

The High-Speed Intercity Passenger Rail (HSIPR) Grant Program: Overview

(name redacted)

Analyst in Transportation Policy

October 18, 2016

Congressional Research Service

7-....

www.crs.gov

R44654

Summary

Since 1964, when Japan opened the first rail line allowing trains to travel safely at speeds greater than 150 miles per hour, several European and Asian countries have built high-speed rail lines. There have been frequent calls for the United States to develop similar high-speed rail services, but none have been built. The financial challenge of building high-speed rail lines, which requires many billions of dollars to be spent over a lengthy period before service opens and revenues begin to be collected, makes government financial support unavoidable. Governments in other countries have provided such support, but over many years efforts to get federal support for the construction of high-speed rail lines have, with the partial exception of Amtrak's Northeast Corridor, been unsuccessful. In fact, Congress provided little funding even for expansion of non-high-speed passenger rail service. Opponents of increased funding for intercity passenger rail have contended that it was economically inefficient compared to other modes of travel.

For a brief period in 2008-2009, it appeared that the situation had changed. The 110th Congress authorized several programs to make grants to states for intercity passenger rail development in the Passenger Rail Investment and Improvement Act of 2008 (Division B of P.L. 110-432). The following year, in the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) and the FY2010 Department of Transportation Appropriations Act (Division A, Title I, P.L. 111-117), the 111th Congress appropriated \$10.6 billion to develop both high-speed and conventional intercity passenger rail services. The Federal Railroad Administration of the U.S. Department of Transportation 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. These included multi-billion-dollar grants to California and Florida for high-speed rail lines; Florida subsequently turned down its grant.

This dramatic change in policy ended just as suddenly, as the 112th Congress rescinded \$400 million of the \$10.6 billion previously appropriated and rejected the Administration's requests for additional funding. Succeeding Congresses have also not responded to requests for HSIPR funding. In addition, several states declined significant grants for improvements to their intercity passenger rail lines. That funding was reallocated to other states. All but two of the HSIPR projects are expected to be complete by 2017, but the most ambitious and expensive, the California High-Speed Rail project, will not enter service for many years.

Congress's creation, then abandonment, of the HSIPR program illustrates the challenges of funding major construction projects that take years to complete without a stable source of financing. At the beginning, the federal and state governments lacked the expertise and program framework to implement the program. Now that the expertise and program framework have been developed, they are at risk of disappearing due to the lack of continued funding. Also, such funding spurts make long-term project planning and implementation very difficult.

A challenge facing the future of the HSIPR program is the large amount of funding required for high-speed rail development, combined with the lack of a dedicated funding source and the funding shortages facing other federal transportation programs even with their dedicated funding sources. Another challenge is contending with arguments against intercity passenger rail. Critics assert that it requires larger per-passenger subsidies than other travel modes, that it is not well-suited to the economic geography of the United States, and that near-term technologies may provide better alternatives.

Contents

Introduction	1
Background	1
Definition of High-Speed Rail	3
Program Administration	3
Grants Awarded	4
Status of Major HSIPR Grants	5
California High-Speed Rail Project	6
Chicago-St. Louis Corridor	7
Chicago-Detroit-Pontiac Corridor	8
Chicago-Iowa City Corridor	9
Washington/Pacific Northwest Rail Corridor Program	10
Southeast High-Speed Rail Corridor	10
Northeast Corridor Improvements	11
Why Are the Major HSIPR Projects Taking So Long to Complete?	12
Lessons Learned	13
The Challenge of Sudden Large but Temporary Grant Funding	14
The Challenge of Continuity amid Political Change	15
The Challenge of Providing Large and Stable Amounts of Funding	15
The Challenge of Funding a Small Number of Costly Regional Projects	15

Tables

Table 1. Laws Promoting Development of New or Improved Intercity Passenger Rail Service, 2007-2016	2
Table 2. Timeline of HSIPR Grants	4
Table 3. HSIPR Grants Awarded	5
Table 4. California High-Speed Rail Corridor Major Projects with HSIPR Funding	7
Table 5. Chicago-St. Louis Major Projects	8
Table 6. Chicago-Detroit-Pontiac Corridor Major Projects	9
Table 7. Chicago-Iowa City Corridor Major Projects	9
Table 8. Pacific Northwest Rail Corridor Major Projects	10
Table 9. Southeast High-Speed Rail Corridor Major Projects	11
Table 10. Boston-New York-Washington, DC, NEC Improvements Major Projects	11

Contacts

Author Contact Information	16
----------------------------------	----

Introduction

Since 1971, when it created Amtrak to operate a skeletal network of passenger trains, which were being discontinued by freight railroads, Congress has provided funding to support intercity passenger rail service. Until recently, almost all of that money went to Amtrak, a government-owned corporation, to cover its operating losses and finance capital improvements to Amtrak-owned infrastructure, mainly in the Northeast and Michigan. Amtrak's Northeast Corridor—between Washington, DC, and Boston, with spurs to Harrisburg, PA, and Springfield, MA—offers the fastest rail service in the United States; the route, laid out over a century ago, allows trains to hit 160 miles per hour (mph) for short distances, but the fastest service between major cities averages around 80 mph. This is far slower than many high-speed rail services in other countries.

In 2008 and 2009, Congress took a different approach, appropriating significant amounts to finance development of higher-speed intercity passenger rail services by state governments. To date, however, the results of this investment are not readily apparent in the form of new, faster, or more frequent services. This report examines the High-Speed Intercity Passenger Rail (HSIPR) Grant Program and highlights related issues of potential interest to Congress.

Background

Prior to 2008, Congress rarely provided funding for intercity passenger rail purposes outside of the annual funding for Amtrak. This changed with passage of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA, Division B of P.L. 110-432) in the fall of 2008. PRIIA, which reauthorized Amtrak, included language authorizing the first federal grants to states to develop intercity passenger rail service.¹ Two grant programs for helping states finance rail facilities, infrastructure, and equipment were authorized at a total of \$2.225 billion over five years. This legislation was passed after a number of states expressed interest in expanding intercity passenger rail operations.

President Barack Obama, who took office in January 2009, proposed spending on high-speed rail projects as part of a larger economic stimulus program to address a deep recession. Congress approved the passenger rail program in the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5), which appropriated \$8 billion for grants to states to develop high-speed and intercity passenger rail services.

In April 2009, two months after the passage of ARRA, the President declared that development of high-speed rail (HSR) was a priority for his Administration and said he would ask Congress to appropriate an additional \$1 billion annually for that purpose.² This priority was reflected in the FY2010 Department of Transportation Appropriations Act (Division A, Title I, P.L. 111-117), in which Congress appropriated \$2.5 billion for high-speed and intercity passenger rail grants to states.

Since that time, Congress has not appropriated further amounts for the HSIPR program, although the Administration has repeatedly requested billions of dollars in additional funding for intercity

¹ §§301-302, Division B.

² In April 2009 the President released a strategic plan for high-speed rail, including a proposal for budgeting an additional \$1 billion a year for five years. The plan said the funding would be “a down payment to jump-start a potential world-class passenger rail system and sets the direction of transportation policy for the future.” U.S. Department of Transportation, “President Obama, Vice President Biden, Secretary LaHood Call for U.S. High-Speed Passenger Trains,” press release, April 16, 2009, DOT 51-09, at <https://www.fra.dot.gov/eLib/details/L00986>.

passenger rail development. Indeed, the 112th Congress rescinded \$400 million previously appropriated for this purpose.³

In December 2015 Congress reauthorized federal surface transportation programs in the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94). The act authorized \$2.2 billion for grants to states and rail carriers for improving intercity passenger and freight rail transportation systems, in addition to funding for Amtrak.⁴ However, this funding was authorized from the general fund, not from dedicated funds, and whether any of the funding is actually appropriated will be determined by Congress through the annual Department of Transportation (DOT) appropriations acts. For FY2016, the FAST Act authorized \$200 million for such grants, but Congress did not appropriate any funding for this purpose.

Table 1 provides a detailed chronology of recent congressional actions to support new or improved intercity passenger rail service.

**Table 1. Laws Promoting Development
of New or Improved Intercity Passenger Rail Service, 2007-2016**

Date of Enactment	Legislation	Notes
December 26, 2007	FY2008 Department of Transportation Appropriations Act (P.L. 110-161, Division K, Title I)	\$30 million for grants to states to improve existing or develop new intercity passenger rail service.
October 16, 2008	Passenger Rail Investment and Improvement Act of 2008 (PRIIA) (P.L. 110-432, Division B)	Authorized an Intercity Passenger Rail Service Corridor Capital Assistance program (§301), a High-Speed Rail Corridor Development program (§501), and a Congestion Grants program (§302) to reduce congestion or facilitate intercity passenger rail ridership growth.
February 17, 2009	American Recovery and Reinvestment Act of 2009 (P.L. 111-5, Division A, Title XII)	Appropriated \$8 billion for the three programs authorized in PRIIA; projects must be completed by September 30, 2017.
March 11, 2009	FY2009 Department of Transportation Appropriations Act (P.L. 111-8, Division I, Title I)	Appropriated \$90 million for grants to states to improve existing or develop new intercity passenger rail service.
December 16, 2009	FY2010 DOT Appropriations Act (P.L. 111-117, Division A, Title I)	Appropriated \$2.5 billion for the three programs authorized in PRIIA; not less than 85% of this funding is for development of entire segments or phases of intercity or high-speed rail corridors.
April 15, 2011	Full-Year Continuing Appropriations Act (P.L. 112-10, Division B)	Rescinded \$400 million from prior year unobligated funding for high-speed and intercity passenger rail projects.
December 4, 2015	Fixing America's Surface Transportation (FAST) Act (P.L. 114-94)	Authorized \$2.2 billion for grants to states and rail carriers for intercity passenger and freight rail development, in addition to grants to support Amtrak. Also expanded uses of the Railroad Rehabilitation and Improvement Financing loan program.

Source: Compiled by CRS.

³ Although between 2010 and 2015 Congress did not appropriate any money for HSIPR grants, Congress did encourage DOT to make greater use of the Railroad Rehabilitation and Improvement Financing (RRIF) loan program for freight and passenger rail projects. In August 2016 it was announced that DOT would loan Amtrak \$2.45 billion through the RRIF program to purchase new high-speed trainsets for the Northeast Corridor.

⁴ The act also made development connected to rail stations eligible for loans under the RRIF program.

Definition of High-Speed Rail

There is no single statutory definition of what constitutes “high-speed rail.” At different times Congress has defined high-speed rail as having maximum speeds above 90 miles per hour, 110 miles per hour, and 125 miles per hour.⁵ The Federal Railroad Administration (FRA), prior to the HSIPR program, had developed a functional definition that did not specify the speed that qualified a service as high-speed; it defined high-speed rail as service “that is time-competitive with air and/or auto for travel markets in the approximate range of 100 to 500 miles.” For the purpose of the HSIPR program, FRA used the standard in the *U.S. Code*: service “reasonably expected to reach speeds of at least 110 mph.”⁶ FRA often refers to routes with track speeds above 79 mph but below 110 mph as “higher-speed” rail. FRA also describes three tiers of intercity rail service:

- Core Express (125 mph-250+ mph);
- Regional (90 mph-125 mph); and
- Emerging (up to 90 mph).⁷

Program Administration

FRA in DOT has primary responsibility for federal grants for passenger rail projects. The FRA had primarily been a rail safety regulatory agency throughout its history, with virtually no experience in grantmaking until September 2008, when it awarded the \$30 million Congress appropriated for grants in FY2008. Five months later, Congress appropriated almost 300 times that amount—\$8 billion—for rail grants in ARRA, giving FRA four months to issue interim guidance to implement the new program.⁸

Although high-speed rail grabbed the headlines, Congress directed that the ARRA funding was also to be used for other intercity passenger rail service and for grants to relieve congestion on the railroad network.⁹ In its program guidance FRA combined the grant programs authorized in PRIIA, the funding in ARRA, and the FY2009 DOT appropriations act to produce four categories (“tracks”) of grants:

- Track 1—Projects: for small-scale construction that could be completed within two years;
- Track 2—Programs: for a set of interrelated projects that improve all or a portion of a corridor;

⁵ See Table 3 in CRS Report R40973, High Speed Rail (HSR) in the United States, coordinated by (name redacted).

⁶ 49 U.S.C. §26106(b)(4).

⁷ Federal Railroad Administration, High-Speed Intercity Passenger Rail (HSIPR) Program: Corridor Investment Strategy, <https://www.fra.dot.gov/Page/P0134>.

⁸ In the PRIIA legislation enacted four months prior to ARRA, Congress had given FRA two years to develop the guidance for the new passenger rail grant programs created in PRIIA.

⁹ This involved some complications, since the ARRA funding required no matching funding, while the grant programs Congress authorized in PRIIA did require a 20% local match, and the eligible applicants and projects were different among the authorized grant programs.

- Track 3—Planning: to support work needed to advance a project to the point of applying for funding under Tracks 1 or 2 to create a pipeline of future construction projects;¹⁰ and
- Track 4—FY2009 Appropriations Projects: an alternative to Track 1, using the FY2009 funding (which required a 50% match, while the ARRA funding did not require a match).

FRA gave states a relatively short window for submitting grant applications, although it provided a bit more time for the more complex applications for Track 2 grants (see **Table 2**). It required would-be applicants to submit preapplications, in part to help FRA judge the staff resources it would need to administer the program.

Table 2. Timeline of HSIPR Grants

Date	Note
February 17 (ARRA)/March 11, 2009 (FY2009 DOT Appropriations)	Initial round of funding: \$8.09 billion total
June 23, 2009	FRA issues interim grant guidance
July 10, 2009	Preapplications required from potential grantees
August 25, 2009	Deadline for applications for Tracks 1, 3, and 4
October 2, 2009	Deadline for applications for Track 2
December 16, 2009	Congress appropriates another \$2.5 billion for HSIPR grants
January 28, 2010	FRA announces first round of grant awards
May 2010	FRA begins to obligate funding to grantees
October 28, 2010	FRA announces second round of grant awards
December 2010	FRA reallocates \$1.2 billion from grants declined by Ohio and Wisconsin to ongoing projects in other states (mostly to California, Florida, and Washington)
May 2011	FRA reallocates \$2.0 billion from grants to Florida to ongoing projects in other states

Source: Federal Railroad Administration, various *Federal Register* notices regarding HSIPR grants; Government Accountability Office, various reports on HSIPR program.

Grants Awarded

FRA received 278 preapplications requesting \$102 billion in the first round of HSIPR grants in 2009, and ultimately received 229 applications for \$57.8 billion from 39 states, the District of Columbia, and Amtrak. It awarded 108 grants in the first round and 50 in the second (and final) round to 32 states and the District of Columbia. **Table 3** shows the grant awards by track.¹¹

¹⁰ Planning activities are also eligible expenses under Tracks 1, 2, and 4.

¹¹ These numbers represent the final distribution of grants awarded.

Table 3. HSIPR Grants Awarded

Track	Projects		Amount Awarded	
	Number	% of total	Millions of dollars	% of total
Track 1: Individual Project: Preliminary Engineering / NEPA	36	23%	\$253	3%
Track 1: Individual Project: Final Design / Construction	47	30%	\$1,594	16%
Track 2: Corridor	28	18%	\$8,072	80%
Track 3: Planning	35	22%	\$38	>1%
Track 4: FY2009 Appropriations: Individual Project—Final Design / Construction	9	6%	\$80	>1%
Multi-State: FRA-Led Planning	3	2%	\$20	>1%
Total	158	100%	\$10,057	100%

Source: CRS, based on a list of grants provided by the Federal Railroad Administration.

Notes: Percentage columns may total more than 100% due to rounding. NEPA refers to studies required under the National Environmental Policy Act prior to project approval.

Reflecting the two distinct goals of the high-speed rail funding in ARRA—the short-term goal of stimulating the economy and the long-term goal of developing a high-speed rail network—the HSIPR grants fell into two categories. Many small grants were awarded for work that could be completed quickly; 36 grants were for less than \$1 million each, and another 53 were for less than \$10 million each. A relatively small number of grants funded large-scale projects involving heavy construction: 16 grants, roughly 10% of the total number awarded, accounted for 84% (\$8.4 billion) of the total HSIPR grant funding.¹²

After the awards were announced, prominent grants for the development of high-speed rail projects in Florida (\$2.4 billion), Wisconsin (\$810 million), and Ohio (\$400 million) were declined by the newly elected governors of those states, who expressed concern that the construction and operating costs for their rail projects might exceed initial estimates and ultimately require additional state funding. Congress had directed that funding not used by a grantee should be returned to DOT and used for other intercity passenger rail projects at the discretion of the Secretary of Transportation,¹³ so the money was reallocated to other grantees. These forgone and reallocated grants represented nearly one-third of the total funding awarded through the HSIPR program.

Status of Major HSIPR Grants

Congress provided that the \$8 billion appropriated for high-speed and intercity passenger rail development in ARRA, which made up the majority of the HSIPR grant funding, had to be expended by the end of FY2017.¹⁴ On July 14, 2016, FRA testified that over half of the projects

¹² Figures and amounts compiled from a list of HSIPR projects provided by FRA.

¹³ 49 U.S.C. §24402(h).

¹⁴ The \$2.5 billion that was appropriated for this purpose in the FY2010 Department of Transportation Appropriations Act was made available until expended.

funded under the HSIPR program have been completed.¹⁵ Following is a brief survey of the status of the major HSIPR grants, defined as those exceeding \$100 million. A total of 15 grants exceeding \$100 million were awarded for six corridors.

California High-Speed Rail Project

The California High-Speed Rail Authority proposes to build a 520-mile dedicated rail line between San Francisco and Los Angeles that will allow trains to reach speeds up to 220 mph. The project, approved by California voters in a 2008 referendum that authorized the sale of \$9 billion of bonds for the initial phase, is to provide service linking San Francisco and Los Angeles in as little as two hours and 40 minutes. A recent change to the first phase would also provide service between San Francisco and the Central Valley city of Merced. A second phase is to serve Sacramento and San Diego.

The total cost of the stretch between San Francisco and Los Angeles, including the link to Merced and some improvements to commuter train infrastructure that will eventually benefit high-speed rail, is estimated to be \$55.3 billion in 2015 dollars.¹⁶ The state legislature has approved the use of certain state revenues for the project, but most of the cost has not yet been funded.

This is the only project receiving HSIPR funding that involves building an entirely new rail line, and is the only HSIPR-supported project that would be considered “high-speed rail” by international standards.¹⁷ ARRA directed DOT to give priority in awarding grants to projects that supported the development of intercity high-speed rail service; after the return of several HSIPR grants by other states, the California project has received four HSIPR grants totaling \$3.9 billion. The “initial construction segment” for which most of that funding was provided extends from just south of Merced to Shafter, just north of Bakersfield, a distance of 118 miles; the estimated construction cost of this segment is \$7.3 billion.¹⁸

¹⁵ Statement of Sarah Feinberg, Administrator, Federal Railroad Administration, before the House of Representatives Committee on Oversight & Government Reform, Subcommittee on Transportation and Public Assets, July 14, 2016.

¹⁶ Or \$64.2 billion in dollars reflecting anticipated inflation during the period of construction. California High-speed Rail Authority, *Connecting and Transforming California: 2016 Business Plan*, May 1, 2016, http://www.hsr.ca.gov/about/business_plans/2016_Business_Plan.html, p. 68.

¹⁷ In the international context, high-speed rail generally refers to trains that operate at more than 125 mph (some operate at up to 180 mph) on tracks that are reserved for the exclusive use of high-speed trains, so that such trains do not have to share tracks with slower trains.

¹⁸ Mac Taylor, *Review of High-Speed Rail Draft 2016 Business Plan*, California Legislative Analyst’s Office, March 17, 2016, p. 7, Figure 4, <http://www.lao.ca.gov/reports/2016/3394/HSR-Draft-Business-Plan-Review-031716.pdf>.

Table 4. California High-Speed Rail Corridor Major Projects with HSIPR Funding

Major Projects	HSIPR Grant (dollars in millions)	Scheduled Completion	Status
Phase I HSR Program—Design/Build: Start of 520-mile Phase I activities <ul style="list-style-type: none"> • Right-of-way acquisition • Grade separation • Track and station construction and improvements 	\$2,553	2022	Construction under way (groundbreaking January 6, 2015)
Initial Central Valley HSR Segment: Madera County to Bakersfield (Kern County) <ul style="list-style-type: none"> • Right-of-way acquisition • Site work • Final design and construction of HSR segment 	\$929	2022	Construction under way
Transbay Transit Center Train Box <ul style="list-style-type: none"> • Build underground level of Transbay Transit Center in San Francisco as station for HSR 	\$400	2017	Construction under way

Source: Federal Railroad Administration San Diego—Los Angeles—San Francisco—Sacramento (CAHSR) fact sheet; personal communication from Federal Railroad Administration.

Status: Construction began in the Fresno area in January 2015. The California High-Speed Rail Authority, the state agency overseeing the project, forecast in 2016 that it will open service between San Jose and both Merced and the Bakersfield area in 2025 and on the longer route between San Francisco and Los Angeles in 2029. However, the agency identified “failure to receive the anticipated amount of public funding at the requisite time” as among the risks that could delay the project and increase its cost.¹⁹ Several projects receiving financial support from the California High-Speed Rail Authority to improve existing commuter rail lines to permit future use by high-speed trains are expected to come into service as early as 2021.

Chicago-St. Louis Corridor

Three major HSIPR grants totaling \$1.34 billion were made for improvements on this 285-mile corridor. The purpose of the project was to reduce travel time and increase service in order to convert a portion of travelers in this corridor from driving to using rail. In addition, the improvements are intended to avert the possibility that increased freight rail traffic in the corridor could degrade the speed and reliability of existing passenger rail service over time. Generally, the project involved adding a parallel track along the existing tracks in the corridor to improve reliability and safety and to increase the number of passenger rail trips.²⁰ Project elements include

¹⁹ Ibid., pp. 75, 102. The HSIPR grant funding derived from ARRA has to be expended by September 2017. To allow the California High-Speed Rail Authority to expend the grant funds by this deadline, FRA is allowing the authority to do a “tapered match” (i.e., to spend the federal portion of its grant first and its matching fund portion later); U.S. House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Field Hearing on “Continued Oversight of the California High-Speed Rail Project,” *Summary of Subject Matter*, August 26, 2016, p. 2, http://transportation.house.gov/uploadedfiles/2016-08-29_-_rr_ssm.pdf.

²⁰ The vast majority of the nation’s rail network is owned by private freight rail companies, so in this and many other (continued...)

- 262 miles of main track upgraded to enable 110-mph service,
- improvements to 252 grade crossings,
- construction of new second tracks and sidings,
- installation of fencing along the corridor (in urban areas and select rural areas),
- upgrading of train control signals to provide positive train control,²¹
- repair and replacement of bridges,
- renovation or construction of eight stations, and
- purchase of eight new high-speed train sets.

Table 5. Chicago-St. Louis Major Projects

Project	HSIPR Grant (dollars in millions)	Scheduled Completion	Goals
Chicago-St. Louis Corridor Improvement	\$1,142	2017	Increase top speed from 79 mph to 110 mph on 92% (262 miles) of the corridor; reduce trip time by 15% (340 to 285 minutes); improve on-time performance and reliability.
Corridor Improvement Program: Dwight-Joliet	\$186	2017	
Midwest Equipment Pool	\$268	2017	

Source: CRS, based on information in the Federal Railroad Administration's Chicago-St. Louis corridor fact sheet and the Illinois Department of Transportation's High-Speed Rail website (www.idothrs.org).

Note: Midwest Equipment Pool grant is for acquisition of equipment that can be used on multiple Midwestern corridors.

Status: As of September 2016, the HSIPR grant work has not resulted in any travel time reductions or service frequency increases on this corridor. When the work is completed, it is expected to result in reduced trip times and increased on-time performance.

Chicago-Detroit-Pontiac Corridor

A total of 11 HSIPR grants totaling \$600 million are funding improvements to this 304-mile corridor. Passenger service is provided by Amtrak's Wolverine route. Major project elements include

- purchase of 135 miles of Norfolk Southern track and right-of-way to be upgraded;

(...continued)

cases the improvements are being made to their property. The improved infrastructure will be owned by the host railroad, and the grantees are required to maintain the improvements and passenger rail service using them for 20 years, or repay a pro-rata share of the grant funding to FRA. In the case of the large-scale corridor projects covered here, most also have agreements to ensure that the passenger rail service benefits that the investments are intended to provide are achieved. These agreements are unique to each project, but typically involve the grantee, Amtrak, and the host freight railroad.

²¹ Positive train control (PTC) is a communications and signaling system that is capable of preventing crashes resulting from mistakes by train operators or dispatchers. Congress has mandated that all passenger routes be equipped with this technology by December 2018. For more information, see CRS Report R42637, *Positive Train Control (PTC): Overview and Policy Issues*, by (name redacted)

- a flyover eliminating an at-grade crossing of two busy rail lines, reducing delays; and
- infrastructure improvements to increase track speeds.

Table 6. Chicago-Detroit-Pontiac Corridor Major Projects

Major Projects	HSIPR Grant (dollars in millions)	Scheduled Completion	Goals
Dearborn-Kalamazoo Service Development Plan	\$197	2016	Increase top speed from 79 mph to 110 mph for 77% (235 miles) of the corridor; reduce trip time by 9% (335 to 305 minutes); increase on-time performance and reliability.
Dearborn-Kalamazoo Corridor Acquisition and Improvements	\$150	2016	
Englewood Flyover	\$126	2016	
Midwest Equipment Pool	\$268	2017	

Source: CRS, based on information in the Federal Railroad Administration's Chicago—Detroit—Pontiac corridor fact sheet.

Note: Midwest Equipment Pool grant is for acquisition of equipment that can be used on multiple midwestern corridors.

Status: As of September 2016, the HSIPR grant work has resulted in a 10-minute reduction in trip times between Chicago and Detroit. When the work is completed (expected by the end of 2016), it is projected to reduce trip times by another 20 minutes and improve on-time performance. Additional investments will likely be needed to further reduce trip times and increase train frequencies.

Chicago-Iowa City Corridor

The Illinois and Iowa departments of transportation received \$230 million in grants to upgrade track and signaling systems and build new stations as part of restoring 79-mph passenger rail service between Chicago and Iowa City. At the request of the state agencies, the grant was split into two parts, with \$177 million awarded to the Illinois DOT for Phase 1 (Chicago-Moline) and \$53 million awarded to Iowa DOT for Phase 2 (Moline-Iowa City).

Table 7. Chicago-Iowa City Corridor Major Projects

Major Projects	HSIPR Grant (dollars in millions)	Scheduled Completion	Goals
Chicago-Iowa City Corridor Phase I <ul style="list-style-type: none"> • Upgrade 74 miles of track between Chicago and Moline, IL • Install new signaling and traffic control systems • Build two new rail stations 	\$177	Uncertain	To reestablish 79-mph passenger rail service between Chicago and Iowa City; create an alternative to auto, bus, and air travel in this 220-mile corridor; and support the expansion of passenger rail service through Chicago in the Midwest.

Source: Federal Railroad Administration, "HSIPR Grants by Region," <https://www.fra.dot.gov/Page/P0554>; Iowa Department of Transportation, various documents published by the Rail Division, including *Status Report on Midwest Regional Rail Passenger Initiative and Passenger Rail Service in Iowa*, February 1, 2016, <http://publications.iowa.gov/21461/1/2016%20Passenger%20Rail%20Legislative%20report.pdf>.

Status: Work on Illinois’s Phase 1 portion of the corridor was delayed by a new state administration, but the state is now developing a revised schedule for the project so that FRA can amend the grant to extend the project end date. Iowa is pursuing preliminary engineering and environmental clearances for Phase 2, but has not identified state and local match funding required to access the Phase 2 federal funding, and has not yet determined whether it will move forward with final design and construction of Phase 2.

Washington/Pacific Northwest Rail Corridor Program

The Washington State Department of Transportation is administering the Pacific Northwest Rail Corridor Improvement Program (PNWRC Program), which received 11 HSIPR grants totaling \$809 million. The goal of the PNWRC Program is to improve the level of service of the Amtrak Cascades route (a state-supported route) between Portland, OR, and Vancouver, British Columbia.

The PNWRC program has approximately 17 component projects. Several of the components have been completed, including improvements to existing stations. The PNWRC Program is scheduled to be completed by April 2017.

Table 8. Pacific Northwest Rail Corridor Major Projects

Major Projects	HSIPR Grant (dollars in millions)	Scheduled Completion	Goals
Pacific Northwest Rail Corridor Program (reroute existing service and build bypass tracks)	\$752	2017	Reduce travel time by 5% (from 210 to 200 minutes) between Seattle and Portland; add two daily round-trips between Seattle and Portland, bringing the total to seven; increase on-time performance to 88%.

Source: CRS, based on Federal Railroad Administration’s Eugene—Portland—Seattle—Vancouver, BC (PNWRC) fact sheet and personal exchanges with Washington Department of Transportation.

Status: As of September 2016, the HSIPR grant work has not resulted in any travel time reductions or service frequency increases on this corridor. When the work is completed, it is expected to reduce trip time in the corridor by 10 minutes between Seattle and Portland, and two daily round-trips between Seattle and Portland will be added.²²

Southeast High-Speed Rail Corridor

The Southeast High-Speed Rail Corridor extends 730 miles, from Washington, DC, to Atlanta, GA. The corridor received eight HSIPR grants totaling \$740 million. Of that, grants totaling \$630 million were made for improvements to the 173-mile portion of the corridor running between Charlotte and Raleigh in North Carolina; the largest grant was \$520 million.

²² Washington Department of Transportation, *Rail Division Action Plan – 2016*, March 2016, <http://www.wsdot.wa.gov/rail>.

Table 9. Southeast High-Speed Rail Corridor Major Projects

Major Projects	HSIPR Grant (dollars in millions)	Scheduled Completion	Goals
Piedmont Corridor Improvement Program <ul style="list-style-type: none"> • Preliminary engineering • Environmental review • Equipment rehabilitation • Stations and facilities improvements • Construction 	\$520	2017	Enable two additional trains daily between Charlotte and Raleigh; increase safety.

Source: CRS, based on Federal Railroad Administration's Washington, DC—Raleigh—Charlotte—Atlanta (SEHSR) fact sheet.

Status: As of September 2016, the HSIPR grant work has not resulted in any travel time reductions or service frequency increases on this corridor. However, North Carolina DOT has stated that it plans to initiate a fourth daily train in 2017, after the project is completed, and a fifth daily train in 2019. The work is also expected to improve on-time performance.

Northeast Corridor Improvements

A total of 11 HSIPR grants totaling \$983 million were awarded for projects on the Northeast Corridor (NEC), a 455-mile corridor running from Washington, DC, through New York City to Boston, MA. The bulk of that funding went to two projects in New Jersey.

Table 10. Boston-New York-Washington, DC, NEC Improvements Major Projects

Major Projects	HSIPR Grant (dollars in millions)	Scheduled Completion	Goals
NJ: NEC power, signal, track, catenary improvements between Trenton, NJ, and New York; upgrades to electrical power, signal systems, tracks, and overhead catenary wires between Trenton and New Brunswick, NJ	\$450	2020	Increase top speed to 160 mph, increase frequencies of trains, and improve reliability of infrastructure.
NY: NEC Harold Interlocking Amtrak Bypass Routes: new conflict-free interlocking at Harold Bypass in Queens, NY, one of the busiest interlockings in the nation	\$295	2022	Reduce trip times and improve schedule reliability by reducing delays at Harold Interlocking.

Source: Federal Railroad Administration, Boston—New York—Washington, DC (NEC) fact sheet; Amtrak, NEC Projects: New Jersey High-Speed Rail Improvement Program (<https://nec.amtrak.com/content/new-jersey-high-speed-rail-improvement-program>).

Notes: The majority of HSIPR grants were funded from ARRA P.L. 111-5; that funding had an availability deadline of September 2017. The \$2.1 billion in HSIPR funding provided in the FY2010 Department of Transportation Appropriations Act (Title I, Division A of P.L. 111-117) is available until expended. An interlocking is a place where two or more rail lines merge or cross at the same level (at-grade).

Status: As of September 2016, the HSIPR grant work has not resulted in any travel time reductions or service frequency increases on the NEC. When the work is completed, it is expected to result in reduced trip times and increased on-time performance.

Why Are the Major HSIPR Projects Taking So Long to Complete?

Many of the HSIPR grants were for relatively small projects—often planning and/or preliminary engineering work—that have already been completed. With two exceptions—the California High-Speed Rail Corridor project, which is the largest and most complex transportation project ever undertaken in the United States,²³ and the Chicago-Iowa City project, the completion of which is in question—the major projects described above are scheduled for completion by fall 2017, seven years after receiving funding.

The considerable time required to complete the projects has been a focus of criticism. However, it is not clear that the projects are in fact taking a long time, relative to surface transportation projects of similar complexity. Although some planning and environmental clearance work had been done on several of the projects prior to their receipt of HSIPR grants, the grants themselves, which constituted the majority of the funding for these projects, were not awarded until 2010. An analysis in 2001 found that the average time required to complete surface transportation projects was 13 years after the beginning of the preliminary engineering phase, with some projects—typically those that encounter significant community opposition or environmental, funding, or land acquisition issues—taking much longer.²⁴

In addition to the complexities typically faced by major surface transportation projects, the HSIPR projects have faced two challenges not faced by highway projects—the need for many grantee states to create rail planning and project management agencies, and the occasional and unpredictable availability of federal funding for HSIPR projects. Many states had no rail development programs prior to 2008, and had to hire engineering professionals, planners, and managers with experience in passenger rail project implementation in the United States before projects could advance.²⁵ They then had to undertake environmental reviews, design, engineering, and, in some cases, land acquisition before construction could proceed. In some cases, project completion has required additional federal assistance beyond what was provided through the HSIPR program, and that assistance was uncertain. For example, construction of a new station in Raleigh, NC, as part of the Southeast High-Speed Rail Corridor project relies on two grants from DOT's Transportation Investment Generating Economic Recovery (TIGER) program. These grants were approved in 2012 and 2013, well after North Carolina received a \$520 million HSIPR grant.

The largest and most complex of the HSIPR projects, the California High-Speed Rail Corridor, illustrates the challenges involved. The project has been in development for many years. The initial environmental impact statement was completed in 2004, but no funding was then available to advance the project. A state referendum to approve borrowing funds for the project was postponed twice before being put before voters in November 2008. The referendum was

²³ Unless one considers the construction of the Interstate Highway System a single project.

²⁴ Federal Highway Administration, *Evaluating the Performance of Environmental Streamlining: Development of an EPA Baseline for Measuring Continuous Performance*, and *Evaluating the Performance of Environmental Streamlining: Phase II*, cited in National Surface Transportation Policy and Revenue Study Commission, *Evaluation of Time Currently Required to Implement Rail, Highway, Transit, and Port Projects from "First Thought" to Operation*, Commission Briefing Paper 4K-01, January 12, 2007.

²⁵ Federal Railroad Administration, "High-Speed Intercity Passenger Rail Program Notice of Funding Availability and Interim Program Guidance," 74 *Federal Register* 29903, June 23, 2009.

approved, and a few months later Congress authorized the HSIPR grant program in ARRA. In 2010, FRA awarded the project an HSIPR grant.

Subsequently, as the project has proceeded through final design and more detailed environmental clearances, it has faced lawsuits by entities wishing to alter its route or stop its construction. These lawsuits, some of which are still in process, have limited the ability of the project to draw on state funding and have delayed activities such as land acquisition.²⁶ The project, which involves crossing earthquake fault zones and mountain ranges, also faces significant environmental and engineering challenges.

It also faces questions about further funding. As additional engineering has brought the details of the project into focus, the cost estimate has increased, and the current estimate of around \$64 billion for Phase 1 (in dollars reflecting inflation during the construction period) is several times greater than the amount of funding currently identified for the project. The project's business plan calls for a significant portion of the total cost to be covered by federal funding,²⁷ but there is no obvious source of additional federal funds beyond the almost \$4 billion of HSIPR grants already obligated. The state of California has dedicated some receipts from auctions of state carbon dioxide emissions permits to the project, but the rate at which these funds will be received is uncertain.

Lessons Learned

If the United States is ever to have true high-speed rail service, this will likely require significant government funding. Financing high-speed rail projects through private investment is very difficult, because vast amounts of money must be spent to build the service before a project starts to earn any revenue—and even then, very few high-speed rail lines anywhere in the world have generated sufficient revenue to cover both construction costs and operating costs. Although the sponsors of a proposed high-speed rail line in Texas have stated, “This project is not backed by public funds,”²⁸ news reports have indicated that the project is likely to depend on long-term loans from the federal government's Railroad Rehabilitation and Improvement Financing and Transportation Infrastructure Finance and Innovation Act (TIFIA) programs.²⁹ Similarly, while All Aboard Florida, a company related to the Florida East Coast Railroad that is developing a passenger rail service between Miami and Orlando, has stated that it has requested “no state or federal grant money” and that “no ongoing taxpayer subsidies [are] required,”³⁰ the venture has

²⁶ Of about 870 pieces of property needed for the first construction segment, on which construction began in early 2015, about 300 parcels had not yet been acquired as of July 2016. Tim Sheehan, “Vidak, Patterson score wins in legislative efforts on high-speed rail,” *Fresno Bee*, August 23, 2016, <http://www.fresnobee.com/news/local/high-speed-rail/article97427642.html>.

²⁷ The 2016 business plan does not identify a specific amount of federal funding. The previous version of the business plan projected that \$42 billion of the then-estimated \$68 billion project cost (62%) would come from federal funds. The federal share of overall project costs in major federal transportation grant programs is typically 80%, though congressional policy riders have limited the Federal Transit Administration's transit construction program to 60% over the past decade, and federal highway programs can go to 100% under certain circumstances.

²⁸ Texas Central, Learn the Facts, <http://www.texascentral.com/facts/>, viewed October 14, 2016.

²⁹ 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>.

³⁰ All Aboard Florida, Fact Sheet, <http://www.allaboardflorida.com/project-details/aaf-fact-sheet>, viewed October 14, 2016.

received federal money to improve rail-highway grade crossings³¹ and is proposing to issue bonds that would benefit from a federal tax subsidy.³²

Given the important role of federal support for high-speed and other intercity passenger rail projects, lessons drawn from experience to date may prove useful for the future.

The Challenge of Sudden Large but Temporary Grant Funding

Each time federal highway and transit programs are reauthorized, a central point made by the states and localities that receive grants through those programs is the great value of having a long period of predictable funding. A predictable level of funding enables the recipients to plan and implement projects efficiently, avoiding the uncertainty of not knowing how much money will be available in a given year and the higher costs that come with that uncertainty. Funding certainty also facilitates the hiring and retention of people with expertise in transportation project development and implementation, without which projects will be more difficult to complete.

Another consequence of unpredictable funding is project delay. For example, the mandatory environmental impact analyses for some of the HSIPR projects had already been completed prior to the availability of HSIPR funding, but the projects had not progressed. Since conditions change over time, environmental impacts need to be reevaluated after a period of time, typically five years. Hence, in some instances earlier environmental analyses needed to be repeated, delaying the start of construction.

Although the term “shovel-ready projects” was frequently used to refer to projects funded under ARRA, the major HSIPR projects were far from shovel-ready; many of the states previously had no reason to invest significant resources in planning for intercity passenger rail projects, and little time was provided for them to develop applications for the suddenly available funding.

FRA faced a similar challenge, as it was given responsibility for awarding billions of dollars for rail projects quickly although it had little capacity for grant management. FRA struggled to implement the new grant program³³ while also responding to increased responsibilities in other areas as assigned in PRIIA.³⁴ As it worked to build the capacity to administer the HSIPR grant program, FRA faced two conflicting responsibilities: to approve grants quickly to meet the legislative intent of stimulating the economy, while also being careful to ensure that the money was well used. The FRA Inspector General later reported that FRA’s efforts to minimize the

³¹ Arnie Rosenberg, “All Aboard Florida received federal financial assistance, investigation finds,” *TCPalm*, February 6, 2015, <http://www.tcpalm.com/news/shaping-our-future/all-aboard-florida-received-federal-financial-assistance-investigation-finds-ep-878686081-332823481.html>.

³² Shelly Sigo, “Why a Judge Allowed a Challenge to a Private Activity Bond Allocation,” *Bond Buyer*, August 17, 2016. The proposed bonds, known as private activity bonds, would have low interest rates because interest would be exempt from federal income taxes. For details about private activity bonds, see CRS Report RL31457, *Private Activity Bonds: An Introduction*, by (name redacted) and (name redacted) .

³³ Office of Inspector General, Federal Railroad Administration, *Completing a Grants Management Framework Can Enhance FRA’s Administration of the HSIPR Program*, CR-2012-178, September 11, 2012, <https://www.oig.dot.gov/sites/default/files/FRA%20HSIPR%20Grants%20Program%5E9-11-12.pdf>; *FRA Improved Its Guidance on High Speed Rail Grant Agreements, But Policies and Procedures for Amending and Monitoring Grants Remain Incomplete*, ST-2015-038, April 1, 2015, <https://www.oig.dot.gov/sites/default/files/FRA%20HSIPR%20Grant%20Amendment%20and%20Oversight%20Processes%20Final%20Report%5E4-1-15.pdf>.

³⁴ Office of Inspector General, Federal Railroad Administration, *FRA Has Made Progress in Implementing PRIIA Responsibilities but Challenges for Long-Term HSIPR Remain*, CR-2012-072, March 6, 2012, <https://www.oig.dot.gov/sites/default/files/PRIIA%20Report%5E3-6-12.pdf>.

misuse of funds had delayed some short-term HSIPR projects because limited staff resources had been devoted to working with the long-term project grantees.³⁵

The Challenge of Continuity amid Political Change

Major transportation projects typically take decades to come to fruition. As such, in addition to their engineering and financial challenges, they face political risk: the prospect that a change in the political environment will bring them to a halt. The impact on the HSIPR program of the change from the 111th Congress to the 112th Congress was dramatic: After having been appropriated \$10.6 billion over a span of 10 months, the program received no further funding over the next six years, as well as having \$400 million of the funding already appropriated to it rescinded. It is unclear whether any significant amounts of funding will be provided in the future to continue the development set in motion by the HSIPR grants.

Political uncertainty exists at the state level as well. As noted above, changes in state administrations in Florida, Ohio, and Wisconsin led to withdrawal of state support for HSIPR projects that had previously been approved. While these funds were subsequently redirected to other grantees, their unexpected arrival may have interfered with efforts to use the money quickly.

The Challenge of Providing Large and Stable Amounts of Funding

The HSIPR program lacked predictable funding in part because there was no dedicated revenue source for the program, as there is for federal programs that make grants for aviation, highway, and transit construction. 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 the limited amount of funding Congress appropriates 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 the Obama Administration has echoed such calls. To date, however, Congress has not taken such a step.

The Challenge of Funding a Small Number of Costly Regional Projects

Intercity passenger rail development projects for low- and moderate-speed service have relatively modest costs, in part because they generally involve improvements to existing tracks rather than extensive bridge construction and the land acquisition needed for building new lines. High-speed rail lines are considerably more expensive. This poses both a financial and political challenge to a federal program that would support development of high-speed rail: not only must significant amounts of funding be provided over a long period of time, but there must also be a willingness for large portions of that funding to be granted to a small number of projects in relatively few states. This is in contrast to federal programs that distribute resources throughout the country, and to rural as well as urban areas.³⁶

³⁵ Office of Inspector General, Federal Railroad Administration, *FRA's Requirements for High Speed Rail Stakeholder Agreements Mitigated Risk, But Delayed Some Projects' Benefits*, CR-2013-007, November 1, 2012, <https://www.oig.dot.gov/sites/default/files/HSIPR%20Access%20Agreements%5E11-1-12.pdf>.

³⁶ See, for example, the National Infrastructure Investment Program (formerly known as the TIGER grant program), (continued...)

Most of the intercity passenger rail projects that have received federal assistance will operate at speeds below 125 mph, and cannot properly be described as high-speed rail. Given the limited funds available in HSIPR, the program might have been more successful at building a true high-speed rail line had Congress directed FRA to concentrate funding on a single project. Congress did not direct FRA to do so. Many Members of Congress have objected to funding for both the California High-Speed Rail Corridor project and Amtrak's Northeast Corridor improvement project; politically, both projects face a challenge in that their direct benefits are limited to relatively few states. Similar political considerations may pose an obstacle to future congressional support for high-speed rail.³⁷ Others have objected to funding intercity passenger rail in general, contending that it is economically inefficient, requires larger per-passenger subsidies than other modes of travel, is not suited to the economic geography of the United States, and may be superseded by future technologies.³⁸

Author Contact Information

(name redacted)
Analyst in Transportation Policy
[redacted]@crs.loc.gov , 7-....

(...continued)

which limits the amount of funding that can be awarded to a single state.

³⁷ Recently federal officials and leaders of New York and New Jersey announced an agreement for the \$20 billion Gateway Tunnel under the Hudson River between New York and New Jersey, which will benefit both intercity and commuter rail service on the NEC. The agreement calls for the federal government to provide half the funding for this project. DOT has stated that the project will be eligible for funding through the Federal Transit Administration's New Starts program, but no federal funds have been committed under this program.

³⁸ For more information, see CRS Report R42584, *The Development of High Speed Rail in the United States: Issues and Recent Events*, coordinated by (name redacted) .

EveryCRSReport.com

The Congressional Research Service (CRS) is a federal legislative branch agency, housed inside the Library of Congress, charged with providing the United States Congress non-partisan advice on issues that may come before Congress.

EveryCRSReport.com republishes CRS reports that are available to all Congressional staff. The reports are not classified, and Members of Congress routinely make individual reports available to the public.

Prior to our republication, we redacted names, phone numbers and email addresses of analysts who produced the reports. We also added this page to the report. We have not intentionally made any other changes to any report published on EveryCRSReport.com.

CRS reports, as a work of the United States government, are not subject to copyright protection in the United States. Any CRS report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS report may include copyrighted images or material from a third party, you may need to obtain permission of the copyright holder if you wish to copy or otherwise use copyrighted material.

Information in a CRS report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to members of Congress in connection with CRS' institutional role.

EveryCRSReport.com is not a government website and is not affiliated with CRS. We do not claim copyright on any CRS report we have republished.