

June 2010

HIGH SPEED RAIL

Learning From Service Start-ups, Prospects for Increased Industry Investment, and Federal Oversight Plans



GAO

Accountability * Integrity * Reliability



Highlights of [GAO-10-625](#), a report to congressional committees

Why GAO Did This Study

The American Recovery and Reinvestment Act (Recovery Act) and subsequent appropriations have dramatically increased federal funds available for high speed intercity passenger rail from \$120 million in fiscal year 2008 and fiscal year 2009 combined to \$10.5 billion available in fiscal year 2010. Other issues, such as developing industry capacity to supply rail equipment and fostering multiyear public support for such systems must be resolved.

As part of its efforts to assess Recovery Act initiatives, GAO reviewed (1) how states started or improved passenger rail services in the recent past, (2) rail industry plans to accommodate the increased passenger rail investments, and (3) Federal Railroad Administration (FRA) plans to oversee the use of federal intercity passenger rail funds. GAO reviewed federal legislation; interviewed state, industry and federal officials; and reviewed selected literature.

GAO is not making any recommendations. The Department of Transportation did not express an overall opinion on a draft of this report. It did provide technical and clarifying comments, which GAO incorporated.

View [GAO-10-625](#) or [key components](#). For more information, contact Susan Fleming at (202) 512-2834 or flemings@gao.gov.

HIGH SPEED RAIL

Learning From Service Start-ups, Prospects for Increased Industry Investment, and Federal Oversight Plans

What GAO Found

State successes to initiate or improve intercity passenger rail services in the recent past (the last 15 years), hinged largely on their abilities to build public and political support, secure funding, obtain equipment, and manage their services. Public and political support and funding provided a foundation for these services. States acquired equipment by using collaborative and cost-saving approaches. Further, states managed their rail services by building consensus with stakeholders, borrowing expertise, and developing state capacity. All of these activities will be important for states that seek to initiate or improve services in the future, including developing conventional passenger rail (operating at speeds up to 79 miles per hour), higher speed passenger rail (operating at speeds up to 150 miles per hour), and even high speed rail services (operating at speeds of 150 miles per hour or more).

Rail industry stakeholders are optimistic that they can meet increased public investment in intercity passenger rail; however, they are looking for (1) federal leadership in setting safety standards for high speed rail and in promoting interstate cooperation for service across state lines, among other things, and (2) stable funding to create a structure for developing a passenger rail marketplace. Additionally, stakeholders said that a stable federal funding stream would encourage firms to enter and invest in the intercity passenger rail marketplace. However, even with strong federal leadership and funding it could take several years to provide the necessary infrastructure, such as for building new passenger rail cars, potentially making it difficult to spend some Recovery Act high speed rail funds by 2017, as required by law.

As a result of Recovery Act funding and the Passenger Rail Investment and Improvement Act of 2008, FRA has had to develop a rail program and an oversight approach. Among other things, FRA had to quickly draft a preliminary national rail plan and a high speed rail strategic vision, as well as develop a program to distribute Recovery Act funds. As a result, FRA officials stated that they concentrated their efforts on meeting these requirements and they are currently designing their oversight program. FRA is in its early stages of setting up agreements with its state grantees and hiring both FRA and contractor personnel to oversee how the federal funds are used. FRA is planning to release another version of its national rail plan in September 2010 which it expects to discuss issues such as the roles of federal, state, and local governments in rail transportation and public and private funding sources. The strategic vision did not define the goals, stakeholder roles, or objectives for federal involvement in high speed intercity passenger rail and the preliminary national rail plan did not have any recommendations for future action. While states will be the recipients of Recovery Act funds, many states do not have state rail plans that would establish strategies and priorities, capital investments, and public benefits of rail investments in the state. To try to stimulate the economy quickly, Congress exempted projects funded by the Recovery Act and recent appropriations from being in state rail plans.

Contents

Letter		1
	Background	3
	States Developed Services by Generating Support, Securing Funding, Obtaining Equipment, and Managing Services	9
	Industry Stakeholders View Federal Leadership as Important in Creating a Robust Intercity Passenger Rail Market	16
	FRA's New Responsibilities Have Held Back Developing a National Rail Plan, Strategic Vision, and Grant Oversight Plan	23
	Concluding Observations	31
	Agency Comments	32
Appendix I	Scope and Methodology	33
Tables		
	Table 1: New or Improved Service Sponsored by States, 1995- Present	5
	Table 2: Annual State Operating Support	13
	Table 3: Issues Identified by Rail Industry Stakeholders for Federal Action	20
	Table 4: FRA's Oversight Plan in Relation to Selected Grant Oversight Principles	30
	Table 5: Organizations Contacted	34
Figures		
	Figure 1: Recovery Act High Speed Rail Awards	8
	Figure 2: Stages of New Rail Car Development and Manufacturing	17

Abbreviations

Amtrak	National Railroad Passenger Corporation
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
PRIA	Passenger Rail Investment and Improvement Act of 2008
Recovery Act	American Recovery and Reinvestment Act of 2009

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, DC 20548

June 17, 2010

The Honorable Christopher Bond
Ranking Member
Subcommittee on Transportation, Housing
and Urban Development, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Corrine Brown
Chair
Subcommittee on Railroads, Pipelines,
and Hazardous Materials
Committee on Transportation and Infrastructure
House of Representatives

Interest in passenger rail service in the United States is high. Recent legislation, especially the American Recovery and Reinvestment Act of 2009 (Recovery Act), has established a new federal role in and provided an unprecedented amount of federal funds for intercity passenger rail. Thirty-seven states and the District of Columbia submitted 259 applications totaling approximately \$57 billion for the \$8 billion that the Recovery Act made available for new passenger rail corridors or improvements to existing service. Passenger rail operators and suppliers from around the world are showing interest in making and operating high speed passenger trains for a possible emerging U.S. market. In addition, prominent statements by the President, the Vice President, the Secretary of Transportation, and others have elevated the profile of intercity passenger rail service and promoted its possible public benefits including energy efficiency, reductions in greenhouse gas emissions, and road and airport congestion reduction.

However, while there is a palpable excitement created by the Recovery Act's funding for new high speed rail service, establishing new service is a difficult, multiyear effort. This effort hinges on, among other things, the availability of federal capital and state operating funds to build and operate systems that go far beyond the funds provided by the Recovery Act in a time of continuing federal and state deficits; the ability of states to work together for service that crosses state lines; gaining the cooperation from private railroads which own most of the rail infrastructure in the United States; and obtaining equipment, such as rail cars, which can take years to design, test, and build. In addition, the Federal Railroad

Administration (FRA) recognizes that it has to transform itself from essentially a rail safety organization to one that can make multibillion dollar investment choices while simultaneously carrying out its safety mission.

To provide some insight into these issues, this report, as part of our overall effort to assess Recovery Act spending, focuses on (1) how states started or improved passenger rail services in the recent past;¹ (2) rail industry's plans to accommodate increased passenger rail investments; and (3) FRA's plans to oversee the use of federal intercity passenger rail funds.

Our overall approach to addressing these topics was to (1) review federal legislation, regulations, plans, and other guidance; (2) interview a broad cross-section of intercity passenger rail stakeholders, including FRA, states that have established or improved intercity passenger rail service, freight railroads, the National Railroad Passenger Corporation (Amtrak), and other potential operators of intercity passenger rail service; passenger rail car manufacturers; railroad construction contractors; and industry and transportation associations; and (3) review studies by various organizations, including the American Association of State Highway and Transportation Officials, the Transportation Research Board, and the Congressional Research Service, as well as our reports on high speed rail. To gain some insight into the types of infrastructure improvements necessary to increase speeds and improve the performance of intercity passenger rail service, we visited railroad projects in Indiana, Michigan, and Illinois designed to reduce rail congestion and increase train speeds. To provide principles of grants oversight that could be used by FRA as it formulates its grants management program, we identified important elements of an effective grants oversight program from information provided by the Comptroller General's Domestic Working Group and contained in our reports evaluating various federal grants programs.²

¹For the purpose of our work, we considered the recent past as the 15-year period between 1995 and 2009 so that we could concentrate on those states that established intercity passenger rail service during and after the most recent changes in Amtrak and freight railroad policies toward expanding intercity passenger rail.

²Domestic Working Group, Grant Accountability Group, *Guide to Opportunities for Improving Grant Accountability* (Washington, D.C., October 2005). This group consisted of 19 federal, state, and local audit organizations to identify current and emerging challenges of mutual interest and explore opportunities for greater collaboration within the intergovernmental audit community.

We conducted this performance audit from June 2009 to June 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Since Amtrak started operations in 1971, federal involvement in funding intercity passenger rail has mainly consisted of capital and operating subsidies to Amtrak annually appropriated from general funds. However, recent legislation has vastly increased the federal role in and federal funds for developing intercity passenger rail service, making the federal government a major investor with state governments in passenger rail service. The Passenger Rail Investment and Improvement Act (PRIIA), enacted in October 2008, authorized over \$3.7 billion for three different federal programs for high speed rail, intercity passenger rail congestion, and capital grants. PRIIA required that projects funded through two of these three programs be included in a state rail plan.³ A state rail transportation authority would develop a statewide rail plan coordinated with other state transportation planning programs that, among other things, must include an explanation of the state's passenger rail service objectives; an analysis of rail's transportation, economic, and environmental impacts in the state; and a long-range investment program for current and future freight and passenger infrastructure in the state. PRIIA also called for the Department of Transportation to establish minimum standards for the preparation and periodic revision of state rail plans. It also called for FRA to create a preliminary national rail plan within 1 year of passage of the law as well as a long-range national rail plan that is consistent with approved state rail plans. FRA released a preliminary national rail plan in October 2009.

³These three programs are Section 301–Capital Assistance for Intercity Passenger Rail Service Grants, Section 302–Congestion Grants, and Section 501–High Speed Rail Corridor Program. State rail plans are required for Sections 301 and 501, but not mentioned in Section 302.

The Recovery Act appropriated \$8 billion for the three PRIIA-established intercity passenger rail programs.⁴ This funding represented a dramatic increase in federal funding for intercity passenger rail projects. The Recovery Act provided up to 100 percent federal funding available for expenditure until 2017 and exempted projects from having to be included in a state rail plan; however, it did require, by incorporating the programs and the requirements of PRIIA, that the funds be competitively awarded and that the Department of Transportation develop a strategic plan to use these funds. The department released its strategic plan to use these funds in April 2009.⁵ In December 2009, the Department of Transportation's fiscal year 2010 appropriation also included \$2.5 billion for high speed rail and intercity passenger rail projects. These funds are subject to a 20 percent nonfederal matching requirement and the law also exempted these projects from having to be included in a state rail plan. The fiscal year 2011 budget proposal includes another \$1 billion in intercity passenger rail funding.⁶

Amtrak, the nation's only intercity passenger rail operator, currently carries about 28 million passengers per year, which amounts to less than 1 percent of the country's total intercity passenger miles, although Amtrak's market share when compared to air service is higher in certain corridors. Amtrak operates long and short distance routes, as well as provides some commuter rail service through contracts with transit providers.⁷ Most of the nation's railroad network is owned by private, for-profit freight railroads with the primary exception of the Amtrak and state-owned Northeast Corridor from Washington, D.C., to Boston⁸ and almost 100 miles in southwest Michigan. As a result, about 70 percent of Amtrak's

⁴By comparison, the fiscal year 2008 and fiscal year 2009 appropriations for the department included \$30 million and \$90 million respectively for intercity passenger rail grants to states.

⁵Department of Transportation, *Vision for High-Speed Rail in America* (Washington, D.C., April 2009).

⁶This proposal also includes \$4 billion for a national infrastructure fund that could also be used for intercity passenger rail projects.

⁷As per 49 U.S.C. 24102(5)(C) and (D), Amtrak defines short distance routes as being 750 miles or less in length and routes 750 miles or more to be long distance. Commuter rail service is generally defined as regional service between a central city and its suburbs.

⁸Amtrak owns tracks connected to the corridor between Philadelphia and Harrisburg, Pennsylvania, and between New Haven, Connecticut, and Springfield, Massachusetts.

train miles are over tracks owned by other railroads.⁹ Top speeds are limited by track conditions. Amtrak’s trains are generally limited to top speeds of 79 miles per hour off the Northeast Corridor and up to 150 miles per hour on the corridor.¹⁰

States provide financial support to certain intercity passenger rail corridors. In fiscal year 2010, 14 states funded short distance service in their states or between states by contract with Amtrak. Between 1995 and 2009, states initiated six new services and improved or increased the speed on seven existing intercity passenger rail services. (See table 1.)

Table 1: New or Improved Service Sponsored by States, 1995-Present

	Service	State	Year(s) service initiated or improved
New service	Lynchburg Service	Virginia	2009
	Downeaster	Maine	2001
	Heartland Flyer	Oklahoma	1999
	Ethan Allen	Vermont	1996
	Piedmont	North Carolina	1995
	Vermonter	Vermont	1995
	Improved service	Lincoln Service	Illinois
Keystone Corridor		Pennsylvania	2006
San Joaquin, Capitol Corridor, and Pacific Surfliner Corridors		California	1998-present
Cascades Service		Washington	1999-2000
Higher speed on existing corridor	Keystone Corridor	Pennsylvania	2006

Source: GAO.

Domestic passenger rail car manufacturing capacity has been in decline, along with the decline in intercity passenger rail service, since the 1950s. Foreign passenger rail car manufacturers have established factories in the

⁹In addition, several transit authorities have purchased rights-of-way on which to operate their commuter rail service. For more information, see GAO, *Commuter Rail: Many Factors Influence Liability and Indemnity Provisions and Options Exist to Facilitate Negotiations*, GAO-09-282 (Washington, D.C.: Feb. 24, 2009).

¹⁰However, Amtrak’s fastest scheduled Acela Express service takes 2 hours and 42 minutes to go 225 miles between Washington, D.C., and New York City for an average of 84 miles per hour.

United States—although mainly for the domestic rail transit market as Amtrak has not made a large capital purchase of passenger rail cars since the Acela trains in the late 1990s.

FRA is the primary federal agency responsible for formulating and enforcing railroad safety regulations and for distributing federal funds for intercity passenger rail service. The agency sets regulations for railroad safety, including rail car maintenance standards and track standards for operating passenger and freight trains at various speeds. Through grant agreements, FRA administers federal operational and capital grants to Amtrak, which have averaged between \$1 billion and \$1.3 billion per year since fiscal year 2003. FRA also approves Railroad Rehabilitation and Improvement Financing loans and Rail Line Relocation and Improvement Capital Grants, and is the granting agency for the \$120 million in fiscal year 2008 and fiscal year 2009 capital funds to states for intercity passenger rail projects.

In addition to the increase in federal funds, PRIIA and the Recovery Act have created new responsibilities for FRA to plan, award, and oversee the use of federal funds for intercity passenger rail. After passage of the Recovery Act, FRA officials said that they set their priorities to meet these responsibilities. According to these officials, FRA's immediate priorities included quickly awarding the funds responsibly and getting all of the Recovery Act funds obligated within 2 years. They also stated that their intermediate and long-term priorities included helping states advance their corridors and projects and gauging the effectiveness of the federal investments, respectively. FRA staff and management worked to meet these priorities by releasing a notice of funding availability and interim guidance on the high speed rail program,¹¹ creating an overall strategic plan for implementing federal grants for high speed rail¹² and releasing a preliminary national rail plan.¹³ FRA staff and management held informational sessions with states and other stakeholders across the country and worked with state applicants to answer questions, evaluate, and provide feedback on preapplications for these funds. In the 5 months between the application deadlines and the grant award announcement, FRA and other department staff used criteria such as public return on

¹¹74 Fed. Reg. 29900, June 23, 2009.

¹²Department of Transportation, *Vision for High-Speed Rail in America* (Washington, D.C., April 2009).

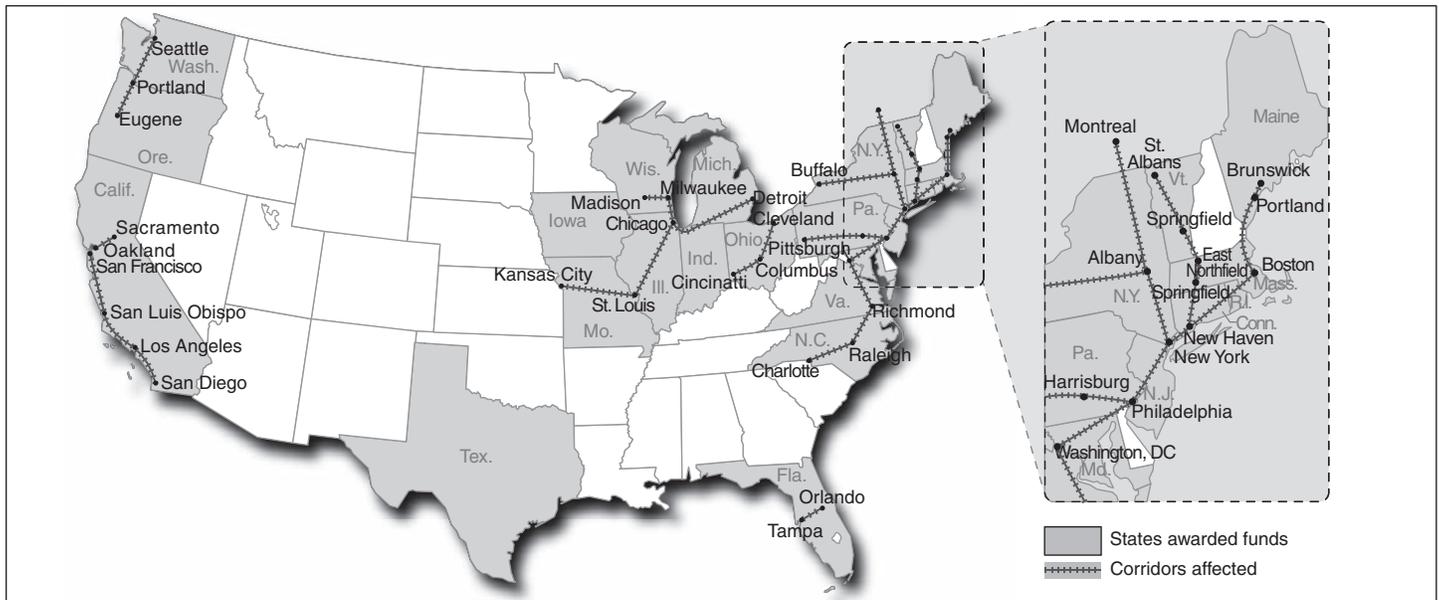
¹³FRA, *Preliminary National Rail Plan* (Washington, D.C., October 2009).

investment, economic recovery benefits, and timeliness to completion to evaluate 259 grant applications from 37 states and the District of Columbia.

In January 2010, FRA announced that 62 projects in 23 states and the District of Columbia would receive approximately \$8 billion in Recovery Act funds.¹⁴ (See fig. 1.) The announced awards went to several types of intercity passenger rail projects—including almost \$2.3 billion for initial investments in the planned over 200 miles per hour service between Los Angeles and San Francisco and, eventually, Sacramento and San Diego; \$1.1 billion to increase top speeds to 110 miles per hour for existing service between Chicago and St. Louis; \$400 million for new service with a top speed of 79 miles per hour between Cincinnati and Cleveland; and \$4 million for signal timing improvements in Texas to benefit Amtrak’s existing Heartland Flyer service. All of the states that have initiated or improved services over the last 15 years were awarded about 62 percent of all Recovery Act high speed rail funds (about \$4.9 billion of the \$8 billion available).

¹⁴For ease of presentation, we combined the individual Recovery Act awards by state. In addition to the Recovery Act awards, another 20 projects in 15 states and the District of Columbia were also awarded \$27 million in fiscal year 2008 and 2009 funds for intercity passenger rail assistance grants in January 2010.

Figure 1: Recovery Act High Speed Rail Awards



State	Award (millions)	Project details	State	Award (millions)	Project details
California	\$2,343	For new high speed rail service, purchase right-of-way, construct track, signaling systems, and stations, and complete environmental reviews and engineering. To improve conventional services, track improvements, and new equipment emissions controls.	New Jersey	\$39	To improve existing passenger rail service.
Connecticut	40	To improve existing conventional service, construct new track.	New York	150	To improve existing conventional service, construct new track, improve signals, crossings, and stations.
District of Columbia	3	To improve existing passenger rail service.	North Carolina	545	To improve existing conventional service, acquire rolling stock, improve track and stations, mitigate congestion.
Florida	1,250	For new high speed rail, construct track, build and improve stations, purchase equipment.	Ohio	400	For new conventional service, improve track, crossings, stations, and maintenance facilities.
Illinois	1,233	For higher speed service, improve track, improve signal systems, improve stations, implement positive train control, conduct planning studies.	Oregon	8	To improve existing conventional service, upgrade station, and engineering and environmental work for track and signal improvements.
Indiana	71	To improve existing conventional service, signal, and track improvements.	Pennsylvania	26	To improve existing higher speed service, eliminate grade crossings, study extending service.
Iowa	17	To improve existing conventional service, signal, and track improvements.	Rhode Island	1	To improve existing passenger rail service.
Maine	35	To expand existing conventional service, track, and crossing improvements.	Texas	4	To improve existing conventional service, final design, and grade and crossing improvements.
Maryland	69	To improve existing passenger rail service.	Vermont	50	To improve existing conventional service, and infrastructure improvements.
Massachusetts	70	To improve existing conventional service, track, station, and signal improvements.	Virginia	75	To improve existing conventional service, and construct track.
Michigan	40	To improve existing conventional service, station improvements, and build a new station.	Washington	590	To improve existing conventional service; construct track; and track, signal, and safety improvements.
Missouri	31	To improve existing conventional service, track, and crossing improvements.	Wisconsin	822	To expand existing conventional service and to improve existing conventional service to higher speed service; track, signal, and station improvements; a new station, and positive train control technology.

Sources: GAO analysis of FRA data; Map Resources (map).

States Developed Services by Generating Support, Securing Funding, Obtaining Equipment, and Managing Services

Officials from states that initiated or improved intercity passenger rail services in the recent past told us that their ability to start or upgrade their services largely hinged on their ability to resolve a number of issues. First, public and political support and funding provided a foundation for initiating and improving their services. Second, states acquired equipment for their services through collaborative and cost-saving approaches. States also built consensus with stakeholders, borrowed expertise, and developed state capacity to effectively manage their rail services.

The activities that helped states initiate and improve their services will be important for states seeking to initiate or improve services in the future—including developing conventional passenger rail, higher speed passenger rail, and high speed rail.¹⁵ Learning ways to build support, secure funding, obtain equipment, and effectively manage rail services will be even more crucial to states developing high speed rail because they will face long time frames, high costs, and a lack of experience in the U.S. passenger rail market for all stages of developing and managing these new passenger rail services. While other countries have experience with high speed passenger rail service, no state currently supports high speed intercity passenger rail service.¹⁶ While there are differences between conventional passenger and high speed passenger rail services, some of the lessons learned by states apply to both. As such, our review of state experiences with conventional passenger rail service could provide some insight into how states might accomplish both initiating and improving conventional passenger rail services, as well as developing higher and high speed passenger rail services.

¹⁵We considered conventional passenger rail service to include trains traveling up to 79 miles per hour; higher speed passenger rail service to include trains traveling up to 150 miles per hour; and high speed passenger rail service to include trains traveling 150 miles per hour or more. In PRIIA, Congress defined high speed rail service as intercity passenger rail service that is reasonably expected to reach speeds of at least 110 miles per hour. We are making this additional differentiation to show the different levels of planning, investment, and safety considerations required to achieve these top speeds.

¹⁶GAO, *High Speed Passenger Rail: Future Development Will Depend on Addressing Financial and Other Challenges and Establishing a Clear Federal Role*, [GAO-09-317](#) (Washington, D.C.: Mar. 19, 2009).

Public and Political Support and Funding Provided a Foundation for States to Develop Passenger Rail Services

State officials favoring investment in intercity passenger rail services secured funding to initiate or expand such services by achieving public and political support and by using innovative approaches for funding both capital and operating costs. Support from passenger rail proponents including governors, state legislators, passenger rail advocacy groups, and communities helped develop public and political support for committing state funds to capital and operating costs of passenger rail services. For example, corridor coalitions of grassroots supporters, advocates, and elected officials aided Illinois' efforts to gain support for making improvements and operating a new service.

Infrastructure improvements for these services required significant investments from states to upgrade track, signals, crossings, and stations. The costs of these improvements varied, from small individual projects costing several million dollars to more extensive projects totaling more than \$100 million. States drew upon a range of sources to supplement limited general funding available for capital improvements. Four states we interviewed established dedicated funding sources for capital improvements or acquired flexible federal funds to develop infrastructure.¹⁷ For example, Virginia used its rail enhancement fund, funded in part from a state rental car tax, in cooperation with a freight railroad to make \$33 million in capacity improvements to initiate a new service. North Carolina used a combination of federal transportation enhancement funds,¹⁸ congressional directives (commonly called earmarks), and the state's share of a federal Congestion Mitigation and Air

¹⁷Flexible funds are federal funds that, by statute, may be used for transit or highway purposes. They allow a local area to choose to use certain federal surface transportation funds—including from the Surface Transportation Program, the Congestion Mitigation and Air Quality Improvement Program, and through Urban Formula funding—based on local planning priorities, not on a restrictive definition of program eligibility. The Federal Highway Administration and the Federal Transit Administration (FTA) administer these programs.

¹⁸The Transportation Enhancement Program, administered by the Federal Highway Administration and first authorized by the Intermodal Surface Transportation Efficiency Act of 1991, provides funding opportunities to states to help expand transportation choices and enhance the transportation experience through 12 eligible activities, including the rehabilitation and operation of historic transportation buildings, structures, or facilities.

Quality Improvement Program grant for investments in capital improvements.¹⁹

Some states shared costs or offered incentives to Amtrak, freight railroads, and local governments to attract nonstate funds to support intercity passenger rail service. For example, North Carolina partnered with communities to redevelop train stations and Washington state recently established grant and loan incentive programs for public agencies and private right-of-way owners to help fund improvements on railroad infrastructure to improve the passenger and freight rail services in the state.

The capital costs of high speed rail systems are expected to be of a magnitude far greater than for initiating or improving conventional and higher speed passenger rail services.²⁰ Based on reported projections, construction costs to initiate new conventional service on existing right-of-way between Cleveland, Columbus, and Cincinnati, Ohio, would be about \$1.4 million per mile.²¹ Similarly, improving existing services to higher speeds could cost about \$1.9 million per mile for services in both Pennsylvania and Michigan;²² \$11.8 million per mile for service from New York City to Niagara Falls, New York;²³ and \$15.2 million per mile to establish higher speed service from Charlotte, North Carolina, to

¹⁹The Congestion Mitigation and Air Quality Improvement Program is jointly administered by the Federal Highway Administration and FTA. The program provides funding to state departments of transportation, metropolitan planning organizations, and transit agencies to invest in projects that reduce regulated air pollutants from transportation-related sources.

²⁰These cost estimates can include several different types of investments, such as constructing stations and platforms, acquiring locomotives and passenger rail cars, improving existing railroad rights-of-way, and building new railroad rights-of-way. The types and mixtures of investments may vary across corridors and some investments may be less variable than others due to the length of the corridor. Nonetheless, expressing cost estimates using route miles as a common denominator helps show how costs for higher and high speed service are significantly greater than for conventional service.

²¹Ohio Rail Development Commission, High Speed Intercity Passenger Rail Track 2 Application: OH-3C-QuickStart (October 2009).

²²Pennsylvania Department of Transportation, High Speed Intercity Passenger Rail Track 2 Application: PA - Keystone Corridor - High Speed (October 2009), and Michigan Department of Transportation, High Speed Intercity Passenger Rail Track 2 Application: MI-CHI Hub, *CHI-DET/PNT* (October 2009).

²³New York State Department of Transportation, High Speed Intercity Passenger Rail Track 2 Application: NY-EC2-Empire Corridor-NYC-NFL (October 2009).

Washington, D.C.²⁴ These estimates are lower than projections to develop new high speed rail services in Florida and California, which would both require building new dedicated track instead of using existing infrastructure. Based on reported projections, final design and construction for high speed rail service between Tampa and Orlando, Florida, would cost approximately \$36.7 million per mile,²⁵ and capital costs for high speed rail between Los Angeles and Anaheim, California, would be about \$75.5 million per mile.²⁶

To secure annual operating subsidies, state rail officials gained support for their passenger rail services. According to state rail officials, this reporting, as well as support from governors, legislators, metropolitan planning organizations, or public grassroots efforts helped rail proponents obtain operating funds for passenger rail services. States reported performance indicators and other metrics such as ridership, on-time performance, and customer satisfaction to communicate the value of their services. A few states reported these indicators on an annual basis.

States use state funds to support passenger rail operations, ranging from \$1.5 million to \$32.2 million per service annually. Support from these states covers 26 percent to 100 percent of the annual operating costs for these services. (See table 2.) Three states established dedicated state funding sources, and another two states used flexible federal transportation funds to overcome funding limitations to operate their services. For example, Pennsylvania established a public transportation trust fund with a set-aside for passenger rail operating expenses to avoid obtaining funding each year from the state legislature, and California derives operating support from a portion of the state sales tax on diesel fuel (with a portion of the state gas tax supporting capital expenditures). In addition, Vermont and Maine drew upon flexible federal funding from their states' Congestion Mitigation and Air Quality Improvement Program allocation, which provided 80 percent of initial operating costs. To meet its \$13.5 million operating budget, Maine contributes \$1.2 million from general revenues and draws upon \$4.8 million in federal Congestion Mitigation and Air Quality Improvement Program funds.

²⁴North Carolina Department of Transportation, High Speed Intercity Passenger Rail Track 2 Application: NCT2.4 – SEHSR - Charlotte to DC/NEC (October 2009).

²⁵Florida Department of Transportation, High Speed Intercity Passenger Rail Track 2 Application: Florida High Speed Rail Express: Tampa-Orlando (October 2009).

²⁶California High Speed Rail Authority, Report to the Legislature (December 2009).

Table 2: Annual State Operating Support

Dollars in millions

State	Service	Type of state funding	Annual state operating support	Total annual operating cost	Percentage of annual operating cost supported by state
California	Capitol Corridor	Dedicated fund	\$29.3	\$29.3	100%
	Pacific Surfliner	Dedicated fund	24.9	35.5	70
	San Joaquin	Dedicated fund	32.2	32.2	100
Illinois	Lincoln	General fund	11.9	20.7	57
Maine	Downeaster	General fund and flexible federal funds	7.9	15.1	52
North Carolina	Piedmont and Carolinian	Combination of dedicated funds	5.0	19.0	26
Pennsylvania	Keystone	Dedicated fund	9.3	17.1	54
Vermont	Ethan Allen	General fund and flexible federal funds	1.5	3.7	41
	Vermontier	General fund and flexible federal funds	3.4	7.6	45
Washington	Cascades	Combination of dedicated funds	14.3	31.2	46

Source: GAO analysis of best available data provided by states.

States Used Collaborative and Cost-saving Approaches to Acquire Equipment for Their Services

To secure passenger rail cars, states worked with Amtrak to use existing passenger rail cars efficiently or refurbished older equipment. Several states partnered with Amtrak during early stages of planning their services, which led to agreements for equipment and operations. For example, Illinois developed agreements in which Amtrak reallocated its equipment on other corridors to commit rail cars to the state's service, and Virginia and Amtrak jointly developed an operating service and capital improvement agreement in which Amtrak committed out-of-service passenger rail cars to the state's new service for which Virginia shared in the rehabilitation cost.

Refurbishing old equipment and pooling equipment orders were other ways that states managed equipment costs. North Carolina officials said that although purchasing used equipment and refurbishing it was not the state's preferred approach, it reduced the cost of rail cars by 50 percent and gave the state more control over the amenities and appearance of its passenger rail cars. Additionally, some states reduced their procurement costs by pooling equipment orders. For example, California left options

open on an order for new locomotives, which allowed other states and commuter agencies to obtain locomotives at a reduced per unit cost.

Procuring equipment for high speed rail systems will also be difficult, in part because no equipment or specifications are currently available for these systems in the United States. According to FRA's High Speed Passenger Rail Safety Strategy, as a general best practice, to travel at speeds exceeding 150 miles per hour, passenger trains should operate on dedicated right-of-way.²⁷ To achieve these high speeds, rail cars are designed to weigh much less than conventional intercity passenger rail equipment and are powered by electric locomotives, which are much lighter than diesel locomotives.²⁸ Based on weight estimates from two manufacturers, a high speed rail car could weigh as much as 29 percent less than a conventional passenger rail car, depending on safety standards and design factors, and an electric locomotive could weigh as much as 33 percent less than a diesel locomotive. The cost of high speed rail cars and locomotives would also depend on safety and design factors that have not been defined by FRA.

States Managed Services by Building Consensus with Stakeholders, Borrowing Expertise, and Developing State Capacity

States developed a variety of planning processes and approaches to stakeholder involvement as a way to build consensus among freight railroads, Amtrak, and other states. For example, California works with railroads to ensure freight capacity is maintained and accommodates projected freight growth through appropriate capital improvements. Additionally, Virginia worked for 5 months with diverse stakeholders such as Amtrak, freight railroads, a commuter rail operator, and local communities to agree to memoranda of understanding for using right-of-way and operating new services. Pennsylvania developed a Web site, held public meetings, and used other outreach activities to educate stakeholders about station area planning and redevelopment processes to bridge potential communication gaps between state passenger rail staff and public participants. In addition to these approaches to working with stakeholders, states leveraged outside expertise and built their own

²⁷Dedicated rail right-of-way refers to railroad track reserved for the exclusive use of high speed rail passenger trains, whereas shared rail right-of-way refers to track used by both passenger and freight trains.

²⁸Conventional passenger rail trains and higher speed passenger rail trains are usually powered by diesel locomotives and operate over rail right-of-way shared with freight trains. Of the states we interviewed, only Pennsylvania improved service on an electrified, rail right-of-way in the recent past.

capacity to manage their services. For example, Illinois obtained support from Amtrak, which worked on the state's behalf to negotiate use agreements with freight railroads; Pennsylvania received planning assistance from FTA and FRA for its service; and Virginia worked with a freight railroad to develop a technical model for forecasting the impacts of its new passenger rail service on affected stakeholders.

Developing high speed rail systems would involve long time frames, in part because acquiring dedicated right-of-way could involve many more local communities and private interests, lengthy environmental approval, and would require states to build consensus among a greater number of stakeholders than developing conventional passenger rail services on existing rights-of-way. We have reported that coordinating high speed rail projects among numerous stakeholders without an established institutional framework would make developing high speed rail difficult.²⁹

Several states initiated their services with support from consultants and later developed management capacity within their state departments of transportation. These states developed their services by changing their management approaches and by building technical expertise. For example, Washington state revamped its passenger rail programs to facilitate communication with freight railroads and reorganized its rail division to more actively manage relationships with freight railroads and Amtrak. Additionally, California rail officials learned over time how to work most effectively with freight railroads on passenger rail projects and developed their own technical expertise and modeling knowledge over time. In addition to these approaches, two states established independent authorities to oversee their intercity passenger rail operations as a way to focus on the management needs of their services. For example, Maine created an independent authority to focus resources on managing its passenger rail service as well as managing relationships with multiple states, Amtrak, and a commuter railroad. Washington state rail officials reported that the state department of transportation's management change was successful and resulted in growth, improved on-time performance, and projects completed on time and under budget.

Similarly, states that develop high speed rail services would need to build capacity to manage their programs. The administrative structures and technical expertise needed to manage these services would require

²⁹GAO-09-317.

consideration from states and affected stakeholders. Several state officials said that state departments of transportation would need additional technical expertise and staff resources to develop new high speed rail.

Industry Stakeholders View Federal Leadership as Important in Creating a Robust Intercity Passenger Rail Market

Rail industry stakeholders, such as passenger rail operators, freight rail right-of-way owners, passenger rail car manufacturers, and general contractors are optimistic that they can meet increased public investment in intercity passenger rail, but they are looking for federal leadership and funding to create a structure for developing high speed rail. Additionally, stakeholders said that a stable federal funding stream would encourage firms to enter and invest in the intercity passenger rail marketplace. However, even after guidance is given on the application of federal laws and states advertise contracts, it could take several years to provide the necessary infrastructure such as new passenger rail cars, potentially making it difficult to spend Recovery Act high speed rail funds by September 30, 2017, as required by law.

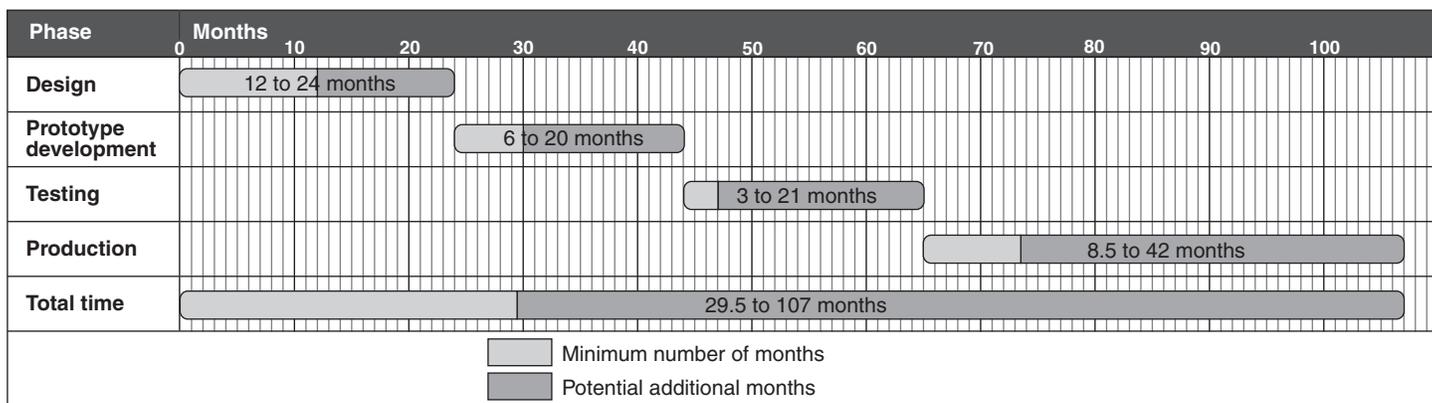
Industry Stakeholders Are Optimistic They Can Meet Increased Public Investment in Intercity Passenger Rail Given Federal Leadership

Industry stakeholders said that the rail industry is in decline due to the recession; however, once the federal government distributes funding and establishes standards, rail industry stakeholders stated that they can begin to increase capacity to meet the increased investments. Stakeholders we interviewed stated that they are ready to increase capacity because several rail industry companies have been forced to lay off workers.

While industry stakeholders are optimistic, it may take some time to build products and develop services to meet the increased public investment. For example, passenger rail car manufacturers, the Secretary of Transportation, and the FRA Administrator have stated that the Recovery Act funding could revive the U.S. market for these rail cars. Foreign passenger rail cars could not be used in this country because U.S. safety standards focus more on crash survival rather than crash avoidance, which is the norm for other countries' safety standards. Most manufacturers we spoke with said that the capacity to design and manufacture intercity passenger rail equipment existed in the United States and that they were eager to have orders placed. However, they also advised that it could take years to design and test new rail cars before they

can be manufactured.³⁰ (See fig. 2.) For example, industry stakeholders told us that design, testing, and production of new passenger rail cars can take anywhere from almost 2.5 years to almost 9 years. Consequently, if states do not place rail car orders relatively soon, it could be difficult to spend Recovery Act funds before 2017. Some states that were awarded funding may be able to spend these funds before 2017 more easily than others. For example, Illinois' Chicago to St. Louis corridor already has project plans and agreements with freight railroads in place to use their federal funds to improve the rail infrastructure, whereas Ohio's "3-C" corridor is still in the preliminary planning stages.³¹

Figure 2: Stages of New Rail Car Development and Manufacturing



Source: GAO interviews with rolling stock manufacturers.

In addition, it may take some time for potential passenger rail operators to build the capacity to operate services. With the exception of Amtrak, potential U.S. passenger rail operating companies only have experience operating commuter rail services, not intercity or high speed passenger rail services. Potential foreign passenger rail operating companies have extensive experience in operating intercity passenger rail and even high speed intercity passenger rail service, but they do not have experience operating those trains in the U.S. market with its unique operating

³⁰However, one passenger rail car manufacturer stated that there are many factors that affect the time it takes to deliver rail cars, such as, the type of equipment, whether there are new design features that require extensive testing, and requirements in the customer's technical specifications.

³¹Ohio's "3-C" corridor is approximately 256 miles long and will connect Cleveland, Columbus, and Cincinnati.

conditions, legal environment, and infrastructure. Even Amtrak, with already established operations and agreements with freight railroads and other railroads, may have to amend its existing agreements or negotiate new agreements with each state and freight right-of-way owner for any new service it operates. The time required to negotiate these agreements can range from a few months to several years.³² Some stakeholders stated that Amtrak has advantages that might make it difficult for other potential operators to compete in the intercity passenger rail market. For example, Amtrak has three statutory rights that no other operator has: (1) access to tracks and facilities of privately owned railroads and regional transportation authorities, (2) access to that railroad infrastructure at incremental cost, and (3) priority over freight trains.³³

Stakeholders are looking for federal leadership and funding to create a structure for high speed rail development, among other things.³⁴ Federal leadership is important as most passenger trains operate over the national rail network and federal involvement could help states work cooperatively to develop routes that cross state lines. Aside from funding, stakeholders said that they were looking for a stronger federal policy and programmatic role. For example, stakeholders mentioned the need for a federal role in promoting interagency and interstate cooperation, and identified other potential federal roles, such as setting additional safety standards, promoting intermodal models of transportation, and assisting with right-of-way acquisition. The Recovery Act will provide a one-time infusion of federal funds, and PRIIA, among other things, provided the basis for a federal structure by mandating a national rail plan. However, stakeholders suggested that more funding and structure is needed.

Although industry stakeholders are optimistic regarding intercity passenger rail implementation, they told us federal guidance could help provide structure to the intercity passenger rail market. According to industry stakeholders, there are several areas where federal guidance could help provide that structure: liability laws, safety regulations, Buy

³²GAO, *Intercity Passenger Rail: National Policy and Strategies Needed to Maximize Public Benefits from Federal Expenditures*, [GAO-07-15](#) (Washington, D.C.: Nov. 13, 2006).

³³For these reasons, Amtrak's access costs cannot be directly compared with any other potential intercity passenger rail operator. However, commuter rail costs are the same as to as much as 10 times as much as Amtrak pays for rail infrastructure access.

³⁴[GAO-09-317](#).

America requirements,³⁵ and equipment standardization. (See table 3.) For example, industry stakeholders cited liability against accident and other train-related risks as a major challenge to high speed intercity passenger rail. This is a challenge because federal law provides limited protection to the operator or right-of-way owner since it only covers the claims of passengers, not third-party claims.³⁶

³⁵The Buy America provisions set forth in 49 U.S.C. 24405(a) provides that the Secretary of Transportation may obligate Recovery Act funds for a High Speed Rail/Intercity Passenger Rail or congestion project only if the steel, iron, and manufactured goods used in the project are produced in the United States. The Secretary has the authority to waive this requirement under certain circumstances and the requirement is only applicable to projects which exceed \$100,000.

³⁶Federal law limits overall damages from passenger claims to \$200 million and explicitly authorized passenger rail providers to enter into indemnification agreements. For more information, see [GAO-09-282](#).

Table 3: Issues Identified by Rail Industry Stakeholders for Federal Action

Issue	Stakeholder concern	Stakeholder-identified federal solution
Liability	<p>Potential passenger rail operators said they might not bid on projects because:</p> <ul style="list-style-type: none"> • Operator liability increases at higher speeds. • Uncertainty about and limitations of the federal \$200 million liability limit. • Potential of states to seek additional liability coverage for intercity passenger rail operators. 	<p>Industry stakeholders proposed a variety of solutions including</p> <ul style="list-style-type: none"> • public insurance; • public funding for insurance; • pooled insurance; and • additional liability caps. <p>FRA told us that the Administration has not yet taken a position on these liability issues.</p>
Safety standards	<p>Manufacturers may wait to design passenger rail cars because:</p> <ul style="list-style-type: none"> • There are no standards for intercity passenger rail cars to operate at speeds greater than 125 miles per hour. • Designs may be discarded if they do not meet future regulations. 	<p>FRA should establish the safety standards for high speed passenger rail service.</p> <p>FRA is developing guidance to be provided by June 2011 that will involve a series of several different passenger rail car and other safety standards.</p>
Buy America	<p>Industry stakeholders may be unable to enter the marketplace because:</p> <ul style="list-style-type: none"> • FRA does not have a passenger rail car exemption similar to FTA's exemption. • They might be unable to meet the 100 percent manufactured in the United States requirement. 	<p>FRA should issue guidance related to passenger rail cars in accordance with the FTA requirements.</p> <p>FRA has stated that it will only fund projects for which the steel, iron, and manufactured goods used in the project are produced in the United States—unless a waiver justification applies, is submitted, and approved.</p>
Equipment standardization	<p>Industry stakeholders generally agreed that standardization of design would be beneficial to the industry because it would allow them to quickly and easily fill orders.</p>	<p>FRA should establish a standard design requirement and conduct an oversight and approval process to ensure that all vehicles met these requirements.</p> <p>FRA officials told us that they are working with other stakeholders to develop specifications for new passenger rail equipment.</p>

Source: GAO interviews with various rail industry stakeholders and FRA.

Freight railroads, for example, do not want to allow such service on their rights-of-way unless they are protected from liability. Freight railroads' liability insurance policies cover accidents related to their freight operations; however, when a freight railroad allows passenger rail service to operate over its right-of-way, it is exposed to additional risks as passengers may sue the passenger rail operator, as well as the right-of-way owner. As a result, freight railroad officials believe that passenger rail operators must contractually indemnify freight railroads against all liability and obtain insurance as a guarantee that payments will be made for any damages. The costs of providing this coverage could present a hurdle for new passenger rail operators.

Potential operators were also concerned that Congress might be willing to raise the \$200 million per accident federal liability limit which could make it even more expensive for new passenger rail operating firms to enter the marketplace. Because the application of this liability cap has been untested in court, many freight and passenger railroads are hesitant to rely upon this statute to cover the full extent of their potential liability. In addition, the federal liability limit does not cover third-party claims, such as from bystanders or property owners along the rights-of-way. As a result, liability agreements between freight railroads and commuter rail operators can range from \$75 million to \$500 million per accident.³⁷

The proposed high speed rail corridors also present new liability issues that will increase costs as, according to one right-of-way owner, operator risk and damage will likely increase at higher speeds. In addition, some freight railroads are requesting that operator agreements include covering third parties (such as bystanders) which would also increase operator costs. For example, CSX Corporation and Norfolk Southern Corporation have requested liability insurance of \$500 million per incident as an element of new access agreements with Virginia Railway Express commuter rail service in the Washington, D.C., area. Furthermore, changes in state liability law may influence negotiations between passenger rail operators and freight rail right-of-way owners. Commuter railroads face similar issues to intercity passenger rail operators because they run trains over the same rail network and have to negotiate with the same freight railroads. Options for facilitating negotiations on liability and indemnity provisions could include amending current law; exploring alternatives to traditional commercial insurance; providing commuter rail agencies with more leverage in negotiations; and separating passenger and freight traffic, either physically or by time of day. With regard to high speed rail, some stakeholders suggested a variety of solutions to this issue, including (1) publicly provided passenger rail insurance coverage, (2) government funding of passenger rail insurance to provide an additional layer of protection to railroad-purchased insurance, (3) pooled insurance across railroads,³⁸ and (4) additional liability caps.

³⁷ [GAO-09-282](#).

³⁸ A liability insurance pool can be described as a group of organizations with similar characteristics, such as a group of commuter rail agencies that pool their assets to obtain a single commercial insurance policy, rather than obtaining individual commercial insurance policies.

Industry Stakeholders Noted the Importance of a Stable Public Funding Source for a Robust Intercity Passenger Rail Marketplace

Industry stakeholders agreed that the time frame for building more intercity passenger rail capacity in the United States depends upon the level of public funding committed. They further stated that a stable federal funding stream would encourage firms to enter the marketplace and to make investments. For example, passenger rail car manufacturers discussed the time commitment involved in designing, testing, and manufacturing passenger rail cars. As a result, they stated that they need to ensure that funding will be available throughout the entire process. While the Recovery Act funding waives the PRIIA nonfederal match requirements for capital investments, the fiscal year 2010 appropriation for intercity passenger rail projects requires at least 20 percent of the project's capital costs to come from nonfederal funding sources. If states or other grantees do not come up with their share, they will be unable to use the federal funds. Industry stakeholders stated that, in order to be successful, intercity passenger rail service would need stable state operating support in addition to capital funding provided by the federal government because all of the passenger rail systems we studied required some level of public operational and capital subsidy.³⁹ One freight railroad official noted that, historically, state fluctuations in ridership and inaccurate ridership and revenue predictions have resulted in a financial shortfall that put private railroads at risk, leaving right-of-way owners concerned about the potential sunk costs of underutilized passenger rail equipment and higher speed rail infrastructure. However, during the current economic environment, it is uncertain the extent to which states will be able to provide funding support—capital or operating—as simulations show near-term projected state and local deficits continuing for several years into the future.⁴⁰

Industry stakeholders said that it is important to recognize that effective high speed rail operations will require a long-term investment of resources for ongoing maintenance and operations. Without long-term public funding commitments for capital investments and operations, projects may not be completed and the intercity passenger rail market may not stabilize. The current level of public funding for high speed rail is not as stable as

³⁹In 2006, we studied the passenger rail systems of Canada, France, Germany, Japan, and the United Kingdom. We selected these systems as they had reformed to try to become more cost-effective and value-added for the level of subsidies spent. For more information, see [GAO-07-15](#).

⁴⁰GAO, *State and Local Governments' Fiscal Outlook: March 2010 Update*, [GAO-10-358](#) (Washington, D.C.: Mar. 2, 2010).

industry stakeholders said it would need to be to create a robust industry. For example, after the initial one-time \$8 billion infusion of Recovery Act funding, \$2.5 billion was appropriated in fiscal year 2010 and, most recently, the administration's fiscal year 2011 budget proposed \$1 billion for high speed rail. These funds are derived from general funds rather than a dedicated funding source. Future federal appropriations for intercity passenger rail projects from general funds will have to compete annually with other transportation and nontransportation expenditures, such as national defense and health care. Industry stakeholders did not view this level of funding as enough to sustain a high speed passenger rail system. However, industry stakeholders commented that, although small, the Recovery Act funding for high speed rail has created an interest in the U.S. passenger rail market.

Both current and former domestic high speed rail project sponsors have sought private financing but found it difficult to obtain private sector participation, given the significant financial risks high speed rail projects pose. Other countries have had success implementing public-private partnerships in which foreign governments' shared the financial risks of their expanding high speed rail systems with private partners.⁴¹ Some state officials said there was greater interest in entering public-private partnerships with regard to station development, train operation, and track maintenance before the economic downturn. In addition, a potential passenger rail operator said that the private sector could not provide enough money to meet the initial capital costs of starting intercity passenger rail service; the vast majority of funding would have to come from the public sources.

FRA's New Responsibilities Have Held Back Developing a National Rail Plan, Strategic Vision, and Grant Oversight Plan

FRA's responsibilities and federal funding for intercity passenger rail investments significantly increased under PRIIA and the Recovery Act—posing risks for the use of federal intercity passenger rail funds. Among other things, recent legislation required FRA to draft a preliminary national rail plan and quickly develop a strategic vision for high speed rail while creating a new federal program to distribute and oversee a large increase in federal funds. A national rail plan, consistent with state rail plans, as required in federal law, that defines goals, roles for stakeholders, and objectives for federal investment in rail projects could help FRA develop an oversight program that would ensure accountability for these

⁴¹[GAO-09-317](#).

funds. Inclusion of sound grants management principles could also enhance FRA's grant oversight program to ensure grantees use federal funds effectively, measure and demonstrate success, and regularly assess and enhance program performance.

Federal and State Capacity to Accommodate Dramatically Increased Funds and New Responsibilities Poses Risks for the Use of High Speed Rail Funds

The confluence of several factors resulting from the Recovery Act's funding for intercity passenger rail projects pose risks for the use of federal funds for investments in high speed rail projects. First, the act dramatically and quickly increased the amount of funds available for federal investment in high speed rail projects. The \$8 billion in funding along with the \$2.5 billion fiscal year 2010 appropriation for intercity passenger rail projects represent an increase of over 87 times the \$120 million appropriated for intercity passenger rail projects in fiscal years 2008 and 2009 combined.

Second, FRA officials have been simultaneously carrying out several new responsibilities, including:

- developing a preliminary national rail plan and strategic vision for high speed rail service;
- creating a rail development program to use Recovery Act funds;
- soliciting and evaluating applications and making award decisions;
- negotiating letters of intent and cooperative agreements with states awarded grants;
- creating a grants oversight plan;
- hiring new personnel for grants oversight; and
- determining awards for fiscal year 2010 high speed rail capital grants.

As a result, FRA officials stated that they have been working to meet these new responsibilities and have had personnel from other Department of Transportation agencies, such as FTA and the Research and Innovative Technology Administration, help them review state applications for Recovery Act funds.

Third, while federal law requires a project management oversight program be in place for one of the three federal intercity passenger rail grant

programs, the other two federal rail grant programs do not have this requirement.⁴² However, according to FRA officials, its high speed rail program will outline how the agency will administer and oversee all federal high speed rail grants. FRA officials stated that they are drawing from a number of resources in developing a robust oversight and monitoring program for high speed rail projects, including existing agency procedures and new high speed intercity passenger rail program-specific protocols. For example, FRA is planning to use letters of intent with grantees which will define milestones and conditions that must be satisfied prior to the obligation and disbursement of federal funds. FRA is also planning to use cooperative agreements with its grantees which will allow for greater federal participation in risk management, oversight, and technical assistance than under standard grant agreements.

In addition, FRA is planning to incorporate best practices and lessons learned from other major federal transportation investment programs in its oversight program, including those employed by FTA and the Federal Highway Administration. FRA is adopting several project oversight tools similar to those employed by FTA's New Starts Program—specifically through the required development of Project Management Plans for major capital projects, and the use of project management oversight contractors to aid FRA staff in project oversight.⁴³ FRA officials stated that they are planning to hire consultants to provide on-site, day-to-day project management oversight and to ensure that the development and implementation of each project complies with all applicable statutes, regulations, and FRA guidance. FRA will establish a point of contact for each state for additional oversight and to provide coordination for any other federal funds for these projects. FRA will also adopt the Federal Highway Administration's Major Projects risk management approach, using three primary risk management tools: a project management plan, a financial plan, and a comprehensive risk-based cost-estimate review. FRA

⁴²One of the federal grant programs established in PRIIA that will be used to distribute Recovery Act high speed rail funds has a project management oversight requirement (Section 301—Capital Assistance for Intercity Passenger Rail Service Grants); whereas the other two programs do not (Section 302—Congestion Grants and Section 501—High Speed Rail Corridor Program). However, FRA is requiring all construction projects funded under the Recovery Act or with future federal passenger rail funds to develop an FRA-approved project management plan prior to awarding the funds.

⁴³Through its New Starts program, FTA identifies and recommends, based on financial and programmatic criteria, new fixed-guideway transit projects, including heavy, light, and commuter rail projects, for federal capital funding.

anticipates its internal grant management manual describing this program to be ready in June 2010. This program's development is critical as it is important to hold grantees accountable by verifying that they are making progress toward stated objectives and ensuring that grant funds are used efficiently to support the program's objectives.

FRA officials stated that as FRA strives to meet these new responsibilities, it is increasing its staff dedicated to high speed passenger rail. Before the Recovery Act, FRA officials said that it had 23 staff dedicated to passenger rail activities. FRA officials stated that FRA received funding for 20 additional personnel, for its passenger rail program in fiscal year 2010. FRA will need to dedicate resources over the next months and years to hire and train these additional personnel as well as find and acclimate the project management consultant firms it plans to retain to oversee the day-to-day project management for each state grantee or large project.

Other federal agencies have faced a similar increase in new responsibilities in critical situations or in quickly handling unprecedented amounts of federal funds. For example, as the federal Office of Financial Stability's assumed responsibility for the \$700 billion Troubled Asset Relief Program, it faced a key challenge of developing comprehensive oversight procedures as it had to quickly react to financial market events, increase staff at the newly created agency, and attempt to develop and communicate a strategy for the federal role in the financial marketplace while simultaneously developing and implementing a program to carry out the strategy.⁴⁴ Similar issues existed at the Department of Commerce and the Department of Agriculture as they hired contractors to handle their multiple new award and oversight responsibilities that accompanied a Recovery Act increase in funding of 97 times the previous annual average amount for broadband infrastructure grants.⁴⁵ FRA's efforts to meet these responsibilities could also be complicated in the near term. Although funds available for oversight of Recovery Act projects expire in September 2014, FRA funds for projects funded with fiscal year 2010 appropriations are available until expended.

⁴⁴GAO, *Troubled Asset Relief Program: Status of Efforts to Address Transparency and Accountability Issues*, GAO-09-296 (Washington, D.C.: Jan. 30, 2009).

⁴⁵GAO, *Recovery Act: Agencies Are Addressing Broadband Program Challenges, but Actions Are Needed to Improve Implementation*, GAO-10-80 (Washington, D.C.: Nov. 16, 2009).

Finally, according to FRA officials, no state or federal agency currently has the management capability to oversee such a large passenger rail program so recently established. They noted that while FRA is building its own capacity to initiate and sustain this program, some state departments of transportation are even further behind in developing their capacity to apply for grants and manage passenger rail projects. While they found that some states are more advanced in their planning for passenger rail projects than others, some have no state resources dedicated to rail and many do not have a state rail plan to guide their efforts.

Development of a National Rail Plan Consistent with State Rail Plans Could Increase the Accountability and Transparency of Federal High Speed Rail Funds

FRA's Preliminary National Rail Plan recognizes the importance of these state rail plans and anticipates coordinating its National Rail Plan with them into an "efficient national system...meeting both regional and national goals." However, FRA officials stated that as the agency is developing its capacity and processes to manage this new intercity passenger rail program, some states are further behind in developing their capacity and processes to apply for passenger rail funds. For example, a California department of transportation official stated that it has been planning for and running its intercity passenger rail service since 1976. In contrast, Ohio commissioned Amtrak to conduct a feasibility study for its "3-C" service in late 2008 and received it in late 2009. As a result, Congress specifically exempted projects funded with Recovery Act funds and fiscal year 2010 appropriations from this requirement to speed their distribution and use. In addition, this exemption allowed those states without state rail plans to apply for and receive federal funding awards without establishing statewide strategies, priorities, capital investments, or possible public benefits for rail service.

Due to the pace and scale of the Recovery Act grants, FRA officials have not been able to develop a detailed strategic plan for how high speed rail fits into the national transportation system or the federal role in high speed intercity passenger rail, as required in the act. FRA has published a strategic vision and a preliminary national rail plan as it concentrated on preparing for and then awarding the Recovery Act funds. The strategic vision outlined FRA's proposed strategy to implement the act's funding for high speed rail corridors; however, it did not define the goals, roles of stakeholders, or objectives for federal involvement in high speed intercity passenger rail. The Preliminary National Rail Plan, while offering broad objectives for high speed intercity passenger rail, did not offer specific recommendations for future action and is designed to serve as a "springboard for further discussion" with states and freight railroads.

We have reported that the United States is not well positioned to reform its intercity passenger rail system as the goals and expected outcomes of U.S. rail policy are ambiguous, stakeholder roles are unclear, and funding is limited.⁴⁶ A national rail plan could define several important aspects of such a rail policy by describing:

- the vision and goals for U.S. high speed rail;
- how passenger rail might fit into the national transportation system; and
- the appropriate federal role in achieving the established goals.⁴⁷

As a result, we recommended that the Department of Transportation prepare a strategic vision for high speed rail, particularly in relation to the role that high speed rail can play in the national transportation system, that clearly identifies potential objectives and goals for high speed rail systems and the roles that the federal government and others can play in achieving each objective and goal. With the federal interest clearly defined, policymakers can clarify the goals for federal involvement and the roles of all stakeholders toward those goals.⁴⁸ FRA officials stated that the National Rail Plan to be released in September 2010 will attempt to better define the role of passenger and freight rail in the national transportation system, as well as appropriate roles for rail stakeholders.

Sound Grants Management Practices Could Also Help FRA in Developing Its Oversight Efforts

A well-designed and implemented grant oversight program is critical to ensuring effective use of federal grant funds. In addition to meeting agency and congressional goals and providing public benefits, effective use of federal funds is important in light of the federal government's long-term fiscal imbalance. Simply monitoring and reporting performance may encourage accountability and grant guidelines can establish uniform outcome measures for evaluating grantees' performance toward specific

⁴⁶GAO, *Intercity Passenger Rail: National Policy and Strategies Needed to Maximize Public Benefits from Federal Expenditures*, [GAO-07-15](#) (Washington, D.C.: Nov. 13, 2006).

⁴⁷[GAO-09-317](#).

⁴⁸[GAO-09-317](#). The Department of Transportation did not take a position on this recommendation and stated that the Recovery Act accelerated its work on high speed intercity passenger rail. At the time, the department indicated that its upcoming strategic plan may include its vision on implementing high speed intercity passenger rail services.

goals.⁴⁹ Incentives or penalties in the grant agreements can also create clear links between performance and funding which help hold grantees accountable for achieving desired results.

Some grants management practices identified by the Comptroller General's Domestic Working Group could help FRA in developing these aspects of its grant management program.⁵⁰ The Domestic Working Group identified several promising practices which could improve grants management including: managing grantee performance, using results of the grant program, and assessing and developing performance measures for grantees.⁵¹ These specific principles will become important as FRA transitions from awarding grants to overseeing their performance. FRA is planning to address these principles in its grant oversight approach. (See table 4.)

⁴⁹GAO, *Grants Management: Enhancing Performance Accountability Provisions Could Lead to Better Results*, [GAO-06-1046](#) (Washington, D.C.: Sept. 29, 2006).

⁵⁰We have also reported on oversight of several federal grant programs such as: Department of Justice juvenile justice grants, GAO, *Juvenile Justice: A Time Frame for Enhancing Grant Monitoring Documentation and Verification of Data Quality Would Help Improve Accountability and Resource Allocation Decisions*, [GAO-09-850R](#) (Washington, D.C.: Sept. 22, 2009); Transportation Security Agency and Federal Emergency Management Agency first responder grants, GAO, *Transit Security Grant Program: DHS Allocates Grants Based on Risk, but Its Risk Methodology, Management Controls, and Grant Oversight Can Be Strengthened*, [GAO-09-491](#) (Washington, D.C.: June 8, 2009); overall grant performance management, GAO, *Grants Management: Enhancing Performance Accountability Provisions Could Lead to Better Results*, [GAO-06-1046](#) (Washington, D.C.: Sept. 29, 2006); and Environmental Protection Agency grant oversight, GAO, *Grants Management: EPA Needs to Strengthen Efforts to Address Persistent Challenges*, [GAO-03-846](#) (Washington, D.C.: Aug. 29, 2003).

⁵¹Domestic Working Group, Grant Accountability Project, *Guide to Opportunities for Improving Grant Accountability*, October 2005. This guide states that it is designed to provide government executives at the federal, state, and local levels with ideas for better managing grants. The guide focuses on specific steps taken by various agencies. The intent is to share useful and innovative approaches taken, so that others can consider using them.

Table 4: FRA’s Oversight Plan in Relation to Selected Grant Oversight Principles

Principle	GAO Grants Working Group description	FRA’s planned oversight approach
Managing grantee performance	<p>Agencies need to ensure grants are used for the intended purposes by</p> <ul style="list-style-type: none"> • monitoring the grants’ financial status; • monitoring performance of grantees and subgrantees; and • using audits to gain information about grantees. 	FRA is planning to incorporate programmatic, financial, and administrative reviews of grantee reports and documentation, as well as perform site visits. Audits will be used to identify project-specific corrective actions.
Assessing and using results of the grant program	<p>Agencies should be able to</p> <ul style="list-style-type: none"> • demonstrate grants’ successes by surveying grantees or inspecting projects; and • identify ways to improve program performance using outside experts to assess and evaluate programs. 	FRA is planning to aggregate its project reviews and site visits to identify trends and to preempt potential issues and concerns with the program.
Measuring performance	Agencies should develop outcome-related performance measures with its grantees.	FRA officials stated that they are developing tools to measure these outcomes. FRA officials stated that they will require time and focused resources to fully develop accurate and useful metrics to measure public benefits.

Source: *Guide to Opportunities for Improving Grant Accountability* and GAO analysis of FRA information.

As FRA is working on agreements with states to monitor their performance on Recovery Act projects, FRA officials have stated that their grant oversight program will incorporate reviews and site visits to measure grantees’ performance; the development of a tool to track grantees’ performance; and processes to use the results of the reviews, site visits, and tracking tool to improve the overall program. Although some performance measures, such as ridership, revenue, and revenue-to-cost metrics exist, FRA officials told us that they are developing more robust metrics for accurately measuring the public benefits of passenger rail investments. FRA’s high speed rail interim program guidance includes such potential benefits as congestion reduction, environmental quality, safety, energy efficiency, and the creation of livable communities. We have recognized that the valuation of public benefits is difficult and have recommended that the Department of Transportation develop specific policies that include performance measures of public benefits in its intercity passenger rail grant award decisions.⁵² In addition, assessing the

⁵²GAO-09-317. The Department of Transportation did not take a position on this recommendation and stated that the Recovery Act accelerated its work on high speed intercity passenger rail. At the time, the department indicated that its upcoming strategic plan may include its criteria for selecting projects and an evaluation process that will be used to measure effectiveness.

grant program and incorporating the results of that assessment could be critical as FRA gains experience with this new program and as future federal funds are appropriated for high speed intercity passenger rail projects.

Concluding Observations

The federal government has embarked on a new role in transportation by designating an unprecedented amount of federal funds for high speed passenger rail. Federal, state, and local officials have welcomed the investment and have cited the possible public benefits of passenger rail service for the nation, regions, states, and communities. However, this new opportunity will come with many years of planning, testing, and construction, and brings new concerns. While the rail industry and some states are ready to take advantage of this opportunity, the federal government and many states do not have any experience in contracting for intercity passenger rail service. States that have established intercity passenger rail service have taken years to build public support, secure funding, obtain equipment, and manage their services. More passenger rail service, especially services at higher and high speeds, will require new safety rules, constant public capital investment and operating subsidies, and balance with freight rail service and the rest of the national transportation system—and currently only some of these elements are in place.

While the recent federal funds may serve as a catalyst for many projects and have generated high public expectations, the planning necessary to meet the many concerns outlined above has not yet occurred. In particular, some states do not have a state rail plan that identifies the states' strategies, priorities, and possible public benefits of public investment in rail transportation. While it is understandable that Congress exempted projects funded by the Recovery Act from this requirement to stimulate the economy, it remains nonetheless important to know how states plan to use federal funds for passenger rail projects over the long term. PRIIA established that states should plan how they use federal passenger rail funds and we believe this kind of planning can provide the basis for sound investment of federal funds. Additionally, on a national level, FRA's definition of federal role, goals, and objectives, in conjunction with a robust grant oversight program, are critical to making sound federal investments. These elements will become even more important as more federal funds are appropriated and distributed and as states and the federal government gain experience in investing and managing intercity passenger rail service. We are not recommending that FRA include these elements in its next version of its National Rail Plan at this time, as the

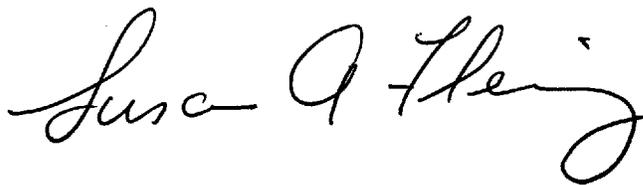
agency appears to be on a path to doing so. We will continue to monitor FRA's efforts in this regard.

Agency Comments

We provided a draft of this report to the Department of Transportation for review and comment. The department did not express an overall view on the draft report. It did provide technical comments and clarifications, which we incorporated.

We are sending copies of this report to congressional subcommittees with responsibilities for surface transportation issues; the Director, Office of Management and Budget; the Secretary of Transportation; and the Administrator of the Federal Railroad Administration. In addition, this report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions regarding this report, please contact me at (202) 512-2834 or flemings@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are Heather Chartier, Gregory Hanna, James Ratzenberger, and Caitlin Tobin.



Susan A. Fleming
Director, Physical Infrastructure Issues

Appendix I: Scope and Methodology

To report on how states successfully initiated or improved their intercity passenger rail services over the past 15 years, we reviewed documentation about states that provided operational support to intercity passenger rail services; interviewed state, association, and industry officials; and identified parallels between developing conventional passenger rail and higher and high speed passenger rail services. (For a list of the organizations interviewed, see table 5 at the end of this appendix.) We identified states that initiated or improved intercity passenger rail services over the last 15 years by reviewing reports and background information about recent intercity passenger rail services, as well as by conducting interviews with the Federal Railroad Administration (FRA), National Railroad Passenger Corporation (Amtrak), and association officials knowledgeable of state-supported passenger rail services. We conducted semistructured interviews with state rail officials from 8 states, including 4 states that initiated new services and 4 states that improved existing services, including 1 state that improved an existing service to higher speeds. We also reviewed documentation provided by states about these passenger rail systems and conducted semistructured interviews with industry officials about these state-supported services.

To gain some insight into the types of infrastructure improvements states would need to invest in to increase speeds and improve the performance of intercity passenger rail service, we visited railroad projects in Indiana, projects on Amtrak-owned infrastructure in Michigan which will soon allow a top speed for passenger trains of 110 miles per hour, and projects on various freight railroad rights-of-way in Illinois designed to reduce rail congestion and increase train speeds, respectively. Additionally, we reviewed information about states and projects awarded Recovery Act funding and reviewed our previous work about intercity passenger rail and high speed rail to determine how state experiences developing intercity passenger rail can be applied to developing conventional intercity passenger rail and high speed rail services.

We met with industry stakeholders to obtain their views regarding how the rail industry plans to accommodate the increased investment in passenger rail service. To identify these stakeholders, we met with railroad associations, attended rail conferences, and drew upon internal and external subject matter experts to identify companies in each area. We conducted semistructured interviews with potential operators, right-of-way owners, passenger rail car manufacturers, and general rail industry contractors to obtain their views on the capacity of the rail industry to accommodate the increased public investment and to identify issues related to this increased investment. We reviewed and analyzed federal

laws and regulations such as the Buy America provision in the Recovery Act, and FRA’s Passenger Rail Safety Study, to describe the rules that govern the industry. We reviewed information from our reports related to stakeholder-identified rail industry challenges to see if these challenges have changed with the onset of the Recovery Act funding.

We reviewed federal laws including the Recovery Act and the Passenger Rail Investment and Improvement Act of 2008 to describe FRA’s new responsibilities regarding passenger rail investment. To provide grant oversight principles that could be used by the FRA in its grants management program, we identified important grant oversight elements from the Comptroller General’s Domestic Working Group report on grants management and from our reports evaluating various federal grant programs. We compared them to statements made by FRA officials regarding their oversight program. We analyzed FRA’s strategic vision for high speed rail, its preliminary national rail plan, and its interim guidance for its high speed passenger rail program for information on the stated federal role in intercity passenger rail and how it fits within the national transportation system. We also interviewed FRA officials responsible for passenger rail development to determine how FRA is planning to oversee the use of Recovery Act and other federal funds for intercity passenger rail investments.

We focused on the state, industry, and federal efforts to fund capital investments in state-supported intercity passenger rail corridors and projects as these projects were the types of projects eligible for Recovery Act and subsequent federal funding.

Table 5: Organizations Contacted

Federal agency
Department of Transportation, Federal Railroad Administration
State departments of transportation
California
Illinois
Maine
North Carolina
Pennsylvania
Vermont
Virginia
Washington

Passenger rail operators

Amtrak

Herzog

JR Central (Central Japan Railway Company)

SNCF

Veolia

Freight railroads

BNSF Railway Company

Canadian National Railway Company

Canadian Pacific Railway

CSX Transportation Incorporated

Union Pacific Railroad

Rail car manufacturers and rail industry firms

Alstom Transport

Bombardier

Kawasaki Rail Car

Parsons Brinckerhoff

Talgo

URS Corporation

Associations

American Association of State Highway and Transportation Officials

Association of American Railroads

Coalition of Northeastern Governors

States for Passenger Rail Coalition

Source: GAO.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday afternoon, GAO posts on its Web site newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to www.gao.gov and select "E-mail Updates."

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's Web site, <http://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548

