

# APTA 1997

## TRANSIT FACT BOOK



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## American Public Transit Association

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

TELEPHONE: (202) 898-4000  
FAX: (202) 898-4070  
WEBSITE: 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 1942. 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 thousands higher 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 (3,250 miles), followed by bus (930), heavy rail (726), ferryboat (355), light rail (349), trolleybus (314), and all other modes (19).

Under construction are 216 miles of bus fixed guideway, 78 miles of light rail, 75 miles of commuter rail, 41 miles of heavy rail, 11 miles of trolleybus, and 2.5 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 47% of transit capital funding comes from the federal government. Transit agencies raise 27% from taxes, tolls, and fees they levy plus non-governmental sources. States contribute 14%; local governments 12%.

In 1995, \$7.0 billion was received from all sources. 36% was for bus-related projects, 32% for rail modernization, 31% for new start transit projects, and 1% for planning.

About 72% of transit operating funds come from the area in which the service is provided: 39% comes from the passengers, 22% from local governments, and 13% from non-government sources and taxes, tolls, and fees levied directly by transit agencies. State and federal governments contribute 22% and 4%, respectively.

Table 1

### Source of Transit Operating Funding, 1984 and 1995

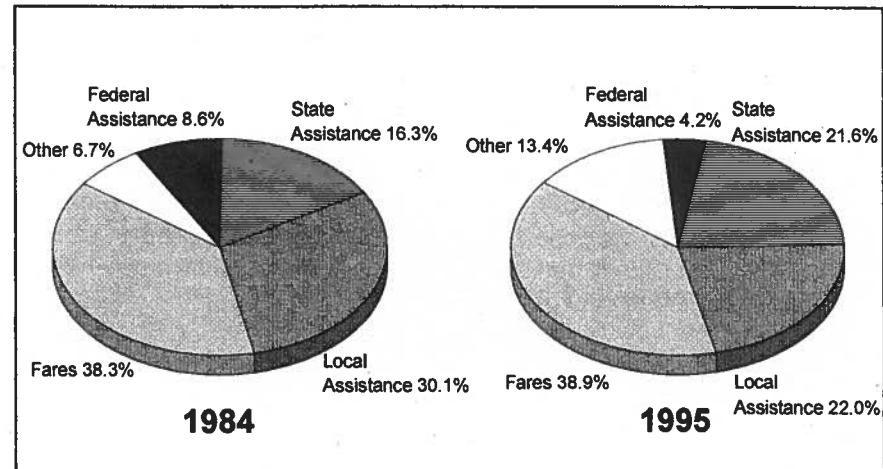
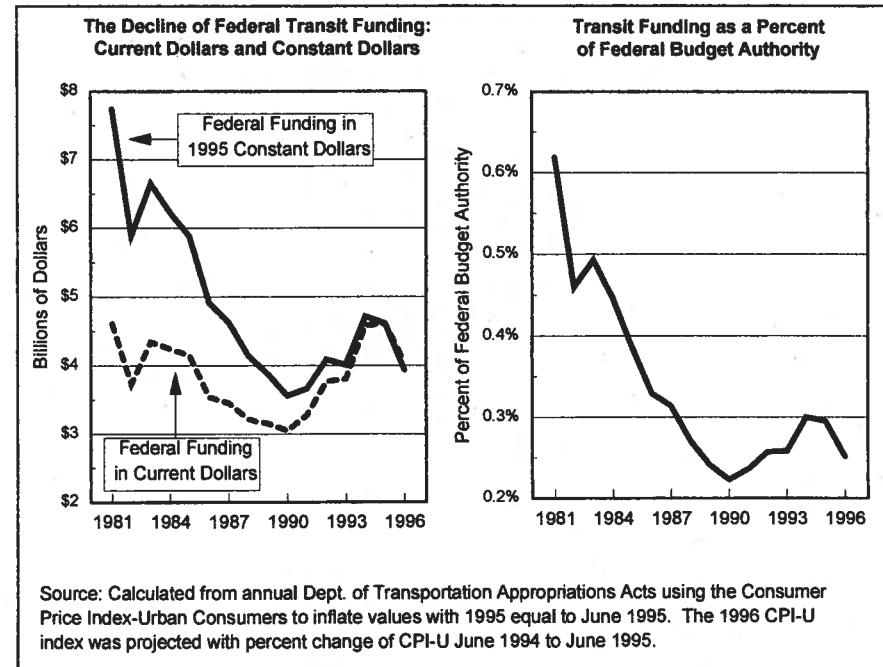


TABLE 2

### Real Value of Federal Transit Assistance, 1981-1996



The average adult base cash fare in 1996 was \$1.05, but most passengers pay more when zone and other surcharges are included. Average fare paid per unlinked trip was \$0.45 for trolleybus, \$0.50 for light rail, \$0.66 for bus, \$0.99 for heavy rail, \$2.26 for demand response, and \$3.13 for commuter rail. Other modes ranged from \$1.31 to \$1.53.

## 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 1995, 25% of the \$7.0 billion total went for vehicles, 53% for facilities, and 22% for equipment and services. 36% was spent on heavy rail, 26% for bus, 24% on commuter rail, 10% on light rail, and the remainder on other modes.

Operating expense in 1995 was \$18.1 billion. Bus accounted for 58%, heavy rail for 19.5%, commuter rail for 12%, demand response for 6%, light rail for 2%, and other modes for 2.5%.

The largest types of expenses were salaries and wages (47%), fringe benefits (26%), purchased transportation (9%), and fuel and supplies (9%). Services, utilities, insurance, and other costs made up the remaining 9%. 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 85% 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 15% to general administration.

## 8. PASSENGERS

About 7.9 billion trips were taken on transit in 1995. Of these, 63% were bus trips, 26% heavy rail, 4% commuter rail, 3% light rail, and the remainder on other modes. An estimated 6 million people use 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 (34.9 miles). Commuter rail was 24.0 miles, demand response 7.8 miles, ferryboat 5.6 miles, heavy rail 5.2 miles, bus 3.8 miles, light rail 3.4 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, and peak-hour commuters are much less responsive to fare changes than other passengers.

## 10. SERVICE PROVIDED

In 1995, 3.5 billion miles and 238 million hours of service were operated. Buses operated 62% of the miles and 69% of the hours, heavy rail 15% of the miles and 12% of the hours, demand response 14% of the miles and 14% of the hours, and commuter rail 7% of the miles and 3% of the hours. No other mode exceeded 1%.

Average speed in revenue service was highest for vanpools at 34.9 m.p.h.

Commuter rail was 33.6, heavy rail 20.7, demand response 14.6, light rail 14.4, bus 13.1, trolleybus 7.8, and other modes 6.3.

## 11. VEHICLES

Transit fleets contain about 115,000 active vehicles. About 58.5% were buses, 25% demand response vehicles, 9% heavy rail cars, and 4% commuter rail cars.

Average age was 8.8 years for buses, 3.5 years for demand response vehicles, 20.6 years for commuter rail cars, 19.9 years for heavy rail cars, and 20.9 years for light rail cars.

Average bus length is 39.4 feet, demand response vehicles 21.6 feet, commuter rail cars 84.9 feet, heavy rail cars 61.5 feet, and light rail cars 68.3 feet.

6.4% of buses and 14% of demand response vehicles use alternative power. Nearly 1,500 use compressed natural gas or CNG blends, 1,200 (all buses) are particulate-trap-equipped, about 400 each use propane, methanol, and liquefied natural gas and LNG blends.

Most vehicles are wheelchair accessible—64% of buses, 91% of demand response vehicles, 67% of commuter rail cars, 94% of heavy rail cars, and 54% of light rail cars.

Each year 150 to 350 new rail cars and 4,800 to 5,500 buses and demand response vehicles are purchased. About 2,500 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 bus costs \$251,000, while rail cars vary widely from \$1.5 million to \$2.5 million apiece.

## 12. EMPLOYEES

It takes about 298,000 employees to operate, maintain, and administer transit service. 60% are employed in bus service, 15% in heavy rail, 14% 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 13%, vehicle mainte-

nance personnel 17%, non-vehicle maintenance personnel 9%, and general administration personnel 10%.

In addition, there are about 10,000 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 about \$42,000 per year.

### 13. ENERGY CONSUMPTION

Transit vehicles used 750 million gallons of fossil fuels and 5.1 billion kilowatt-hours of electricity in 1995, which is only 1% of all the energy consumed in this country.

91% of the fossil fuels used was diesel, and of that 84% was use by buses, 9% by commuter rail, 4% by demand response, and 3% by ferryboats. 66% of the other fossil fuels was gasoline, 16% methanol, and 9% compressed natural gas.

Most electricity is used by heavy rail (67%), while commuter rail used 25% and light rail 6%.

### 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 1996 estimated the annual cost to a single-occupant driver to be \$4,380 for a small car up to \$8,620 for a sport utility vehicle, depending on mileage driven.

Each year society pays \$2 to \$3 billion 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
Parking (APTA estimate)	<u>5.00</u>
Total	7.00

<b><u>Driving 3 miles to a park-and-ride lot and using transit for the remainder of the trip</u></b>	
Fares	\$3.00
Gasoline & oil	0.36
Maintenance & tires	<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 \$12.00 per day (small car driven 10,000 miles per year) up to \$23.62 (sport utility vehicle driven 20,000 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 1992-1994 average death rates in terms of 100 million passenger miles are as follows:

	<u>Death Rate</u>
Automobiles	0.85
Intercity & commuter railroads	0.17
Airlines	0.02
Intercity buses	0.02
School buses	less than 0.005
Transit buses	0.02
Heavy, light, & other rail vehicles	Not reported

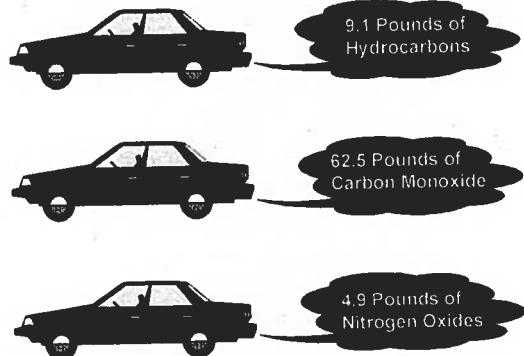
#### *10. Increased Productivity*

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

**One Person Using Mass Transit for a Year Instead  
of Driving to Work Saves the Environment:**



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	5
Bus	2,250
Cable Car	1
Commuter Rail	16
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>5,973</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

## 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	24	110
Alaska	1	3	17	11	32
Arizona	11	12	61	5	89
Arkansas	4	9	159	6	178
California	76	72	200	121	469
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)

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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	33	143
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	31	39	247	27	344

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(continued on next page)

TABLE 5 (continued)

**Number of Transit Agencies By State (a)**

STATE	AGENCIES			TOTAL
	FEDERALLY URBANIZED AREA AGENCIES (b)	RURAL AGENCIES (c)	SPECIALIZED TRANSPORTATION AGENCIES (d)	
Utah	2	3	51	58
Vermont	1	10	29	46
Virginia	13	13	40	88
Washington	15	15	4	54
West Virginia	5	12	73	96
Wisconsin	17	29	69	128
Wyoming	2	43	13	63
Total	552	1,074	3,594	5,973

(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.(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

**35 Largest Transit Agencies, Fiscal Year 1995,  
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	Southeastern Pennsylvania Transportation Authority	Philadelphia, PA
6	Massachusetts Bay Transportation Authority	Boston, MA
7	New Jersey Transit Corporation	New York, NY
8	San Francisco Municipal Railway	San Francisco, CA
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	Metro-Dade Transit Agency	Miami, FL
14	Metropolitan Transit Authority of Harris County	Houston, TX
15	San Francisco Bay Area Rapid Transit District	San Francisco, CA
16	Port Authority of Allegheny County	Pittsburgh, PA
17	City & County of Honolulu Dept of Transp Services	Honolulu, HI
18	Regional Transit Authority of Orleans and Jefferson	New Orleans, LA
19	Regional Transportation District	Denver, CO
20	Port Authority of New York and New Jersey	New York, NY
21	Tri-County Metropolitan Transp District of Oregon	Portland, OR
22	Alameda-Contra Costa Transit District	San Francisco, CA
23	Metropolitan Council Transit Operations	Minneapolis, MN
24	Greater Cleveland Regional Transit Authority	Cleveland, OH
25	City of Detroit Department of Transportation	Detroit, MI
26	Milwaukee County Department of Transportation	Milwaukee, WI
27	Dallas Area Rapid Transit	Dallas, TX
28	Bi-State Development Agency	Saint Louis, MO
29	San Diego Metropolitan Transit Development Board (includes San Diego Transit Corporation and San Diego Trolley)	San Diego, CA
30	VIA Metropolitan Transit	San Antonio, TX
31	Santa Clara Valley Transportation Authority	San Jose, CA
32	City of Phoenix Public Transit Department	Phoenix, AZ
33	Orange County Transportation Authority	Los Angeles, CA
34	Connecticut Transit	Hartford, CT
35	Westchester County Department of Transportation	New York, NY

(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)
?	planning	131.7
?	proposed	13.6
<b>? TOTAL</b>		<b>199.9</b>
AG	construction	0.7
AG	design	3.0
AG	open	9.7
AG	planning	1.0
AG	proposed	0.0
<b>AG TOTAL</b>		<b>17.2</b>
CC	open	4.5
CC	proposed	0.0
<b>CC TOTAL</b>		<b>4.5</b>
CR	construction	75.0
CR	design	87.7
CR	open	3,250.3
CR	planning	862.4
CR	proposed	992.4
<b>CR TOTAL</b>		<b>6,432.2</b>
FB	construction	0.0
FB	design	0.0
FB	open	354.8
FB	planning	10.0
FB	proposed	53.7
<b>FB TOTAL</b>		<b>452.5</b>
HR	construction	17.2
HR	design	8.8
HR	open	725.9
HR	planned	2.8
HR	planning	59.8
HR	proposed	35.6
<b>HR TOTAL</b>		<b>923.5</b>
IP	open	1.5
IP	proposed	0.0
<b>IP TOTAL</b>		<b>1.5</b>
LR	construction	20.2
LR	design	26.8

TABLE 7

File: GUIDMILE

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

MODE (b)	STATUS	MILES (c)
LR	open	349.0
LR	planning	129.3
LR	proposed	35.2
<b>LR TOTAL</b>		<b>916.7</b>
MB	construction	63.8
MB	design	6.4
MB	open	930.2
MB	planned	28.6
MB	planning	40.6
MB	proposed	44.9
<b>MB TOTAL</b>		<b>1,563.0</b>
MO	open	2.7
MO	planning	2.6
MO	proposed	0.0
<b>MO TOTAL</b>		<b>5.3</b>
TB	construction	5.0
TB	design	10.5
TB	open	314.1
TB	planning	2.9
TB	proposed	8.4
<b>TB TOTAL</b>		<b>381.1</b>
TR	open	0.6
TR	proposed	0.0
<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 1996, 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	2.5
<b>TOTAL</b>	<b>2.5</b>
<b>BUS</b>	
Charlotte, NC	3.9
Denver, CO	1.8
Houston, TX	18.5
Los Angeles, CA	76.7
Memphis, TN	11.0
Miami, FL	8.4
Minneapolis, MN	9.7
Nashville, TN	8.0
New Orleans, LA	4.0
Norfolk, VA	4.4
Orlando, FL	2.7
Phoenix, AZ	4.3
Pittsburgh, PA	8.1
San Bernardino, CA	19.7
San Jose, CA	6.0
Seattle, WA	10.1
Washington, DC	18.2
<b>TOTAL</b>	<b>215.5</b>
<b>COMMUTER RAIL</b>	
Boston, MA	52.0
Cape May, NJ	3.0
Los Angeles, CA	5.9
Miami, FL	2.0
New York, NY	0.2
Philadelphia, PA	12.1
<b>TOTAL</b>	<b>75.2</b>
<b>FERRYBOAT</b>	
None	0.0
<b>TOTAL</b>	<b>0.0</b>

**TABLE 8**

Title: GUIDECON

**Fixed Guideways Under Construction (a)**

LOCATION	MILES
<b>HEAVY RAIL</b>	
Los Angeles, CA	10.9
New York, NY	0.4
San Francisco, CA	14.0
Washington, DC	15.2
<b>TOTAL</b>	<b>40.5</b>
<b>LIGHT RAIL</b>	
Baltimore, MD	7.3
Dallas, TX	3.0
Denver, CO	8.7
Los Angeles, CA	13.6
Memphis, TN	2.2
New York, NY	7.6
Portland, OR	18.0
Sacramento, CA	2.3
San Diego, CA	5.7
San Francisco, CA	2.0
San Jose, CA	7.6
<b>TOTAL</b>	<b>78.0</b>
<b>TROLLEYBUS</b>	
Boston, MA	1.0
Dayton, OH	5.2
Seattle, WA	5.0
<b>TOTAL</b>	<b>11.2</b>

(a) Data as of July 1996, plus updated information where known.

Source: APTA survey

TABLE 9

**Bus Fixed Guideways 3.5 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	Freeport St-Furnace Brook Parkway	6.0
Dallas, TX	I 30 East HOV Lanes	Central Expressway-Jim Miller Rd	5.2
Dallas, TX	I 35E North HOV Lanes	I 635-FM 3040	7.8
Dallas, TX	I 635 HOV Lanes	US 75-I 35E	6.8
32 Denver, CO	I 25 North HOV Lanes	Union Terminal-70th	6.8
Denver, CO	Santa Fe HOV Lanes	I 25-Hampden Ave	4.2
Denver, CO	US 36 HOV Lanes I/B	Sheridan Ave-I 25	3.9
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	Mililani-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-Almeda/Genoa	12.1
Houston, TX	US 290 Northwest HOV Lanes	I 10-FM 1960	13.5
Houston, TX	US 59 South HOV Lanes	Shepherd-West Bellfort	11.6
Los Angeles, CA	CA 134 HOV Lanes	US 101/CA 170-I 210	12.9

TABLE 9

**Bus Fixed Guideways 3.5 Miles or More in Length (a)**

LOCATION	GUIDEWAY	SEGMENT	MILES
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-Lambert	10.0
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
33 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 110-I 105	9.2
Los Angeles, CA	I 5 HOV Lanes	I 405-CA 22/CA 57	12.7
Miami, FL	I 95 HOV Lanes	Broward County Line-FL 112	11.2
Minneapolis, MN	Coon Rapids Blvd HOV Lanes	Avocet St-Yucca St	4.0
Minneapolis, MN	I 394 HOV Lanes	N. 12th St-I 494	9.0
Minneapolis, MN	I 94 HOV Lanes Westbound	Brooklyn Blvd-Weaver Lake Rd	6.3
Minneapolis, MN	MN 47 HOV Lanes	35th Ave NE-85th Ave NE	5.5
Minneapolis, MN	MN 5 HOV Lanes	I 494-Market Blvd	4.5
Minneapolis, MN	MN 77 HOV Lanes	Old Shakopee Rd-I 35E South	4.2
Minneapolis, MN	US 61 South HOV Lanes	70th St-Burns Ave	3.8
Nashville, TN	I 65 South HOV Lanes	Armory Dr-Concord Rd	8.0
New York, NY	I 80 HOV Lanes	I 287-NJ 15	10.0

TABLE 9

**Bus Fixed Guideways 3.5 Miles or More in Length (a)**

LOCATION	GUIDEWAY	SEGMENT	MILES
New York, NY	Long Island Expressway HOV Lanes	NY 110-Exit 57	12.0
New York, NY	New Jersey Turnpike HOV Lanes	Woodbridge-Newark	13.0
New York, NY	Second Ave HOV Lanes S/B	14th St-96th St	4.1
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-Baseline Rd	23.7
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 East Busway	Liberty/Grant-Wilkinsburg	7.8
Pittsburgh, PA	South Busway	South Hills Junction-Glenbury	4.3
San Diego, CA	I 15 HOV Lanes	CA 163-CA163/Ted Williams Pkwy	7.6
San Francisco, CA	US 101 HOV Lanes	Marin Co Civic Center-CA 37	6.5
San Francisco, CA	US 101 HOV Lanes	Richardson Bay-Sir Francis Drake Blvd	3.9
San Jose, CA	CA 237 HOV Lanes	I 880-Mathilda	5.5
San Jose, CA	CA 85 HOV Lanes	CA 237-US 101 South	22.0
San Jose, CA	I 280 HOV Lanes	Magdalena Ave-Bascom Ave	10.5
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
San Juan, PR	Ponce de Leon Contraflow Lane	Olimpo St-Guayama St	3.8
Seattle, WA	Airport Road HOV Lanes	86th Pl SW (Casino Rd)-8th Ave W.	3.5

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TABLE 9

**Bus Fixed Guideways 3.5 Miles or More in Length (a)**

LOCATION	GUIDEWAY	SEGMENT	MILES
Seattle, WA	I 405 HOV Lanes	I 5 South-NE 160th St	22.7
Seattle, WA	I 5 HOV Lanes	King County Line-164th St SW	6.3
Seattle, WA	I 5 HOV Lanes	Klickitat Dr-WA 516	4.8
Seattle, WA	I 5 HOV Lanes	NE 103rd St-Snohomish Co Line	4.8
Seattle, WA	I 5 HOV Lanes N/B	Military Rd-WA 516	4.7
Seattle, WA	I 5 HOV Lanes N/B	S. Boeing Access Rd-Columbia Way S.	4.7
Seattle, WA	I 5 HOV Lanes S/B	E. Roanoke St-I 90	3.8
Seattle, WA	I 90 HOV Lanes	5th Ave S.-WA 900	13.8
35 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	14th/C St SW-VA 2000	24.9
Washington, DC	US 29 Congestion Bypass Shoulder Lns	MD 198-Industrial Parkway	4.4
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

(a) Data as of July 1996, plus updated information where known.

Source: APTA survey

**TABLE 10**  
**Airports With Direct Access to Rail Transit (a)**

CITY	AIRPORT	RAIL TYPE	STATION LOCATION (b)
Atlanta, GA	Atlanta International	HR	In building
Chicago, IL	Midway	HR	In building
Chicago, IL	O'Hare International	HR	In building
Cleveland, OH	Cleveland-Hopkins International	HR	In building
Philadelphia, PA	Philadelphia International	CR	Outside building
Saint Louis, MO	Lambert-St. Louis International	LR	In building
South Bend, IN	Michigania Regional	CR	In building
Washington, DC	Washington National	HR	Outside building

HR = heavy rail, LR = light rail, CR = commuter rail

(a) Excludes airports that require a bus or van ride between the station and building and airports that only have internal non-transit rail circulation systems.

(b) "In building" indicates rail transit station is within or directly connected to the passenger terminal building via a weather-protected passageway. "Outside building" means station is within walking distance, but not connected to the building.

## SECTION III

# Funding, Capital

### *Highlights . . . . .*

- \$7.0 billion was received from all sources in 1995.
- 47% came from the federal government,  
14% from state governments,  
12% from local governments,  
27% was raised by transit agencies from directly-levied taxes,  
advertising, interest income, and other sources.
- Federal capital and operating appropriations total \$4.4 billion  
for 1997.
- Federal capital grant approvals for 1995 totaled \$5.5 billion.
- 36% of capital grants went for bus-related projects,  
32% for rail modernization,  
31% for new start transit projects,  
1% for other planning projects.
- Capital investment needs from 1995-2004 total \$87.6 billion to  
maintain service and \$138.8 billion to expand service.

TABLE 11

File: CAPFUND

**Capital Funding Sources, Millions of Dollars**

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 P	3,316.3	965.3	820.1	1,928.6	2,748.7	7,030.3
1995 % of Total	47.2%	13.7%	11.7%	27.4%	39.1%	100.0%

P = Preliminary

(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.

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TABLE 12

File: FEDAPP

**Federal Transit Appropriations, Fiscal Years 1990-1997, Millions of Dollars**

PROGRAM	1990	1991	1992	1993	1994	1995	1996	1997
MAJOR CAPITAL INVESTMENT PROGRAM:	982.0	1,115.0	1,342.2	1,725.0	1,785.0	1,725.0	1,665.0	1,900.0
New Starts/Extensions	419.2	440.0	536.9	721.8	667.9	646.7	666.0	760.0
Fixed-Guideway Modernization	430.7	455.0	536.9	666.3	760.1	725.0	666.0	760.0
Bus	132.1	220.0	268.4	336.9	357.0	353.3	333.0	380.0
FORMULA PROGRAM:	1,724.8	1,835.0	1,983.7	1,700.0	2,414.9	2,500.0	2,052.9	2,149.2
Urbanized Area Operating Limit	802.3	802.3	802.3	802.3	802.3	710.0	400.0	400.0
Urbanized Area Capital Only	822.0	932.3	1,020.5	758.2	1,424.3	1,573.9	1,491.2	1,578.0
Rural Capital & Operating	65.6	65.4	106.1	90.8	129.6	132.9	110.1	115.1
Elderly & Disabled	34.9	35.0	54.9	48.6	58.7	59.2	51.6	56.0
Other	—	—	—	—	—	24.0	—	—
PLANNING & RESEARCH:	59.9	58.0	109.1	85.0	92.2	92.2	85.5	85.5
Metropolitan Planning	44.9	45.0	43.7	38.3	41.5	41.5	39.5	39.5
Rural Transit Assistance Program	5.0	5.0	5.0	4.3	4.6	4.6	4.5	4.5
All Other Research & Training	10.0	8.0	60.4	42.5	46.1	46.1	41.5	41.5
University Research Centers	5.0	5.0	7.0	6.0	6.0	6.0	6.0	6.0
Interstate Transfer	159.5	160.0	160.0	75.0	45.0	48.0	—	—
Washington DC Metro	84.7	64.1	124.0	170.0	200.0	200.0	200.0	200.0
FTA Administration	31.8	32.6	37.0	38.6	39.5	43.1	42.0	41.5
<b>TOTAL</b>	<b>3,047.7</b>	<b>3,269.7</b>	<b>3,763.0</b>	<b>3,799.6</b>	<b>4,582.6</b>	<b>4,614.3</b>	<b>4,051.4</b>	<b>4,382.2</b>

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

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TABLE 13

**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	1,401.6	1,474.3	657.2	44.2	3,577.3
1995	1,988.7	1,767.1	1,677.7	47.7	5,481.2
1995 % of Total	36.3%	32.2%	30.6%	0.9%	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

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

FEDERAL FISCAL YEAR	DISCRETIONARY (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	962.6	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
1995 % of Total	48.6%	44.9%	6.4%	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**

<b>Flexible Highway Funds Obligated to Transit, Millions of Dollars (a)</b>				
FISCAL YEAR	CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT PROGRAM	SURFACE TRANSPORTATION PROGRAM	INTERSTATE SUBSTITUTE & EARMARKED FEDERAL HIGHWAY ADMINISTRATION FUNDS	TOTAL
1992	121.2	20.8	101.6	243.6
1993	289.0	125.7	13.9	428.6
1994	259.7	114.8	99.3	473.8
1995	494.4	280.2	132.7	907.3
1996	337.9	247.1	101.6	686.6
<b>1996 % of Total</b>	<b>49.2%</b>	<b>36.0%</b>	<b>14.8%</b>	<b>100.0%</b>

(a) Under Provisions of Intermodal Surface Transportation Efficiency Act of 1991.

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

**TABLE 16**

<b>Federal Capital Obligations by State, 1995, Millions of Dollars</b>	
Alabama	6.4
Alaska	4.6
Arizona	56.3
Arkansas	3.9
California	1,078.3
Colorado	27.6
Connecticut	59.2
Delaware	7.8
District of Columbia	77.4
Florida	138.1
Georgia	88.9
Hawaii	17.7
Idaho	2.3
Illinois	351.8
Indiana	28.7
Iowa	26.5
Kansas	13.2
Kentucky	7.4
Louisiana	31.6
Maine	41.4
Maryland	111.0
Massachusetts	197.2
Michigan	59.5
Minnesota	30.9
Mississippi	2.5
Missouri	40.5
Montana	1.0
Nebraska	1.5
Nevada	22.9
New Hampshire	1.8
New Jersey	514.3
New Mexico	4.5
New York	847.6
North Carolina	51.2
North Dakota	1.3
Ohio	130.2
Oklahoma	13.4
Oregon	159.3
Pennsylvania	486.7
Rhode Island	9.7
South Carolina	7.3
South Dakota	2.3
Tennessee	43.8
Texas	314.5
Utah	31.2
Vermont	6.9
Virginia	33.5
Washington	50.1
West Virginia	13.5
Wisconsin	40.4
Wyoming	0.9
Puerto Rico & Territories	14.2
<b>TOTAL</b>	<b>5,314.7</b>

Source: Federal Transit Administration.

TABLE 17

**Capital Investment Needs, 1995-2004, Millions of 1993 Dollars, Not Adjusted for Inflation(a)**

CATEGORY	CURRENT SERVICE	MAINTAIN SERVICE	EXPAND SERVICE
<b>NEW PASSENGER VEHICLES:</b>			
Regular Replacement and Growth	21,419.0	24,831.6	
New Starts and Extensions	1,001.8	5,629.8	
Fixed-Guideway Modernization	3,603.1	4,487.9	
Total New Passenger Vehicles	26,023.9	34,949.3	
<b>FIXED-GUIDEWAY NEW STARTS AND EXTENSIONS:</b>			
Without New Vehicles	11,779.5	42,569.7	
New Vehicle Needs	1,001.8	5,629.8	
Total Including New Vehicles	12,781.3	48,199.5	
<b>TOTAL OTHER NEW FACILITIES AND CAPITAL ITEMS</b>	<b>15,109.3</b>	<b>23,468.2</b>	
<b>PASSENGER VEHICLE REHABILITATION:</b>			
Regular Rehabilitation Projects	910.7	917.0	
Fixed-Guideway Modernization	2,955.1	2,960.7	
Total Passenger Vehicle Rehabilitation	3,865.8	3,877.7	
<b>FIXED-GUIDEWAY MODERNIZATION:</b>			
Without Vehicle Costs	18,609.8	21,587.9	
New Vehicle Needs	3,603.1	4,487.9	
Vehicle Rehabilitation Needs	2,955.1	2,960.7	
Total Fixed-Guideway Modernization	25,168.0	29,036.5	
<b>TOTAL FACILITY AND OTHER CAPITAL ITEM REHABILITATION</b>	<b>12,231.0</b>	<b>12,358.6</b>	
<b>TOTAL LESS ALL DUPLICATION</b>	<b>87,619.4</b>	<b>138,811.5</b>	

(a) For numbers of vehicles to be funded by these funds, see "Vehicles" section.

Source: APTA, *Transit Funding Needs, 1995-2004*, 1994SECTION IV**Expenses, Capital**

File: EXCAP

*Highlights. . . . .*

- \$7.0 billion was spent in 1995.
- 25% was used for rolling stock,  
53% for facilities,  
22% for other capital expenses.
- 26% was used for bus projects,  
24% for commuter rail,  
36% for heavy rail,  
10% for light rail.

## Notes on Capital Costs

File: CAPCOST

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).

File: CAPEXMOD

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 P	1,846.8	1,701.0	72.4	2,555.7	718.5	15.5	120.4	7,030.3
1995 % of Total	26.3%	24.2%	1.0%	36.4%	10.2%	0.2%	1.7%	100.0%

P= Preliminary

TABLE 19

File: CAPEX TYP

**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 P	1,745.9	3,761.9	1,522.5	7,030.3
1995 % of Total	24.8%	53.5%	21.7%	100.0%

P = Preliminary

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TABLE 20

File: CAPEX M&amp;T

**Capital Expense by Mode and Type, 1995, Millions of Dollars**

TYPE	BUS	COMMUTER RAIL	DEMAND RESPONSE	HEAVY RAIL	LIGHT RAIL	TROLLEY BUS	OTHER	TOTAL
Rolling Stock	869.9	429.5	52.7	253.1	90.9	3.0	46.8	1,745.9
Facilities	688.7	1,100.9	5.9	1,283.0	610.3	9.9	63.2	3,761.9
Other	288.2	170.6	13.8	1,019.6	17.3	2.6	10.4	1,522.5
<b>TOTAL</b>	<b>1,846.8</b>	<b>1,701.0</b>	<b>72.4</b>	<b>2,555.7</b>	<b>718.5</b>	<b>15.5</b>	<b>120.4</b>	<b>7,030.3</b>
% of Total	26.3%	24.2%	1.0%	36.4%	10.2%	0.2%	1.7%	100.0%

All data are preliminary

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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.

## Funding, Operating

### *Highlights. . . . .*

- \$17.6 billion was received from all sources in 1995.
- 39% came from passengers,  
22% from local governments,  
22% from state governments,  
4% from the federal government,  
13% is raised by transit agencies from directly-levied taxes,  
advertising, interest income, and other sources.
- Average adult base cash fare was \$1.05.
- Average fare paid per unlinked trip was \$0.87.  
for bus it was \$0.66,  
commuter rail \$3.13,  
demand response \$2.26,  
ferryboat \$1.31,  
heavy rail \$0.99,  
light rail \$0.50,  
trolleybus \$0.45,  
vanpool \$1.53,  
other modes \$1.53.
- Operating funding needs from 1995-2004 total \$209 billion to maintain service and \$231 billion to expand service.

TABLE 21

**Operating Funding Sources, Millions of Dollars**

CALENDAR YEAR	DIRECTLY	GENERATED	FUNDS	GOVERNMENT FUNDS			TOTAL
	PASSENGER FARES (a)	OTHER	TOTAL	LOCAL (c)	STATE	FEDERAL	
1984	4,447.7	780.5	5,228.2	5,399.1 (b)	(b)	995.8	6,394.9
1985	4,574.7	701.8	5,276.5	5,978.5 (b)	(b)	939.6	6,918.1
1986	5,113.1	737.3	5,850.4	4,244.5	2,305.6	941.2	7,491.3
1987	5,114.1	776.6	5,890.7	4,680.6	2,564.6	955.1	8,200.3
1988	5,224.6	840.7	6,065.3	4,893.1	2,677.1	905.1	8,471.3
1989	5,419.9	836.7	6,256.6	4,995.4	2,796.3	936.6	8,728.3
1990	5,890.8	895.0	6,785.8	5,326.8	2,970.6	970.0	9,267.4
1991	6,037.2	766.8	6,804.0	5,373.4	3,199.5	955.9	9,728.8
1992 (d)	6,152.5	645.9	6,798.4	5,268.1	3,879.5	969.1	10,116.7
1993	6,350.9	764.0	7,114.9	5,490.6	3,704.2	966.5	10,161.3
1994	6,756.0	2,270.6	9,026.6	4,171.2	3,854.4	915.6	8,941.2
1995 P	6,850.3	2,361.5	9,211.8	3,871.4	3,812.1	734.9	8,418.4
1995 % of Total	38.9%	13.4%	52.3%	22.0%	21.6%	4.2%	47.8%
							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.

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TABLE 22

**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 P	3,292.1	1,076.4	177.6	2,018.2	126.5	54.0	105.5	6,850.3
% of Total, 1995	50.4%	16.2%	0.7%	29.6%	1.4%	0.8%	1.0%	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.

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**TABLE 23**  
**Passenger Fares Summary**

CALENDAR YEAR	PASSENGER FARES RECEIVED PER UNLINKED TRIP	ADULT BASE	CASH FARE (a)	PER CENT OF SYSTEMS WITH (c)	ZONE OR DISTANCE SURCHARGES
			HIGHEST		
1984	0.503	1.50	0.569	9.5	36.6
1985	0.530	1.50	0.584	8.6	37.0
1986	0.583	2.10	0.617	8.8	30.7
1987	0.585	2.75	0.634	8.4	29.5
1988	0.603	2.75	0.662	7.8	30.2
1989	0.607	2.75	0.670	6.4	27.7
1990	0.669	2.75	0.730	6.5	28.8
1991	0.704	6.00	0.823	5.5	24.2
1992	0.724	6.00	0.860	5.6	26.6
1993	0.773	6.00	0.860	5.6	26.6
1994	0.850	6.00	0.955	6.4	25.2
1995	0.871	7.00	0.992	6.5	23.8
1996	NA	7.00	1.047	7.0	22.9

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, 1995, Dollars**

MODE	FARE PER UNLINKED PASSENGER TRIP
Bus	0.66
Commuter Rail	3.13
Demand Response	2.26
Ferryboat	1.31
Heavy Rail	0.99
Light Rail	0.50
Trolleybus	0.45
Vanpool	1.53
Other (a)	1.57
<b>TOTAL</b>	<b>0.87</b>

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
1977	571.8
1978	685.3
1979	868.5
1980	1,120.7
1981	1,129.5
1982	1,055.5
1983	887.9
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

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

SECTION VI

## Expenses, Operating

File: OFNEED

TABLE 26

**Operating Funding Needs, 1995-2004, Millions of 1993 Dollars, Not Adjusted  
For Inflation (a)**

EXPENSE	MAINTAIN CURRENT SERVICE	EXPAND SERVICE	BY FUNCTION
			Vehicle Operations
Maintenance	91,124.0		100,866.9
General Administration	60,879.0		67,321.8
Purchased Transportation	40,546.0		44,881.2
<b>TOTAL</b>	<b>16,511.0</b>		<b>18,276.4</b>
	<b>209,000.0</b>		<b>231,346.3</b>
		BY OBJECT CLASS	
Salaries, Wages, Fringe Benefits	147,930.2		163,746.9
Materials and Supplies	18,977.2		21,006.2
Purchased Transportation	16,511.0		18,276.4
Services, Utilities, and Insurance	25,581.6		28,316.8
<b>TOTAL</b>	<b>209,000.0</b>		<b>231,346.3</b>

(a) Total amounts estimated from survey data; amounts for specific uses estimated from historical data.  
Source: APTA, *Transit Funding Needs, 1995-2004*, 1994.*Highlights . . . .*

- \$18.1 billion was spent in 1995.
- 47% was for vehicle operations,  
18% for vehicle maintenance,  
10% for non-vehicle maintenance,  
15% for general administration,  
9% for purchased transportation.
- 47% was for salaries and wages,  
26% for fringe benefits,  
5% for services,  
about 75% of the 9% for purchased transportation was labor-related,  
about 85% of all costs were labor-related.
- 9% was for materials and supplies,  
3.5% for utilities,  
3% for casualty and liability costs.
- 58% was for buses,  
19.5% for heavy rail,  
12% for commuter rail,  
6% for demand response,  
2% for light rail.

TABLE 27

## Operating Expense for 1995 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	4,636.7	1,628.6	1,124.1	1,024.3	0.0	8,413.7
Fringe Benefits	2,572.9	826.7	622.8	607.8	0.0	4,630.2
Services	75.5	144.0	105.6	582.5	0.0	907.6
Fuels & Lubricants	384.3	52.2	2.0	0.0	0.0	438.5
Tires & Tubes	74.2	1.5	0.0	0.0	0.0	75.7
Materials & Supplies	23.0	690.7	180.4	235.1	0.0	1,129.2
Utilities	109.0	36.9	316.9	173.0	0.0	635.8
Casualty & Liability	34.4	7.8	12.0	471.5	0.0	525.7
Purchased Transp.	0.0	0.0	0.0	0.0	1,665.5	1,665.5
Other	594.8	-91.3	-495.3	-378.3	0.0	-370.1
Total	8,504.8	3,297.1	1,868.5	2,715.9	1,665.5	18,051.8
PER CENT						
Salaries & Wages	25.69%	9.02%	6.23%	5.67%	0.00%	46.61%
Fringe Benefits	14.25%	4.58%	3.45%	3.37%	0.00%	25.65%
Services	0.42%	0.80%	0.59%	3.23%	0.00%	5.03%
Fuels & Lubricants	2.13%	0.29%	0.01%	0.00%	0.00%	2.43%
Tires & Tubes	0.41%	0.01%	0.00%	0.00%	0.00%	0.42%
Materials & Supplies	0.13%	3.83%	1.00%	1.30%	0.00%	6.26%
Utilities	0.60%	0.20%	1.76%	0.96%	0.00%	3.52%
Casualty & Liability	0.19%	0.04%	0.07%	2.61%	0.00%	2.91%
Purchased Transp.	0.00%	0.00%	0.00%	0.00%	9.23%	9.23%
Other	3.30%	-0.51%	-2.74%	-2.10%	0.00%	-2.05%
Total	47.11%	18.26%	10.35%	15.05%	9.23%	100.00%

TABLE 28

## 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	1,633.2	16,541.4	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	16,781.4	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 P	8,504.8	3,297.1	1,868.5	2,715.9	1,665.5	18,051.8	2,630.1	1,103.0	21,784.9
1995 % of Total	47.1%	18.3%	10.4%	15.0%	9.2%	100.0%	14.6%	6.1%	120.7%

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 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	5,843.1	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	6,897.7	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 P	8,413.7	4,630.2	907.6	1,643.4	635.8	525.7	1,665.5	-370.1	18,051.8
1995 % of Total	46.6%	25.7%	5.0%	9.1%	3.5%	2.9%	9.2%	-2.1%	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.

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TABLE 30

**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 P	10,468.9	2,200.3	1,051.2	3,521.8	379.6	138.9	291.1	18,051.8
1995 % of Total	58.0%	12.2%	5.8%	19.5%	2.1%	0.8%	1.6%	100.0%

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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 comprise 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.

## SECTION VII

## Passengers

*Highlights. . . . .*

- 7.9 billion unlinked trips were taken in 1995,  
63% were by bus,  
26% by heavy rail,  
all other modes totaled only 11%.
- 62% of bus trips were in urbanized areas of 2,000,000 population or more,  
23% in areas between 500,000 and 1,999,999,  
only 15% in areas below 500,000 population.
- Average trip length was longest for vanpools at 34.9 miles,  
commuter rail trips averaged 24.0 miles,  
demand response trips 7.8 miles,  
ferryboat trips 5.6 miles,  
heavy rail trips 5.2 miles,  
bus trips 3.8 miles,  
light rail trips 3.4 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

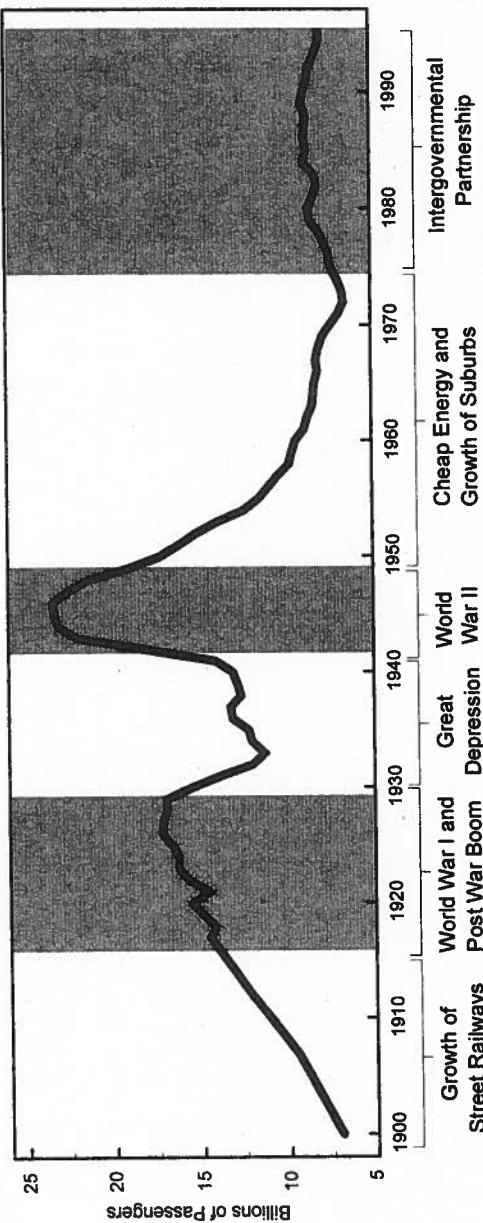
All ridership data reported in this book relate to trips taken—not to people—because that is how data is collected and reported. The heavy use of passes, transfers, joint tickets, and cash by people transferring from one vehicle to another, one mode to another, and from one transit agency to another 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 31  
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.

TABLE 32

## Passenger Trips by Mode, Millions

CALENDAR YEAR	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL	TROLLEY BUS	BUS	DEMAND RESPONSE	OTHER	TOTAL (a)
1907	8,868	675	—	0	—	0	—	9,543
1912	11,109	1,041	—	—	—	0	—	12,150
1917	13,193	1,332	—	—	—	0	—	14,525
1918	12,876	1,385	—	—	—	0	—	14,261
1919	13,430	1,505	—	—	—	0	—	14,935
1920	13,770	1,792	—	—	—	0	—	15,562
1921	12,688	1,909	—	—	404	0	—	14,597
1922	13,413	1,942	—	—	661	0	—	15,759
1923	13,593	2,081	—	—	989	0	—	16,335
1924	13,130	2,207	—	—	—	—	—	16,326
1925	12,924	2,264	—	—	1,484	0	—	16,672
1926	12,895	2,350	—	—	2,009	0	—	17,254
1927	12,469	2,451	—	—	2,301	0	—	17,221
1928	12,044	2,492	—	3	2,470	0	—	17,009
1929	11,804	2,571	—	5	2,623	0	—	17,003
1930	10,530	2,559	—	16	2,481	0	—	15,586
1931	9,191	2,408	—	28	2,315	0	—	13,942
1932	7,662	2,204	—	37	2,138	0	—	12,041
1933	7,086	2,133	—	45	2,077	0	—	11,341
1934	7,404	2,206	—	68	2,376	0	—	12,054
1935	7,286	2,236	—	96	2,625	0	—	12,243

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

(a) Excludes modes with "—" entries.

TABLE 32 (continued)

## Passenger Trips by Mode, Millions

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

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

(a) Excludes modes with "—" entries.

TABLE 32 (continued)

## Passenger Trips by Mode, Millions

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

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

(a) Excludes modes with "—" entries.

TABLE 32 (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 P	4,968	344	79	2,033	251	119	75	7,869
1995 % of Total	63.1%	4.4%	1.0%	25.8%	3.2%	1.5%	1.0%	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.

TABLE 33

**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 P	3,080	1,131	184	214	84	275	4,968
1995 % of Total	62.0%	22.8%	3.7%	4.3%	1.7%	5.5%	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.

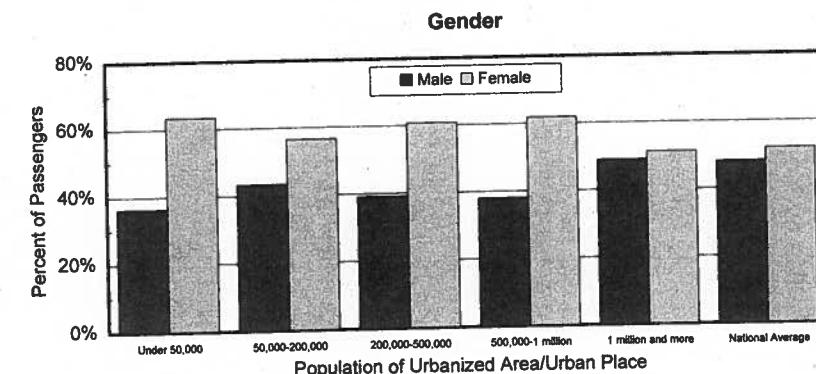
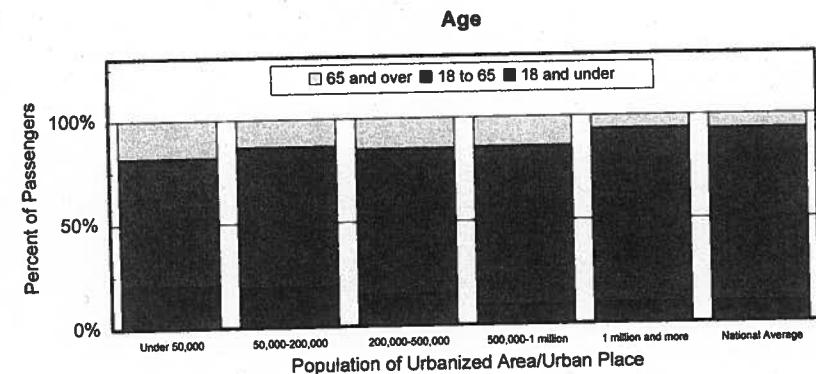
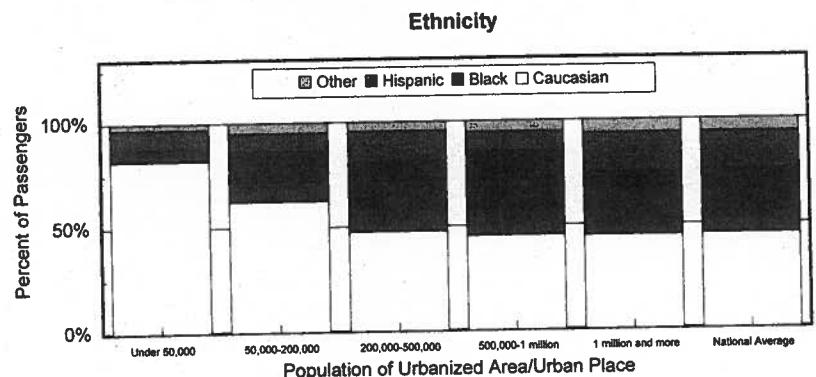
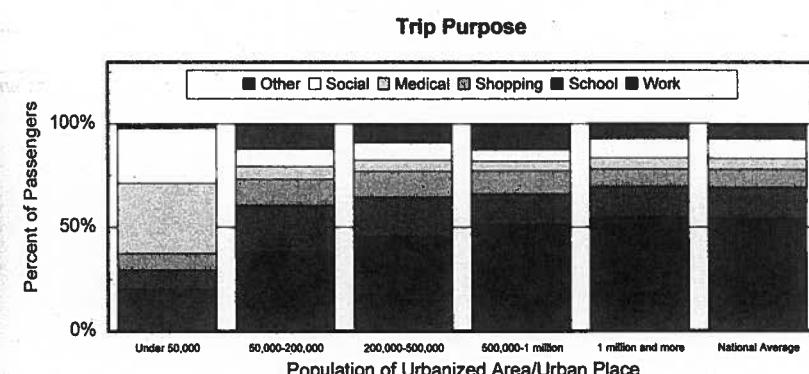
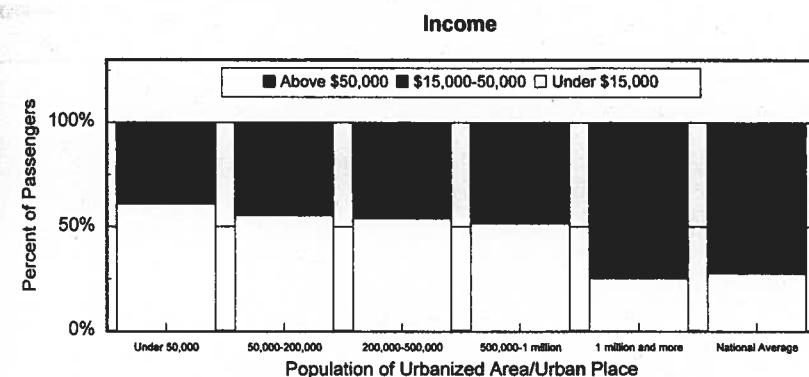
TABLE 34

**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	10,668	833	187	492	39,585
1995 P	18,818	8,247	613	10,559	860	187	531	39,815
1995 % of Total	47.3%	20.7%	1.5%	26.5%	2.2%	0.5%	1.3%	100.0%

P = Preliminary

--- Not available

**TABLE 35****Profiles of Transit Passengers****TABLE 36****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 37

File: PROOPEN

**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 38

**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 39

Title: TRLENGTH

**Average Trip Length by Mode, 1995**

MODE	AVERAGE TRIP LENGTH (MILES)
Bus	3.8
Commuter Rail	24.0
Demand Response	7.8
Ferryboat (b)	5.6
Heavy Rail	5.2
Light Rail	3.4
Trolleybus	1.6
Vanpool	34.9
Other (a)	1.0
<b>TOTAL</b>	<b>5.1</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 40

**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%
<b>TOTAL</b>	<b>100.0%</b>

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

TABLE 41

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 . . . . .**

- 3.5 billion miles and 238 million hours of service were operated.
- Buses operated 62% of vehicle miles, heavy rail 15%, demand response 14% commuter rail 7%.
- Buses operated 69% of vehicle hours, demand response 14%, heavy rail 12%, commuter rail 3%.
- 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 34.9 m.p.h., commuter rail was 33.6 m.p.h., heavy rail 20.7 m.p.h., demand response 14.6 m.p.h., light rail 14.4 m.p.h., bus 13.1 m.p.h., trolleybus 7.8 m.p.h., all others were 6.3 m.p.h.

TABLE 42

**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 P	2,178.1	237.7	494.6	537.3	34.5	13.8	36.0	3,532.0	4,305.3
1995 % of Total	61.7%	6.7%	14.0%	15.2%	1.0%	0.4%	1.0%	100.0%	

-- Data not available

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 43

**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 P	163.6	7.2	33.3	27.6	2.5	1.8	1.6	237.6
1995 % of Total	68.9%	3.0%	14.0%	11.6%	1.1%	0.8%	0.7%	100.0%

P = Preliminary

TABLE 44

Title: SPEED

**Average Vehicle Speed in Revenue Service by Mode, 1995**

MODE	AVERAGE SPEED (MILES PER HOUR)
Bus	13.1
Commuter Rail	33.6
Demand Response	14.6
Ferryboat (b)	6.3
Heavy Rail	20.7
Light Rail	14.4
Trolleybus	7.8
Vanpool	34.9
Other (a)	6.1
<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 45

**Vehicle Revenue Miles and Vehicle Revenue Hours by Mode, 1995**

MODE	VEHICLE REVENUE MILES (MILLIONS)	VEHICLE REVENUE HOURS (MILLIONS)
Bus	1,921.1	146.8
Commuter Rail	217.8	6.5
Demand Response	431.8	29.5
Ferryboat (b)	2.5	0.4
Heavy Rail	521.8	25.2
Light Rail	34.0	2.4
Trolleybus	13.2	1.7
Vanpool	29.0	0.8
Other (a)	1.9	0.3
<b>TOTAL</b>	<b>3,173.1</b>	<b>213.6</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 about 115,000 active vehicles providing transit service in 1995.
- Buses comprised 58.5%, demand response vehicles 25%, heavy rail cars 9%, commuter rail cars 4%, light rail cars and trolleybuses 1% each.
- Average age of buses was 8.8 years, demand response vehicles 3.5 years, commuter rail cars 20.6 years, heavy rail cars 19.9 years, light rail cars 20.9 years.
- Average length of buses was 39.4 feet, demand response vehicles 21.6 feet, commuter rail cars 84.9 feet, heavy rail cars 61.5 feet, light rail cars 68.3 feet.

- 6.4% of buses used alternative power, demand response vehicles 14%, commuter rail cars 53%, heavy and light rail cars and trolleybuses 100%.
- 64% of buses were wheelchair accessible, 91% of demand response vehicles, 67% of commuter rail cars, 94% of heavy rail cars, 54% of light rail cars.
- Over 900 buses and over 200 demand response vehicles used compressed natural gas, nearly 400 more used CNG blends, nearly 1,200 buses were particulate-trap-equipped, over 400 demand response vehicles and about 30 buses used propane, nearly 400 buses used methanol, nearly 400 buses and demand response vehicles used liquefied natural gas and LNG blends.
- About 150 to 350 new rail cars are built each year, 4,800 to 5,500 buses and demand response vehicles, 2,500 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 20% of new buses will have alternative power sources, about two-thirds will be 40 feet in length, the average 40-foot bus costs about \$251,000.
- The new rail car market is split fairly evenly among 7 manufacturers, new rail cars cost from \$1.5 to \$2.5 million apiece, new locomotives range from \$1.2 million for diesel to \$4.8 million for electric.
- 107,000 new vehicles are needed from 1995-2004 to maintain service, 128,000 to expand service, 15,000 will need rehabilitation.

File: VENACT

TABLE 46  
Active Passenger Vehicles by Mode

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 P	67,086	4,565	28,233	10,157	999	885	2,699	114,624
1995 % of Total	58.5%	4.0%	24.6%	8.9%	0.9%	0.8%	2.4%	100.0%

P= Preliminary

**TABLE 47**

File: VEHAGE

**Average Vehicle Age by Mode**

MODE	AVERAGE AGE (YEARS)
Bus	8.8
Commuter Rail	20.6
Commuter Rail Locomotive	18.3
Demand Response	3.5
Ferryboat	24.2
Heavy Rail	19.9
Light Rail	20.9
Other Rail	58.5
Trolleybus	14.1
Vanpool	2.9

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

**TABLE 48**

File: VEHLEN

**Average Vehicle Length by Mode**

MODE	AVERAGE LENGTH (FEET)
Bus	39.4
Commuter Rail	84.9
Commuter Rail Locomotive	58.4
Demand Response	21.6
Ferryboat	215.5
Heavy Rail	61.5
Light Rail	68.3
Other Rail	33.7
Trolleybus	46.6
Vanpool	16.9

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

**TABLE 49**

File: VEHALPOW

**Alternative Power Vehicles by Mode**

MODE	PER CENT USING ALTERNATIVE POWER
Bus	6.4%
Commuter Rail	52.8%
Commuter Rail Locomotive	36.1%
Demand Response	14.0%
Ferryboat	2.0%
Heavy Rail	99.9%
Light Rail	100.0%
Other Rail	37.3%
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 50**

Title: VEHACC%

**Accessible Vehicles by Mode**

MODE	ACCESSIBLE VEHICLES	VEHICLES REPORTED	PER CENT ACCESSIBLE (a)
Bus	32,273	50,344	64.1%
Commuter Rail	3,142	4,687	67.0%
Demand Response	6,301	6,950	90.7%
Ferryboat	0	50	0.0%
Heavy Rail	9,779	10,433	93.7%
Light Rail	693	1,275	54.4%
Other Rail	35	83	42.2%
Trolleybus	526	1,028	51.2%
Vanpool	37	1,960	1.9%

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

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

TABLE 51

## Passenger Vehicle Power Sources (a)

POWER SOURCE	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL CAR	COMMUTER RAIL LOCO-MOTIVE	TROLLEY BUS	BUS	DEMAND RESPONSE	OTHER	TOTAL
Compressed Natural Gas	0	0	0	0	0	938	236	1	1,175
CNG Blends	0	0	0	0	0	136	247	0	383
Diesel	0	0	23	325	0	46,862	3,384	213	50,807
Diesel with Trap	0	0	0	0	0	1,188	0	0	1,188
Electric Battery	0	0	0	0	0	39	0	0	39
Electric Third Rail or Catenary	1,275	10,430	2,474	38	792	0	0	31	15,040
Electric & Diesel	0	0	0	154	236	0	0	13	403
Gasoline	0	0	0	0	0	234	2,591	1,782	4,607
Liquefied Natural Gas	0	0	0	0	0	64	42	0	106
LNG Blends	0	0	0	0	0	283	0	0	283
Methanol	0	0	0	0	0	396	0	0	396
Propane	0	0	0	0	0	29	431	0	460
Other (b)	0	0	0	0	0	175	20	0	195
Unpowered	0	3	2,190	15	0	0	0	53	2,261
TOTAL	1,275	10,433	4,687	532	1,028	50,344	6,951	2,093	77,343

(a) Data as of January 1, 1996 from APTA survey of about 300 transit agencies. Data are not national totals.

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

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TABLE 52

## New Passenger Vehicles Delivered by Mode

CALENDAR YEAR	(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 P	38	72	38	2,462	704	2,372	5,538	3	5,689
1995 % of Total	0.7%	1.3%	0.7%	43.3%	12.4%	41.7%	97.3%	0.1%	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.

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TABLE 53

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 P	2,003	494	322	2,606	113	5,538
1995 % of Total	36.2%	8.9%	5.8%	47.1%	2.0%	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

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TABLE 54

File: BUSMKT

**New Bus Market (a)**

CATEGORY	BUILT	IN 1995	ON ORDER	JAN-JUN 1996	PLANNED	ORDERS (b)
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	3,168	100.0%	6,047	100.0%	4,708	100.0%
With air conditioning	3,090	97.5%	5,473	90.5%	4,229	89.8%
Wheelchair accessibility						
Via lift	2,934	92.6%	5,275	87.2%	3,410	72.4%
Via ramp (low floor)	229	7.2%	772	12.8%	1,296	27.5%
Via stations	0	0.0%	0	0.0%	0	0.0%
Type						
Articulated	113	3.6%	228	3.8%	436	9.3%
Intercity	6	0.2%	9	0.1%	52	1.1%
Suburban	0	0.0%	55	0.9%	259	5.5%
Transit	3,004	94.8%	5,727	94.7%	3,940	83.7%
Trolley Replica	45	1.4%	28	0.5%	21	0.4%
Length						
55-60 feet	113	3.6%	228	3.8%	436	9.3%
45 feet	0	0.0%	30	0.5%	289	6.1%
38-41 feet	2,345	74.0%	4,721	78.1%	3,051	64.8%
33-37 feet	220	6.9%	570	9.4%	174	3.7%
28-32 feet	272	8.6%	408	6.7%	645	13.7%
20-27 feet	218	6.9%	90	1.5%	113	2.4%

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

(b) Data for 1996 and 1997 plus a few orders extending into future years. DATA ARE TENTATIVE; SOME PLANNED ORDERS MAY NOT OCCUR.

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TABLE 54 (continued)

## New Bus Market (a)

CATEGORY	BUILT	IN 1995	ON ORDER	JAN-JUN 1996	PLANNED	ORDERS (b)
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	3,168	100.0%	6,047	100.0%	4,708	100.0%
Manufacturer						
American Ikarus	81	2.6%	533	8.8%	NA	NA
Champion Motor Coach	133	4.2%	5	0.1%	NA	NA
Chance Coach	62	2.0%	34	0.6%	NA	NA
ElDorado-National	87	2.7%	120	2.0%	NA	NA
Electric Transit	3	0.1%	60	1.0%	NA	NA
Flexible	652	20.6%	299	4.9%	NA	NA
Gillig	570	18.0%	1,450	24.0%	NA	NA
Neoplan	115	3.6%	619	10.2%	NA	NA
New Flyer	334	10.5%	1,019	16.9%	NA	NA
Nova BUS	724	22.9%	860	14.2%	NA	NA
Orion	273	8.6%	973	16.1%	NA	NA
All others	134	4.2%	75	1.2%	NA	NA
Power Source						
Compressed natural gas	354	11.2%	1,162	19.2%	424	9.0%
Diesel (inc particulate trap)	2,756	87.0%	4,749	78.5%	2,749	58.4%
Electric catenary	3	0.1%	60	1.0%	250	5.3%
Gasoline	47	1.5%	31	0.5%	0	0.0%
Liquefied natural gas	3	0.1%	31	0.5%	267	5.7%
All others	5	0.2%	14	0.2%	56	1.2%
Undecided	NA	NA	NA	NA	962	20.4%

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

(b) Data for 1996 and 1997 plus a few orders extending into future years. DATA ARE TENTATIVE; SOME PLANNED ORDERS MAY NOT OCCUR.

TABLE 55

File: BUSCOST

## Average New Bus and Van Costs, 1995/1996, Thousands of Dollars (a)

TYPE OF VEHICLE	BUS	TROLLEYBUS	DEMAND RESPONSE	VANPOOL
Number of orders	205	0	98	9
Small bus	128	NA	56	NA
Midsize bus	198	NA	87	NA
Standard bus	251	NA	NA	NA
Suburban bus	333	NA	NA	NA
Intercity bus	288	NA	NA	NA
Articulated bus	371	NA	NA	NA
Van	47	NA	36	24
Trolley replica bus	243	NA	NA	NA
Trolleybus	NA	NA	NA	NA

(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 56

## New Rail Car Market (a)

CATEGORY	BUILT	IN 1995	ON ORDER	JAN-JUN 1996	PLANNED	ORDERS (b)
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	166	100.0%	1,136	100.0%	833	100.0%
With air conditioning	166	100.0%	1,136	100.0%	833	100.0%
Wheelchair accessibility						
Via on-board lift	45	27.1%	156	13.7%	63	7.6%
Via on-board ramp (low floor)	1	0.6%	130	11.4%	0	0.0%
Via stations	120	72.3%	850	74.8%	750	90.0%
Type						
Single-deck articulated	44	26.5%	323	28.4%	73	8.8%
Single-deck non-articulated	104	62.7%	446	39.3%	740	88.8%
Double-deck	18	10.8%	287	25.3%	20	2.4%
Triple-deck	0	0.0%	80	7.0%	0	0.0%
Length						
86-95 feet	16	9.6%	146	12.9%	50	6.0%
80-85 feet	58	34.9%	502	44.2%	20	2.4%
70-79 feet	67	40.4%	259	22.8%	23	2.8%
60-69 feet	25	15.1%	0	0.0%	0	0.0%
48-59 feet	0	0.0%	229	20.2%	740	88.8%

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

(b) Data for 1996 and 1997 plus a few orders extending into future years. DATA ARE TENTATIVE; SOME PLANNED ORDERS MAY NOT OCCUR.

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TABLE 56 (continued)

## New Rail Car Market (a)

CATEGORY	BUILT	IN 1995	ON ORDER	JAN-JUN 1996	PLANNED	ORDERS (b)
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	166	100.0%	1,136	100.0%	833	100.0%
Manufacturer						
ABB Daimler-Benz	not in	business	238	21.0%	NA	NA
ABB Traction	3	1.8%	out of	business	NA	NA
American Passenger Rail	7	4.2%	169	14.9%	NA	NA
Bombardier	22	13.3%	169	14.9%	NA	NA
Breda	0	0.0%	226	19.9%	NA	NA
Kawasaki	0	0.0%	181	15.9%	NA	NA
Kinki Sharyo	10	6.0%	50	4.4%	NA	NA
Morrison-Knudsen	90	54.2%	out of	business	NA	NA
Nippon Sharyo	6	3.6%	0	0.0%	NA	NA
Siemens	28	16.9%	103	9.1%	NA	NA
Power Source						
Diesel	0	0.0%	0	0.0%	0	0.0%
Electric	148	89.2%	639	56.3%	665	79.8%
Unpowered	18	10.8%	497	43.8%	168	20.2%

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

(b) Data for 1996 and 1997 plus a few orders extending into future years. DATA ARE TENTATIVE; SOME PLANNED ORDERS MAY NOT OCCUR.

TABLE 57

File: RAILCOST

**Average New Rail Vehicle Costs, 1995/1996, Thousands of Dollars (a)**

TYPE OF VEHICLE	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL CAR	COMMUTER RAIL LOCOMOTIVE	OTHER
Number of orders	2	2	16	7	0
1-level cab	NA	2,288	1,360	NA	NA
1-level non-cab	NA	NA	1,177	NA	NA
2-level cab	NA	NA	1,620	NA	NA
2-level non-cab	NA	NA	1,527	NA	NA
3-level cab	NA	NA	1,618	NA	NA
3-level non-cab	NA	NA	1,472	NA	NA
Diesel	NA	NA	NA	1,195	NA
Diesel-electric	NA	NA	NA	2,637	NA
Electric	NA	NA	NA	4,806	NA
Articulated cab	1,442	NA	NA	0	NA

(a) Data from APTA survey of 90% of 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.

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TABLE 58

File: VEHNEED

**New Passenger Vehicles Needed**

CATEGORY	MAINTAIN	CURRENT	SERVICE	EXPAND	SERVICE	
	1995 - 1999	2000 - 2004	10-YEAR TOTAL	1995 - 1999	2000 - 2004	10-YEAR TOTAL
Buses 35 Feet or Longer	27,400	23,400	50,800	33,300	27,200	60,500
Buses Below 35 Feet	3,000	3,000	6,000	3,800	3,500	7,300
Vans	23,000	20,900	43,900	26,800	24,600	51,400
Trolleybuses	200	50	250	200	70	270
Heavy Rail Cars	1,570	1,460	3,030	1,760	2,420	4,180
Light Rail Cars	350	0	350	1,050	580	1,630
Self-Propelled Commuter Rail Cars	790	830	1,620	930	960	1,890
Locomotive-Hauled Commuter Rail Cars	520	240	760	690	320	1,010
Other Passenger Vehicles	70	40	110	110	60	170
<b>TOTAL</b>	<b>56,900</b>	<b>49,920</b>	<b>106,820</b>	<b>68,640</b>	<b>59,710</b>	<b>128,350</b>

Source: APTA, *Transit Funding Needs, 1995-2004*, 1994.

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**Passenger Vehicles in Need of Rehabilitation**

CATEGORY	MAINTAIN 1995 - 1999	CURRENT 2000 - 2004	SERVICE 10-YEAR TOTAL	1995 - 1999	1999	EXPAND 2000 - 2004	SERVICE 10-YEAR TOTAL
				1995 - 1999	1999		
Buses 35 Feet or Longer	5,500	3,500	9,000	5,600	3,500	9,100	
Buses Below 35 Feet	100	100	200	100	100	200	
Vans	100	100	200	100	100	200	
Trolleybuses	200	0	200	200	0	200	
Heavy Rail Cars	1,400	1,500	2,900	1,400	1,500	2,900	
Light Rail Cars	460	370	830	460	370	830	
Self-Propelled Commuter Rail Cars	420	0	420	420	10	430	
Locomotive-Hauled Commuter Rail Cars	640	150	790	640	150	790	
Other Passenger Vehicles	200	70	270	200	70	270	
<b>TOTAL</b>	<b>9,020</b>	<b>5,790</b>	<b>14,810</b>	<b>9,120</b>	<b>5,800</b>	<b>14,920</b>	

Source: APTA, *Transit Funding Needs, 1995-2004*, 1994.SECTION X**Employees***Highlights.....*

- There were nearly 298,000 operating employees, plus over 10,000 capital employees, in 1995.
- 50% were vehicle operators (including conductors), 13% other vehicle operations employees, 17% vehicle maintenance employees, 9% non-vehicle maintenance employees, 10% general administration employees.
- Bus employees were 60%, heavy rail 15%, demand response 14%, commuter rail 7%.
- Average compensation per employee (salaries and fringe benefits) was over \$42,000.

TABLE 60

## 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 P	149,417	39,718	51,195	27,157	30,099	297,586	10,516	308,102
1995 % of Total	50.2%	13.3%	17.2%	9.1%	10.1%	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."

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TABLE 61

## 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 P	178,473	21,840	41,035	45,658	4,956	1,871	3,753	297,586
1995 % of Total	60.0%	7.3%	13.8%	15.3%	1.7%	0.6%	1.3%	100.0%

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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.

<b>Employee Compensation, Millions of Dollars</b>				
CALENDAR YEAR	NUMBER OF EMPLOYEES (a)(b)	SALARIES AND WAGES	FRINGE BENEFITS	COMPENSATION
1984	263,197	5,487.8	2,716.7	8,204.5
1985	270,020	5,843.1	2,868.3	8,711.4
1986	277,854	6,119.2	3,125.9	9,245.1
1987	276,610	6,324.1	3,266.9	9,591.0
1988	275,583	6,675.0	3,528.9	10,203.9
1989	272,487	6,897.7	3,737.3	10,635.0
1990	272,839	7,226.3	3,986.0	11,212.3
1991	276,145	7,394.5	3,998.4	11,392.9
1992	278,995	7,670.5	4,318.6	11,989.1
<b>1993</b>	<b>299,184</b>	<b>7,932.1</b>	<b>4,400.3</b>	<b>12,332.4</b>
1994	304,294	8,223.8	4,451.7	12,675.5
1995 P	308,102	8,413.7	4,630.2	13,043.9

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

File: ENERGY

## Energy and Environment

*Highlights.....*

- About 750 million gallons of fossil fuels and 5.1 billion kilowatt-hours of electricity were used to move transit vehicles in 1995.
- 91% of all fossil fuels was diesel,  
84% of all diesel was used by buses,  
9% by commuter rail,  
4% by demand response,  
3% by ferryboats.
- 66% of the non-diesel fuel used was gasoline,  
16% methanol,  
9% compressed natural gas.
- 67% of the electric power used was by heavy rail,  
25% by commuter rail,  
6% 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		
102	1984	505,049	58,320	15,371 (c)	21,624	(c)	600,364
	1985	518,137	55,372	14,482 (c)	20,747	(c)	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	678,226
	1995 P	570,049	62,553	28,341	20,263	167	681,373
	1995 % of Total	83.7%	9.2%	4.2%	3.0%	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 P	6,013	42,917	2,110	10,745	2,016	1,254	65,055
1995 % of Total	9.2%	66.0%	3.2%	16.5%	3.1%	1.9%	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	173	70	10	4,489
1987	1,155	3,219	191	70	21	4,656
1988	1,195	3,256	243	68	23	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 P	1,253	3,402	287	101	21	5,064
1995 % of Total	24.7%	67.2%	5.7%	2.0%	0.4%	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.

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!**

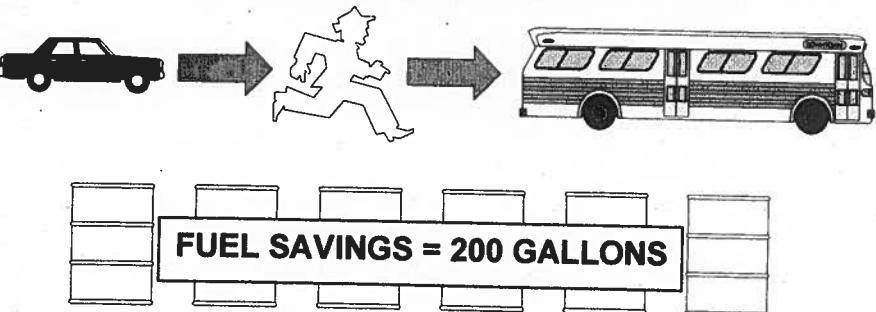
Source: APTA, *Public Transit - The Vehicle For Conserving Energy*, 1991.

TABLE 67

**Non-military Transportation Energy Use by Mode, 1994, Trillions of BTUs**

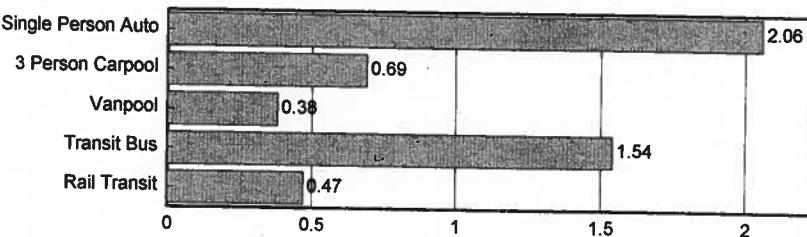
	FUEL CONSUMPTION	PER CENT
Automobiles	9,238.6	39.1%
Transit Buses	90.1	0.4%
Other Buses	106.1	0.5%
Trucks (a)	8,454.4	35.8%
Motorcycles	25.6	0.1%
<b>TOTAL HIGHWAY</b>	<b>17,914.8</b>	<b>75.9%</b>
Off-highway	716.4	3.0%
Air	2,056.0	8.7%
Water	1,413.8	6.0%
Pipeline	955.2	4.0%
Transit Rail	44.0	0.2%
Commuter Rail	23.1	0.1%
Intercity Rail	13.8	0.1%
Freight Rail (b)	465.4	2.0%
<b>TOTAL</b>	<b>23,602.5</b>	<b>100.0%</b>

(a) Includes minivans and sport utility vehicles.

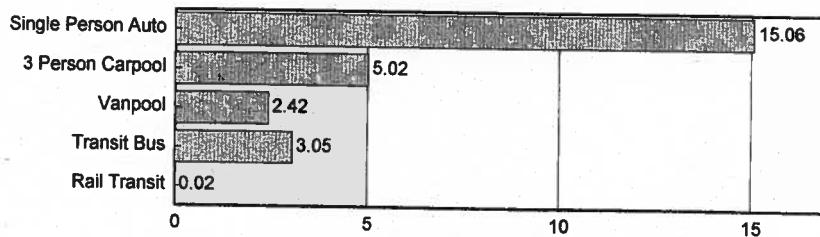
(b) Includes Class I railroads only.

Source: U.S. Department of Energy, *Transportation Energy Data Book: Edition 16, Table 2.10.*

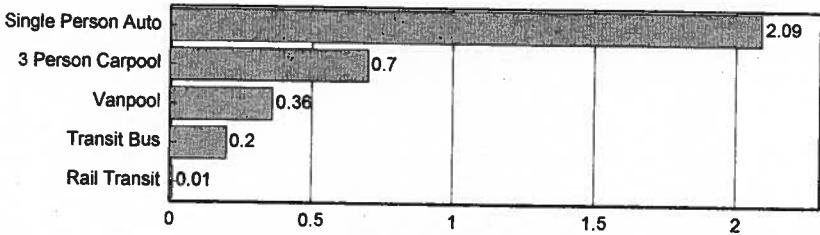
TABLE 68

**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: 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 70

**Bus Summary Data, Fiscal Year 1995**

	2,250
Agencies, Number of	
Fares Collected, Passenger	\$3,292,130,000
Fare per Unlinked Trip, Average	\$0.66
Expense, Operating Total	\$10,468,859,000
Salaries and Wages	\$4,926,004,000
Fringe Benefits	\$2,608,765,000
Services	\$515,271,000
Fuel and Lubricants	\$369,108,000
Materials and Supplies, Other	\$717,955,000
Utilities	\$133,651,000
Casualty and Liability	\$341,269,000
Purchased Transportation	\$852,728,000
Other	\$4,108,000
Vehicle Operations	\$5,491,073,000
Vehicle Maintenance	\$2,026,908,000
Non-vehicle Maintenance	\$428,288,000
General Administration	\$1,669,862,000
Expense, Capital Total	\$1,846,820,000
Rolling Stock	\$869,854,000
Facilities	\$688,737,000
Other	\$288,229,000
Trips, Unlinked Passenger, Average Weekday	16,692,000
Trips, Unlinked Passenger, Annual	4,968,590,000
Miles, Passenger	18,817,411,000
Trip Length, Average (miles)	3.8
Miles, Vehicle Total	2,178,118,000
Miles, Vehicle Revenue	1,921,101,000
Hours, Vehicle Total	163,630,000
Hours, Vehicle Revenue	146,820,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	13.1
Vehicles, Total	69,808
Active	67,086
Age, Average (years)	8.8
Air-conditioned	87.6%
Fareboxes, registering	89.4%
Radios, 2-way	96.7%
Lifts, Wheelchair	62.9%
Ramps, Wheelchair	1.2%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	93.6%
Power Source, Alternative	6.4%
Rehabilitated	13.8%
Employees, Operating	178,473
Vehicle Operations	121,481
Vehicle Maintenance	31,822
Non-vehicle Maintenance	6,022
General Administration	19,148
Employees, Capital	2,540
Diesel Fuel Consumed (gallons)	570,049,000
Other Fuel Consumed (gallons)	21,886,000
Electricity Consumed (kwh)	499,000

TABLE 71

**35 Largest Bus Transit Agencies, Fiscal Year 1995,  
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	New Jersey Transit Corporation	New York, NY
5	Southeastern Pennsylvania Transportation Authority	Philadelphia, PA
6	Washington Metropolitan Area Transportation Auth	Washington, DC
7	Massachusetts Bay Transportation Authority	Boston, MA
8	San Francisco Municipal Railway	San Francisco, CA
9	Mass Transit Administration, Maryland Dept of Trp	Baltimore, MD
10	Metropolitan Transit Authority of Harris County	Houston, TX
11	New York City Department of Transportation	New York, NY
12	Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA
13	City and County of Honolulu Dept of Transp Services	Honolulu, HI
14	Port Authority of Allegheny County	Pittsburgh, PA
15	Regional Transit Authority of Orleans and Jefferson	New Orleans, LA
16	Regional Transportation District	Denver, CO
17	Metro-Dade Transit Agency	Miami, FL
18	Alameda-Contra Costa Transit District	San Francisco, CA
19	Metropolitan Council Transit Operations	Minneapolis, MN
20	King County Department of Transportation	Seattle, WA
21	City of Detroit Department of Transportation	Detroit, MI
22	Milwaukee County Department of Transportation	Milwaukee, WI
23	Tri-County Metropolitan Transp District of Oregon	Portland, OR
24	Dallas Area Rapid Transit	Dallas, TX
25	VIA Metropolitan Transit	San Antonio, TX
26	Greater Cleveland Regional Transit Authority	Cleveland, OH
27	Orange County Transportation Authority	Los Angeles, CA
28	Santa Clara Valley Transportation Authority	San Jose, CA
29	Bi-State Development Agency	Saint Louis, MO
30	San Diego Metropolitan Transit Development Board ( includes San Diego Transit Corporation)	San Diego, CA
31	City of Phoenix Public Transit Department	Phoenix, AZ
32	Connecticut Transit	Hartford, CT
33	Westchester County Transit System	New York, NY
34	Regional Transportation Commiss of Clark County	Las Vegas, NV
35	Utah Transit Authority	Salt Lake City, UT

TABLE 72

File: CRSUM

**Commuter Rail Summary Data, Fiscal Year 1995**

Agencies, Number of	16
Fares Collected, Passenger	\$1,076,393,000
Fare per Unlinked Trip, Average	\$3.13
Expense, Operating Total	\$2,200,315,000
Salaries and Wages	\$915,605,000
Fringe Benefits	\$628,732,000
Services	\$162,984,000
Fuel and Lubricants	\$34,828,000
Materials and Supplies, Other	\$154,416,000
Utilities	\$136,858,000
Casualty and Liability	\$74,506,000
Purchased Transportation	\$128,089,000
Other	(\$35,703,000)
Vehicle Operations	\$846,442,000
Vehicle Maintenance	\$490,047,000
Non-vehicle Maintenance	\$391,630,000
General Administration	\$344,107,000
Expense, Capital Total	\$1,701,004,000
Rolling Stock	\$429,493,000
Facilities	\$1,100,872,000
Other	\$170,639,000
Trips, Unlinked Passenger, Average Weekday	1,217,000
Trips, Unlinked Passenger, Annual	343,667,000
Miles, Passenger	8,247,339,000
Trip Length, Average (miles)	24.0
Miles, Vehicle Total	237,677,000
Miles, Vehicle Revenue	217,818,000
Hours, Vehicle Total	7,158,000
Hours, Vehicle Revenue	6,486,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	33.6
Vehicles, Total (Passenger Cars Only)	4,706
Active	4,565
Age, Average (years)	20.6
Air-conditioned	100.0%
Fareboxes, registering	0.0%
Radios, 2-way	64.2%
Lifts, Wheelchair	1.3%
Ramps, Wheelchair	6.7%
Accessible Only via Stations	59.0%
Power Source, Diesel or Gasoline	47.2%
Power Source, Alternative	52.8%
Rehabilitated	55.6%
Employees, Operating	21,840
Vehicle Operations	8,338
Vehicle Maintenance	6,170
Non-vehicle Maintenance	4,837
General Administration	2,495
Employees, Capital	2,347
Diesel Fuel Consumed (gallons)	62,553,000
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	1,253,112,000

File: CRAGENCY

**Commuter Rail Transit Agencies and Stations (a)**

CITY	TRANSIT AGENCY	NUMBER OF STATIONS	NUMBER OF ACCESSIBLE STATIONS
Baltimore, MD	Maryland Dept of Transp	41	13
Boston, MA	Massachusetts Bay Transportation Authority	102	50
Chicago, IL	Regional Transportation Authority (Northeast Illinois Regional Commuter Railroad Corporation)	321	59
Dallas, TX	Northern Indiana Commuter Transportation District	18	7
Los Angeles, CA	Dallas Area Rapid Transit Authority	3	3
Miami, FL	Southern California Regional Rail Authority	44	44
New Haven, CT	Tri-County Commuter Rail Authority	15	15
New York, NY	Connecticut Department of Transportation	7	7
New York, NY	Metropolitan Transportation Auth Long Island Rail Road	134	15
New York, NY	Metropolitan Transportation Auth Metro-North Railroad	106	1
Philadelphia, PA	New Jersey Transit Corporation	158	22
Philadelphia, PA	Pennsylvania Department of Transportation	14	4
San Diego, CA	Southeastern Pennsylvania Transportation Authority	181	25
San Francisco, CA	North San Diego County Transit District	8	8
Syracuse, NY	Peninsula Corridor Joint Powers Board	34	14
Washington, DC	ON TRACK	3	3
	Virginia Railway Express	18	18
<b>TOTAL</b>		<b>1,207</b>	<b>308</b>

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

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

TABLE 74

**Demand Response Summary Data, Fiscal Year 1995**

Agencies, Number of	5,214
Fares Collected, Passenger	\$177,663,000
Fare per Unlinked Trip, Average	\$2.26
Expense, Operating Total	\$1,051,237,000
Salaries and Wages	\$206,295,000
Fringe Benefits	\$86,662,000
Services	\$31,770,000
Fuel and Lubricants	\$17,059,000
Materials and Supplies, Other	\$21,548,000
Utilities	\$4,996,000
Casualty and Liability	\$16,903,000
Purchased Transportation	\$651,422,000
Other	\$14,582,000
Vehicle Operations	\$247,230,000
Vehicle Maintenance	\$53,243,000
Non-vehicle Maintenance	\$10,611,000
General Administration	\$88,731,000
Expense, Capital Total	\$72,406,000
Rolling Stock	\$52,675,000
Facilities	\$5,884,000
Other	\$13,847,000
Trips, Unlinked Passenger, Average Weekday	284,000
Trips, Unlinked Passenger, Annual	78,647,000
Miles, Passenger	612,828,000
Trip Length, Average (miles)	7.8
Miles, Vehicle Total	494,615,000
Miles, Vehicle Revenue	431,827,000
Hours, Vehicle Total	33,318,000
Hours, Vehicle Revenue	29,526,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	14.6
Vehicles, Total	29,657
Active	28,233
Age, Average (years)	3.5
Air-conditioned	97.9%
Fareboxes, registering	10.7%
Radios, 2-way	94.6%
Lifts, Wheelchair	83.4%
Ramps, Wheelchair	7.3%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	86.0%
Power Source, Alternative	14.0%
Rehabilitated	0.5%
Employees, Operating	41,035
Vehicle Operations	33,948
Vehicle Maintenance	3,240
Non-vehicle Maintenance	401
General Administration	3,446
Employees, Capital	14
Diesel Fuel Consumed (gallons)	28,341,000
Other Fuel Consumed (gallons)	41,031,000
Electricity Consumed (kwh)	0

File: DRSUM

File: FBSUM

TABLE 75

**Ferryboat Summary Data, Fiscal Year 1995**

Agencies, Number of	25
Fares Collected, Passenger	\$60,879,000
Fare per Unlinked Trip, Average	\$1.31
Expense, Operating Total	\$210,219,000
Salaries and Wages	\$95,504,000
Fringe Benefits	\$29,468,000
Services	\$9,924,000
Fuel and Lubricants	\$13,259,000
Materials and Supplies, Other	\$21,292,000
Utilities	\$2,624,000
Casualty and Liability	\$3,388,000
Purchased Transportation	\$30,611,000
Other	\$4,149,000
Vehicle Operations	\$127,806,000
Vehicle Maintenance	\$24,269,000
Non-vehicle Maintenance	\$11,688,000
General Administration	\$15,845,000
Expense, Capital Total	\$75,513,000
Rolling Stock	\$39,587,000
Facilities	\$30,740,000
Other	\$5,186,000
Trips, Unlinked Passenger, Average Weekday	146,000
Trips, Unlinked Passenger, Annual	46,556,000
Miles, Passenger	260,472,000
Trip Length, Average (miles)	5.6
Miles, Vehicle Total	2,512,000
Miles, Vehicle Revenue	2,488,000
Hours, Vehicle Total	397,000
Hours, Vehicle Revenue	394,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	6.3
Vehicles, Total	112
Active	110
Age, Average (years)	24.2
Air-conditioned	0.0%
Fareboxes, registering	0.0%
Radios, 2-way	0.0%
Lifts, Wheelchair	0.0%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	98.0%
Power Source, Alternative	2.0%
Rehabilitated	0.0%
Employees, Operating	2,697
Vehicle Operations	2,075
Vehicle Maintenance	252
Non-vehicle Maintenance	172
General Administration	198
Employees, Capital	132
Diesel Fuel Consumed (gallons)	20,263,000
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	0

TABLE 76

**Ferryboat Transit Agencies (a)**

URBANIZED AREA	TRANSIT AGENCY
Boston, MA	Massachusetts Bay Transportation Authority
Bremerton, WA	Kitsap Transit
Cincinnati, OH	Anderson Ferry Boat
Corpus Christi, TX	Corpus Christi Regional Transportation Authority
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 77

**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 78

**Trolleybus Summary Data, Fiscal Year 1995**

Agencies, Number of	
Fares Collected, Passenger	5
Fare per Unlinked Trip, Average	\$53,978,000
Expense, Operating Total	\$0.45
Salaries and Wages	\$138,895,000
Fringe Benefits	\$70,545,000
Services	\$39,746,000
Fuel and Lubricants	\$7,669,000
Materials and Supplies, Other	\$59,000
Utilities	\$9,015,000
Casualty and Liability	\$4,668,000
Purchased Transportation	\$6,144,000
Other	\$0
Vehicle Operations	\$1,049,000
Vehicle Maintenance	\$74,792,000
Non-vehicle Maintenance	\$24,988,000
General Administration	\$13,694,000
Expense, Capital Total	\$25,421,000
Rolling Stock	\$15,484,000
Facilities	\$2,986,000
Other	\$9,875,000
Trips, Unlinked Passenger, Average Weekday	\$2,623,000
Trips, Unlinked Passenger, Annual	.380,900
Miles, Passenger	118,823,000
Trip Length, Average (miles)	1.6
Miles, Vehicle Total	13,794,000
Miles, Vehicle Revenue	13,196,000
Hours, Vehicle Total	1,796,000
Hours, Vehicle Revenue	1,693,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	7.8
Vehicles, Total	1,028
Active	885
Age, Average (years)	14.1
Air-conditioned	17.2%
Fareboxes, registering	92.6%
Radios, 2-way	94.3%
Lifts, Wheelchair	51.2%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	1.1%
Employees, Operating	1,871
Vehicle Operations	1,246
Vehicle Maintenance	316
Non-vehicle Maintenance	180
General Administration	129
Employees, Capital	62
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	100,397,000

TABLE 79

File: HRSUM

**Heavy Rail Summary Data, Fiscal Year 1995**

Agencies, Number of	14
Fares Collected, Passenger	\$2,018,181,000
Fare per Unlinked Trip, Average	\$0.99
Expense, Operating Total	\$3,521,845,000
Salaries and Wages	\$1,989,461,000
Fringe Benefits	\$1,123,231,000
Services	\$139,566,000
Fuel and Lubricants	\$1,971,000
Materials and Supplies, Other	\$242,437,000
Utilities	\$321,186,000
Casualty and Liability	\$62,702,000
Purchased Transportation	\$0
Other	(\$358,709,000)
Vehicle Operations	\$1,532,270,000
Vehicle Maintenance	\$578,739,000
Non-vehicle Maintenance	\$917,010,000
General Administration	\$493,826,000
Expense, Capital Total	\$2,555,733,000
Rolling Stock	\$253,085,000
Facilities	\$1,283,003,000
Other	\$1,019,645,000
Trips, Unlinked Passenger, Average Weekday	6,795,000
Trips, Unlinked Passenger, Annual	2,033,587,000
Miles, Passenger	10,559,412,000
Trip Length, Average (miles)	5.2
Miles, Vehicle Total	537,278,000
Miles, Vehicle Revenue	521,828,000
Hours, Vehicle Total	27,619,000
Hours, Vehicle Revenue	25,208,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	20.7
Vehicles, Total	10,354
Active	10,157
Age, Average (years)	19.9
Air-conditioned	96.4%
Fareboxes, registering	0.6%
Radios, 2-way	28.1%
Lifts, Wheelchair	0.0%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	93.7%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	47.9%
Employees, Operating	45,658
Vehicle Operations	19,605
Vehicle Maintenance	7,905
Non-vehicle Maintenance	14,130
General Administration	4,018
Employees, Capital	5,005
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	3,402,095,000

TABLE 80  
**Heavy Rail Transit Agencies and Stations**

CITY	TRANSIT AGENCY	NUMBER OF STATIONS	NUMBER OF ACCESSIBLE STATIONS
Atlanta, GA	Metropolitan Atlanta Rapid Transit Authority	36	36
Baltimore, MD	Mass Transit Administration, Maryland Dept of Transp	14	14
Boston, MA	Massachusetts Bay Transportation Authority	53	33
Chicago, IL	Regional Transportation Authority (Chicago Transit Auth)	145	0
Cleveland, OH	Greater Cleveland Regional Transit Authority	18	3
Los Angeles, CA	Los Angeles County Metropolitan Transportation Authority	8	8
Miami, FL	Metro-Dade Transit Agency	21	0
New York, NY	Metropolitan Transportation Auth New York City Transit	469	25
New York, NY	Metropolitan Transportation Auth Staten Island Railway	22	2
New York, NY	Port Authority of New York & New Jersey	13	6
Philadelphia, PA	Port Authority Transit Corp of Pennsylvania & New Jersey	76	2
Philadelphia, PA	Southeastern Pennsylvania Transportation Authority	36	4
San Francisco, CA	San Francisco Bay Area Rapid Transit District	36	36
Washington, DC	Washington Metropolitan Area Transit Authority	74	74
<b>TOTAL</b>		<b>998</b>	<b>243</b>

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

TABLE 81

File: LRSUM

**Light Rail Summary Data, Fiscal Year 1995**

Agencies, Number of	22
Fares Collected, Passenger	\$126,471,000
Fare per Unlinked Trip, Average	\$0.50
Expense, Operating Total	\$379,586,000
Salaries and Wages	\$174,822,000
Fringe Benefits	\$98,286,000
Services	\$30,801,000
Fuel and Lubricants	\$332,000
Materials and Supplies, Other	\$33,616,000
Utilities	\$27,829,000
Casualty and Liability	\$15,107,000
Purchased Transportation	\$0
Other	(\$1,207,000)
Vehicle Operations	\$154,523,000
Vehicle Maintenance	\$85,978,000
Non-vehicle Maintenance	\$81,580,000
General Administration	\$57,505,000
Expense, Capital Total	\$718,438,000
Rolling Stock	\$90,948,000
Facilities	\$610,287,000
Other	\$17,203,000
Trips, Unlinked Passenger, Average Weekday	805,000
Trips, Unlinked Passenger, Annual	250,769,000
Miles, Passenger	860,025,000
Trip Length, Average (miles)	3.4
Miles, Vehicle Total	34,560,000
Miles, Vehicle Revenue	34,010,000
Hours, Vehicle Total	2,464,000
Hours, Vehicle Revenue	2,369,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	14.4
Vehicles, Total	1,167
Active	999
Age, Average (years)	20.9
Air-conditioned	64.9%
Fareboxes, registering	39.2%
Radios, 2-way	77.3%
Lifts, Wheelchair	13.4%
Ramps, Wheelchair	0.9%
Accessible Only via Stations	40.0%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	23.0%
Employees, Operating	4,956
Vehicle Operations	2,184
Vehicle Maintenance	1,211
Non-vehicle Maintenance	1,151
General Administration	410
Employees, Capital	376
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	286,719,000

TABLE 82  
**Light Rail Transit Agencies and Stations**

CITY	TRANSIT AGENCY	NUMBER OF STATIONS (a)	NUMBER OF ACCESSIBLE STATIONS (a)
Baltimore, MD	Maryland Dept of Transp	24	24
Boston, MA	Mass Transit Administration, Massachusetts Bay Transportation Authority	95	0
Buffalo, NY	Niagara Frontier Transit Metro System	14	7
Cleveland, OH	Greater Cleveland Regional Transit Authority	33	4
Dallas, TX	Dallas Area Rapid Transit Authority	14	14
Denver, CO	McKinney Avenue Transit Authority	0	0
Fort Worth, TX	Region/T Transportation District	15	15
Galveston, TX	Tandy Center Subway	2	0
Los Angeles, CA	Los Angeles County Metropolitan Transportation Auth	3	1
Memphis, TN	Island Transit	22	22
New Orleans, LA	Memphis Area Transit Authority	20	20
New York, NY	Regional Transit Authority of Orleans & Jefferson	2	2
Philadelphia, PA	New Jersey Transit Corporation	11	0
Pittsburgh, PA	Southeastern Pennsylvania Transportation Authority	64	0
Portland, OR	Port Authority of Allegheny County	13	0
Sacramento, CA	Tri-County Metropolitan Transportation Dist of Oregon	27	3
Saint Louis, MO	Sacramento Regional Transit District	28	0
San Diego, CA	Bi-State Development Agency	18	18
San Francisco, CA	San Diego Metropolitan Transit Development Board	38	38
San Jose, CA	(San Diego Trolley)	11	9
Seattle, WA	San Francisco Municipal Railway	33	5
TOTAL	Santa Clara Valley Transportation Authority	14	14
	King County Department of Transportation	501	196

(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.

TABLE 83

File: ORSUM

**Other Rail Summary Data, Fiscal Year 1995**

Agencies, Number of	14
Fares Collected, Passenger	\$33,645,000
Fare per Unlinked Trip, Average	\$1.57
Expense, Operating Total	\$61,250,000
Salaries and Wages	\$30,692,000
Fringe Benefits	\$13,370,000
Services	\$5,668,000
Fuel and Lubricants	\$65,000
Materials and Supplies, Other	\$3,803,000
Utilities	\$3,866,000
Casualty and Liability	\$2,748,000
Purchased Transportation	\$579,000
Other	\$459,000
Vehicle Operations	\$25,654,000
Vehicle Maintenance	\$11,040,000
Non-vehicle Maintenance	\$13,839,000
General Administration	\$10,138,000
Expense, Capital Total	\$44,315,000
Rolling Stock	\$6,988,000
Facilities	\$32,420,000
Other	\$4,907,000
Trips, Unlinked Passenger, Average Weekday	62,000
Trips, Unlinked Passenger, Annual	21,370,000
Miles, Passenger	21,148,000
Trip Length, Average (miles)	1.0
Miles, Vehicle Total	1,966,000
Miles, Vehicle Revenue	1,922,000
Hours, Vehicle Total	323,000
Hours, Vehicle Revenue	315,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	6.1
Vehicles, Total	181
Active	168
Age, Average (years)	58.5
Air-conditioned	37.3%
Fareboxes, registering	0.0%
Radios, 2-way	42.2%
Lifts, Wheelchair	1.2%
Ramps, Wheelchair	0.0%
Accessible Only via Stations	41.0%
Power Source, Diesel or Gasoline	0.0%
Power Source, Alternative	100.0%
Rehabilitated	10.8%
Employees, Operating	801
Vehicle Operations	236
Vehicle Maintenance	252
Non-vehicle Maintenance	236
General Administration	77
Employees, Capital	30
Diesel Fuel Consumed (gallons)	0
Other Fuel Consumed (gallons)	0
Electricity Consumed (kwh)	21,137,000

File: ORAGENCY

**Other Rail Transit Agencies and Stations**

CITY	TRANSIT AGENCY	RAIL TYPE (a)	NUMBER OF STATIONS	NUMBER OF ACCESSIBLE STATIONS
Detroit, MI	Detroit Transportation Corporation	AG	13	13
Jacksonville, FL	Jacksonville Transportation Authority	AG	3	3
Miami, FL	Metro-Dade Transit Agency	AG	21	0
Morgantown, WV	West Virginia University	AG	3	0
Tampa, FL	Hillsborough Area Regional Transit Authority	AG	2	2
San Francisco, CA	San Francisco Municipal Railway	CC	0 (b)	0 (b)
Chattanooga, TN	Chattanooga Area Regional Transportation Authority	IP	2	2
Dubuque, IA	Fenelon Place Elevator	IP	2	0
Johnstown, PA	Cambria County Transit Authority	IP	2	2
Los Angeles, CA	Angels Flight Incline	IP	2	2
Pittsburgh, PA	Port Authority of Allegheny County	IP	4	2
Las Vegas, NV	Regional Transportation Commission of Clark County	MO	2	3
Seattle, WA	City of Seattle	MO	2	2
New York, NY	Roosevelt Island Operating Corporation	TR	2	0
<b>TOTAL</b>			<b>60</b>	<b>29</b>

(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.

TABLE 85

File: VPSUM

**Vanpool Summary Data, Fiscal Year 1995**

Agencies, Number of	55
Fares Collected, Passenger	\$10,968,000
Fare per Unlinked Trip, Average	\$1.53
Expense, Operating Total	\$19,585,000
Salaries and Wages	\$4,744,000
Fringe Benefits	\$1,903,000
Services	\$3,998,000
Fuel and Lubricants	\$1,861,000
Materials and Supplies, Other	\$784,000
Utilities	\$138,000
Casualty and Liability	\$2,918,000
Purchased Transportation	\$2,088,000
Other	\$1,151,000
Vehicle Operations	\$4,930,000
Vehicle Maintenance	\$1,891,000
Non-vehicle Maintenance	\$219,000
General Administration	\$10,457,000
Expense, Capital Total	\$11,529,000
Rolling Stock	\$5,264,000
Facilities	\$803,000
Other	\$5,462,000
Trips, Unlinked Passenger, Average Weekday	27,900
Trips, Unlinked Passenger, Annual	7,147,000
Miles, Passenger	249,176,000
Trip Length, Average (miles)	34.9
Miles, Vehicle Total	31,531,000
Miles, Vehicle Revenue	28,950,000
Hours, Vehicle Total	889,000
Hours, Vehicle Revenue	830,000
Speed, Vehicle in Revenue Service, Average (m.p.h.)	34.9
Vehicles, Total	2,483
Active	2,421
Age, Average (years)	2.9
Air-conditioned	99.6%
Fareboxes, registering	0.0%
Radios, 2-way	1.4%
Lifts, Wheelchair	1.5%
Ramps, Wheelchair	0.4%
Accessible Only via Stations	0.0%
Power Source, Diesel or Gasoline	100.0%
Power Source, Alternative	0.0%
Rehabilitated	0.0%
Employees, Operating	255
Vehicle Operations	22
Vehicle Maintenance	28
Non-vehicle Maintenance	27
General Administration	178
Employees, Capital	10
Diesel Fuel Consumed (gallons)	167,000
Other Fuel Consumed (gallons)	2,137,000
Electricity Consumed (kwh)	0

**SECTION XIII**

File: TRVSAUTO

**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 \$4,380 per year for a small car to \$8,620 per year for a sport utility vehicle, 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.

TABLE 86

FILE: TRANCOST

**Examples of Cost of Riding Transit**

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

126

TABLE 87

FILE: DRIVCOST

**Automobile Driving Costs, 1996**

CATEGORY	SMALL CAR	MIDSIZE CAR	LARGE CAR	SPORT UTILITY VEHICLE	VAN
<b>OPERATING COSTS (cents per mile)</b>					
Gasoline & Oil	4.5	5.9	6.5	6.8	5.8
Maintenance	2.6	2.8	2.8	3.1	2.9
Tires	0.9	1.4	1.5	1.4	1.3
<b>SUBTOTAL</b>	8.0	10.1	10.8	11.3	10.0
<b>OWNERSHIP COSTS (cost per year)</b>					
Insurance	896	782	856	1,027	722
License, registration, taxes	180	229	237	373	339
Depreciation	2,710	3,208	3,592	3,458	3,293
Finance charge	579	778	797	934	836
<b>SUBTOTAL</b>	4,365	4,997	5,482	5,792	5,190
<b>DEPRECIATION FOR EXCESS MILEAGE</b> (per 1000 miles over 15,000 miles annually)	141	151	160	115	148
<b>TOTAL ANNUAL COST</b>					
10,000 miles per year	4,380	5,140	6,270	5,980	5,230
15,000 miles per year	5,565	6,510	7,095	7,485	6,690
20,000 miles per year	6,680	7,780	8,440	8,620	7,940

Source: American Automobile Association and Runzheimer International, *Your Driving Costs, 1996 Edition*. Data for a popular model of each type listed with ownership costs based on 60,000 miles before replacement.

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TABLE 88

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
<b>TOTAL</b>	<b>795.6</b>	<b>808.2</b>
<b>2. TAXES &amp; OTHER FEES PAID BY USERS</b>	<b>70.3</b>	<b>72.3</b>
<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
<b>TOTAL</b>	<b>88.6</b>	<b>256.3</b>
<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
<b>TOTAL</b>	<b>103.0</b>	<b>135.9</b>
Less taxes also reported in item 2	-70.3	-72.3
<b>NET TOTAL</b>	<b>32.6</b>	<b>63.6</b>
<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
<b>TOTAL</b>	<b>326.5</b>	<b>585.0</b>
<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
<b>TOTAL</b>	<b>850.7</b>	<b>1,051.0</b>
<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 XIV****Federal Legislation****History and Provisions of the Federal Transit Act**

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 through its third decade, Congress enacted the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The ISTEA not only authorizes higher levels of funding for transit than any previous law, it also provides for flexible use of additional funds for either highway or transit purposes and requires greater coordination of highway and transit planning to provide for the most efficient surface transportation system to meet local needs.

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¢ of a 5¢ 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.
- 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¢ the portion of the Highway Trust Fund tax on motor fuels to be placed in the Mass Transit Account.

- 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, vastly 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 3 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.

- 1993: The Omnibus Budget Reconciliation Act of 1993 raised to 2¢ 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.

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 through discretionary processes. The largest are:

**Major Capital Investment, 49 USC 5309 (formerly Section 3):** 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." Titled "Discretionary Grants" in 49 USC 5309.

*Status:* Authorized through FY 1997.

*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 by discretion of the Federal Transit Administration or may have amounts "earmarked" by Congress during the legislative process. 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 (formerly Section 9):** Apportions operating and capital assistance on a formula basis to urbanized areas.

*Status:* Authorized through FY 1997.

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

*Eligible Expenditures:* Operations or capital projects by local decision up to a specific amount called the "operating limit" or "operating cap." Apportioned funds in excess of each urbanized area's operating limit may be used only for capital projects. The operating limit is calculated separately from each area's apportionment and is a limit on the use of apportioned funds--it is not additional money.

*Method of Allocation:* By six formulas based on urbanized area population and mode of transit service. These formulas are:

(1) Fixed guideway operations in urbanized areas over 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 over 750,000 population that have commuter rail operations receive a minimum of 0.75% of this formula.

(2) Fixed guideway operations in urbanized areas over 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 over 750,000 population that have commuter rail operations receive a minimum of 0.75% of this formula.

(3) Bus operations in urbanized areas over 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 1,000,000 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 over 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 less than 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 (formerly Section 16(b)):** Established by the UMT Act of 1970 to assure mass transportation availability to elderly and disabled persons.

*Status:* Authorized through FY 1997.

*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, contracted service, and state administrative costs.

*Method of Allocation:* Allocated by formula to states based on elderly and disabled population with a fixed minimum amount for each state.

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

**Rural Area Formula (RAF), 49 USC 5311 (formerly Section 18):** Established by the STA Act of 1978 to apportion funds for mass transportation in rural areas outside of urbanized areas.

*Status:* Authorized through FY 1997.

*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 5.5% of total UAF and RAF funds.

*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) (formerly Section 18(h)):** 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.

## Other Major Federal Laws Affecting Transit

File: FEDLAW

- **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.

In particular, all transit buses and rail cars ordered after August 25, 1990 must be accessible to the mobility-impaired and contain audible and visual features to aid the hearing and sight-impaired. At least one car on every train had to be accessible by July 26, 1995.

All new passenger stations built after the effective date of the act must be accessible, and all "key" stations (end-of-line, transfer, and major traffic-generator) had to be retrofitted for accessibility by July 26, 1994, unless an extension was granted for extraordinarily expensive retrofitting.

By January 26, 1997, full compliance with the provisions requiring paratransit service is required.

- **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 nonattainment 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 Major 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. Ferry boat employees are covered, but are also subject to Coast Guard regulations.

Educational, testing, and rehabilitation programs are required.

- **Energy Policy Act of 1992 (Transit Benefit Law)**, authorized a tax-free employer-provided transit pass or subsidy fringe benefit for employees of \$60 per month and limited the similar benefit for parking to \$155 per month, which could be used when parking at a transit park-and-ride facility. Subsequent legislation made this a permanent benefit for federal employees, including the military.

## SECTION XV

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".

TABLE 89

File: MILESTON

**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 surviving street railway labor organization (Knights of Labor Local 2878)
1884	Cleveland—first electric street railway line (East Cleveland Street Railway)

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TABLE 89 (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	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 public 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)

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TABLE 89 (continued)

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

1914	Los Angeles--first jitney
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 cowls-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
1936	New York--first industry-developed standardized street railway car (P.C.C. car) (Brooklyn & Queens Transit System)
1938	Chicago--first use of federal capital funding to build a transit rail line
1939	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 89 (continued)

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

1943	Los Angeles--first rail line in expressway median (Pacific Electric Railway)
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 railroad providing commuter service (AMTRAK)
1972	San Francisco--first computer-controlled heavy rail transit agency (Bay Area Rapid Transit District)
1972	transit ridership hits all-time low (5.3 billion)
1973	Washington--some transit service required to be accessible to disabled (Rehabilitation Act of 1973)

**TABLE 89 (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
1974	Morgantown, WV--first automated guideway transit agency (West Virginia University)
1975	San Diego--first wheelchair-lift-equipped fixed-route bus
1977	Seattle--first successful wheelchair-lift-equipped fixed-route bus service
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)
1982	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 service 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
1990	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)
1991	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)
1992	Washington--transit workers in safety-sensitive positions subjected to drug and alcohol testing
1993	Washington--1.5 cents dedicated portion of federal fuel tax increased to 2 cents
1995	Washington--1.5 cents dedicated portion of federal fuel tax increased to 2 cents

## SECTION XVI

# 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.

TABLE 90

File: CANSUM

**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)
1982	74	1,355.8	447.5	763.6	1,482.0
1983	74	1,385.7	443.1	839.4	1,573.4
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	89	1,355.4	486.9	1,496.9	2,717.8

(a) Number of agencies is actual number.

(b) Monetary data are Canadian Dollars.

Source: Canadian Urban Transit Association.

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TABLE 91

File CANVEH

**Canadian Fixed-Route Active Passenger Vehicles by Mode**

CALENDAR YEAR	LIGHT RAIL	HEAVY RAIL	COMMUTER RAIL	TROLLEY BUS	BUS	OTHER	TOTAL
1982	415	1,638 (a)	(a)	649	10,500	0	13,202
1983	392	1,619 (a)	(a)	649	10,396	2	13,058
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	10,545	85	13,223

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

Source: Canadian Urban Transit Association.

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TABLE 92

File: CANNEWVE

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

CALENDAR YEAR	LIGHT RAIL	HEAVY RAIL	TROLLEY BUS	BUS	OTHER	TOTAL
1982	8	10	120	813	0	951
1983	44	71	224	469	0	808
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	341	61	422

Source: Canadian Urban Transit Association.

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TABLE 93

File: CANFARES

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

CALENDAR YEAR	AVERAGE PASSENGER FARE PER REVENUE PASSENGER TRIP	ADULT	BASE CASH FARE	
		HIGH	LOW	AVERAGE
1982	0.56	0.85	0.40	0.62
1983	0.61	1.00	0.40	0.69
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	1.44

(a) Data reported in Canadian dollars.

Source: Canadian Urban Transit Association.

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TABLE 94

**Canadian Fixed-Route Employees by Type**

CALENDAR YEAR	VEHICLE OPERATORS	OTHER VEHICLE OPERATIONS	VEHICLE MAINTENANCE	NON-VEHICLE MAINTENANCE	GENERAL ADMINISTRATION	TOTAL
1982	20,693 (a)	(a)	5,576	2,303	6,680	35,252
1983	20,259 (a)	(a)	3,799	4,490	6,224	34,772
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	21,500	2,835	6,964	3,227	4,477	38,981

(a) Vehicle operators and other vehicle operations combined.

Source: Canadian Urban Transit Association.

File: CANEMP

TABLE 95

File: GUIDMILE

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

MODE (b)	STATUS	MILES (c)
?	proposed	0.0
?	<b>TOTAL</b>	<b>0.0</b>
AG	open	17.9
AG	<b>TOTAL</b>	<b>17.9</b>
CR	open	320.0
CR	proposed	
CR	<b>TOTAL</b>	<b>320.0</b>
FB	open	3.1
FB	<b>TOTAL</b>	<b>3.1</b>
HR	construction	4.0
HR	design	3.2
HR	open	72.5
HR	proposed	2.9
HR	<b>TOTAL</b>	<b>82.6</b>
IP	open	0.1
IP	<b>TOTAL</b>	<b>0.1</b>
IR	design	1.9
IR	open	4.0
IR	<b>TOTAL</b>	<b>5.9</b>
LR	construction	2.3
LR	open	93.5
LR	planning	9.4
LR	proposed	16.2
LR	<b>TOTAL</b>	<b>145.7</b>
MB	construction	17.3
MB	design	2.0
MB	open	79.7
MB	planned	10.0
MB	proposed	10.5
MB	<b>TOTAL</b>	<b>147.4</b>
TB	open	210.3
TB	<b>TOTAL</b>	<b>210.3</b>

TABLE 95

File: GUIDMILE

**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 1996, 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

Title: GUIDEBUS

**TABLE 96**  
**Bus Fixed Guideways 3.5 Miles or More in Length (a)**

LOCATION	GUIDEWAY	SEGMENT	MILES
Montreal, PQ	Henri Bourassa Bus Lanes	Lacordaire-St. Laurent	4.3
Montreal, PQ	Pie IX Bus Lanes	47th-Pierre de Coubertin	5.3
Montreal, PQ	Rene Levesque Bus Lanes	Atwater-St. Denis	4.3
Ottawa, ON	CN 17 East Shoulder Bus Line	Place d'Orleans-Blair	4.8
Ottawa, ON	East Transitway	Laurier-Blair	5.7
Ottawa, ON	Southeast Transitway	Hurdman-South Keys	5.1
Quebec, PQ	Boul du Jardin-1e Ave Bus Lanes	Boul du Jardin/des Loutres-1e Ave/24e Rue	4.3
Quebec, PQ	Quatre-Bourgeois-Boul Laurier Bus Lanes	Entre des 3 drapeaux U.L.-Edifice Many	3.7
Vancouver, BC	BC 99 Bus-Vanpool Lanes	80th St-Massey Tunnel	4.2

(a) Data as of July 1996, 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	50	8.7	28.9	12.6	144.9

(a) Number of agencies is actual number.

(b) Monetary data are Canadian Dollars.

Source: Canadian Urban Transit Association.

**SECTION XVII****Definitions**

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. Motorbuses 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 motorbus 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 motor buses. Based on average seating plus standing capacity of the vehicle as compared to the capacity including standees (70 people) of a standard-size motorbus.

**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, N.W.  
Washington, D.C. 20005