOV facility is determined by state and/or local officials. Also called "busway," "transitway," or "commuter lane."

**Kiss and Ride Facility (APTA)**--A part of a park and ride facility where commuters who are passengers in non-transit vehicles are dropped off to board a mass transportation vehicle.

**Park and Ride Facility**--A parking garage and/or pavement used for parking passengers' automobiles, either free or for a fee, while they use transit agency facilities. Park-and-ride facilities are generally established as collector sites for rail or bus service. Park-and-ride facilities may also serve as collector sites for vanpools and carpools, and as transit centers.

**Station (APTA)**--A public transportation passenger facility.

**Transfer Center (APTA)**--A fixed location where passengers interchange from one route or vehicle to another.

**Transitway (APTA)**--Another name for "High-Occupancy Vehicle Facility."

## MODES

**Aerial Tramway**--Unpowered passenger vehicles suspended from a system of aerial cables and propelled by separate cables attached to the vehicle suspension system. The cable system is powered by engines or motors at a central location not on board the vehicle.

**Automated Guideway Transit**--Guided transit passenger vehicles operating singly or in multi-car trains with a fully automated system (no crew on transit units). Service may be on a fixed schedule or in response to a passenger-activated call button. Automated guideway transit includes personal rapid transit, group rapid transit and people mover systems.

**Bus**--Rubber-tired vehicles operating on fixed routes and schedules on roadways. Buses are powered by diesel, gasoline, battery or alternative fuel engines contained within the vehicle.

**Cable Car**--Streetcar type of passenger vehicles operating by means of an attachment to a moving cable located below the street surface and powered by engines or motors at a central location not on board the vehicle.

**Carpool (APTA)**--An arrangement where two or more people share the use and cost of privately owned vehicles in traveling together to and from pre-arranged destinations.

**Commuter Rail**--Long-haul rail passenger service operating between metropolitan and suburban areas, whether within or across the geographical boundaries of a state, usually characterized by reduced fares for multiple rides, and commutation tickets for regular, recurring riders. Also known as "regional rail" or "suburban rail."

**Demand Response**--Passenger cars, vans or buses with fewer than 25 seats operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. A demand response operation is characterized by the following: (a) The vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need; and (b) typically, the vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers. The following types of operations fall under the above definitions provided they are not on a scheduled fixed route basis: Many origins-many destinations, many origins-one destination, one origin-many destinations, and one origin-one destination. Also called "Dial-a-Ride" and "Paratransit."

**Dial-a-Ride (APTA)**--Another name for "Demand Response."

**Ferryboat**--Vessels carrying passengers and/or vehicles over a body of water. The vessels are generally steam or diesel-powered conventional ferry vessels. They may also be hovercraft, hydrofoil and other high speed vessels.

**Fixed-Route (APTA)**--Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand response. Includes route deviation service, where revenue vehicles deviate from fixed routes on a discretionary basis.

**Heavy Rail**--High-speed, passenger rail cars operating singly or in trains of two or more cars on fixed rails in separate rights-of-way from which all other vehicular and foot traffic are excluded. Also known as "rapid rail,"

"subway," "elevated (railway)," or "metropolitan railway (metro)."

**Inclined Plane**--Special tramway type of vehicles operating up and down slopes on rails via a cable mechanism so that passenger seats remain horizontal while the undercarriage (truck) is angled parallel to the slope.

**Jitney**--Passenger cars or vans operating on fixed routes (sometimes with minor deviations) as demand warrants without fixed schedules or fixed stops.

**Light Rail**--Lightweight passenger rail cars operating singly (or in short, usually two-car, trains) on fixed rails in right-of-way that is not separated from other traffic for much of the way. Light rail vehicles are driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph. Also known as "streetcar," "tramway," or "trolley car."

**Metropolitan Railway (APTA)**--Another name for "Heavy Rail."

**Mode**--A transit system category characterized by specific right-of-way, technological and operational features.

**Monorail**--Guided transit vehicles operating on or suspended from a single rail, beam or tube. Monorail vehicles usually operate in trains.

**Non-Fixed-Route (APTA)**--Service not provided on a repetitive, fixed-schedule basis along a specific route to specific locations. Demand response is the only non-fixed-route mode.

**Paratransit (APTA)**--Another name for "Demand Response."

**Rapid Rail (APTA)**--Another name for "Heavy Rail."

**Rapid Transit (APTA)**--Rail or bus transit service operating completely separate from all modes of transportation on an exclusive right-of-way.

**Regional Rail (APTA)**--Another name for "Commuter Rail."

**Suburban Rail (APTA)**--Another name for "Commuter Rail."

**Trolleybus**--Rubber-tired passenger vehicle operating singly on city streets. Trolleybuses are driven electrically with the power being drawn from an overhead electric line via trolleys. Also known as "trolley coach" or "trackless trolley."

**Urban Ferryboat (APTA)**--Ferryboats that have at least one terminal within an urbanized area, excluding international, rural, rural interstate, island, and urban park ferries.

**Vanpool**--Vans and/or buses seating less than 25 persons operating as a voluntary commuter ride sharing arrangement, which provides transportation to a group of individuals traveling directly between their homes and their regular places of work within the same geographical area. The vans should have a seating capacity greater than seven persons, including the driver. It is a mass transit service operated by a public entity, or in which a public entity owns, purchases, or leases the vehicles. Other forms of public participation to encourage ridesharing arrangements such as the provision of parking spaces, utilization of high occupancy vehicle (HOV) lanes, coordination or clearing house service, do not necessarily qualify as public vanpools.

## VEHICLES

**Accessible Vehicle**--Public transportation revenue vehicles which do not restrict access, are usable, and provide allocated space and/or priority seating for individuals who use wheelchairs.

**Active Vehicle**--The vehicles that are available to operate in revenue service, including vehicles temporarily out of service for routine maintenance and minor repairs.

**Aerial Tramway**--Unpowered passenger vehicles suspended from a system of aerial cables and propelled by separate cables attached to the vehicle suspension system. The cable system is powered by engines or motors at a central location not on board the vehicle.

**Automated Guideway Vehicle**--Guided transit passenger vehicles operating under a fully automated system (no crew on transit units).

**Bus**--Rubber-tired passenger vehicle powered by diesel, gasoline, battery or alternative fuel engine contained within the vehicle. Types include:



**Articulated Bus**--Extra-long (54 to 60 feet) bus with the rear body section connected to the main body by a joint mechanism. The joint mechanism allows the vehicle to bend when in operation for sharp turns and curves and yet have a continuous interior.

**Double Decked Bus**--High-capacity bus having two levels of seating, one over the other, connected by one or more stairways. Total bus height is usually 13 to 14.5 feet, and typical passenger seating capacity ranges from 40 to 80 people.

**Intercity Bus (APTA)**--A bus with front door only, separate luggage compartments, and usually with restroom facilities and high-backed seats for use in high-speed long-distance service.

**Suburban Bus (APTA)**--A bus with front doors only, normally with high-backed seats, and without luggage compartments or restroom facilities for use in longer-distance service with relatively few stops.

**Transit Bus (APTA)**--A bus with front and center doors, normally with a rear-mounted engine, low-back seating, and without luggage compartments or restroom facilities for use in frequent-stop service.

**Trolley Replica Bus (APTA)**--A bus with an exterior (and usually an interior) designed to look like a streetcar from the early 1900s.

**Cable Car**--Streetcar type of passenger vehicle operating by means of an attachment to a moving cable located below the street surface and powered by engines or motors at a central location not on board the vehicle.

**Commuter Rail Car**--Commuter rail passenger vehicle. There are two types:

**Commuter Rail Passenger Coach**--Not independently propelled and requiring one or more locomotives for propulsion.

**Commuter Rail Self-propelled Passenger Car**--Not requiring a separate locomotive for propulsion.

**Commuter Rail Locomotive**--Commuter rail vehicle used to pull or push commuter rail passenger cars. Locomotives do not carry passengers themselves.

**Downtown People Mover (APTA)**--A type of automated guideway transit vehicle operating on a loop or shuttle route within the central business district of a city.

**Ferryboat**--Vessel for carrying passengers and/or vehicles over a body of water. The vessel is generally a steam or diesel-powered conventional ferry vessel. It may also be a hovercraft, hydrofoil or other high speed vessel.

**Heavy Rail Car**--Rail car with motive capability, driven by electric power taken from overhead lines or third rails, configured for passenger traffic and usually operated on exclusive right-of-way.

**High Occupancy Vehicle (HOV) (APTA)**--Vehicles that can carry two or more persons. Examples of high occupancy vehicles are a bus, vanpool and carpool. These vehicles sometimes have exclusive traffic lanes called "HOV lanes," "busways," "transitways" or "commuter lanes."

**Inclined Plane Vehicle**--Special type of passenger vehicle operating up and down slopes on rails via a cable mechanism.

**Light Rail Vehicle**--Rail car with motive capability, usually driven by electric power taken from overhead lines, configured for passenger traffic and usually operating on non-exclusive right-of-way. Also known as "streetcar," "tramway," or "trolley car."

**Monorail Vehicle**--Guided transit passenger vehicle operating on or suspended from a single rail, beam or tube.

**Passenger Vehicle (APTA)**--A vehicle used to carry passengers in transit service.

**Rehabilitation**--The rebuilding of revenue vehicles to original specifications of the manufacturer. Rebuilding may include some new components but has less emphasis on structural restoration than would be the case in a remanufacturing operation, focusing on mechanical systems and vehicle interiors.

**Streetcar (APTA)**--Another name for "Light Rail Vehicle."

**Trackless Trolley (APTA)**--Another name for "Trolleybus."

**Tramway (APTA)**--Another name for "Light Rail Vehicle."

**Trolley Car (APTA)**--Another name for "Light Rail Vehicle."

**Trolley Coach (APTA)**--Another name for "Trolleybus."

**Trolleybus**--Rubber-tired electrically powered passenger vehicle operating on city streets drawing power from overhead lines with trolleys. Also known as "trolley coach" or "trackless trolley."

**Van**--Vehicles having a typical seating capacity of 5 to 15 passengers and classified as a van by vehicle manufacturers. A modified van is a standard van which has undergone some structural changes, usually made to increase its size and particularly its height. The seating capacity of modified vans is approximately 9 to 18 passengers.

## OPERATING EXPENSES

**Function**--A function is the activity performed or cost center of a transit agency. There are four basic functions, as follows:

**Vehicle Operations**--All activities associated with the subcategories of the vehicle operations function: transportation administration and support; revenue vehicle operation; ticketing and fare collection; and system security.

**Vehicle Maintenance**--All activities associated with revenue and non-revenue (service) vehicle maintenance, including administration, inspection and maintenance, and servicing (cleaning, fueling, etc.) vehicles. In addition, vehicle maintenance includes repairs due to vandalism and accident repairs of revenue vehicles.

**Non-Vehicle Maintenance**--All activities associated with facility maintenance, including: administration; repair of buildings, grounds and equipment as a result of accidents or vandalism; operation of electric power facilities; and maintenance of vehicle movement control systems; fare collection and counting equipment; structures; tunnels and subways; roadway and track; passenger stations; operating station buildings, grounds and equipment; communication systems; general administration buildings, grounds and equipment; and electric power facilities.

**General Administration**--All activities associated with the general administration of the transit agency, including transit service development, injuries and damages, safety, personnel administration, legal services, insurance, data processing, finance and accounting, purchasing and stores, engineering, real estate management, office management and services, customer services, promotion, market research and planning.

**Operating Expense**--The expenses associated with the operation of the transit agency, and classified by function or activity and the goods and services purchased. It is the sum of "Vehicle Operations," "Vehicle Maintenance," "Non-Vehicle Maintenance," and "General Administration." Alternatively, it is the sum of the various object classes listed below.

**Object Class**--An object class is a grouping of expenses on the basis of goods and services purchased. Object Classes are as follows:

**Salaries and Wages**--The pay and allowances due employees in exchange for the labor services they render in behalf of the transit agency. The allowances include payments direct to the employee arising from the performance of a piece of work. Also called "Labor."

**Labor**--Another name for "Salaries and Wages."

**Fringe Benefits**--The payments or accruals to others (insurance companies, governments, etc.) on behalf of an employee and payments and accruals direct to an employee arising from something other than a piece of work. These payments are transit agency costs over and above labor costs, but still arising from the employment relationship. Fringe benefits include retirement, pension, medical, dental, life insurance and short-term disability plans; unemployment insurance; workers' compensation insurance; sick, holiday, vacation, and other paid leave; and, uniform and work clothing allowances.

**Employee Compensation (APTA)**--Sum of "Salaries and Wages" and "Fringe Benefits."

**Services**--The labor and other work provided by outside organizations for fees and related expenses. In most instances, services from an outside organization are procured as a substitute for in-house employee labor, except in the case of independent audits which could not be performed by employees in the first place. The substitution is

usually made because the skills offered by the outside organization are needed for only a short period of time or are better than internally available skills. The charge for these services is usually based on the labor hours invested in performing the service. Services include management service fees, advertising fees, professional and technical services, temporary help, contract maintenance services, custodial services and security services.

**Materials and Supplies**--The tangible products obtained from outside suppliers or manufactured internally. Freight-in, purchase discounts, cash discounts, sales and excise taxes (except on fuel and lubricants) are to be included in the cost of the material or supply. Charges to these expense accounts will be for the materials and supplies issued from inventory for use and for the materials and supplies purchased for immediate use, i.e., without going through inventory. Three types are:

**Fuel and Lubricants**--The costs of gasoline, diesel fuel, propane, lubricating oil, transmission fluid, grease, etc., for use in vehicles.

**Tires and Tubes**--The lease payments for tires and tubes rented on a time period or mileage basis, or the cost of tires and tubes for replacement of tires and tubes on vehicles.

**Other Materials and Supplies (APTA)**--Materials and supplies other than fuel and lubricants and tires and tubes.

**Utilities**--The payments made to various utilities for utilization of their resources (e.g., electric, gas, water, telephone, etc.). Utilities include propulsion power purchased from an outside utility company and used for propelling electrically driven vehicles, and other utilities such as electrical power for purposes other than for electrically driven vehicles, water and sewer, gas, garbage collection, and telephone.

**Casualty and Liability**--The cost elements covering protection of the transit agency from loss through insurance programs, compensation of others for their losses due to acts for which the transit agency is liable, and recognition of the cost of a miscellaneous category of corporate losses. The costs of repairing damaged property are recorded in labor, fringe benefit, material and services object classes. The costs of writing off property damaged beyond repair are recorded in the depreciation object class. The costs of transit agency employees engaged in insuring and processing claims for and against

the transit agency are recorded in labor and fringe benefit object classes. Casualty and liability costs include premiums for physical damage insurance, recoveries of physical damage losses, premiums for public liability and property damage insurance, payouts for and recoveries from insured and uninsured public liability and property damage settlements, and premiums for other corporate insurances (e.g., fidelity bonds, business records insurance, etc.).

**Purchased Transportation**--The payment or accrual to other transit agencies, public or private, for providing transportation service including fare revenues retained by the seller, other expenses incurred by the buyer of service, and other expenses incurred by the seller of service when the purchased transportation agreement pays for only part of the costs.

**Other (APTA)**--The sum of taxes, miscellaneous, and expense transfers expenses:

**Taxes**--The taxes levied against the transit agency by Federal, State and Local governments. Sales and excise taxes on materials and services purchased other than fuel and lubricants are not included in this category but are to be accounted for as part of the base price of the material or service. Taxes include income, property, fuel and lubricant, and electric propulsion power taxes; and, vehicle licensing and registration fees.

**Miscellaneous Expenses**--The expenses which cannot be attributed to any of the other major expense categories.

**Expense Transfers**--Accounts to be used for reporting adjustments and reclassifications of expenses previously reported. Expense transfers include reclassifications of expenses from one function to another; a composite category of expense encompassing labor, fringe benefits, materials and services used in the transit agency's internal information system to reclassify costs between cost centers and work orders; and, a credit account to be used for adjusting entries transferring expenses to receivables, property, or work-in-process for capital projects.

**Depreciation and Amortization**--The charges that reflect the loss in service value of the transit agency's assets. Depreciation and amortization include the depreciation of the physical facilities such as

guideways, tracks and roadbeds, elevated structures, passenger stations and parking facilities, revenue vehicles, operating stations, and facilities (including buildings, equipment and furnishings) for power generation and distribution, revenue vehicle movement control, data processing, revenue collection and processing, and other general administration. Amortization of the intangible costs of the transit agency includes organization costs, franchises, patents, goodwill and other intangible assets.

**Other Reconciling Items (APTA)**--All other expenses in addition to "Total Operating Expense" and "Depreciation and Amortization" including interest expense, leases and rentals, purchase lease payments, related parties lease agreements, and any other costs.

**Total Expense (APTA)**--The sum of "Total Operating Expense," "Depreciation and Amortization," and "Other Reconciling Items."

## OPERATING FUNDING

**Operating Funding Source (APTA)**--Funds used to pay for operating expense.

**Government Funds (APTA)**--Funds provided by federal, state, and/or local governments. For some purposes, also includes directly generated taxes, tolls, fees, and other imposed funding sources.

**Federal Funds**--Financial assistance from the federal government to assist in paying the operating costs of providing transit service.

**State Funds**--Financial assistance from a state government(s) to assist with paying the operating costs of providing transit service.

**Local Funds**--Financial assistance from local governments (below the state level) to help cover the operating costs of providing transit service.

**Directly Generated Funds**--Any funds generated by or donated directly to the transit agency, including passenger fares, advertising revenues, donations and grants from private foundations. Directly generated funds also include directly levied taxes and other funds dedicated to transit, such as development fees where the transit agency has the legal authority to impose the development fees.

**Passenger Fares**--The revenue earned from carrying passengers in regularly scheduled service. Passenger fares include the base fare, zone premiums, express service premiums, extra cost transfers and quantity purchase discounts applicable to the passenger's ride. They also include revenues earned but paid for by some organization rather than the rider, and for rides given along special routes for which revenue may be guaranteed by a beneficiary of the service. They include revenue from services operated directly by the transit agency as well as service operated by purchased transportation contractors.

**Adult Base Cash Fare (APTA)**--Minimum cash fare paid by an adult for one transit ride; excludes transfer charges, zone or distance charges, express service charges, peak period surcharges, and reduced fares.

**Passenger Fares Received per Unlinked Passenger Trip (APTA)**--"Passenger Fares" divided by "Unlinked Passenger Trips."

**Peak Period Surcharge (APTA)**--An extra fee required during peak periods (rush hours).

**Transfer Surcharge (APTA)**--An extra fee charged for a transfer to use when boarding another transit vehicle to continue a trip.

**Zone or Distance Surcharge (APTA)**--An extra fee charged for crossing a predetermined boundary.

**Other Operating Funds (APTA)**--The sum of school bus service revenues, freight tariffs, charter service revenues, auxiliary transportation revenues, non-transportation revenues, revenue accrued through a purchased transportation agreement, and subsidy from other sectors of operations:

**School Bus Service Revenues**--The revenue earned operating vehicles under school bus contracts. School bus service is the operation of buses exclusively to carry school passengers to and from their schools.

**Freight Tariffs**--The revenue earned from carrying all types of freight on runs whose primary purpose is passenger operations.

**Charter Service Revenues**--The revenue earned operating vehicles under charter contracts. Charter service is the operation of vehicles hired for exclusive use and that do not operate over a regular route, on a regular schedule and are not available to the general public.

**Auxiliary Transportation Revenues**--The revenue earned from operations closely associated with transportation operations. Revenue includes station concessions, vehicle concessions, advertising and automotive vehicle ferriage.

**Non-Transportation Revenues**--The revenue earned from activities not associated with the provision of transit service. Non-transportation revenues include revenues earned from sales of maintenance service on property not owned or used by the transit agency, rentals of revenue vehicles to other operators, rentals of transit agency buildings and property to other organizations, parking fees generated from parking lots not normally used as park and ride locations, and donations.

**Revenue Accrued through a Purchased Transportation Agreement**--Revenue accrued by a seller of transportation services through purchased transportation agreements. These are the contract revenues earned (payments and accruals) by a transit agency under contract to another transit agency or governmental unit.

**Subsidy from Other Sectors of Operations**--The funds obtained from other sectors of a transit agency's operations to help cover the cost of providing transit services.

## CAPITAL EXPENSES

**Capital Expense**--The expenses related to the purchase of tangible property or other items eligible to be capitalized (e.g., vehicle tire leasing). Property includes tangible assets with an expected service life of more than one year at the time of their installation, and a unit cost greater than \$1,000. Generally, these are any items eligible as a capital expense under federal, state or local requirements.

**Rolling Stock**--The revenue vehicles used in providing transit service for passengers. The term revenue vehicles includes the body and chassis

and all fixtures and appliances inside or attached to the body or chassis, except fare collection equipment and revenue vehicle movement control equipment (radios). For rubber-tired vehicles, it includes the cost of one set of tires and tubes to make the vehicle operational, if the tires and tubes are owned by the transit agency.

**Facilities**--The following items are facility and facility-related projects: construction of maintenance facilities (including design and engineering, demolition, etc.); rehabilitation of maintenance facilities (including design and engineering, land acquisition, relocation, etc.); crime prevention and security equipment; purchase or installation of service and support equipment; operational support (computer hardware and software, bus diagnostic equipment, and other activities that enhance system operations and efficiency while reducing operating costs); transit malls, transfer facilities, intermodal terminals, shelters, passenger stations, depots, terminals, HOV facilities, transit ways, and park-and-ride facilities; and track; line equipment and structures; signals and communications; and power equipment and substations.

**Other**--Any other item not described above, such as service vehicles, construction of general administration facilities, furniture, equipment that is not an integral part of buildings and structures, data processing equipment (including computers and peripheral devices whose sole use is in data processing operations), fare collection equipment, and revenue vehicle movement control equipment.

## CAPITAL FUNDING

**Capital Funding Source (APTA)**--Funds used to pay for capital expense.

**Government Funds (APTA)**--Funds provided by federal, state, and/or local governments. For some purposes, also includes directly generated taxes, tolls, fees, and other imposed funding sources.

**Federal Funds**--Financial assistance from the federal government to assist in paying the capital costs of providing transit service.

**State Funds**--Financial assistance from a state government(s) to assist with paying the capital costs of providing transit service.

**Local Funds**--Financial assistance from local governments (below the state level) to help cover the capital costs of providing transit service.

**Directly Generated Funds**--Any funds generated by or donated directly to the transit agency, including passenger fares, advertising revenues, donations and grants from private foundations. Directly generated funds also include directly levied taxes and other funds dedicated to transit, such as development fees where the transit agency has the legal authority to impose the development fees.

## EMPLOYEES

**Capital Employee**--The employee labor hours whose cost is reimbursed under a capital grant or is otherwise capitalized.

**Operating Employee**--The employees engaged in the operation of the transit system. They are:

**General Administration Employee**--Executive, professional, supervisory, and secretarial transit system personnel engaged in general management and administration activities: preliminary transit system development, customer services, promotion, market research, injuries and damages, safety, personnel administration, general legal services, general insurance, data processing, finance and accounting, purchasing and stores, general engineering, real estate management, office management and services, general management, and planning.

**Non-Vehicle Maintenance Employee**--Executive, professional, supervisory, and secretarial transit system personnel engaged in non-vehicle maintenance, personnel providing maintenance support to such personnel for inspecting, cleaning, repairing and replacing all components of: vehicle movement control systems; fare collection and counting equipment; roadway and track; structures, tunnels, and subways; passenger stations; communication system; and garage, shop, operating station, general administration buildings, grounds and equipment. In addition, it includes support for the operation and maintenance of electric power facilities.

**Other Vehicle Operations Employee**--Executive, professional, and supervisory transit system personnel engaged in vehicle operations,

personnel providing support in vehicle operations activities, personnel engaged in ticketing and fare collection activities, and personnel engaged in system security activities.

**Vehicle Maintenance Employee**--Executive, professional, secretarial, and supervisory transit system personnel engaged in vehicle maintenance, personnel performing inspection and maintenance, vehicle maintenance of vehicles, performing servicing functions for revenue and service vehicles, and repairing damage to vehicles resulting from vandalism or accidents.

**Vehicle Operator**--The personnel (other than security agents) scheduled to be aboard vehicles in revenue operations including vehicle operators, conductors, and ticket collectors.

## PASSENGERS

**Average Trip Length (APTA)**--Passenger miles divided by unlinked passenger trips.

**Passenger Miles**--The cumulative sum of the distances ridden by each passenger.

**Revenue Passenger Trips (APTA)**--The number of fare-paying transit passengers with each person counted once per trip; excludes transfer and non-revenue trips.

**Unlinked Passenger Trips**--The number of passengers who board public transportation vehicles. A passenger is counted each time he/she boards a vehicle even though he/she may be on the same journey from origin to destination.

## SERVICE PROVIDED

**Average Speed (APTA)**--Vehicle miles divided by vehicle hours.

**Directional Route Miles**--The mileage in each direction over which public transportation vehicles travel while in revenue service. Directional route miles are a measure of the facility or roadway, not the service carried on the facility, i.e., number of routes or vehicle revenue miles. Directional route miles are computed with regard to direction of service, but without

regard to the number of traffic lanes or rail tracks existing in the right-of-way.

**Miles of Track**--The number of tracks per one-mile segment of right-of-way. Miles of track are measured without regard to whether or not rail traffic can flow in only one direction on the track. All track is counted, including yard track.

**Total Bus Mile Equivalents (APTA)**--The number of vehicle miles that would have been operated by a transit mode if the service had been provided by buses. Based on average seating plus standing capacity of the vehicle as compared to the capacity including standees (70 people) of a standard-size bus.

**Vehicle Hours**--The hours a vehicle travels while in revenue service (vehicle revenue hours) plus deadhead hours. For rail vehicles, vehicle hours refer to passenger car hours. Vehicle hours exclude hours for charter services, school bus service, operator training and maintenance testing.

**Vehicle Miles**--The miles a vehicle travels while in revenue service (vehicle revenue miles) plus deadhead miles. For rail vehicles, vehicle miles refer to passenger car miles. Vehicle miles exclude miles for charter services, school bus service, operator training and maintenance testing.

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**American Public Transit Association**  
**1201 New York Avenue, NW**  
**Washington, DC 20005**  
**[www.apta.com](http://www.apta.com)**