

GAO

Testimony

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Housing and Urban Development, and Related
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TRANSPORTATION PROGRAMS

Challenges Facing the Department of Transportation and Congress

Statement of Katherine Siggerud, Managing Director

Physical Infrastructure Issues



GAO

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Highlights of [GAO-09-435T](#), a testimony before the Subcommittee on Transportation, Housing and Urban Development, and Related Agencies; Committee on Appropriations; House of Representatives

Why GAO Did This Study

A safe, efficient, and convenient transportation system is integral to the health of our economy and quality of life. Our nation's vast transportation system of airways, railways, roads, transit systems, and waterways has served this need, yet is under considerable pressure due to increasing congestion and costs to maintain and improve the system. Calls for increased investment come at a time when traditional funding for transportation projects is increasingly strained. The authorizing legislation supporting transportation programs will soon expire.

The Department of Transportation (DOT) implements national transportation policy and administers most federal transportation programs. DOT received funds for transportation infrastructure projects through the American Recovery and Reinvestment Act of 2009 to aid in economic recovery. DOT also requested \$72.5 billion to carry out its activities for fiscal year 2010.

This statement presents GAO's views on major challenges facing DOT and Congress as they work to administer recovery funds and reauthorize surface transportation and aviation programs. It is based on work GAO has completed over the last several years. GAO has made recommendations to DOT to improve transportation programs; the agency has generally agreed with these recommendations. To supplement this existing work, GAO obtained information on the recovery funds provided to DOT.

View [GAO-09-435T](#) or key components. For more information, contact Katherine Siggerud at (202) 512-2834 or siggerudk@gao.gov.

TRANSPORTATION PROGRAMS

Challenges Facing the Department of Transportation and Congress

What GAO Found

The Department of Transportation received about \$48 billion of recovery funds for investments in transportation infrastructure from the American Recovery and Reinvestment Act of 2009. As with other executive agencies, DOT is faced with the challenges of using these funds in ways that will aid economic recovery, making wise funding choices while spending the money quickly, and ensuring accountability for results. GAO will report to Congress bimonthly on how states and localities use the recovery funds received from DOT.

DOT and Congress will also be faced with numerous challenges as they work to reauthorize surface transportation and aviation programs.

- **Funding the nation's transportation system.** Revenues to support the Highway Trust Fund are not keeping pace with spending levels and the Highway Account was nearly depleted last summer. In addition, the excise taxes that fund Airport and Airway Trust Fund revenues have been lower than previously forecasted, and forecasts of future revenues have declined. Declining revenues in both trust funds may adversely affect DOT's ability to continue to fund surface transportation and aviation programs at levels previously assumed.
- **Improving transportation safety.** Although the number of traffic crashes and the associated fatality rate has decreased over the last 10 years, the number of fatalities has remained at about 42,000 annually. The continued high level of fatalities and difficulties experienced by states in implementing grant programs raise issues for Congress to consider in restructuring these programs during reauthorization. While the U.S. commercial aviation industry is among the safest in the world, accidents can have catastrophic consequences. The lack of performance measures and complete data limit DOT's ability to improve safety and manage safety risks.
- **Improving transportation mobility.** Despite large increases in transportation spending, congestion on our nation's highways has increased over the last 10 years and increased demand will further strain the system. Flight delays and cancellations at congested airports continue to plague the U.S. aviation system. For example, almost one in four flights either arrived late or was canceled in 2008, and the average flight delay increased despite a 6 percent annual decline in the total number of operations through December 2008. Congestion poses serious economic as well as environmental and health concerns for the nation.
- **Transforming the nation's air traffic control system.** The air traffic control modernization program is technically complex and costly. The Federal Aviation Administration will need to accelerate the implementation of new and existing technologies, consider incentives for aircraft operators to acquire those technologies, and sustain the current system while transitioning to the new one, among other things.

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to participate in this hearing to discuss the challenges facing the Department of Transportation (DOT) and Congress as they work to aid economic recovery and address the reauthorization of the surface transportation and aviation programs. A safe, efficient, and convenient transportation system is critical to the nation's economy and affects the daily life of most Americans. However, this system is under pressure, and estimates to repair, replace, or upgrade aging infrastructure—as well as expand capacity to meet increased demand—top hundreds of billions of dollars. Calls for increased investment in transportation coincide with growing strains on traditional funding for transportation projects. For example, revenues to support the Highway Trust Fund are not keeping pace with spending levels, and the fund's Highway Account was nearly depleted last summer.¹ Similarly, excise tax revenues to support the Airport and Airway Trust Fund have been lower than previously forecasted, a trend which is likely to continue given the downturn in the economy.² The federal government's current financial condition and the nation's weakening economy will further strain funding sources for transportation projects.

DOT will immediately be faced with overseeing the distribution of economic stimulus funds that were provided in the American Recovery and Reinvestment Act of 2009 to states and localities.³ Congress and DOT will also soon face the challenge of allocating federal resources to meet demands for a wide range of surface transportation infrastructure projects, as the current authorization of federal surface transportation programs expires at the end of fiscal year 2009. Furthermore, federal aviation programs have been operating under a series of funding extensions since the authorizing legislation expired at the end of fiscal year 2007. Timely reauthorization is critical to ensuring the continuity of the Federal Aviation Administration's (FAA) current programs and

¹The Highway Trust Fund is the mechanism used to account for federal highway user taxes (e.g., federal excise taxes on fuel) that are dedicated for highway- and transit-related purposes. The Highway Trust Fund has two accounts: the Highway Account and the Mass Transit Account.

²The Federal Aviation Administration (FAA) is primarily funded by an appropriation from The Airport and Airway Trust Fund, which comes from various excise taxes paid by passenger and cargo airlines and general aviation operators. FAA also receives an appropriation from the General Fund to support its operations.

³Pub. L. No. 111-5, 123 Stat. 115 (2009).

progress in transforming the nation's air traffic control system. DOT faces these challenges with few officials named or confirmed to appointed posts.

My statement is primarily based on work that we have completed over the past several years. (A list of related GAO products is included with this statement.) To supplement our existing work, we also obtained information on the American Recovery and Investment Act of 2009 and the President's budget for the Department of Transportation for fiscal year 2010.⁴

Background

The safe, efficient, and convenient movement of people and goods depends on a vibrant transportation system. Our nation has built vast systems of roads, airways, railways, transit systems, pipelines, and waterways that facilitate commerce and improve our quality of life. However, these systems are under considerable strain due to increasing congestion and the costs of maintaining and improving the systems. This strain is expected to increase as the demand to move people and goods grows resulting from population growth, technological change, and the increased globalization of the economy.

DOT implements national transportation policy and administers most federal transportation programs. Its responsibilities are considerable and reflect the extraordinary scale, use, and impact of the nation's transportation systems. DOT has multiple missions—primarily focusing on mobility and safety—that are carried out by several operating administrations. (See table 1.) For fiscal year 2010, the President's budget requested \$72.5 billion to carry out these and other activities.

⁴We conducted our work in accordance with all sections of GAO's Quality Assurance Framework that were relevant to the objectives of each engagement. The framework requires that we plan and perform each engagement to obtain sufficient and appropriate evidence to meet our stated objectives and to discuss any limitations in our work. We believe that the information and data obtained, and the analyses conducted, provided a reasonable basis for the findings and conclusions in each report.

Table 1: Primary Missions of the Department of Transportation

DOT operating administration	Mission
Federal Highway Administration	Enhancing the quality and performance of the nation's highway system and intermodal connections
Federal Aviation Administration	Promoting the safety and efficiency of the national airspace system
Federal Transit Administration	Supporting locally planned and operated public mass transit systems
National Highway Traffic Safety Administration	Reducing motor vehicle crashes and their associated deaths and injuries
Federal Motor Carrier Safety Administration	Reducing commercial motor vehicle-related (large trucks and buses) fatalities and injuries
Federal Railroad Administration	Improving safety on the nation's rail systems and providing grants for intercity passenger rail activities
Pipeline and Hazardous Materials Safety Administration	Maintaining the safety and integrity of the nation's pipeline transportation system and the safety of transporting hazardous materials
Maritime Administration	Strengthening the nation's maritime transportation system, including infrastructure, industry, and labor

Source: DOT.

Note: This table does not include the Research and Innovative Technology Administration or the Saint Lawrence Seaway Development Corporation. In addition, the Surface Transportation Board, which has jurisdiction over such areas as railroad rate and service issues and rail restructuring transactions, is an economic regulatory agency that is decisionally independent but administratively affiliated with DOT.

DOT carries out some activities directly, such as employing more than 15,000 air traffic controllers to coordinate air traffic. However, the vast majority of the programs it supports are not under its direct control. Rather, the recipients of transportation funds, such as state departments of transportation, implement most transportation programs. For example, the Federal Highway Administration (FHWA) provides funds to state governments each year to improve roads and bridges and meet other transportation demands, but state and local governments decide which transportation projects have high priority within their political jurisdictions.

We have previously reported that current surface transportation programs—authorized in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—do not effectively address the transportation challenges the nation faces. As a

result, we have called for a fundamental reexamination of the nation's surface transportation programs to (1) have well-defined goals with direct links to an identified federal interest and federal role, (2) institute processes to make grantees more accountable by establishing more performance-based links between funding and program outcomes, (3) institute tools and approaches that emphasize the return on the federal investment, and (4) address the current imbalance between federal surface transportation revenues and spending.⁵

We have also called for a timely reauthorization of FAA programs that expired at the end of fiscal year 2007 and have continued under a series of funding extensions. Such short-term funding measures could delay key capital projects and may affect FAA's current programs and progress toward the Next Generation Air Transportation System.

Aiding Economic Recovery and Ensuring Accountability for Recovery Funds' Use

Congress and the presidential administration have fashioned the American Recovery and Reinvestment Act of 2009 to help our nation respond to what is generally reported to be the worst economic crisis since the Great Depression. DOT received about \$48 billion of these funds for investments in transportation infrastructure—primarily for highways, passenger rail, and transit—mostly for use through fiscal year 2010. (See table 2.) As with other executive agencies, DOT now faces the challenges of using these funds in ways that aid economic recovery, making wise funding choices while spending the money quickly, and ensuring accountability for results.

⁵GAO, *Surface Transportation: Restructured Federal Approach Needed for More Focused, Performance-Based, and Sustainable Programs*, [GAO-08-400](#) (Washington, D.C.: Mar. 6, 2008).

Table 2: 2009 Recovery Act Funds Provided to the Department of Transportation

Area	Uses	Amounts (dollars in billions)
Highway	Capital assistance to states and localities to restore, repair, and construct highways and passenger and freight rail transportation and port infrastructure	\$27.5
Intercity passenger rail	Capital assistance for high-speed rail, intercity passenger rail, and Amtrak	9.3
Transit	Capital assistance for transit projects	8.4
Supplemental discretionary awards ^a	Capital assistance to states and localities for capital improvements in surface transportation infrastructure	1.5
Aviation	Capital assistance to airports for improvements and for FAA facilities and equipment	1.3
Maritime	Capital assistance to small shipyards	0.1
Total		\$48.1

Source: GAO summary of information in the American Recovery and Reinvestment Act of 2009.

^aThese funds are for investments in surface transportation infrastructure in addition to the other amounts listed in the table. The funds are to be awarded competitively for highway, bridge, public transportation, passenger and freight rail, and port infrastructure projects.

The act largely provided for increased transportation funding through existing programs—such as the Federal-Aid Highways, the New Starts transit, and the Airport Improvement programs. Channeling funding through existing programs should allow DOT to jump start its spending of recovery funds. However, there is a need to balance the requirement in the recovery act to get funds out quickly to help turn around the economy with the equally powerful need to make sure that funds are spent wisely on infrastructure investments and are not subject to waste, fraud, and abuse.

We have reported on important design criteria for any economic stimulus package including that it be timely, temporary, and targeted.⁶ This is a difficult challenge for transportation infrastructure projects.⁷ First, they require lengthy planning and design periods. According to the Congressional Budget Office (CBO), even those projects that are “on the shelf” generally cannot be undertaken quickly enough to provide a timely stimulus to the economy.⁸

⁶GAO, *Long-Term Fiscal Outlook: Action Is Needed to Avoid the Possibility of a Serious Economic Disruption in the Future*, [GAO-08-411T](#) (Washington, D.C.: Jan. 29, 2008).

⁷GAO, *Physical Infrastructure: Challenges and Investment Options for the Nation’s Infrastructure*, [GAO-08-763T](#) (Washington, D.C.: May 8, 2008).

⁸Congressional Budget Office, *Options for Responding to Short-Term Economic Weakness*, January 2008.

Second, spending on transportation infrastructure is generally not temporary because of the extended time frames needed to complete projects. Third, because of differences among states, it is challenging to target stimulus funding to areas with the greatest economic and infrastructure needs.

The act will substantially increase the federal investment in the nation's surface transportation system. However, the current federal approach to addressing the nation's surface transportation problems is not working well. Many existing surface transportation programs are not effective at addressing key challenges because goals are numerous and sometimes conflicting, roles are unclear, programs lack links to the performance of the transportation system or of the grantees, and programs in some areas do not use the best tools and approaches to ensure effective investment decisions and the best use of federal dollars. In addition, evidence suggests that increased federal highway grants influence states and localities to substitute federal funds for state and local funds they otherwise would have spent on highways. In 2004, we estimated that states used roughly half of the increases in federal highway grants since 1982 to substitute for state and local highway funding, and that the rate of substitution increased during the 1990s.⁹ Our work has also shown that there is still room for improved oversight in surface transportation programs including the Federal-Aid Highway program. For example, we and the DOT Inspector General have each recommended that FHWA develop the capability to track and measure the costs of federally-aided projects over time.¹⁰

Among other things, the act gives our office the responsibility of reporting to Congress bimonthly on how selected states and localities are using the

⁹GAO, *Federal-Aid Highways: Trends, Effect on State Spending, and Options for Future Program Design*, [GAO-04-802](#) (Washington, D.C.: Aug. 31, 2004). The recovery act requires that each governor certify to DOT that their state will maintain its efforts for the types of projects that are funded by the act.

¹⁰GAO, *Federal-Aid Highways: FHWA Needs a Comprehensive Approach to Improving Project Oversight*, [GAO-05-173](#) (Washington, D.C.: Jan. 31, 2005). We recently reported on the need to better oversee states' increased use of contractors and consultants to assure the public's interest is adequately protected. See GAO, *Federal-Aid Highways: Increased Reliance on Contractors Can Pose Oversight Challenges for Federal and State Officials*, [GAO-08-198](#) (Washington, D.C.: Jan. 8, 2008). See also Office of Inspector General, *FHWA Needs to Capture Basic Aggregate Cost and Schedule Data to Improve Its Oversight of Federal-Aid Funds*, MH-2005-046 (Washington, D.C.: Feb. 15, 2005). In addition, the department's Office of Inspector General recently reported that the department needed to better oversee states' oversight of design and engineering firms' indirect cost billing. See Office of Inspector General, *Oversight of Design and Engineering Firms' Indirect Costs Claimed on Federal-Aid Grants*, ZA-2009-033 (Washington, D.C.: Feb. 5, 2009).

recovery funds. We will work with the department's Office of Inspector General and with the state and local audit community to coordinate our activities.¹¹ We also anticipate that committees of jurisdiction will request that we assess specific issues related to the department's use of recovery funds. We look forward to working with this subcommittee and others to meet Congress's needs.

Addressing Funding, Safety, Mobility, and Modernization Challenges in Surface Transportation and Aviation Reauthorization Efforts

DOT and Congress will be faced with numerous challenges as they work to reauthorize the surface transportation and aviation programs. In particular, the department and Congress will need to address challenges in (1) ensuring that the nation's surface transportation and aviation systems have adequate funding, (2) improving safety, (3) improving mobility, and (4) transforming the nation's air traffic control system. Surface transportation program funding is one of the issues on our high-risk list.¹²

Funding the Nation's Transportation System

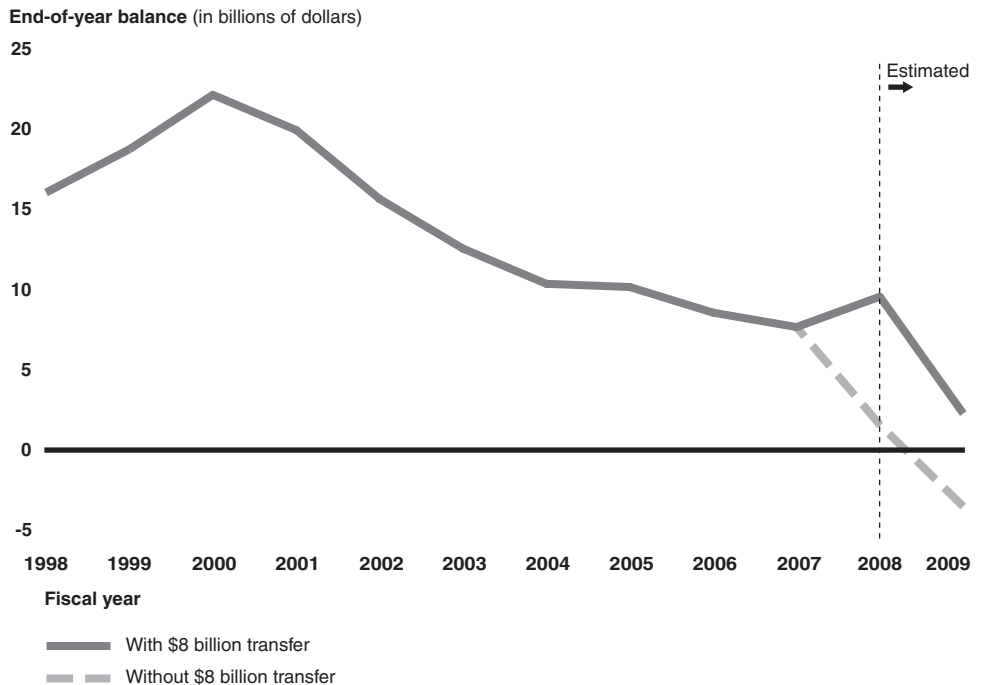
Revenues from motor fuels taxes and truck-related taxes to support the Highway Trust Fund—the primary source of funds for highway and transit—are not keeping pace with spending levels. This fact was made dramatically apparent last summer when the Highway Account within the trust fund was nearly depleted. The balance of the Highway Account has been declining in recent years because, as designed in SAFETEA-LU, outlays from the account exceed expected receipts over the authorization period. Specifically, when SAFETEA-LU was passed in 2005 estimated outlays from Highway Account programs exceeded estimated receipts by about \$10.4 billion. Based on these estimates, the Highway Account balance would have been drawn down from \$10.8 billion to about \$0.4 billion over the authorization period. This left little room for error. Assuming all outlays were spent, a revenue shortfall of even 1 percent

¹¹GAO, *American Recovery and Reinvestment Act: GAO's Role in Helping to Ensure Accountability and Transparency*, [GAO-09-453T](#) (Washington, D.C.: Mar. 5, 2009).

¹²GAO, *High-Risk Series: An Update*, [GAO-09-271](#) (Washington, D.C.: Jan. 22, 2009). Surface transportation modes included in the high-risk report are highways and transit, intercity passenger rail, and freight rail.

below what SAFETEA-LU had predicted over the 5-year period would result in a cash shortfall in the account balance.

Figure 1: Highway Account Balance, Fiscal Years 1998 through 2009



Source: GAO analysis of FHWA data.

In fact, actual Highway Account receipts were lower than had been estimated, particularly for fiscal year 2008. Account receipts were lower in fiscal year 2008 due to a weakening economy and higher motor fuel prices that affected key sources of Highway Trust Fund revenue. For example, fewer truck sales, as well as fewer vehicle miles traveled and correspondingly lower motor fuel purchases resulted in lower revenues. As a result, the account balance dropped more precipitously than had been anticipated and was nearly depleted in August 2008—1 year earlier than the end of the SAFETEA-LU authorization period. In response, Congress passed legislation in September 2008 to provide \$8 billion to replenish the account. However, according to CBO, the account could reach a critical stage again before the end of fiscal year 2009. Without either reduced expenditures or increased revenues, or a combination of the two, shortfalls will continue.

In the past, we have reported on several strategies that could be used to better align surface transportation expenditures and revenue.¹³ Each of these strategies has different merits and challenges, and the selection of any strategy will likely involve trade-offs among different policy goals. The strategies related to funding sources are also included in the recent report from the National Surface Transportation Infrastructure Financing Commission.¹⁴

- Altering existing sources of revenue. The Highway Account's current sources of revenue—motor fuel taxes and truck-related taxes—could be better aligned with actual outlays. According to CBO and others, the existing fuel taxes could be altered in a variety of ways to address the erosion of purchasing power caused by inflation, including increasing the per-gallon tax rate and indexing the rates to inflation.
- Ensure users are paying fully for benefits. Revenues can also be designed to more closely follow the user-pay concept—that is, require users to pay directly for the cost of the infrastructure they use. This concept seeks to ensure that those who use and benefit from the infrastructure are charged commensurately. Although current per-gallon fuel taxes reflect usage to a certain extent, these taxes are not aligned closely with usage and do not convey to drivers the full costs of road use—such as the costs of congestion and pollution. We have reported that other user-pay mechanisms—for example, charging according to vehicle miles traveled, tolling, implementing new freight fees for trucks, and introducing congestion pricing (pricing that reflects the greater cost of traveling at peak times)—could more equitably recoup costs.
- Supplement existing revenue sources. We have also reported on strategies to supplement existing revenue sources. A number of alternative financing mechanisms—such as enhanced private-sector participation—can be used to help state and local governments finance surface transportation. These mechanisms, where appropriate, could help meet growing and costly transportation demands. However, these potential financing sources are forms of debt that must ultimately be repaid.
- Reexamine the base. Given the federal government's fiscal outlook, we have reported that we cannot accept all of the federal government's

¹³GAO, *Surface Transportation: Restructured Federal Approach Needed for More Focused, Performance-Based, and Sustainable Programs*, [GAO-08-400](#) (Washington, D.C.: Mar. 6, 2008).

¹⁴National Surface Transportation Infrastructure Financing Commission, *Paying Our Way: A New Framework for Transportation Finance*, February 2009.

existing programs, policies, and activities as “givens.” Rather, we need to rethink existing programs, policies, and activities by reviewing their results relative to the national interests and by testing their continued relevance and relative priority.

- Improve the efficiency of current facilities. Finally, better managing existing system capacity and improving performance of existing facilities could minimize the need for additional expenditures. We have reported that the efficiency of the nation’s surface transportation programs are declining and that the return on investment could be improved in a number of ways, including creating incentives to better use existing infrastructure.

In addition to better aligning revenues and outlays, improving existing mechanisms that are intended to help maintain Highway Account solvency could help DOT better monitor and manage the account balance, thereby reducing the likelihood of a funding shortfall. For example, statutory mechanisms designed to make annual adjustments to the Highway Account have been modified over time—particularly through changes in SAFETEA-LU—to the extent that these mechanisms either are no longer relevant or are limited in effectiveness.¹⁵ Furthermore, monitoring indicators throughout the year that could signal sudden changes in the Highway Account revenues could help DOT better anticipate potential changes in the account balance that should be communicated to Congress, state officials, and other stakeholders. We recently made recommendations to help DOT improve solvency mechanisms for the Highway Account and communication on the account’s status with stakeholders.

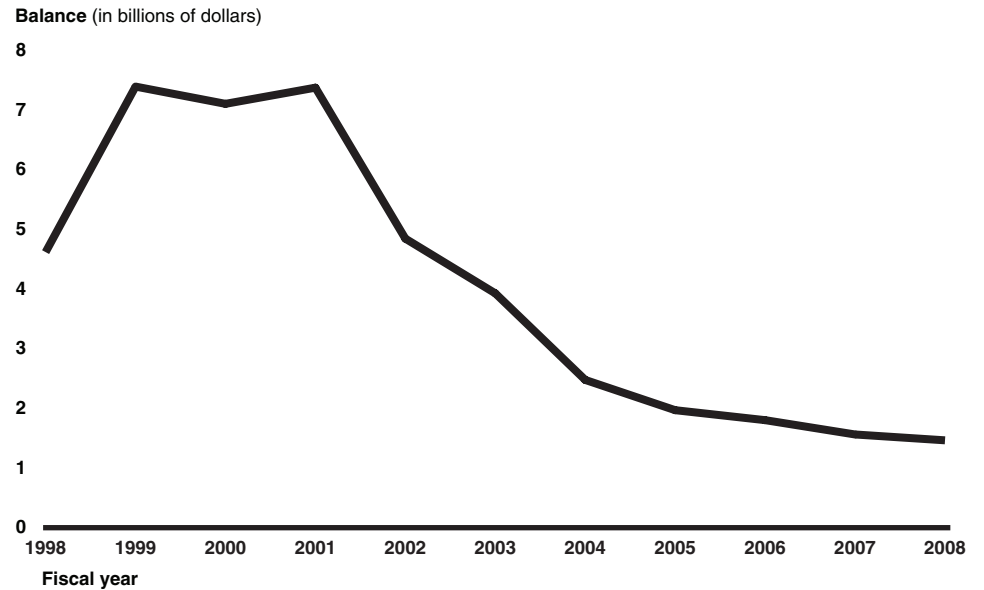
Turning to aviation funding, the excise taxes that fund Airport and Airway Trust Fund revenues have been lower than previously forecasted, and forecasts of future revenues have declined because of a decline in airline passenger travel, fares, and fuel consumption.¹⁶ Moreover, the uncommitted balance in the Trust Fund has decreased since fiscal year 2001. (See fig. 2). For the short run, lower-than-expected excise tax revenues will reduce the Trust Fund balance even further and could affect

¹⁵Two mechanisms are intended to help keep the Highway Account solvent by making annual adjustments to ensure there are adequate funds to reimburse states (through the Byrd Test) and align outlays with actual revenues (through Revenue Aligned Budget Authority).

¹⁶Airport and Airway Trust Fund excise taxes expired at the end of fiscal year 2007 but were extended through March 31, 2009.

funding for FAA programs this year and next. In the longer run, continued declines in Trust Fund revenues may require Congress to reduce spending on FAA operations and capital projects, increase revenues for the trust fund by introducing new fees or increasing taxes, or increase FAA's funding provided by the General Fund.

Figure 2: Airport and Airway Trust Fund End-of-Year Uncommitted Balance, Fiscal Years 1998 through 2008

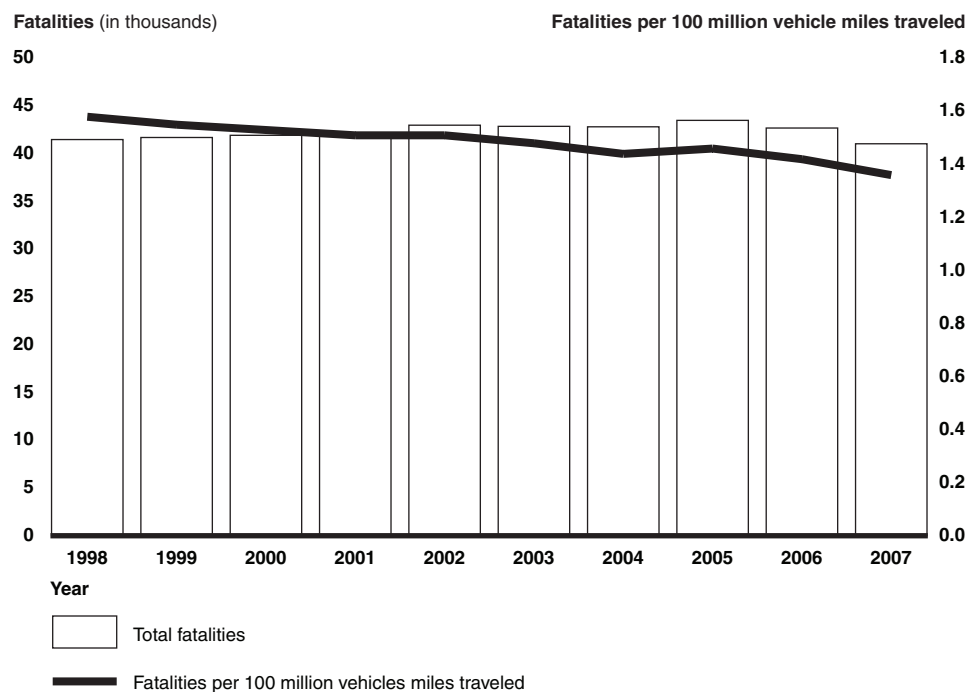


Source: Treasury Income Statements.

Improving Transportation Safety

Improvements in transportation safety are needed to reduce the number of deaths and injuries from transportation accidents, the vast majority of which occur on our nation's roads. We recently reported that although the number of traffic crashes and the associated fatality rates has decreased over the last 10 years, the number of fatalities has, unfortunately, remained at about 42,000 annually and some areas are of particular concern.¹⁷ For example, in 2007, over half of the passenger vehicle occupants killed were not using safety belts or other proper restraint, nearly one-third of the total fatalities were in alcohol-impaired driving crashes, and motorcyclist fatalities increased for the 10th year in a row.

Figure 3: Traffic Fatalities and Fatality Rate, 1998 through 2007



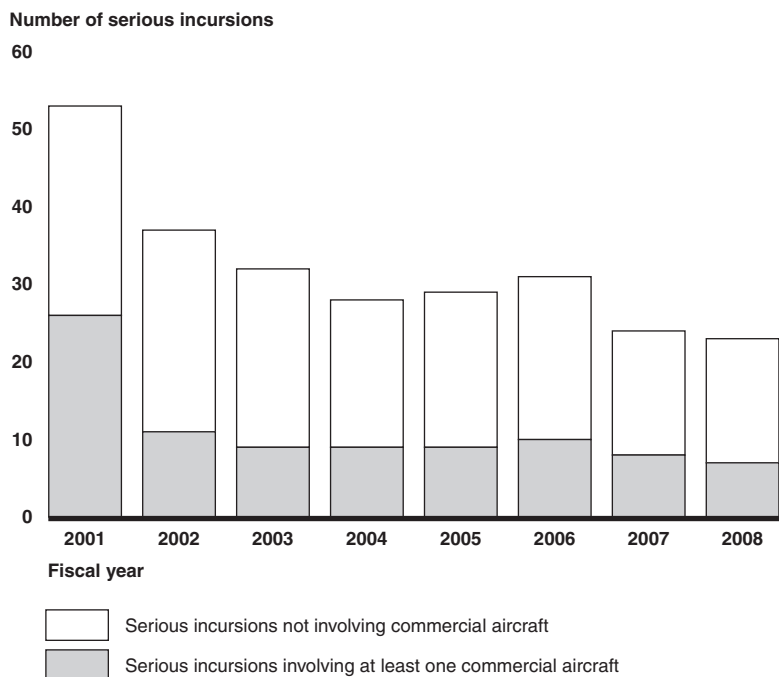
Sources: NHTSA and FHWA.

While the U.S. commercial aviation industry is among the safest in the world, aviation safety is also a major concern because when accidents or serious incidents occur they can have catastrophic consequences.

¹⁷GAO, *Traffic Safety Programs: Progress, States' Challenges, and Issues for Reauthorization*, [GAO-08-890T](#) (Washington, D.C.: July 16, 2008).

Moreover, last year there were 25 serious runway incursions—nine of these involved commercial aircraft—when collisions between aircraft on runways were narrowly avoided. Runway incursions can be considered a precursor to aviation accidents.¹⁸ Figure 4 shows the number of serious incursions involving commercial aircraft from fiscal year 2001 through fiscal year 2008.

Figure 4: Total Number of Serious Runway Incursions Involving at Least One Commercial Aircraft, Fiscal Years 2001 through 2008



Source: FAA.

DOT has taken steps to address surface and aviation safety concerns. To improve traffic safety, the National Highway Traffic Safety Administration (NHTSA) has made substantial progress in administering traffic safety grant programs and high-visibility enforcement programs which, according to state safety officials, are helping them address key traffic safety issues, such as safety belt use and alcohol-impaired driving. NHTSA has also taken steps to improve the consistency of its process for reviewing states'

¹⁸GAO, *Aviation Safety: FAA Has Increased Efforts to Address Runway Incursions*, [GAO-08-1169T](#) (Washington, D.C.: Sept. 25, 2008).

management of traffic safety grants. To maintain and expand the margin of safety within the national airspace system, FAA is moving to a system safety approach to oversight and has established risk-based, data-driven safety programs to oversee the aviation industry. FAA has also taken recent actions to improve runway safety, including conducting safety reviews at airports and establishing an FAA-industry team to analyze the root causes of serious incursions and recommend runway safety improvements.

Despite NHTSA's progress in administering and overseeing traffic safety programs, several challenges may limit the effectiveness of the programs and NHTSA's ability to measure and oversee program effectiveness:

- The grant programs generally lack performance accountability mechanisms to tie state performance to receipt of grants.
- Some states have faced challenges passing legislation required to qualify for some traffic safety incentive grants.
- Each safety incentive grant has a separate application process, which has proven challenging for some states to manage, especially those with small safety offices.
- Some states also would have preferred more flexibility in using the safety incentive grants to focus on key safety issues within the state.

Over the past several years, we have made recommendations to help NHTSA further improve its ability to measure and oversee surface traffic safety programs and to help FAA improve its oversight of aviation safety. However, some challenges related to traffic safety—such as state challenges in administering the programs and the lack of performance accountability measures—result from the structure of the grant programs established under SAFETEA-LU. These challenges and the persistence of substantial numbers of traffic fatalities nationwide raise issues for Congress to consider in restructuring surface traffic safety programs during the upcoming reauthorization. Furthermore, to maintain the high level of safety in the aviation industry, FAA needs to address challenges in accessing complete and accurate aviation safety data, and improving runway and ramp safety. For example, recent actions by some major airlines to discontinue participation in an important data reporting program limit data access. Moreover, a lack of national data on operations involving air ambulances, air cargo, and general aviation hinders FAA's ability to evaluate accident trends and manage risks in these sectors. Improving runway safety will require a sustained effort by FAA that includes developing new technologies and revised procedures to address

human factors issues, such as fatigue and distraction, which experts have identified as the primary cause of incursions.

Improving Transportation Mobility

Congestion has worsened over the past 10 years, despite large increases in transportation spending at all levels of government and improvements to the physical condition of highways and transit facilities. Furthermore, according to DOT, highway spending by all levels of government has increased 100 percent in real dollar terms since 1980, but the hours of delay during peak travel periods have increased by almost 200 percent during the same period. These mobility issues have increased at a relatively constant rate over the last two decades.¹⁹ (See table 3.)

Table 3: Urban Congestion Impacts on the Nation's Urban Areas

	1985	1995	2005
Travel delay (billions of hours)	1.1	2.5	4.2
Wasted fuel (billions of gallons)	0.7	1.7	2.9
Congestion cost (billions of 2005 dollars)	\$20.5	45.4	78.2

Source: Texas Transportation Institute.

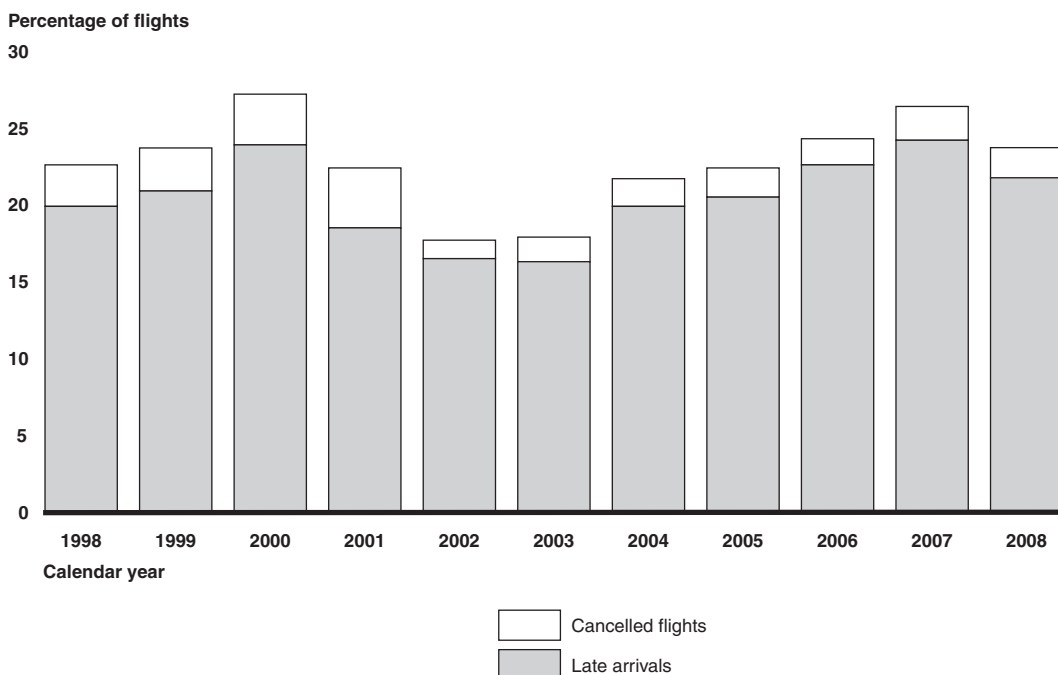
In addition, demand has outpaced the capacity of the system, and projected population growth, technological changes, and increased globalization are expected to further strain the system. Likewise, increased demand and capacity constraints have threatened the mobility of the nation's freight transportation network. According to DOT, volumes of goods shipped by trucks and railroads are projected to increase by 98 percent and 88 percent, respectively, by 2035 over 2002 levels, at the same time that the ability to increase capacity will be constrained by geographic barriers, population density, and urban land-use development patterns. One study estimates that highway congestion alone costs shippers \$10 billion annually. Constraints on freight mobility can also result in undesirable environmental effects, such as air pollution, and contribute to increased risks for illnesses, such as respiratory disease.

Flight delays and cancellations at congested airports also continue to plague the U.S. aviation system. Flight delays and cancellations steadily

¹⁹Texas Transportation Institute, *The 2007 Urban Mobility Report*, September 2007. The statistics cited are for the 437 urban areas in the United States.

increased from 2002 through 2007 and decreased slightly in 2008. (See fig. 5.) For example, almost one in four flights either arrived late or was canceled in 2008, and the average flight delay increased despite a 6 percent decline in the total number of operations through December 2008. Delays are a particular problem at a few airports, such as those in the New York area, where less than 70 percent of flights arrive on time. Because the entire airspace system is highly interdependent, delays at one airport may lead to delays rippling across the system and throughout the day.

Figure 5: Trends in Percentage of Late Arriving and Canceled Flights—Systemwide (1998 through 2008)



Source: DOT.

Commissions, proposals, and actions have attempted to address mobility issues in past years. To address concerns with the performance of the surface transportation system, including mobility concerns, Congress established two commissions to examine current and future needs of the system and recommend needed changes to surface transportation programs, one of which called for significantly increasing the level of investment in surface transportation. Various other transportation industry associations and research organizations have also issued proposals for restructuring surface transportation programs. DOT has also taken several steps in the last 5 years to address key impediments to freight mobility by

developing policies and programs to address congestion in the United States. For example, it has drafted a framework for a national freight policy, released a national strategy to reduce congestion, and created a freight analysis framework to forecast freight flows along national corridors and through gateways.²⁰ DOT and FAA began implementing several actions in summer 2008 intended to enhance capacity and reduce flight delays, particularly in the New York region. These actions include redesigning the airspace around the New York, New Jersey, and Philadelphia metropolitan area and establishing schedule caps on takeoffs and landings at the three major New York airports.²¹ In addition, as part of a broad congestion relief initiative, DOT awarded over \$800 million to several cities under its Urban Partnership Agreements initiative to demonstrate the feasibility and benefits of comprehensive, integrated, performance-driven, and innovative approaches to relieving congestion.

We have previously reported on several challenges that impede DOT's efforts to improve mobility:

- Although all levels of government have significantly invested in transportation, and recommendations have been made by transportation stakeholders for increasing investment in surface transportation even further, we have previously reported that federal transportation funding is generally not linked to specific performance-related goals or outcomes, resulting in limited assurance that federal funding is being channeled to the nation's most critical mobility needs. Federal funding is also often tied to a single transportation mode, which may limit the use of those funds to finance the greatest improvements in mobility.
- DOT does not possess adequate data to assess outcomes or implement performance measures. For example, DOT lacks a central source for data on congestion—even though it has identified congestion as a top priority—and available data are stovepiped by mode, impeding efficient planning and project selection.
- Although DOT and FAA should be commended for taking steps to reduce mounting flight delays and cancellations, as we predicted this past summer, delays and cancellations in 2008 did not markedly improve over

²⁰GAO, *Freight Transportation: National Policy and Strategies Can Help Improve Freight Mobility*, [GAO-08-287](#) (Washington, D.C.: Jan. 7, 2008).

²¹GAO, *FAA Airspace Redesign: An Analysis of the New York/New Jersey/Philadelphia Project*, [GAO-08-786](#) (Washington, D.C.: July 31, 2008).

2007 levels despite a decline in passenger traffic.²² The growing air traffic congestion and delay problem that we face is the result of many factors, including airline practices and inadequate investment in airport and air traffic control infrastructure. Long-term investments in airport infrastructure and air traffic control, or other actions by Congress, DOT, or FAA could address the fundamental imbalance between underlying demand for, and supply of, airspace capacity.

Modernizing the Air Traffic Control System and Ensuring a Safe and Efficient Transformation to the Next Generation Air Transportation System

FAA has made significant progress in addressing weaknesses in its air traffic control modernization. It established a framework for improving system management capabilities, continued to develop an enterprise architecture, implemented a comprehensive investment management process, assessed its human capital challenges, and developed an updated corrective action plan for 2009 to sustain improvement efforts and enhance its ability to address risks, among other things. Because FAA has shown progress in addressing most of the root causes of past problems with the air traffic control modernization effort and is committed to sustaining progress into the future, we removed this area from the high-risk list in January 2009. Nonetheless, we will closely monitor FAA's efforts because the modernization program is still technically complex and costly, and FAA needs to place a high priority on efficient and effective management.

FAA's improvement efforts are even more critical because the modernization has been extended to plan for the Next Generation Air Transportation System (NextGen)—a complex and ambitious multiagency undertaking that is intended to transform the current radar-based system to an aircraft-centered, satellite-based system by 2025. As the primary implementer of NextGen, FAA faces several challenges that, if not addressed, could severely compromise NextGen goals and potentially lead to a future gap between the demand for air transportation and available capacity that could cost the U.S. economy billions of dollars annually. Challenges facing FAA include the following:²³

²²GAO, *National Airspace System: DOT and FAA Actions Will Likely Have a Limited Effect on Reducing Delays during Summer 2008 Travel Season*, [GAO-08-934T](#) (Washington, D.C.: July 15, 2008).

²³GAO, *National Airspace System: FAA Reauthorization Issues are Critical to System Transformation and Operations*, [GAO-09-377T](#) (Washington, D.C.: Feb. 11, 2009).

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- Accelerating the implementation of available NextGen technologies, which, according to some industry stakeholders, are not being implemented fast enough to have NextGen in place by 2025.
 - Working with stakeholders to explore a range of potential options that would provide incentives to aircraft operators to purchase NextGen equipment and to suppliers to develop that equipment. These options could include some combination of mandated deadlines, operational credits, or equipment investment credits.
 - Reconfiguring facilities and enhancing runways to take full advantage of NextGen's benefits. FAA has not developed a comprehensive reconfiguration plan, but intends to report on the cost implications of reconfiguration this year.
 - Sustaining the current air traffic control system and maintaining facilities during the transition to NextGen. More and longer unscheduled outages of existing equipment and support systems indicate more frequent system failures. These systems will be the core of the national airspace system for a number of years and, in some cases, become part of NextGen.

To implement NextGen, the department is undertaking several initiatives. For example, FAA has formed partnerships with industry to accelerate the availability of NextGen capabilities. These partnerships include (1) entering into agreements with private sector firms to conduct NextGen technology demonstration projects; (2) working with industry and the local community on their plans to build an aviation research and technology park where FAA can work with industry on the research and development, integration, and testing of NextGen technologies; and (3) establishing a NextGen midterm task force to forge a consensus on operational improvements and planned benefits for 2013 to 2018. In addition, to increase the capacity of existing runways at busy airports, FAA has begun implementing the High-Density Terminal and Airport Operations initiative that changes requirements for aircraft separation and spacing, among other things.

One step for moving forward with the NextGen transition was proposed in the 2009 House reauthorization bill, which directed FAA to establish a working group to develop criteria and make recommendations for the realignment of services and facilities—considering safety, potential cost savings, and other criteria, in concert with stakeholders, including employee groups. Until FAA establishes this working group and the group develops recommendations, the configurations needed for NextGen cannot be implemented and potential savings that could help offset the cost of NextGen will not be realized.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any questions that you or other Members of the Subcommittee might have.

GAO Contact and Staff Acknowledgments

For further information on this statement, please contact Katherine Siggerud at (202) 512-2834 or siggerudk@gao.gov. Contact points for our Congressional Relations and Public Affairs offices may be found on the last page of this statement. Individuals making key contributions to this testimony were Sara Vermillion, Assistant Director; Steve Cohen, Matthew Cook, Heather Krause, Nancy Lueke, James Ratzenberger, and Teresa Spisak.

Related GAO Products

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