



FRASTRUCTURE

This chapter includes commuter rail, which was included in the 'Rail' chapter in the 2013 report card.

#### **OVERVIEW**

Transit in America continues to grow, carrying 10.5 billion trips in 2015, and adding new lines and systems every year. Yet the symptoms of overdue maintenance and underinvestment have never been clearer. Despite increasing demand, the nation's transit systems have been chronically underfunded, resulting in aging infrastructure and a \$90 billion rehabilitation backlog. While some communities are experiencing a transit boom, many Americans still have inadequate access to public transit.

# **CAPACITY & CONDITION**

American transit systems carried 10.5 billion passenger trips in 2015. This is a 33% increase from 20 years ago, when transit carried 7.9 billion trips, but is 250 million trips less than in 2014. 11% of American adults reported taking public transportation on a daily or weekly basis in 2015.

Buses are the most common form of public transportation, accounting for approximately half of passenger trips in 2015. The 15 heavy rail (subway/metro) systems comprise the majority of non-bus trips, accounting for over a third of total passenger trips. While transit has higher ridership in urban areas, there are nearly 1,400 public transit systems in rural areas, providing paratransit, bus, commuter bus, and vanpool service. These often-forgotten rural transit systems provide vital mobility to people who do not have access to a car or cannot drive themselves, particularly elderly individuals and people with disabilities.

The extent of transit in the U.S. has been increasing: from 2004 to 2014, 26% more urban route miles of rail modes became available, with light rail and commuter rail seeing almost all of the growth, as well as 11% more urban route miles in non-rail modes. This time period also saw a 17% increase in the number



of passenger stations. However, many Americans still don't have access to public transit. Despite 81% of Americans living in urban areas, only 51% of U.S. households reported in 2013 they could get to a grocery store using public transportation.

In order for transit to work well, both the transit vehicles (buses, trains, etc.) and the physical infrastructure (tracks, signals, etc.) must be in good condition. According to the most recent data available, 10% of the nation's urban bus fleet and 3% of the nation's rail fleet are not in a "state of good repair." Transit's physical infrastructure fairs considerably worse: 15% of facilities (e.g., maintenance facilities), 17% of systems (e.g., power, signal, communications, fare collecting) 35% of guideway elements (e.g., tracks), and 37% of stations are not in a "state of good repair."

Many transit systems are also experiencing ridership demand beyond what the systems were designed for, creating tension between the ability to expand to meet demand and the need to maintain the existing system. A transit system's condition closely correlates to ridership and financial strength; when transit becomes unreliable, fewer people continue to use it, creating a chain effect of lost support in fares and, over time, less investment in the system due to lower ridership. Several of the older heavy rail systems, including in Washington, D.C., New York, and San Francisco, are confronting the challenges and consequences of rider demand, years of deferred maintenance, and chronic funding problems.



**Transit Passenger Trips** 

# **FUNDING & FUTURE NEED**

2017 INFRASTRUCTURE REPORT CARD



As a result of years of insufficient funding, transit systems across the U.S. are struggling to cope with aging infrastructure and limited funding, creating a massive and increasing backlog. The most recent federal estimate quantifies the backlog of projects needed to attain a "state of good repair" at \$90 billion and is projected to grow to \$122 billion by 2032. The backlog was primarily in **fixed guideway** modes such as rail, due to specialized infrastructure requirements, such as tracks and stations, as opposed to roadway modes, likes buses, which utilize existing roads and bridges.

In addition to the fare revenue they collect and other directly-generated revenues (e.g. parking and ad

monies), transit agencies may receive money from federal, state, and/or local governments. In 2015, 45% of operating expenses were paid for through fares and other directly generated funds, while 55% of expenses were paid with public funds, primarily from state and local governments. The federal government is an important source of funding for capital expenditures in public transportation; federal funds covered 42% of capital expenditures in 2015, while state and local governments contributed 36% and directly generated funds paid for 22%. The total operating expenses for the nation's public transportation systems in 2015 totaled \$46.3 billion and total capital expenditures equaled \$19.3 billion. The majority of capital spending in transit (64% in 2015)



was



#### **Transit Funding Sources**

focused on improving existing service, as opposed to expanding it.



Federally, the Fixing America's Surface Transportation Act (FAST Act) provides \$305 billion for highway, transit, and rail programs over five years with \$60 billion of this reauthorization committed for transit investment. States provide support for public transportation to varying degrees. In 2014, just five states—California, Illinois, Massachusetts, New York, and Pennsylvania—provided three-quarters of all state funding for transit, while another five states—Alabama, Arizona, Hawaii, Nevada, and Utah— provided no funding for public transit. However, transit initiatives have been quite successful when taken directly to voters via ballot measures. In 2016 voters approved 34 of 49 (69%) of transit-related ballot measures worth almost \$200 billion to be spent over 30-40 years.

#### **PUBLIC SAFETY**

255 people were killed in transit-related incidents in 2015. Most fatalities were non-passengers passengers accounted for less than 5% of all fatalities in 2015. However, several high-profile occurrences of smoke, fire, derailments, and crashes, primarily in the larger, older heavy and commuter rail systems, have occurred in the last several years.

## RESILIENCE

Alternative fuel-powered vehicles using compressed or liquid natural gas, propane, hydrogen, or battery power have become more popular in the last decade; the share of the national bus fleet using alternative fuels rose from 21% in 2006 to 30% in 2015. Diesel-burning engines are still the most common, accounting for 68% of non-electric buses in 2015, but compressed natural gas buses now make up 18% of the fleet. From 2010 to 2015, the number of transit vehicles powered by electric batteries more than doubled. The number of transit agencies using electric vehicles also grew considerably—from 5 to 17—during that time period.

Transit resilience is often tested by extreme weather events, which degrade infrastructure and can temporarily shutter service. Super Storm Sandy demonstrated the need to address resiliency, as key tunnels under the East River and Hudson River were severely damaged.

# **INNOVATION**

The past several years have seen significant innovations in public transportation. Bikesharing and ridesharing companies have challenged people's ideas of what is public transit. These services have also helped expand access to traditional public transportation systems by solving the "first mile-last mile problem" for riders who would otherwise find it difficult to get to the nearest transit station or to their ultimate destination after riding transit. Many transit operators now provide real-time updates about the location of their vehicles, allowing riders to better time their journeys, resulting in a plethora of smartphone applications.

# **RECOMMENDATIONS TO RAISE THE GRADE**

- Encourage additional investment at all levels of government and in relevant areas that focus on reducing the backlog of rehabilitation needs.
- Ensure an adequate and reliable federal funding source by fixing the Highway Trust Fund through raising the motor fuels tax and exploring alternative long-term financing mechanisms.



- Budget for and fund maintenance and improvements critical to sustaining performance, maintaining reliability and meeting service expectations.
- Use asset management best practices to prioritize projects so as to improve the condition, security, and safety of assets while minimizing lifecycle costs.

## **DEFINITIONS**

**Passenger trips** – Recognize each time a passenger boards or alights a transit vehicle during travel, while passenger miles measure the total amount of travel.

**Farebox recovery** – the percentage of transit operating expenses that are covered by revenues from transit fares.

**Fixed guideway** – a public transportation facility using and occupying a separate right-of-way for the exclusive use of public transportation (examples: rail, ferries, and bus rapid transit).

## **SOURCES**

American Association of State Highway and Transportation Officials. Survey of State Funding-Public <u>Transportation: Final Report 2016- FY 2014 Data</u>. April 2016.

American Public Transportation Association. <u>2016 Fact Book Appendix A: Historical Tables</u>. April 2016. Pew Research Center. <u>Who relies on public transit in the U. S</u>. April 7, 2016.

U.S. Department of Transportation. <u>2015 Status of the Nation's Highways, Bridges and Transit:</u> <u>Conditions and Performance</u>. January 2017.

U.S. Department of Transportation, Federal Transit Administration. <u>2006-2015 Annual Database Capital</u> <u>Use reports</u>.

U.S. Department of Transportation, Federal Transit Administration. <u>2015 Nation Transit Summary and</u> <u>Trends</u>. October 2016.

U.S. Department of Transportation, Federal Transit Administration. <u>2015 Nation Transit Summary and</u> <u>Trends: Appendix</u>. October 2016.

U.S. Department of Transportation, Federal Transit Administration. 2015 Annual Database 2015 report.