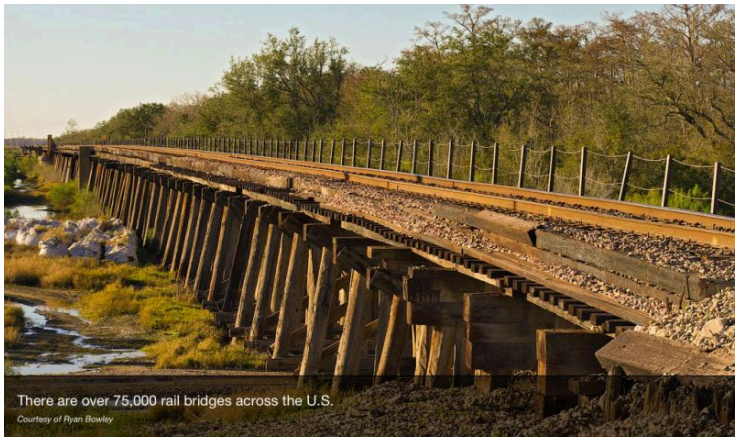
2013 Report Card for America's Infrastructure Findings

Railroads are experiencing a competitive resurgence as both an energy-efficient freight transportation option and a viable city-to-city passenger service. In 2012, Amtrak recorded its highest year of ridership with 31.2 million passengers, almost doubling ridership since 2000, with growth anticipated to continue. Both freight and passenger rail have been investing heavily in their tracks, bridges, and tunnels as well as adding new capacity for freight and passengers. In 2010 alone, freight railroads renewed the rails on more than 3,100 miles of railroad track, equivalent to going coast to coast. Since 2009, capital investment from both freight and passenger railroads has exceeded $75 billion, actually increasing investment during the recession when materials prices were lower and trains ran less frequently.

Rail: Conditions & Capacity

The U.S. rail network is made up of more than 160,000 miles of track, 76,000 rail bridges, and 800 tunnels across the nation that are shared by all operators moving freight and passengers. The 565 U.S. freight railroads are categorized into 3 classes based on their distance served and earnings – 7 Class I freight railroad systems, 21 regional or Class II railroads, and 537 short line or Class III railroads. In addition to freight, the rail network hosts passenger rail service that is provided by a single intercity passenger rail provider, Amtrak, as well as operators of the nation's 27 regional commuter rail lines.


There are over 75,000 rail bridges across the U.S.
Courtesy of Ryan Bowley

Freight Rail

Each owner of the rail network is responsible for maintaining the condition of its track and right of way, as well as railroad bridges and tunnels. After a period of underinvestment, freight railroads nearly doubled their capital investment from 1990 to 2010 to maximize productivity by replacing aging and inefficient infrastructure as well

as shedding lines that were underutilized. Regional and short line railroad operators took over many of the rail network's "fingers" that connected customers in rural areas to the main arteries or "highways" of the Class I network. Short line railroads also connect many shippers in rural areas to main Class I and II railroads, which then transport goods over longer distances. However, many regional and short line railroad operators only maintain their segments to the most efficient level of operation, and high fixed costs in addition to new regulations can force operators to discontinue service.

Amtrak train coming out of Union Station in Washington, D.C.
Courtesy of Ryan Bowley

Railroads transport 43% of the nation's intercity freight and about one-third of U.S. exports, such as wheat and coal. Railroad freight tonnage growth is estimated to grow by 22% by 2035, rising from 12.5 billion tons to 15.3 billion tons. Class I railroads have initiated several public-private partnerships with states and port-connection projects to build the capacity to meet expected demand. However, as freight volumes increase relative to the network's capacity, overall congestion on the railroad network will increase for both freight and passenger rail. Already congestion bottlenecks, in areas such as Chicago and the Northeast Corridor, are costing the U.S. economy about $200 billion a year, or 1.6% of U.S. economic output, and they will continue to escalate without adding capacity to meet future needs. To ensure freight stays productive and to capitalize on modal efficiencies, investment will be needed along nationally significant corridors and to advance intermodal options.

Passenger Rail

Although Amtrak owns only 730 miles of the 160,000 mile national rail network, they have put an increased focus on reaching a state of good repair for their assets and made necessary long-term investments when federal funding is available, or when they receive one-time grants like the American Recovery and Reinvestment Act of 2009 (ARRA). These investments and a greater on-time performance are credited for the record-high ridership on Amtrak in 2012 with 31.2 million passengers, showing almost 50% increase in ridership since 2000. In addition, commuter railroad ridership has grown more than 28% over the last decade and now exceeds 468 million passengers per year. However, ridership growth has led to some segments reaching 75% of their capacity. By 2040, Amtrak is planning for traffic in the densely populated and congested Northeast Corridor to quadruple today's ridership, reaching 43.5 million passengers. To meet future demand in

U.S. RAIL INVESTMENTS TRENDS SINCE 2000

YEAR	FREIGHT INFRASTRUCTURE INVESTMENT (CURRENT BILLIONS)	FED INVESTMENT IN AMTRAK (CURRENT BILLONS)
2000	$15.3 BILLION	$0.6 BILLION
2001	$14.6 BILLION	$0.5 BILLION
2002	$15.0 BILLION	$0.8 BILLION
2003	$15.5 BILLION	$1.0 BILLION
2004	$16.7 BILLION	$1.2 BILLION
2005	$16.7 BILLION	$1.2 BILLION
2006	$19.3 BILLION	$1.3 BILLION
2007	$20.2 BILLION	$1.3 BILLION
2008	$21.5 BILLION	$1.3 BILLION
2009	$20.2 BILLION	$1.5 BILLION
2010	$20.8 BILLION	$1.6 BILLION
2011	$23.3 BILLION	$1.5 BILLION
TOTAL	$458.8 BILLION	$30.7 BILLION

Source: U.S. Federal Rail Administration

the Northeast Corridor for both Amtrak and the eight commuter railroads that use the corridor, estimated investments are about $10 billion over the next 15 years to achieve a state of good repair and to increase train capacity by 40%. Maintaining adequate track capacity to address expanding passenger and freight needs is among the largest challenges in creating a competitive passenger railroad network.

Rail: Investment & Funding

Freight Rail

After years of underinvestment, the deregulation in the 1980s has been followed by one of the highest rates of private and public investment in the core rail infrastructure by the Class I railroads and regional railroads, as well as federal and state investments leading to improved conditions on the majority of the U.S. rail network. Since the 1980s, the freight railroads have spent almost $500 billion maintaining and modernizing the railroad network using capacity and revenue projections to plan capital investments. Types of capital investment included adding tracks next to existing tracks, straightening curves that require slower speeds, and expanding tunnel heights to taller double-stack intermodal containers on trains.

Reinvestment by the freight railroads into the network averages about 40 cents of every revenue dollar. Even in the economic downturn, the railroad industry continued their aggressive investment level, averaging about $20 billion each year from 2009 through 2012 to modernize their network. Freight railroads were able to capitalize on the reduced frequency of trains and lower material prices to continue their aggressive capital and maintenance expenditure policy, which places them in a greatly improved position to handle the increased traffic levels that are beginning to appear.

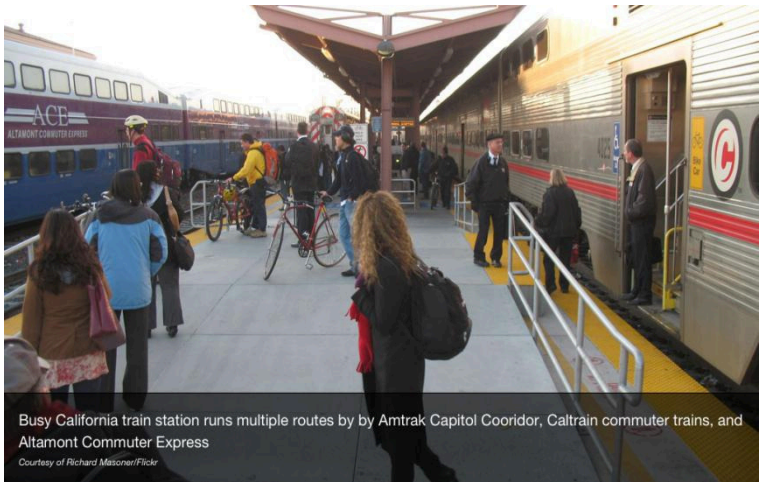
Passenger Rail

Amtrak now recovers 76% of its operating cost from ticket revenue, with the remainder coming from the federal government and 15 states that provide operating and capital support for passenger corridor service. Federal support for Amtrak averages about $1.50 per American per year. Long-term funding is uncertain, as Amtrak's capital funding is planned over a long-term period but must be given a prescribed yearly funding level under its own bill in Congress. The federal government has also put forward some significant investment programs and regulations that have affected the rail industry, including the Passenger Rail Investment and Improvement Act (PRIIA) of 2008, which will create a national rail plan, the High-Speed and Intercity Passenger Rail Program, which outlines potential corridors for faster passenger service, the Transportation Investment Generating Economic Recovery (TIGER) Grants, where many rail projects found additional investment, and the Rail Safety Improvement Act of 2008, mandating safety improvements, including the implementation of Positive Train Control on certain track lines. With PRIIA, the states' role in passenger rail investment and operations has also expanded, as 15 routes that are less than 750 miles will become the primary financial responsibility of states in 2014 in addition to the state-supported commuter rail services.

Rail: Success Stories

California's Capitol Corridor: Busy, Connected, and Collaborative Rail

The Capitol Corridor is now one of the busiest rail corridors in the nation, carrying 1.75 million California residents each year along the 170-mile corridor between San Jose, Oakland, Richmond, and Sacramento, and as far east as Roseville, Rocklin, and Auburn. An alternative to the region's congested freeways, the Capitol Corridor has doubled its ridership since it opened by operating fast, reliable, and affordable intercity rail service. A case study in partnership and connectivity, the corridor is managed by the Capitol Corridor Joint Powers Authority (CCJPA) a partnership among Amtrak, Caltrans, Union Pacific Railroad (UPRR), and six transit agencies. Administrative costs account for less than 5 percent of the Capitol Corridor's operating budget because each entity performs the functions where it has a competitive advantage — BART provides a dedicated management team, Caltrans provides operating funds, Amtrak operates the trains, UPRR performs maintenance, and UPRR and Caltrans dispatch the trains. One example of the function-to-savings achieved by this approach is the 94 percent on-time performance achieved by UPRR by dispatching the Capitol Corridor passenger trains along with their freight trains. Additionally, this corridor service provides a high level of interconnectivity, from providing bike access for passengers to its 17 stations connecting to local transit systems, like the Bay Area Rapid Transit system and the Santa Clara Valley Transportation Authority (VTA). It also puts an emphasis on remote connectivity options through Wi-Fi Internet on the trains in addition to using eTicketing services. Due to the high level of ridership, the Capitol Corridor has attracted private investment to the areas around its stations, helping to focus the region's growth on transit-oriented, walkable "infill" sites and reducing the impacts of urban sprawl. Since the Capitol Corridor began, 13 of the 15 cities it serves have rezoned station areas to accommodate more compact development, supporting more than 4,200 homes and 6.7 million square feet of commercial space just within a quarter-mile of stations. The Capitol Corridor's growth trajectory has provided an essential transportation service in the region through its collaborative capital approach and cost-effective, results-oriented operations strategy.



Busy California train station runs multiple routes by by Amtrak Capitol Cooridor, Caltrain commuter trains, and Altamont Commuter Express
Courtesy of Richard Masoner/Flickr

Oklahoma DOT's "Rolling Pipeline"

Although oil has been produced in Oklahoma for decades, only recently did geologists confirm that up to 80 percent of the recoverable reserves may still be in the ground. However, the state-owned 49-mile rail route to take the oil to the refineries between Sayre and Clinton was taking several days because the track was not rated for higher-

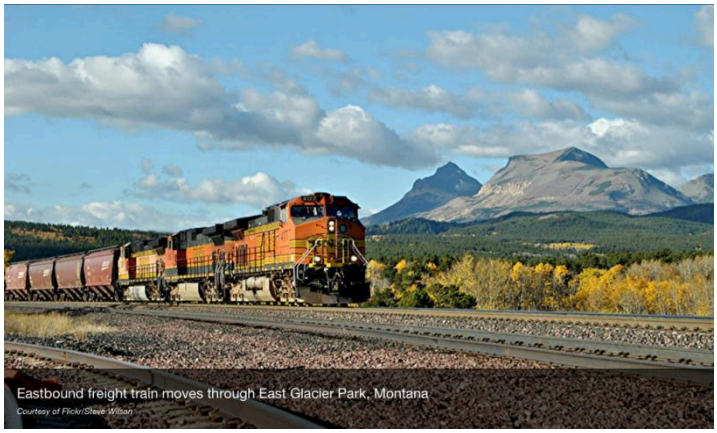
Railroad Crossing In Rural Oklahoma
Courtesy of Doug Wertman

speed and longer trains. To prepare for the expected growing shipments, the Oklahoma Department of Transportation applied for a Transportation Investments Generating Economic Recovery III (TIGER) grant by the U.S. Department of Transportation to upgrade the rail line to Class 2 standards to facilitate the safe and efficient movement of the oil.

Using a 20 percent local match, the $8.4-million project was awarded a TIGER grant in 2011 to create a "rolling pipeline" of domestically produced energy due to its unusually high benefit-cost ratio. In this case, the benefits of rail were clear as trucking costs were prohibitive and no pipeline alternative existed. The project also benefits the community from a safety perspective since it shifts four truckloads of a sensitive commodity off the shared passenger and freight highways into a single 30,000-gallon tank car. With the anticipated upgrades, the "rolling pipeline" will now arrive in a few hours and meet the demand for a plentiful U.S. energy source.

Rail: Conclusion

The railroads have invested heavily in their tracks, bridges, and tunnels, as well as adding new capacity for freight and passengers. While the freight railroads carry the majority of the responsibility for track upkeep, both freight and passenger railroads have made significant investments using both private and public funding. Intercity and commuter passenger ridership are showing year-over-year growth as a viable commuting option for dense urban areas. Meeting capacity demands will be an ongoing challenge as rail ridership and freight rail continue to gradually increase.


Eastbound freight train moves through East Glacier Park, Montana
Courtesy of Flickr/Steve Wilson

Raising the Grades: Solutions that Work Now

- **Integrate rail into a national multimodal transportation policy** that recognizes and takes advantage of efficiencies in the movement of people and goods
- **Improve passenger rail in dense urban corridor markets** and as an alternative to air and automobile travel for intercity markets
- **Increase and expand passenger rail commuter services** in urban areas and intercity passenger services linking major cities in the nation's mega-regions
- **Support a regulatory and financial environment** that encourages continued private investment in the nation's freight railroad system

$75 BILLION
CAPITAL INVESTMENT MADE IN FREIGHT AND PASSENGER RAIL SINCE 2009