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Improving Intercity Passenger Rail Service in the United States

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SUMMARY

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Ben Goldman
Analyst in Transportation Policy

Improving Intercity Passenger Rail Service in the United States

The federal government has been involved in preserving and improving passenger rail service since 1970, when the bankruptcies of several major railroads threatened the continuance of passenger trains. Congress responded by creating Amtrak—officially, the National Railroad Passenger Corporation—to preserve a basic level of intercity passenger rail service, while relieving private railroad companies of the obligation to maintain a business that had lost money for decades. In the years since, the federal government has funded Amtrak and, in recent years, has funded passenger-rail efforts of varying size and complexity through grants, loans, and tax subsidies.

Efforts to improve intercity passenger rail can be broadly grouped into two categories: incremental improvement of existing services operated by Amtrak and implementation of new rail service where none currently exists. Efforts have been focused on identifying corridors where passenger rail travel times would be competitive with driving or flying (generally less than 500 miles long) and where population density and intercity travel demand create favorable conditions for rail service.

Improving existing routes: On the busy Northeast Corridor line owned by Amtrak, several projects to modernize or extend the life of existing infrastructure have been completed using federal grants overseen by the Federal Railroad Administration (FRA). Amtrak has also received annual appropriations above authorized levels for use on the Northeast Corridor in recent years, but proposed projects to add capacity or reduce trip times require a level of investment that outstrips existing options for passenger rail funding. Federal grants have enabled state-supported routes off the Northeast Corridor to add additional trains per day and/or to reduce trip times (whether by increasing speeds or rerouting trains onto more direct alignments). Some grant funds have also preserved service on Amtrak's long-distance lines, which account for under 15% of ridership but incur the largest operating subsidies.

State-supported and long-distance routes generally operate over tracks owned and maintained by freight railroads (called "host" railroads), which can interfere with existing service and complicate plans to add trains to already congested freight lines. Interference by freight trains has been cited by Amtrak as a major contributor to its trains' poor on-time performance, although freight railroads sometimes dispute this. A federal law passed in 2008 was designed to hold host railroads to new performance standards, but has been the subject of court challenges for nearly a decade. While legal issues surrounding on-time performance standards may be resolved in the short term, on-time performance has fallen from its system-wide high of 80% (four trains out of five arriving at all stops on time) achieved in 2012 and has been slow to rebound.

New rail services: Amtrak has partnered with several states to extend existing routes beyond their former termini to serve new stations, sometimes using additional federal grant money. A high-profile project to build a truly high-speed rail system in California was awarded nearly $4 billion out of the roughly $10 billion appropriated for intercity rail projects in 2009-2010, but projected costs exceed earlier estimates and current funding is sufficient to build only an initial segment. The Trump Administration is now seeking the return of some federal grants. A smaller and less technically complex project to introduce new rail service connecting Chicago, IL, and Iowa City, IA, received federal funding but was delayed at the state level, and it is not clear when or if it will be completed. Meanwhile, several efforts are under way in the private sector to bring intercity passenger rail to major urban corridors. One of these, the *Brightline* service in Florida, has already begun serving Miami and West Palm Beach on a line that will eventually reach Orlando. While privately funded and operated, these projects do benefit from public assistance in other ways, as *Brightline* was allowed to issue tax-subsidized qualified private activity bonds to finance construction. Pilot programs to allow private railroads to compete for the right to serve existing Amtrak routes have been less successful.

Rail programs were included in the most recent surface transportation authorization, which expires at the end of FY2020. Issues in reauthorization include whether and how to fund plans to build new infrastructure for improved rail services, especially on the federally owned Northeast Corridor; federal support for operating intercity rail services; the process by which rail lines are planned; the obligations of freight railroads to carry passenger trains; and whether other opportunities exist for the private sector to build or operate passenger rail services.

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Introduction

Intercity passenger rail in America dates to the rail industry's origins in the 19th century. As common carriers engaged in interstate commerce, railroad companies built hundreds of thousands of miles of track across the country offering both freight and passenger transportation, making the distinction between a freight railroad and a passenger railroad a relatively recent one. Federal regulation was important in the industry's development. The Hepburn Act of 1906 (34 Stat. 584) authorized the Interstate Commerce Commission (ICC) to regulate maximum interstate passenger fares to ensure that they were "just and reasonable." The Transportation Act of 1958 (P.L. 85-625, 72 Stat. 571) gave the ICC authority to allow a railroad to discontinue passenger service on a line while continuing freight service.[1]

By the mid-20th century, passenger services faced increased competition from jet airliners offering faster travel times and private automobiles offering convenient access to a network of new federally funded highways. The rail industry's worsening financial health meant that infrastructure conditions also worsened as maintenance was deferred, contributing to reduced speeds and reliability. With ridership declining, the ICC permitted railroads to discontinue many passenger services and focus on carrying freight. In an effort to shore up flagging passenger rail service, Congress passed the High Speed Ground Transportation Act of 1965 (P.L. 89-221), creating an office in the Department of Commerce to foster research and development of new transportation technologies (the Department of Transportation did not yet exist).[2] This contributed to the establishment of the nation's fastest rail service, the Metroliner, on the Washington, DC, to New York City portion of the Northeast Corridor (NEC), when that line was still under private ownership.

In the years since, Congress has taken an active role in preserving and improving passenger rail service. Although ridership is much lower than in the heyday of long-distance trains, the federal government continues to support passenger rail through a variety of grants, loans, and tax preferences. There continues to be debate over whether federal subsidies for passenger rail are justified, given competing alternatives by air or highway that dominate most intercity travel markets (though these alternatives may also receive subsidies). The Trump Administration has called for "the end of the [federal] Government subsidizing operating losses" on passenger trains, shifting decisionmaking and cost responsibility to states.[3]

The Federal Role in Passenger Rail

As several freight railroads, including the Pennsylvania Central, the nation's largest, entered bankruptcy in 1970, Congress created Amtrak—officially, the National Railroad Passenger Corporation—to preserve a basic level of intercity passenger rail service, while relieving private railroad companies of the obligation to run passenger trains that had lost money for decades.[4]

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[1] For background on federal regulation of passenger rail service, see archived CRS Report R42512, *Passenger Train Access to Freight Railroad Track*, by John Frittelli.

[2] In a global context, high-speed rail (HSR) generally refers to electric-powered trains, operating at sustained top speeds of 150 miles per hour or more, usually on tracks designed and built for their exclusive use. In the United States, policies and programs to improve passenger rail will sometimes use the phrase "high-speed rail" even if the resulting rail service does not fit that description.

[3] U.S. Department of Transportation, *Budget Highlights: Fiscal Year 2020*, p. 57, https://www.transportation.gov/sites/dot.gov/files/docs/mission/budget/333126/budgethighlightsfinal040519.pdf.

[4] For additional information, see CRS Report R44973, *Amtrak: Overview*, by David Randall Peterman.

Amtrak is structured as a private company, but virtually all of its shares are held by the U.S. Department of Transportation (U.S. DOT).

Amtrak owned no infrastructure at the time of its creation. It was originally structured as a contracting agency, and Amtrak trains were operated by private railroads over tracks they owned. Under the Railroad Revitalization and Regulatory Reform Act (4R Act) of 1976, ownership of the NEC was transferred from the bankrupt Penn Central Railroad to Amtrak.[5] At the same time, Congress initiated the Northeast Corridor Improvement Program, which required travel times of 3 hours and 40 minutes between New York and Boston, and of 2 hours and 40 minutes between New York and Washington, by 1981. While the act funded many improvements along the corridor, these goals were not achieved.

The law that created Amtrak also stipulated that Amtrak pay host railroads for the incremental costs specific to Amtrak's usage of tracks—for instance, the additional track maintenance costs required for passenger trains. Amtrak is not required to contribute to a freight railroad's overhead costs. Then, in 1973, Congress granted Amtrak "preference" over freight trains in using a rail line, junction, or crossing (P.L. 93-146, §10(2), 87 Stat. 548), but Amtrak has been unable to enforce this preference to ensure that host railroads operate its trains on schedule.

Several railroads continued to operate long-distance passenger services after 1970 rather than contracting with Amtrak. The last of these services was discontinued in 1983. Amtrak itself discontinued a number of the routes it originally operated, but has been required by Congress to maintain a "national network" of long-distance trains. Amtrak has received federal funds to cover operating losses and capital expenditures since its creation.

Federally Designated High-Speed Rail Corridors

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA, P.L. 102-240) empowered the Secretary of Transportation to designate up to five high-speed rail corridors. These were required to be "rail lines where railroad speeds of 90 miles per hour are occurring or can reasonably be expected to occur in the future" (§1010). ISTEA created an annual set-aside of $5 million from a highway funding program to fund railway-highway crossing safety improvements on these corridors. As the presence of grade crossings can restrict how fast trains can travel, this provision funded projects that had the potential to boost maximum speeds.

The Transportation Equity Act for the 21st Century (TEA-21, P.L. 105-178) increased the number of high-speed rail corridors to 11 (see **Table A-1**). These have a total length of roughly 9,600 miles, less than half the length of the current Amtrak network. Several of the designated "corridors" are in fact networks of interlocking or diverging lines. For example, the Midwest high-speed rail corridor, as initially designated, consisted of lines radiating outward from Chicago to Milwaukee, St. Louis, and Detroit; further extensions to these lines have since been added to the corridor designation, which now goes by the name of the Chicago Hub Network. Most corridors were designated at the discretion of U.S. DOT, but three—the Gulf Coast, Keystone, and Empire State corridors—were designated by statute.[6] Almost all corridors are between 100 and 500 miles in length, the distance range in which rail is expected to be competitive with other modes.

Most federally designated corridors already receive some intercity passenger rail service, and roughly half of all federally designated corridors are served by Amtrak's NEC or state-supported routes. Approximately 1,500 miles of federally designated high-speed rail corridors currently

[5] P.L. 94-210.

[6] P.L. 105-178, §1103(c)(2).

receive no intercity passenger rail service of any kind. Some of these segments were regularly served by Amtrak trains as recently as 2005; others have not seen intercity passenger rail service since before Amtrak initiated operations in 1971. There is no longer a dedicated funding program for this network as there had been under ISTEA, but federal designation was incorporated into later efforts to improve passenger rail as discussed below.

Rail Corridor Improvement Grants

The Passenger Rail Investment and Improvement Act (PRIIA, P.L. 110-432, Division B), enacted in 2008, created discretionary grant programs to expand or otherwise improve passenger rail service. Sections 301, 302, and 501 of PRIIA authorized up to $3.725 billion in grants to states to develop intercity passenger rail service. One of these new programs, which authorized $1.5 billion specifically for high-speed rail corridor improvements, explicitly defined "corridor" as a federally designated corridor established by ISTEA or TEA-21.

With PRIIA in effect, the 111th Congress appropriated a total of $10.6 billion to develop intercity passenger rail services in the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) and the FY2009 and FY2010 Department of Transportation Appropriations Acts (Division A, Title I, P.L. 111-117), well in excess of authorized levels. That same year, the Federal Railroad Administration (FRA) published its High-Speed Rail Strategic Plan, which outlined the Obama Administration's priorities to improve intercity passenger rail service using the programs created by PRIIA and the infusion of funds provided by ARRA.[7] This document indicated that the federally designated high-speed rail corridors were to be prioritized in the coming solicitations for intercity passenger rail grant funds.

FRA ultimately used this money to award 158 grants under the new High-Speed Intercity Passenger Rail (HSIPR) Grant Program. Some 80% of the funding went to a relatively small number of large-scale projects, each within a federally designated priority corridor. These included multi-billion-dollar grants to California and Florida for new high-speed rail lines; Florida subsequently turned down its grant. Most grants funded projects that made incremental improvements to existing services, rather than the establishment of new lines (with the notable exception of California's high-speed rail project, discussed later in this report). HSIPR also offered grants for passenger rail planning, which previously had not been addressed by departments of transportation in some states. The 112th Congress rescinded $400 million of the $10.6 billion previously appropriated and did not adopt the Obama Administration's requests for additional funding. No subsequent HSIPR funding has been provided.

Several states ultimately declined HSIPR grants to improve or expand intercity passenger rail service. That funding was reallocated to other states. Some of the remaining projects encountered delays in delivery, meaning their effects on passenger rail service have only recently begun to be felt. Other projects are still years away from completion, and still others funded planning and engineering work that requires additional funding for construction. Specific improvements in rail service brought about by these grants are discussed in later sections of this report.

Intercity Passenger Rail in the FAST Act

Authority for passenger rail programs lapsed when PRIIA expired at the end of 2013. After a gap of two years, passenger rail programs were reauthorized by the Passenger Rail Reform and

[7] https://www.fra.dot.gov/Elib/Document/1468.

Investment Act of 2015, enacted as Title XI of the Fixing America's Surface Transportation Act (FAST Act, P.L. 114-94).

In the FAST Act, Congress did not continue the approach taken in PRIIA of authorizing large sums for capital grants to implement or improve passenger rail service over entire corridors. The FAST Act did, however, contain a number of measures intended to improve passenger rail in other ways. The collective effect of these programs has been to advance some passenger rail projects initiated under PRIIA, but on a comparatively smaller scale. Some intercity passenger rail projects have also been advanced using funds from U.S. DOT's TIGER/BUILD grant program, a discretionary program that supports infrastructure investments deemed to have significant local or regional impact.[8]

Consolidated Rail Infrastructure and Safety Improvements Program (CRISI)

Section 11301 of the FAST Act created this grant program, which merged eligibility from several programs, including the Intercity Passenger Rail and Congestion Reduction programs created by Sections 301 and 302 of PRIIA. A total of $1.103 billion was authorized for this program from FY2016 through FY2020; to date, $916 million has been appropriated by Congress. The program has not yet resulted in any increases in speed or frequency within the intercity passenger rail system. However, it has been used to fund implementation of Positive Train Control (PTC) systems in many areas. PTC is primarily a crash-avoidance technology, but in certain cases it can allow trains to travel faster.[9]

Federal-State Partnership for State of Good Repair Program

In Section 11302 of the FAST Act, Congress created the Federal-State Partnership for State of Good Repair program to fund the rehabilitation or replacement of aging infrastructure used for passenger rail service. A total of $997 million was authorized for this program; to date, $675 million has been appropriated. By statute, preference is given to grant applications with at least a 50% non-federal share of project costs, to applications submitted jointly by multiple applicants, and to projects sponsored by other entities than Amtrak alone. The Partnership program is more explicitly directed to intercity passenger rail projects by statute, but similarly to CRISI it is primarily designed to fund the replacement or rehabilitation of aging infrastructure rather than to implement new or dramatically improved passenger rail service.

Restoration and Enhancements Grant Program

In Section 11303 of the FAST Act, Congress created the Restoration and Enhancements program to cover the operating costs of reinitiating passenger rail services that have been suspended.[10] This sets it apart from other grant programs administered by FRA, which generally fund capital grants for infrastructure improvements. Many corridors are potentially eligible for these funds, as many passenger routes have been discontinued by Amtrak since its creation, but the program was primarily aimed at restoring service along the coast of the Gulf of Mexico. A section of Amtrak's long-distance *Sunset Limited* ran between New Orleans and Orlando from 1993 until it was suspended after sustaining damage during Hurricane Katrina in 2005.

[8] For details, see https://www.transportation.gov/BUILDgrants/about.

[9] See CRS Report R42637, *Positive Train Control (PTC): Overview and Policy Issues*, by John Frittelli.

[10] Codified at 49 U.S.C. §24408.

Funding was made available for the program in FY2017, which did not result in any successful applications. However, a $33 million CRISI grant was awarded to the Southern Rail Commission (a multi-state coalition formed to promote passenger rail in Southern states) in 2019 for capital improvements necessary to reinstate service between New Orleans and Mobile.[11] Such a service would be eligible to receive Restoration and Enhancements grant funding to support its operating costs.

Improvements to Rolling Stock

The federal government has taken several steps to improve passenger rail by supporting the acquisition of new rail cars and locomotives. Rail equipment can have an effect on the speed and frequency of rail service. Older equipment may not be capable of running at high speeds or be compatible with modern train control systems or accessibility laws. Amtrak periodically rehabilitates and expands its own fleet of rail cars and locomotives, although some states have purchased specialized rail equipment to supplement Amtrak's existing fleet.

Section 305 of PRIIA tasked Amtrak with creating a Next Generation Corridor Equipment Pool Committee to design, develop specifications for, and procure standardized rail equipment for use on state-supported short distance corridors. The committee developed specifications for diesel locomotives and bi-level passenger cars. Five states—California, Illinois, Michigan, Missouri, and Washington—agreed to jointly procure a total of 130 passenger cars and 32 locomotives for use on their state-supported rail corridors. They did so using a mix of state funds, federal funds awarded for corridor improvements, and a $268 million HSIPR grant awarded specifically for equipment procurement.

The locomotive procurement was awarded to Siemens, and Siemens-built "Charger" diesel locomotives are now in service on several Amtrak routes, with the potential for additional follow-up orders. The regional passenger car procurement was awarded to Sumitomo Corporation of America, and subcontractor Nippon Sharyo was to assemble the cars at a newly expanded factory in Rochelle, IL. However, a prototype car failed an important structural test, and the requisite design changes would have delayed the project beyond certain deadlines imposed by the federal funding agreement. Ultimately, Nippon Sharyo was replaced by Siemens, and the procurement was modified to substitute single-level rail cars for the bi-levels originally contracted.[12] The delays resulted in a portion of the $268 million grant expiring and being returned to the Treasury.

Procurement of new rail equipment can be constrained by certain federal regulations. Purchases of rail equipment using federal funds are subject to "Buy America" requirements for domestic content and final assembly. FRA safety standards require passenger rail cars that operate in mixed traffic with freight trains to be able to withstand certain crush forces. This makes most passenger rail equipment designed for use in Europe or Asia impossible to deploy in the United States without major modifications, increasing unit production costs. The safety standards also make passenger rail equipment heavier, which in turn makes it more difficult for trains to accelerate and decelerate quickly, increasing trip times. Regulations promulgated by FRA in 2018 attempt to address this, creating a category of Tier III passenger rail equipment permitted to operate at speeds up to 220 miles per hour (mph) on dedicated tracks or up to 125 mph on lines also used by freight trains.[13] The regulation also modifies certain crashworthiness and occupant-protection

[11] John Sharp, "Amtrak returning service to the Gulf Coast," *AL.com,* June 7, 2019, https://www.al.com/news/2019/06/amtrak-set-to-return-to-gulf-coast.html.

[12] https://www.railwaygazette.com/news/traction-rolling-stock/single-view/view/siemens-replaces-nippon-sharyo-in-multi-state-coach-order.html.

[13] 83 *Federal Register* 59182.

requirements on Tier I equipment (designed for speeds below 125 mph) to permit a greater variety of train car designs to operate on the U.S. network.

Federal Loans for Passenger Rail Projects

Passenger rail projects are eligible under two federal loan programs, the Railroad Rehabilitation and Improvement Financing (RRIF) program and the Transportation Infrastructure Finance and Innovation Act (TIFIA) program.[14] Neither of these programs was designed with passenger rail specifically in mind; RRIF was intended for use primarily by freight railroads, and TIFIA has primarily been used for toll road and transit projects. Because loans require a revenue source to establish creditworthiness (the ability to repay a loan), and because passenger rail lines rarely generate an operating profit, these programs have seen limited application to intercity rail. However, Amtrak has used RRIF loans to purchase new locomotives for the Northeast Corridor, which does generate an operating profit. Amtrak's two active RRIF loans, totaling over $3 billion, now represent almost 60% of total nominal RRIF loan amounts.

Metrics and Standards to Improve Performance

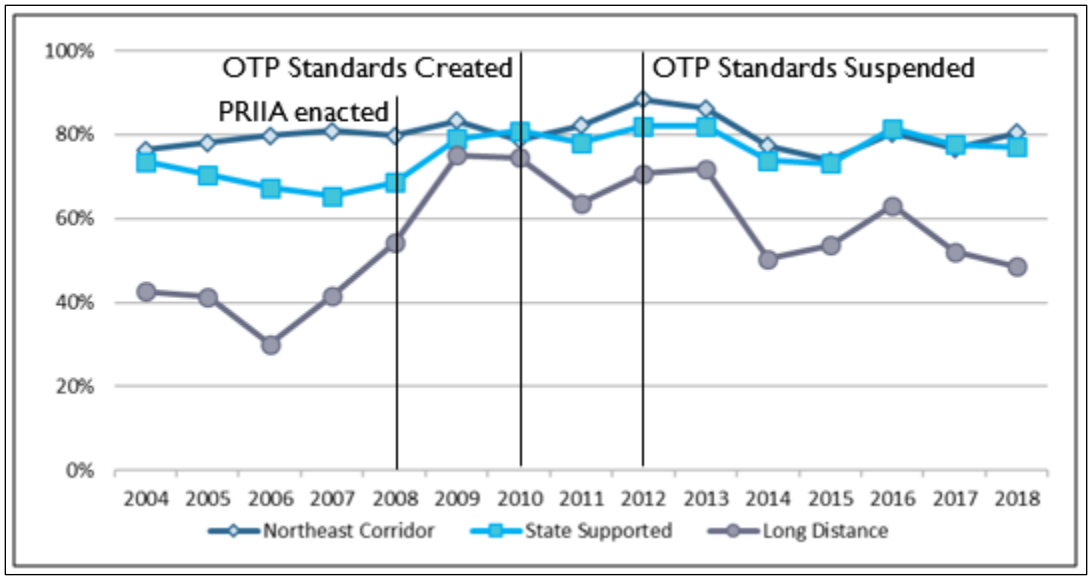
Only 73% of Amtrak trains arrived at all stations on time in 2018, and Amtrak routes often fall short of internal on-time performance goals. Among trains on long-distance routes, half arrived at their final destinations within 15 minutes of the scheduled time in 2018. The freight lines used by most Amtrak services may have little incentive to give priority to Amtrak trains at the expense of their own more profitable operations. However, trains on the Amtrak-owned NEC also reached their final destinations late on one trip out of five. **Figure 1** below illustrates the fluctuations in endpoint on-time performance for Amtrak's three business lines over the last 15 years. In general, reliability on state-supported routes and on the NEC has been relatively stable compared to long-distance routes. Where state-supported routes used to lag behind the NEC, they are now more or less equal in terms of reliability, though both have dipped from their historic highs.

Amtrak has made forceful statements blaming host railroads for poor on-time performance. In one recent example from February 2019, a Twitter account used by Amtrak to alert riders of service issues identified host railroad Norfolk Southern by name as the cause of a delay. In response, Norfolk Southern issued a letter disputing the cause of the delay, accusing Amtrak of damaging Norfolk Southern's reputation, and threatening further action. Amtrak's response continued to blame Norfolk Southern, listing additional delays it attributed to the company and suggesting that it take "immediate action to improve the on-time performance of Amtrak trains on your railroad."[15]

[14] See CRS Report R44028, *The Railroad Rehabilitation and Improvement Financing (RRIF) Program*, by David Randall Peterman, and CRS Report R45516, *The Transportation Infrastructure Finance and Innovation Act (TIFIA) Program*, by William J. Mallett.

[15] "Amtrak, Norfolk Southern spar over Twitter comments," *Trains*, March 18, 2019, http://trn.trains.com/news/news-wire/2019/03/18-amtrak-norfolk-southern-spar-over-twitter-comments.

Figure 1. Amtrak On-Time Performance by Service Line, 2004-2018



Source: Amtrak Endpoint On-Time Performance reports.

Notes: NEC includes Acela, Metroliner, and Northeast Regional trains, including those terminating/originating at stations outside the NEC. Figures for 2004-2012 also include Keystone trains, then grouped in the "Amtrak Corridor" category in Amtrak's performance reports. OTP = On-Time Performance; PRIIA = the Passenger Rail Investment and Improvement Act (P.L. 110-432, Division B).

The 110th Congress attempted to address on-time performance in section 207 of PRIIA. This section directed FRA, Amtrak, and the Surface Transportation Board (STB), which regulates competition in the rail industry, to develop minimum performance standards, incorporate those standards into rail service contracts, and resolve disputes arising from these standards in arbitration. Another section in PRIIA, section 213, gave STB enforcement power over railroads that failed to meet their performance standards. Final metrics and standards went into effect in 2010.[16]

The Association of American Railroads, an industry group representing freight rail companies, sued to block the metrics and standards in 2011, asserting that Congress improperly gave Amtrak, defined in statute as a private entity, the power to regulate other private entities and that exercising such power deprived host railroads of their right to due process. A series of federal court decisions culminated in a unanimous Supreme Court ruling that Amtrak could be considered part of the government for the purposes of deciding the case.[17] The 2010 standards were suspended during much of the legal proceedings, and Amtrak on-time performance has decreased since reaching a systemwide high of roughly 80% in 2012.

On July 20, 2018, the U.S. Court of Appeals for the District of Columbia Circuit ruled that without an arbitrator to enforce the standards, Amtrak is not exercising undue coercive power over its competitors.[18] The Supreme Court declined AAR's appeal of this decision on June 3, 2019, allowing the federal government's power to set performance standards to remain in place. The 2010 standards remain vacated, but FRA is free to establish new standards with Amtrak's input.

[16] 75 *Federal Register* 26839.

[17] *Department of Transportation, et al., v. Association of American Railroads,* 135 S. Ct. 1225 (2015).

[18] *Association of American Railroads v. DOT,* No. 17-5123 (DC Cir. 2018).

Recent Improvements to the Existing Network

Most recent attempts to improve intercity passenger rail have involved making improvements to infrastructure and equipment on existing routes, rather than the planning and implementation of new routes. However, the geography of existing lines can constrain efforts to increase speeds, and the freight railroads that control most of the lines Amtrak uses have little incentive to allow higher speeds or more frequent passenger service without concessions in return, such as capital improvements that also serve to improve freight flows. This section describes federally funded programs to improve Amtrak's route network in order to extend the life of existing infrastructure, improve reliability, increase service frequency, and/or reduce scheduled trip times.

The Northeast Corridor

The Northeast Corridor (NEC), already the busiest intercity passenger rail line in the nation at the time of PRIIA's enactment, received nearly $1 billion in HSIPR funds divided among several projects. Some of these projects resulted in the construction of infrastructure intended to improve train service or prevent its deterioration, while others completed prerequisite environmental and engineering studies for large projects that remain unfunded.

Table 1. Status of Major HSIPR-Funded Projects on the NEC

Project	HSIPR Funding	Expected Outcomes	Status
Trenton-New Brunswick Improvements	$450 million (ARRA)	Upgraded tracks and electrical systems to allow top speeds of 160 mph for 23 miles in New Jersey	Construction under way, scheduled for completion in 2020
Harold Interlocking	$295 million (ARRA)	Upgraded tracks to reduce congestion for trains between New York City and New England	Construction complete, no change to timetables (mainly benefits commuter rail)
Baltimore & Potomac Tunnel	$60 million (ARRA)	Preliminary engineering and environmental review to replace 150-year-old two-track tunnel with higher-speed four-track tunnel	Funding required for final design and construction (est. cost: $4.5 billion)
Portal Bridge	$39 million (ARRA)	Final design to replace 110-year-old movable bridge with higher-speed fixed bridge near Newark, NJ	Early construction complete, funding required to finish construction (est. cost: $1.8 billion)
Susquehanna River Bridge	$22 million (ARRA)	Preliminary engineering and environmental review to replace 110-year-old movable bridge with two higher-speed fixed bridges	Funding required for final design and construction (est. cost: $0.9 billion)
Delaware Third Track	$13 million (FY2010)	Triple-tracking a 1.5-mile two-track chokepoint to increase capacity through Wilmington, DE	Construction under way, scheduled for completion in 2020

Source: FRA, Amtrak.

NEC Future

Apart from funding specific infrastructure projects, PRIIA also called for a corridor improvement plan for the NEC. The planning project, NEC Future, has identified goals for rail service along the corridor and recommended specific infrastructure investments necessary to bring about the desired level of service. A corridor-level Environmental Impact Statement evaluated several alternatives, from maintaining the corridor at what are essentially current service levels to building a brand new corridor adjacent to the existing one capable of much faster trips but at a considerably higher capital cost. The Selected Alternative, approved in a Record of Decision (ROD) issued in July 2017, fell in between these two options, improving speed and capacity on existing infrastructure without building an entirely new parallel route.

One limitation of the existing Northeast Corridor is the path taken by trains along the coast of Long Island Sound in southeastern Connecticut. The tight curves along the shore reduce speeds and lengthen trip times. NEC Future planners initially recommended the construction of new tracks set farther inland along a straighter path, but this was met with opposition from local groups that objected to the construction of new rail lines in their towns. The Selected Alternative considered in the Final Environmental Impact Statement recommended further study of this segment of the corridor.[19]

The Gateway Program

Amtrak says that no further significant expansion of intercity service on the NEC is possible without increasing capacity into and through Manhattan. Also, the reliability of that service is threatened due to the aftereffects of the flooding of the rail tunnel under the Hudson River during Hurricane Sandy in 2012. The Gateway Program is a package of projects proposed to increase both reliability and capacity. The centerpiece is a new two-track tunnel under the Hudson River, supplementing the current tunnel, and conceived in the aftermath of the 2010 cancellation by the State of New Jersey of a similar tunnel project called Access to the Region's Core (ARC). The cost estimates for the entire program of work are in the range of $24 billion to $29 billion.

One challenge facing the Gateway Program is that Amtrak, the infrastructure owner, and New Jersey Transit, the other primary beneficiary of the improvements, have limited ability to fund the improvements. New Jersey Transit does not earn a profit and needs several billion dollars for other projects. Amtrak earned an operating profit of $526 million on its NEC operations in FY2018,[20] but at least a portion of its NEC operating profit is pledged starting in 2022 to repay a $2.45 billion federal loan Amtrak received in 2016 to purchase new train cars.[21] Amtrak also has several billion dollars in other needs, including a backlog of projects to restore its infrastructure to a state of good repair.

A second challenge facing the program is that while assistance may be sought from the federal government, current federal transportation grant programs are not structured to provide large amounts of funding to a particular project on a predictable basis over many years. Funding under discretionary programs depends on the amount that Congress appropriates each year. Since the Gateway Program would improve both intercity passenger rail service and commuter rail service,

[19] Ana Radelat, "Feds drop Old Saybrook-to-Rhode Island bypass from final rail plan," *CT Mirror*, July 12, 2017, https://ctmirror.org/2017/07/12/feds-drop-old-saybrook-to-rhode-island-bypass-from-final-rail-plan/.

[20] Amtrak, *September FY2018 (Year-End) Monthly Performance Report* (preliminary and unaudited), "Route Level Results," p. 7, available at https://www.amtrak.com/about-amtrak/reports-documents.html.

[21] Amtrak, *Consolidated Financial Statements, Years Ended September 30, 2017 and 2016*, p. 25, available at https://www.amtrak.com/about-amtrak/reports-documents.html.

the individual projects that are part of the program could be eligible for assistance from federal programs that focus on either intercity passenger rail or public transit, but no program of either type currently provides multi-year funding in the amount sought by Gateway project sponsors.

The two projects within the Gateway program that are farthest along in their planning and design phases—the Portal North Bridge and Hudson Tunnel Projects—are in project development for Federal Transit Administration (FTA) Capital Investment Grant (CIG) funding, but FTA has cast doubt on the strength of their local financial commitments. Sponsors of both projects have planned to use federal RRIF and TIFIA loans—to be repaid with local funds—as part of the non-federal share of project costs, but FTA has not accepted this approach.[22]

The National Network

Most federal grant funding to improve the existing passenger rail system has gone to routes on Amtrak's National Network, outside the Northeast Corridor. These routes do not routinely generate the operating surpluses found on the NEC and are generally operated over tracks owned by private freight railroads, so the HSIPR program involved spending public funds to improve privately owned rail infrastructure, or else to facilitate the purchase of that infrastructure by a public agency.

One criticism of the HSIPR program has been that investments were spread out so thinly that they could fund only limited service improvements. Building a true high-speed rail line under HSIPR would have required FRA to concentrate considerable funding on a single project, something Congress did not direct FRA to do. Developing true high-speed passenger rail services with federal assistance will be challenging given the inevitable pressures to distribute federal funding widely.

State-Supported Routes

Half of all Amtrak trips are taken on state-supported routes, and state-supported routes have accounted for a large portion of the growth in Amtrak's ridership over the last two decades. To build on this growth, several states received infusions of federal funding to increase speeds, add additional frequencies, extend service to new stations, or generally improve reliability by replacing aging infrastructure.

Table 2 below contains a list of selected improvements to state-supported routes to receive HSIPR grants. Some of these projects are already complete and have been successful; others, especially the larger and more complex corridor improvement projects, have encountered delays and have not yet delivered their intended benefits. Status updates for three of these projects appear beneath the table.

[22] U.S. Congress, House Committee on Transportation and Infrastructure, *Examining the Administration's Infrastructure Proposal*, 115th Cong., 2nd sess., March 6, 2018, 115-37 (Washington: GPO, 2018), pp. 44-45.

Table 2. Selected HSIPR-Funded Improvements to State-Supported Routes

Corridor	HSIPR Funding	Major Performance Goals	Current Status
Chicago-St. Louis	$1.3 billion	Reduce trip time to 4h45m (a 55-minute reduction) by increasing maximum speed to 110mph.	110 mph service initiated in part, but trip times range from 5h20m to 5hr57m. Construction under way on Springfield segment. Plans for full double-tracking canceled.
Chicago-Detroit	$0.6 billion	Reduce Kalamazoo-Dearborn segment travel time 30 minutes by increasing maximum speed to 110mph.	110mph service initiated in part; Kalamazoo-Dearborn trip time reduced approximately 15 minutes; Chicago-Kalamazoo trip time reduced approximately 12 minutes. Plans for added round trips canceled.
Portland-Seattle	$0.8 billion	Add two new round trips per day, and reduce trip time by 10 minutes by rerouting trains through new tracks in Tacoma.	New schedule and added service on hold following a derailment on the first day of service over new route through Tacoma in 2017.
Raleigh-Charlotte	$0.7 billion	Add two round trips per day.	Complete.
New Haven-Springfield	$0.2 billion	Improve track and stations to accommodate additional intercity and commuter traffic.	Complete.
Springfield-St. Albans	$0.1 billion	Reduce trip time by 25 minutes by rerouting trains in Massachusetts and increasing speeds to 79mph in Vermont.	Complete.
Boston-Brunswick	<$0.1 billion	Extend service 30 miles from existing terminus in Portland to Freeport and Brunswick, ME.	Complete.

Source: Compiled by CRS from FRA, IDOT, MDOT, NCDOT, ConnDOT, VTrans, NNEPRA, Amtrak.

Notes: Some projects may have received additional federal funds in the form of TIGER, BUILD, or other grants. HSIPR funding may include a combination of corridor improvement grants and individual project grants (for example, station renovations).

Chicago-St. Louis

The Chicago-St. Louis corridor improvement program, though it was dubbed Illinois HSR, did not have as its immediate objective the implementation of true high-speed rail along the corridor. Rather, a series of targeted investments was planned to create additional rail capacity, reducing interference from freight trains and allowing passenger trains to reach speeds of 110 mph. In 2012, 110-mph service was initiated on the 15-mile segment between Dwight and Pontiac, IL, but not on the remaining segments from Dwight to Joliet and Pontiac to Alton. Portions of the route—from Chicago to Joliet, from St. Louis to Alton, and passing through Springfield—are congested with freight and/or commuter traffic and impose lower speed limits, further hampering efforts to reduce trip time.

A federally funded environmental study identified alternatives for double-tracking the entire corridor, including the segments not improved by the HSIPR corridor development grant. These alternatives would double existing service levels to eight round trips daily, and have the potential

to reduce end-to-end travel times by nearly two hours. The corridor-level study estimated the costs of implementing these alternatives at between $4.9 billion and $5.2 billion, including building new tracks in the congested areas in Springfield and just outside Chicago and St. Louis.[23] A project in Springfield that would reroute passenger and freight trains onto separate tracks is under construction with the support of TIGER grants, but the environmental reviews for the Chicago-Joliet and Granite City-St. Louis segments were suspended in November 2018. FRA indicated that the project sponsors did not want to pursue the environmental reviews at that time.[24]

Chicago-Detroit

Freight railroad Norfolk Southern no longer wished to maintain a 135-mile section of the corridor from Kalamazoo, MI, to Dearborn, MI, to the standards necessary to run passenger trains at 79 mph, meaning speeds would have decreased and trip times would have increased without outside intervention. The State of Michigan used HSIPR grant funds to purchase the section from Norfolk Southern, bringing it into public ownership and making improvements that would allow top speeds of 110 mph. In 2012, 110-mph service was initiated on a separate 97-mile segment from Porter, IN, to Kalamazoo, the result of upgrades paid for with ARRA funds awarded directly to Amtrak, which owns that segment. As of 2019, the cumulative effect of these improvements has been to reduce average trip times between Chicago and Detroit by approximately 25 minutes.[25] Further reductions may be possible as additional segments are upgraded to 110 mph.

A federally funded environmental study for the corridor resulted in a Draft Environmental Impact Statement that identified alternatives for further improvements on the route, increasing service to six or 10 daily round trips (from the existing three) and making further reductions to trip time. Key among these improvements would be the selection of a new route from Chicago to Michigan City, IN. On November 30, 2018, FRA announced it was rescinding the Notice of Intent issued as part of this environmental review, effectively halting the planning process before reaching the Final EIS or Record of Decision stage. However, FRA also noted that planning work completed to that point could be reused in future projects, given sufficient interest and funding.[26]

Portland-Seattle

On December 18, 2017, a southbound Amtrak *Cascades* train derailed near Dupont, WA, killing three and injuring 62. The train was the first in regular service to use the Point Defiance Bypass, an inland rail route upgraded using some of Washington State's HSIPR funds. The Bypass was to reduce travel times between Seattle and Portland by 10 minutes without raising the maximum allowable speed on the track. In the aftermath of the derailment, Amtrak has been operating trains on its original route and schedule.

On May 21, 2019, the National Transportation Safety Board (NTSB) published an abstract of its final report and recommendations following an investigation of the 2017 derailment.[27] NTSB recommended that Amtrak no longer operate the route with a certain type of passenger car.

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[23] Illinois Department of Transportation and Federal Railroad Administration, *Chicago to St. Louis High-Speed Rail Tier 1 Final Environmental Impact Statement: Volume I – Section 3 – Alternatives*, October 2012, p. 3-62 (table 3.4-2).

[24] 83 *Federal Register* 61710.

[25] Amtrak timetables effective May 2, 2012, and July 16, 2018.

[26] 83 Federal Register 61710.

[27] National Transportation Safety Board, "Inadequate Planning, Insufficient Training Led to Fatal Amtrak Train Derailment," May 21, 2019, https://www.ntsb.gov/news/press-releases/Pages/mr-20190521.aspx.

Amtrak and the Washington State Department of Transportation (WSDOT) have announced they will comply with the recommendation, reducing the fleet of usable cars.

New State-Supported Service: Chicago-Quad Cities-Iowa City

The States of Illinois and Iowa were selected to receive HSIPR grants that would have made possible the initiation of a new state-supported Amtrak route linking Chicago to Iowa City, via the Quad Cities (Moline and Rock Island, IL, and Davenport and Bettendorf, IA). The two states jointly received $230 million in federal funds in 2011, but implementation has been slowed by reluctance on the part of state governments to commit the non-federal matching funds required by the grant agreements.

The original grant was split between the two states, with Illinois receiving $177 million and Iowa receiving $53 million. Each state put its share of the project on hold following the inauguration of new governors, each of whom had concerns about potential cost overruns and the need to provide operating subsidies. Iowa completed preliminary engineering but did not provide matching funds to begin construction, while Illinois put its share of the project—already under construction in some places—on hold indefinitely. The Illinois state legislature recently voted to appropriate $225 million in state funds to complete improvements necessary to extend service to Moline, indicating that the Illinois portion of the project is poised to resume construction.

Long-Distance Routes

Some efforts to put Amtrak on more stable financial footing have centered on reforming the long-distance routes that Amtrak operates as part of the National Network. These routes require the largest operating subsidies, have the lowest on-time performance of Amtrak's three business lines, and make many stops at small communities that are not major generators of passenger traffic. At the same time, those communities may see Amtrak service as an important link to other cities or as a point of local pride. This has led to the federal government pursuing policies, sometimes simultaneously, that preserve existing long-distance train service while pushing Amtrak to reduce or eliminate operating losses.

Grants to Improve or Retain Existing Long-Distance Routes

Congress has supported long-distance routes primarily through annual appropriations to the National Network, which help cover operating subsidies and some capital projects necessary to maintain service. The FAST Act authorized gradual increases in grants to the National Network, from $1 billion in FY2016 rising to $1.2 billion in FY2020. Appropriators have generally met or exceeded these authorized levels.

For FY2019, appropriations to the National Network included $50 million to support capital grants necessary to maintain long-distance service over tracks where "Amtrak is the sole operator on a host railroad's line and a positive train control system is not required by law or regulation."[28] These funds were allowed by statute to be used as non-federal matching funds for competitive discretionary grants that would lead to such projects.

This measure was instrumental in sustaining operations of the *Southwest Chief* route that runs from Chicago to Los Angeles. A segment of the route, between La Junta, CO, and Lamy, NM, receives no freight service; track owner BNSF Railway did not wish to pay to maintain the tracks for Amtrak's exclusive benefit, instead offering to reroute the train on different tracks between Kansas and New Mexico. Local communities along the route applied for and received federal TIGER grants, which required $3 million in matching funds from Amtrak. In 2018, Amtrak signaled it would not contribute these matching funds and would instead consider replacing trains with buses in certain areas. However, the $50 million set-aside from FY2019 appropriations

[28] P.L. 116-6, Div. G.

funded the remaining share of project costs, allowing the project to proceed and train service to continue along the entirety of the route.

Proposals to Convert Long-Distance Routes to State-Supported Corridors

Both the Administration and Amtrak itself have proposed changes to long-distance train service. These changes closely parallel Amtrak's plan, ultimately suspended, to replace a section of the *Southwest Chief* with bus service. In its FY2020 budget request, the Administration proposed eliminating operating support for long-distance trains and a corresponding reduction in National Network grants, but an increase in funding to the Restoration and Enhancements grant program.[29] To replace federal operating support for a route, states would be eligible to apply for Restoration and Enhancements funding to bridge the funding gap until funds could be raised locally to support the service. Federal funding would be gradually phased down over the five-year duration of a grant agreement, with the states concerned assuming full responsibility for operating costs on the route by FY2024. States could potentially negotiate with Amtrak about changes to schedules or service levels, or about retaining certain segments while discontinuing others. Trains could be replaced with bus service or discontinued if a state did not wish to support rail service on the route.

In its own FY2020 grant request, Amtrak has shown some willingness to alter how long-distance routes are funded and operated, stating that "a modernization of the National Network, with the right level of dedicated and enhanced federal funding, would allow Amtrak to serve more passengers efficiently while preserving our ability to maintain *appropriate* Long Distance routes" (emphasis added). [30] In a recent letter to Senator Moran, Amtrak CEO Richard Anderson stated,

> While we strongly believe that there is a permanent place for high-quality long-distance trains in our network, the time to closely examine the size and nature of that role is upon us for numerous reasons. ...[Congress] will need to decide whether to continue to fund the operation of all existing long-distance trains with funding to buy new rolling stock and increased levels of financial support or consider changes to the network that could either enhance transportation value or reduce capital and operating expenses.[31]

Nevertheless, the FY2019 Consolidated Appropriations Act contained a Sense of Congress that "long-distance passenger rail routes provide much-needed transportation access for 4,700,000 riders in 325 communities in 40 states and are particularly important in rural areas; and long-distance passenger rail routes and services should be sustained to ensure connectivity throughout the National network."[32] While there were 4.7 million trips on long-distance routes in 2017, and 4.5 million in 2018, many stations that receive only long-distance train service have very few daily boardings and alightings.

Long-Distance Competitive Pilot Program

One way Congress has attempted to control or reduce operating subsidies for passenger rail is to open the network to a greater degree of competition. This has proven to be difficult given Amtrak's advantages over other operators, including a statutory requirement that freight railroads

[29] https://www.transportation.gov/sites/dot.gov/files/docs/mission/budget/334311/fra-fy-2020-budget-estimates-508-compliant.pdf.

[30] https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/reports/Amtrak-General-Legislative-Annual-Report-FY2020-Grant-Request.pdf.

[31] Letter from Amtrak President & CEO Richard H. Anderson to Sen. Jerry Moran, May 20, 2019.

[32] P.L. 116-6, Div. K, §151.

grant Amtrak trains preference in using their tracks, and another requiring Amtrak to be charged only the incremental cost of using another railroad's tracks.[33]

Section 214 of PRIIA required FRA to implement a program that would allow other operators to submit competing bids to take over certain routes operated by Amtrak.[34] This program would be open to any of the railroad companies that serve as hosts to Amtrak long-distance routes, with Amtrak able to respond to any outside bid with one of its own. FRA would then select a winning bidder, which would be entitled to receive an annual operating subsidy of no more than the prior fiscal year's subsidy amount, adjusted for inflation. Up to two routes could be operated in this manner for up to five years, selected from among the worst-performing routes according to a classification system contained elsewhere within PRIIA. FRA promulgated its final rule establishing this program in 2011,[35] but no bids were submitted.

The program was revisited in the FAST Act,[36] which increased the number of available routes from two to three, reduced the operation period from five years to four with the possibility of reapplication for a second four-year term, and capped operating subsidies at 10% below its level in the prior fiscal year. The list of eligible bidders was also expanded to include not just host railroads, but also to one or more states, and to partnerships between a state and a host railroad. FRA promulgated its final rule reestablishing this program in 2017,[37] but again no bids have been submitted.

PRIIA §217: Competition on State-Supported Routes

Section 217 of PRIIA allows states to enter into agreements with entities other than Amtrak to operate their state-supported routes. In 2015, Indiana became the first—and so far only—state to employ this provision when it contracted with a private railroad company to provide equipment for the Chicago-Indianapolis *Hoosier State* route.

At the time, the Chicago-Indianapolis corridor was served by one train in each direction per day. Three days a week, this service was provided by the *Cardinal* long-distance route, which also served Cincinnati, Washington, DC, and New York City. The other four days, the corridor was served by the *Hoosier State* on a comparable schedule. The cost allocation provisions in PRIIA required the State of Indiana to support the shorter route if it were to be continued. After nearly discontinuing service in 2013, Indiana reached an agreement to share the $3 million annual cost between state and local governments, making it the last route to have its PRIIA-required state support agreement in place.[38]

In 2015, the Indiana Department of Transportation (INDOT) selected railroad company Iowa Pacific Holdings to provide and service the equipment, with Amtrak providing crew and handling ticketing. Iowa Pacific was able to offer on-board Wi-Fi and a dining car, neither of which was offered when Amtrak provided the equipment. On-time performance improved in 2016 before falling again in 2017, but ridership did not increase. Less than two years into the contract, Iowa Pacific announced it could no longer fulfill the terms of the agreement without additional subsidies, which Indiana did not provide.[39] Subsequently, Amtrak provided and maintained the equipment as it had done prior to PRIIA. Indiana adopted a two-year budget in April 2019 that did not include continuing subsidies for the *Hoosier State*. Thrice-weekly *Cardinal* service, funded as part of Amtrak's National Network, will continue.[40]

[33] See CRS Report R42512, *Passenger Train Access to Freight Railroad Track*, by John Frittelli.

[34] P.L. 110-432, §214.

[35] 76 *Federal Register* 77716, December 14, 2011.

[36] P.L. 114-94, §11307.

[37] 82 *Federal Register* 31476, July 7, 2017.

[38] Howey Politics Indiana, "Governor: Pence Announces Agreement with Amtrak," HPI Daily Wire, October 16, 2013, https://howeypolitics.com/PrintArticle.aspx?aid=10465&uid=7101a217-4f4f-454d-a64d-fffbfdaa6989.

[39] "Iowa Pacific withdraws from Hoosier State Train service," *Progressive Railroading*, January 31, 2017, https://www.progressiverailroading.com/amtrak/article/Iowa-Pacific-withdraws-from-Hoosier-State-Train-service—50723.

[40] Mary Wisniewski, "Hoosier State Amtrak train from Chicago to Indianapolis to end July 1 because Indiana won't

High-Speed Rail and Other New Lines

Projects to retain or improve existing Amtrak services, as described in the previous section, routinely require investments amounting to tens or hundreds of millions of dollars. High-speed rail systems of the type in use in Europe and Asia, which can make only limited use of infrastructure designed for conventional rail, require significant investments in new infrastructure. Even when built for conventional rail equipment compatible with existing lines, establishing new rail service is a capital-intensive, time-consuming process. For example, a federally funded study of rail options in New York State estimated that instituting 125-mph service from New York City to Albany and Buffalo would require $14.7 billion in capital funding.[41]

A list of active or recently completed corridor plans and their cost estimate ranges can be found in **Appendix B**.

California High-Speed Rail

The California High-Speed Rail (CAHSR) program is a project led by the State of California with the goal of implementing a true high-speed rail system, capable of speeds in excess of 200 mph, between Los Angeles and San Francisco via the Central Valley cities of Fresno and Bakersfield. Ground was broken on the Central Valley section on January 6, 2015. Since that time, the California High-Speed Rail Authority (CHSRA) has completed civil works such as construction of viaducts or grade separations along the route. Construction of the full "Phase 1" system connecting San Francisco to Los Angeles, originally anticipated to be completed in 2028, is now expected to take until 2033.[42]

Funding for CAHSR has never been committed in sufficient quantities to cover the entire projected cost of construction. In 2008, California voters approved ballot measure Proposition 1A, which authorized the state to issue $9 billion in bonds. At the time Proposition 1A was approved, California assumed a level of federal and private sector support that ultimately never materialized. The project did receive a total of $3.9 billion in federal HSIPR grants, some from ARRA and some from FY2010 appropriations. While estimates for the cost of the project have fluctuated, the 2018 business plan estimates the capital cost of the Central Valley segment alone at $10.6 billion, and the Phase 1 system at $77.3 billion.

In February 2019, California Governor Gavin Newsom announced in his State of the State Address that there "simply isn't a path" to complete the full system without additional funding.[43] He later clarified that his comments were not intended to convey that the project was canceled; the section under construction is expected to result in improved passenger rail service in the central valley, and may still result in improved connections to San Francisco once other infrastructure projects are complete.[44] The federal government has taken steps to reclaim federal grant money awarded to the project, on the grounds that the scope of the project has changed too

fund it," *Chicago Tribune*, April 30, 2019, https://www.chicagotribune.com/news/breaking/ct-biz-amtrak-hoosier-train-cut-20190430-story.html.

[41] New York State Department of Transportation and Federal Railroad Administration, *High Speed Rail Empire Corridor Tier 1 Draft Environmental Impact Statement Volume 1*, January 2014, p. 6-13 (exh. 6-9).

[42] California High-Speed Rail Authority, *2018 Business Plan*, June 2018, p. 33.

[43] Sophia Bollag, "'Let's be real.' Gavin Newsom says he'll cut back on California's high-speed rail plan," *The Sacramento Bee*, February 12, 2019, https://www.sacbee.com/news/politics-government/capitol-alert/article226151030.html.

[44] CHSRA Project Update Report to the California State Legislature, March 2019.

much to be an eligible recipient of federal funding under the terms of the grant agreement.[45] California is challenging these efforts in court; of the two largest grants CHSRA received, a $2.6 billion grant has already been fully spent in accordance with a federal deadline, while a second $929 million grant that has no such deadline remains untouched.

All Aboard Florida/Brightline/XpressWest/Virgin Trains USA

After the State of Florida turned down a federal HSIPR grant and canceled its Tampa-Orlando rail project, the private company All Aboard Florida (AAF) began making plans to initiate a new intercity passenger rail line between Miami and Orlando via West Palm Beach. That service, which would come to be called Brightline, does not use the same tracks used by Amtrak, instead using tracks owned by a regional freight railroad, Florida East Coast Industries (FECI; AAF and FECI were at the time both owned by asset management firm Fortress Investment Group). The diesel-powered trains are expected to provide faster service than Amtrak's route between Miami and Orlando, which currently provides two daily long-distance trains in each direction with poor on-time performance.

All Aboard Florida initially sought a $1.6 billion federal RRIF loan to finance construction of the portion of the route between West Palm Beach and Orlando, but no loan was authorized. Instead, AAF applied to U.S. DOT for allocations to sell $600 million of qualified private activity bonds to finance work on the Miami-West Palm Beach segment and another $2.25 billion for the West Palm Beach-Orlando segment.[46] The interest on these bonds is exempt from federal income tax; hence, the federal government is subsidizing the project by allowing it to borrow money at a lower interest rate than it would have to pay without the federal tax exemption.[47] Brightline rail service between Fort Lauderdale and West Palm Beach began on January 13, 2018, with service expanding to Miami by May 19 of that year. Service to Orlando is expected to begin in 2022.

In 2018, All Aboard Florida acquired XpressWest, a private company planning to build and operate a passenger rail service between Las Vegas, NV, and the Los Angeles area. XpressWest had been in the early stages of applying for a RRIF loan that was ultimately not issued. XpressWest was to be a true high-speed rail line with a connection to the California HSR system in Palmdale, and it is not clear whether California Governor Gavin Newsom's changes to the CAHSR plan will have repercussions for the project. In 2019, British based Virgin Group announced a partnership with All Aboard Florida, rebranding both Brightline and XpressWest as Virgin Trains USA. Other Virgin Group subsidiaries have operated intercity trains in the United Kingdom since the 1990s. Virgin Trains USA announced in January 2019 it would sell stock in an initial public offering, but in February the share offering was postponed. On May 30, Virgin Trains announced that construction of the Las Vegas-Southern California line would be delayed for two years.[48]

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[45] "Statement of Federal Railroad Administration on Termination of FY '10 Grant Agreement with California High-Speed Rail Authority," https://railroads.dot.gov/newsroom/statement-federal-railroad-administration-termination-fy-%E2%80%9810-grant-agreement-california.

[46] Virgin Trains USA LLC, Form S-1 Registration Statement, November 16, 2018, p. F-39; Brightline, "Virgin Trains USA Closes $1.75 Billion Private Activity Bond Sale to Fund Phase 2 Expansion to Orlando," press release, April 19, 2019; Shelly Sigo, "$950 million in bonds for Florida's Virgin Trains USA price Thursday," *Bond Buyer*, June 12, 2019.

[47] CRS Report RL31457, *Private Activity Bonds: An Introduction*, by Steven Maguire and Joseph S. Hughes.

[48] Mick Akers, "Start of high-speed rail construction likely delayed 2 years," *Las Vegas Review-Journal*, May 30, 2019.

Texas Central Railway

A private company, Texas Central Partners, is moving forward with plans to construct a true high-speed rail line between the cities of Dallas and Houston. The project, which has the backing of a Japanese rail operator and would use Japanese high-speed rail technology and equipment, would reach top speeds of 186 mph and take 90 minutes end-to-end. There is currently no direct rail service of any kind linking Dallas and Houston. Although the sponsors have stated, "This project is not backed by public funds,"[49] news reports have indicated that the project is likely to depend on long-term loans from the federal government's RRIF and TIFIA programs.[50]

The project is not yet under construction. One obstacle has been the acquisition of land on which to build the new tracks. There have been conflicting county-level court rulings on whether Texas Central can take the land it needs using eminent domain. Despite these legal issues, the company has stated it could begin construction on the line in 2019 or 2020.[51]

Issues for Congress

Corridor Plans Outstrip Historical Funding Availability

Many HSIPR grants funded studies of new or improved passenger rail corridors. A few of these studies were ultimately canceled before reaching completion, but others have resulted in near-finished plans to enhance intercity passenger rail. These plans often feature capital cost projections in the billions of dollars, even for projects with comparatively conservative speed and frequency objectives.

The federal government's current approach to funding passenger rail differs from its approach to funding highways and transit. Although PRIIA and the FAST Act set authorized spending levels over multi-year periods, Amtrak funding is subject to the annual appropriations process, while many highway and transit programs are funded automatically out of Highway Trust Fund balances. Likewise, the HSIPR program lacked predictable funding in part because there was no dedicated revenue source for the program.

In the context of the federal appropriations process it is difficult to provide significant amounts of funding on a predictable basis to a grant program that depends on the Treasury general fund, as it must compete with many other programs for funding each year. This problem is exacerbated by the limits on overall discretionary spending that were imposed by the Budget Control Act of 2011. Supporters of passenger rail service have long called for a dedicated funding source for rail projects, and previous administrations have echoed such calls. To date, however, Congress has not taken such a step.

Rail Plans Are Not Always Coordinated

Rail planning in the United States is not centralized, relying on project sponsors (usually states) to formulate their own plans. Congress and several presidents have, at times, identified corridors as

[49] Texas Central, Learn the Facts, http://www.texascentral.com/facts/, viewed October 14, 2016.

[50] Eric Nicholson, "Texas Central Railway's Fuzzy Definition of 'Privately Financed,'" *Dallas Observer*, August 11, 2015, http://www.dallasobserver.com/news/texas-central-railways-fuzzy-definition-of-privately-financed-7479867.

[51] Maya Cruz, "Houston-Dallas high-speed rail construction may begin in late 2019," *Houston Chronicle*, February 15, 2019, https://www.houstonchronicle.com/neighborhood/spring/news/article/Houston-Dallas-high-speed-rail-construction-may-13620560.php.

investment priorities or set out trip time goals for certain routes, but these have usually not been backed by any financial commitment or implementation plan. The lack of reliable funding for passenger rail capital projects and operations is one obstacle to rail planning, as some states may not wish to invest time and resources into a plan that may not be achievable without additional federal support.

PRIIA contained a requirement for FRA to develop a National Rail Plan (NRP), which has not taken the form of a standalone document.[52] Instead, FRA has issued guidance for states to follow when drafting their own rail plans, as well as cost estimation and cost-benefit analysis guidance for project sponsors to follow when planning new or improved rail lines. FRA has also worked with groups of states to create regional rail plans, identifying service goals and rough cost estimates for passenger rail service between major cities. A rail study in the Southwest is complete, while rail studies in the Midwest and Southeast are ongoing. Regional rail plans are nonbinding and have no construction funding attached. Follow-on policies, including new dedicated funding for rail investment programs, were contained within U.S. DOT legislative proposals that were not enacted.[53]

Legal and Regulatory Hurdles to Competition

The short-lived experiment contracting with an equipment provider for the *Hoosier State* and the failure of the long-distance competitive pilot program to generate any applications show that efforts to foster competition have not resulted in improvements to intercity passenger rail. Part of this may be attributed to the de facto monopoly status enjoyed by Amtrak since its private sector competitors ended their passenger businesses.

Amtrak has statutory privileges that currently would not extend to startup passenger rail operating companies hoping to compete over existing routes. Under current laws and regulations, a new entrant to passenger rail not wishing to negotiate with Amtrak or freight railroads for track access must either have a prior affiliation with an existing freight railroad (as with All Aboard Florida) or must plan to construct its own tracks (as with Texas Central). Congress could re-impose some obligation to accommodate passenger service on freight railroads. The freight rail industry would likely be opposed to such a step.[54]

[52] FRA published a "National Rail Plan Progress Report" in September 2010, describing broad goals and priorities for the national passenger and freight rail systems; https://www.transportation.gov/briefing-room/us-department-transportation-launches-port-infrastructure-development-program.

[53] Rail America Act, Title IX of the GROW AMERICA Act (H.R. 2410, 114th Congress).

[54] See archived CRS Report R42512, *Passenger Train Access to Freight Railroad Track*, by John Frittelli.

Appendix A. Federally Designated HSR Corridors

Table A-1. Description of Federally Designated High-Speed Rail Corridors

Corridor Name	Date Designated	Extent at Designation	Amended Extent
Midwest Corridor (Chicago Hub Network)	Oct. 15, 1992*	Chicago – Milwaukee Chicago – Detroit Chicago – St. Louis	Added Dec. 11, 1998 Milwaukee – Minneapolis/St. Paul Added Jan. 28, 1999 Chicago – Indianapolis – Cincinnati Added Oct. 11, 2000 Chicago – Toledo – Cleveland Indianapolis – Louisville Cleveland – Columbus – Dayton – Cincinnati Added Jan. 19, 2001 St. Louis – Kansas City
Florida Corridor	Oct. 16, 1992*	Miami – Orlando – Tampa	
California Corridor	Oct. 19, 1992*	San Diego – Los Angeles – San Joaquin Valley – San Francisco – Sacramento	Clarified Oct. 11, 2000 Any corridor alignments between the original four major cities Added Jul. 2, 2009 Los Angeles – Las Vegas
Southeast Corridor	Oct. 20, 1992*	Washington – Richmond – Charlotte	Added Dec. 14, 1995 Richmond – Hampton Roads (Norfolk/Newport News) Added Dec. 1, 1998 Charlotte – Greenville – Atlanta – Macon Raleigh – Columbia – Savannah – Jacksonville Added Oct. 11, 2000 Macon – Jesup
Pacific Northwest Corridor	Oct. 20, 1992*	Eugene – Portland – Seattle – Vancouver, BC	
Gulf Coast Corridor	Nov. 18, 1998**	New Orleans – Houston New Orleans – Biloxi – Mobile New Orleans – Meridian – Birmingham	Added Oct. 11, 2000 Birmingham – Atlanta
Keystone Corridor	Dec. 10, 1998**	Philadelphia – Harrisburg	Added Oct. 11, 2000 Harrisburg – Pittsburgh
Empire State Corridor	Dec. 10, 1998**	New York – Albany – Buffalo	

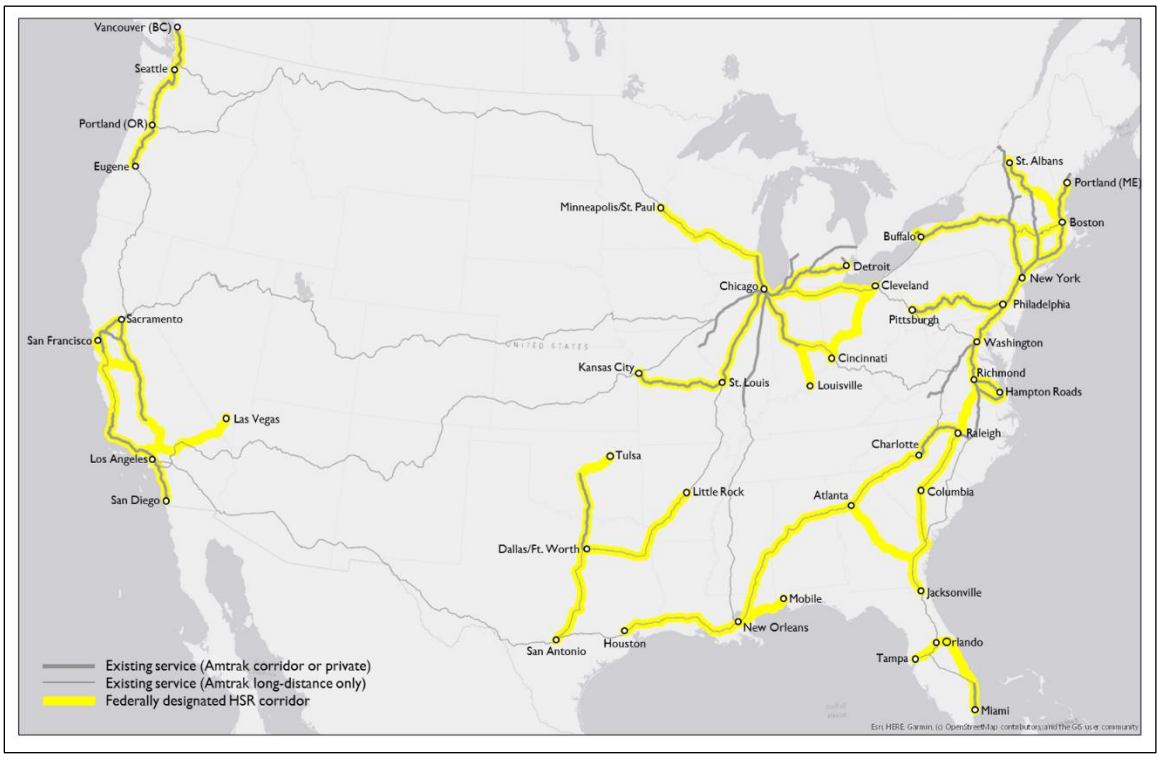
Corridor Name	Date Designated	Extent at Designation	Amended Extent
Northern New England	Oct. 11, 2000**	Boston – Portland/Auburn, ME Boston – Montréal, PQ	Added Dec. 8, 2004 Boston – Springfield – Albany Springfield – New Haven
South Central Corridor	Oct. 11, 2000**	Dallas/Ft. Worth – Austin – San Antonio Dallas/Ft. Worth – Oklahoma City – Tulsa Dallas/Ft. Worth – Texarkana – Little Rock	
Northeast Corridor (NEC)	Mar. 14, 2011***	Washington – Philadelphia – New York City – Boston	

Source: Federal Railroad Administration (archived); https://web.archive.org/web/20110721040155/http://www.fra.dot.gov/rpd/passenger/618.shtml.

Notes: *Designated under ISTEA. **Designated under TEA-21. ***The NEC was not initially designated as a high-speed rail corridor, since the only statutory benefit of being designated was eligibility to receive funds from the grade crossings set-aside, and the NEC already featured very few grade crossings and already offered speeds above the 90 mph target set by ISTEA. To clarify its eligibility to receive funds under new programs, it was officially designated the eleventh high-speed rail corridor in 2011.

Figure A-1. Map of Federally Designated High-Speed Rail Corridors

With existing passenger rail network



Source: Rail routes from Bureau of Transportation Statistics, corridors from Federal Railroad Administration (archived); https://web.archive.org/web/20110721040155/http://www.fra.dot.gov/rpd/passenger/618.shtml.

Appendix B. New, Improved, and Planned Intercity Passenger Rail Lines

Table B-1. New, Improved, and Planned Intercity Passenger Rail Lines

Route	Sector	Route Type	Service Type	Est. Cost ($ Billions)	Status
San Francisco-Los Angeles (California High-Speed Rail)	Public	New	HSR	$77.3	Central Valley segment under construction. Remaining segments not funded. Active litigation.
New York-Albany-Buffalo-Niagara Falls (Empire)	Public	Upgraded	Conventional	$1.7-$14.7	Tier 1 DEIS issued January 2014. FRA anticipates publishing the Tier 1 Final EIS in 2019. Six alternatives under consideration, with top speeds of 79-125 mph.
Dallas-Houston (Texas Central)	Private	New	HSR	$12-$15	Tier 2 DEIS issued September 2017; Tier 2 FEIS/ROD not yet issued. Active litigation.
Miami-Orlando-Tampa (All Aboard Florida/ Brightline/Virgin Trains USA)	Private	New	Conventional	$4 (approx.)	Miami-West Palm Beach segment in operation; Orlando segment under construction; Tampa segment in planning (not counted in est. cost).
Victorville, CA-Las Vegas (XpressWest/Virgin Trains USA)	Private	New	HSR	$7 (approx.)	Not yet under construction.
Atlanta-Charlotte	Public	Upgraded	Conventional	$2.0-$15.4	Tier 1 DEIS not yet issued.
Richmond-Raleigh	Public	New	Conventional	$2.1	Tier 2 FEIS/ROD issued March 2017. Design and construction not funded.
Washington-Richmond	Public	Upgraded	Conventional	$3.4-$5.5	Tier 2 DEIS issued August 2017. Tier 2 FEIS/ROD not yet issued. Does not include Long Bridge project in DC.
Washington-New York-Boston (NEC)	Public	Upgraded	Conventional +HSR	$121-$153	Tier 1 FEIS/ROD issued July 2017. Design and construction not funded.
Harrisburg-Pittsburgh (Keystone)	Public	Upgraded	Conventional	$1.5-$13.1	Environmental review not started.

Route	Sector	Route Type	Service Type	Est. Cost ($ Billions)	Status
Rutland-Burlington	Public	New	Conventional	$0.03	Construction under way using $19 million in federal TIGER grants; will extend current New York-Rutland *Ethan Allen Express* service.
Chicago-St. Louis (Illinois HSR)	Public	Upgraded	Conventional	$4.9-$5.2	Improvements under construction using HSIPR funds (not counted in est. cost), 110 mph service initiated on some segments. Springfield segment under construction. Planning canceled for Chicago and St. Louis segments.
Chicago-Milwaukee (Hiawatha)	Public	Upgraded	Conventional	$0.07-$0.19	Draft EA issued October 2016. Final EA/FONSI not yet issued.
Minneapolis-Duluth (NLX)	Public	New	Conventional	$0.5	Tier 2 FONSI issued February, 2018. Design and construction not funded.
Chicago-Iowa City	Public	New	Conventional	$0.2-$0.3	Some construction complete, but additional state funds required; IL has committed funds necessary to restore service to Moline.
Portland-Eugene	Public	Upgraded	Conventional	$0.9-$4.6	Tier 1 DEIS issued October 2018. Tier 1 FEIS/ROD not yet issued.
San Luis Obispo-Salinas (Coast Daylight)	Public	Upgraded	Conventional	$1.2	Would result in a new Los Angeles-San Francisco service via the route of the *Coast Starlight* long-distance train.
Coachella Valley	Public	Upgraded	Conventional	tbd	Tier 1 DEIS not yet issued.
New Orleans-Mobile	Public	New	Conventional	$0.06	$33 million federal CRISI grant awarded for track improvements, with anticipated initiation in 2021; matching funds secured from states of MS and LA, but not AL.
Richmond-Norfolk	Public	New	Conventional	$0.1	Service initiated 2012.
Lynchburg-Roanoke	Public	New	Conventional	$0.1	Service initiated 2017.

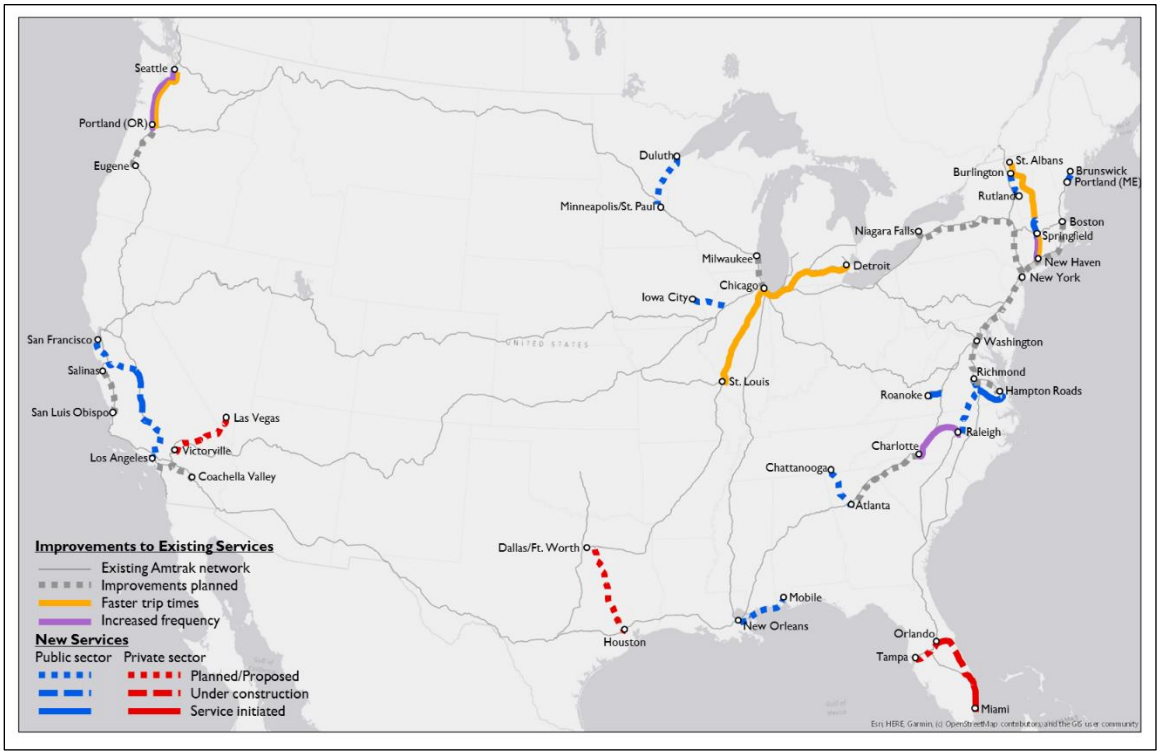
Route	Sector	Route Type	Service Type	Est. Cost ($ Billions)	Status
Richmond-Hampton Roads	Public	Upgraded	Conventional	$1.0	Tier 1 FEIs/ROD issued 2012. Tier 2 study not funded.
Atlanta-Chattanooga	Public	New	HSR	$8.8	Tier 1 FEIS/ROD issued September 2017. Design and construction not funded.

Source: Cost estimates from environmental review documents available at https://www.fra.dot.gov/environment.

Notes: Table includes proposed new/improved passenger rail lines that have received federal grant funding, have advanced past planning stages, or are being advanced privately. Cost estimates may include multiple alternatives still under consideration and have not been adjusted for inflation. For additional information regarding the National Environmental Policy Act (NEPA) process as it pertains to transportation infrastructure projects, see CRS Report R42479, *The Role of the Environmental Review Process in Federally Funded Highway Projects: Background and Issues for Congress*, by Linda Luther.

Figure B-1. Map of New, Improved, and Planned Intercity Passenger Rail Lines

With existing Amtrak network



Source: Existing Amtrak network from Bureau of Transportation Statistics, 2019. New and planned routes based on environmental review documents available at https://www.fra.dot.gov/environment, and may include multiple alternatives still under consideration.

Author Information

Ben Goldman
Analyst in Transportation Policy

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