

# **TOP MANAGEMENT CHALLENGES**

*Department of Transportation*

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# Memorandum

U.S. Department of  
Transportation

Office of the Secretary  
of Transportation  
Office of Inspector General

Subject: **INFORMATION:** DOT's Fiscal Year 2010  
Top Management Challenges  
Report Number PT-2010-008

Date: November 16, 2009

From: Calvin L. Scovel III   
Inspector General

Reply to  
Attn. of: J-1

To: The Secretary  
Deputy Secretary

We have identified the Department of Transportation's (DOT) top management challenges for fiscal year 2010. The Nation's economy and the quality of life for all Americans rely heavily on a safe and vital transportation system. The Department spends about \$70 billion annually on a wide range of programs and initiatives to meet this objective, and we continue to support its efforts through our audits and investigations.

Improving transportation safety remains the Department's overarching goal. The Department, the Administration, and Congress continue to face significant challenges in achieving this goal—challenges that will require difficult decisions. Longstanding concerns we have identified that demand ongoing attention include relieving highway and air traffic congestion, financing the Highway Trust Fund, and addressing the Nation's aging surface infrastructure. At the same time, the Department must address new OIG concerns, such as starting up an intercity high-speed rail system and ensuring that the Department has a sufficient acquisition workforce with the skills needed to oversee contracts. We have begun to build a body of work to help the Department effectively manage these and other emerging issues.

The Department's challenges are further exacerbated by budget constraints, uncertain financial markets, fluctuating fuel prices, and an increasing reliance on contractors. While the American Recovery and Reinvestment Act in February 2009 aimed to stimulate the economy, it also created new challenges for the Department in overseeing the rapid disbursement of billions of dollars to address the Nation's transportation concerns. We recognize the commitment of the Secretary and his staff to the success of DOT's recovery initiatives. DOT has been proactive on several fronts, including establishing the Transportation

Investment Generating Economic Recovery (TIGER) team to coordinate DOT's role in the recovery program, ensure accountability, and develop a risk management and financial reporting plan.

There are important opportunities for the Department to set priorities; establish sound management policies, practices, procedures; and thereby maximize its return on transportation investments. Strong leadership and careful stewardship of taxpayer dollars are essential for successfully addressing the top challenges facing the Department.

Several criteria were considered in identifying the following ten challenges, including their impact on safety, documented vulnerabilities, large dollar implications, and the ability of the Department to effect change in these areas:

- Maximizing the Department's Economic Recovery Investments
- Enhancing Surface Safety Programs to Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety
- Maximizing Federal Surface Infrastructure Investments by Helping States Better Allocate Resources and Providing Effective Oversight
- Addressing Human Factors and Strengthening the Regulatory and Oversight Framework for Aviation Safety
- Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System
- Improving Contract Management and Oversight
- Enhancing the Ability to Combat Cyber Attacks and Improving the Governance of Information Technology Resources
- Developing a Funding Framework for the Next Surface Transportation Reauthorization
- Strengthening the Department's Acquisition Workforce
- Successfully Implementing the Newly Created Multi-Billion Dollar High-Speed Intercity Passenger Rail Program

We remain committed to keeping decision makers informed of longstanding as well as emerging problems identified through our audits and investigations so that timely corrective actions can be taken.

This report and the Department's response will be included in the Department's Performance and Accountability Report, as required by law. The Department's response can be found in the appendix.

If you have any questions concerning this report, please contact me at (202) 366-1959. You may also contact Ann Calvaresi Barr, Principal Assistant Inspector General for Auditing and Evaluation, at (202) 366-1427.

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# Maximizing the Department's Economic Recovery Investments



Source: Minnesota 2020, used with permission

In February 2009, Congress passed and the President signed the American Recovery and Reinvestment Act<sup>1</sup> in an effort to jumpstart the economy, create or save jobs, and put a down payment on addressing transportation needs across the country. In the 8 months since ARRA's passage, DOT has obligated \$29.6 billion—62 percent of its total \$48.1 billion Recovery Act funds—on nearly 9,476 highway, road, bridge, transit, and rail projects nationwide. With much at stake, ARRA calls for unprecedented levels of transparency and accountability to know how, when, and where tax dollars are being spent. DOT took steps to enhance oversight of its ARRA funding, including establishing the DOT-wide Transportation Investment Generating Economic Recovery (TIGER) team to coordinate the Department's role in the recovery program, ensure accountability, and develop a risk management and financial reporting plan. While proactive steps like these are important, DOT still faces several key challenges in meeting ARRA's goals and requirements going forward.

<sup>1</sup> Pub. L. No. 111-5, February 17, 2009.

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# Maximizing the Department's Economic Recovery Investments

### Key Challenges

- Implementing the Office of the Secretary's (OST) \$1.5 billion TIGER Discretionary Grants Program.
- Enhancing oversight of ARRA spending on existing and new programs.
- Reporting accurate and consistent job creation data.

### Implementing OST's \$1.5 Billion TIGER Discretionary Grants Program

One of ARRA's new discretionary grants programs includes \$1.5 billion under OST for surface transportation infrastructure projects. To better ensure this program meets its objective, OST was required to develop comprehensive and sound program plans and criteria.

OST must overcome management and resource obstacles to effectively implement this discretionary grant program. For example, OST has not finalized its role in the post-grant award process once grants are awarded. Also, OST has not thoroughly assessed what additional grant oversight resources or expertise it will need to effectively administer these grants.

An immediate challenge OST faces is to establish and carry out objective internal grant review and selection procedures based on the selection criteria it publicly released in June.<sup>2</sup> Qualitative factors such as "improving existing transportation facilities or systems" and "livability," are subject to interpretation by OST grant application evaluators. OST issued internal guidance at the end of September 2009 that provides details on evaluating applications against the criteria, and the review process is under way. At the same time, OST must meet the statutory requirement that ARRA grants be equitably distributed geographically. These potentially competing requirements, mandated by law, could be difficult to reconcile, and revising the list of selected projects to satisfy the geographic distribution requirements could result in higher rated projects being taken off the list.

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<sup>2</sup> Federal Register, Vol. 74, No. 115, Wednesday, June 17, 2009.

# Maximizing the Department's Economic Recovery Investments

### Enhancing Oversight of ARRA Spending on Existing and New Programs

DOT faces several challenges in overseeing its ARRA programs. The large increase in funding and tight time frames involved in the implementation of ARRA have strained DOT's resources, particularly the time and attention of its field staff. Key focus areas for DOT:

- **Following through on comprehensive workforce plans.** To help agencies prepare for the added responsibility of awarding ARRA funding, the Office of Management and Budget (OMB) directed agencies to assess the gap between their current workforce and ARRA human capital requirements. OMB's guidance requires agencies to identify mission-critical human capital needs for ARRA implementation using competency-based workforce planning methodologies. While the Federal Highway Administration (FHWA) developed an agencywide workforce plan, not all Operating Administrations have developed or implemented such plans. Additionally, FAA did not fully consider the effects that meeting ARRA requirements might have on existing programs and obligations, which agencies are expected to continue to fulfill. The significant increase in DOT's workload underscores the importance of finalizing and following through on a comprehensive workforce plan.
- **Enhancing oversight mechanisms.** To mitigate the risk of inefficient or imprudent expenditure of ARRA dollars, OMB directed agencies to take steps, beyond standard practice, to enhance oversight of ARRA grant programs and contracts. Enhanced oversight mechanisms have been established for some DOT programs, but ARRA still poses ongoing management challenges that will require sustained focus. This is especially important for FHWA and FTA, which received three-fourths of DOT's total ARRA funds. For example, to oversee the \$27.5 billion it received in ARRA funding, FHWA developed national review teams. However, FHWA's management challenge is to make sure these teams have a consistent approach to conducting compliance reviews across its 52 Division Offices and promote vigilant oversight of recovery projects. In the past, ensuring that its widely dispersed staff provided sufficient oversight to grantees had been a challenge for FHWA.<sup>3</sup> In contrast, FTA plans to primarily rely on existing reviews to provide oversight of ARRA-funded projects, using ARRA funds to increase the level of these reviews. At the grantee level, this will include a set of established periodic reviews, such as triennial reviews. Follow-through by FTA

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<sup>3</sup> OIG Report Number MH-2009-013, "National Bridge Inspection Program: Assessment of FHWA's Implementation of Data-Driven, Risk-Based Oversight," January 12, 2009.



# Maximizing the Department's Economic Recovery Investments

to ensure that all oversight activities are conducted consistently with sufficient rigor is key, given the dramatic increase in funds that FTA is charged with overseeing.

OMB required Federal agencies to aggressively address fraud, waste, and abuse in ARRA projects. DOT's Operating Administrations are taking action to combat the significant risk of fraud in the recovery program; but continued outreach is needed to enhance understanding among DOT staff, grantees, and their contractors on how to detect, prevent, and report potential fraud. Efforts to date are mixed. For example, while FTA sponsored a week-long "Grants A to Z" seminar, the Maritime Administration (MARAD) continues to lack a systematic fraud prevention strategy. An effective strategy centers on deterring fraud schemes that could occur on projects receiving recovery funding, such as bid-rigging, false claims for materials and labor, and product substitution through mismarking or mislabeling products and materials. A key element of this strategy is increased awareness of certain "red flags" that could indicate the presence of one or more fraud schemes on a project. As more recovery projects are initiated across the country, OIG's investigative staff will continue to partner with program officials to provide fraud prevention and awareness education. However, each Operating Administration must maintain its own rigorous fraud prevention and awareness programs.

**Reporting Accurate and Consistent Job Creation Data** To provide transparency and accountability for Federal recovery dollars, ARRA mandated extensive new reporting requirements to include estimating and reporting on job creation. However, a lack of guidance to the individual Operating Administrations on assessing data reliability and untimely reporting on new jobs may impede the Department's ability to provide accurate reports.

OMB provided general guidance to agencies on how to obtain and report job creation data for ARRA projects, but DOT's plans for estimating and reporting such jobs raises concerns. For example, OST has not provided guidance on how the Operating Administrations should assess the reliability of job creation data provided by recipients. In addition, OST's methodology for estimating the number of indirect jobs created by ARRA projects is inconsistent with the Council of Economic Advisors recommended methodology for estimating total employment. Further, OST intends to report indirect and total jobs on the date recipients are reimbursed for expenditures, which could result in a lag between when

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# Maximizing the Department's Economic Recovery Investments

jobs are actually created or saved and when they are reported. Given the ambiguity these weaknesses create in OST's estimates—particularly its estimates of indirect jobs—it is critical that DOT expeditiously address risks related to the quality of job creation data.

**Related Products** The following related reports, testimonies, and advisories can be found on the OIG website at <http://www.oig.dot.gov>.

- Status of Operating Administrations' Processes To Conduct Limited Quality Reviews of Recovery Act Recipient Data, October 6, 2009.
- ARRA Advisory: FAA's Process for Awarding ARRA Airport Improvement Program Grants, August 6, 2009.
- ARRA Advisory: Sampling of Improper Payments in Major DOT Grants Programs Department of Transportation, June 22, 2009.
- ARRA Advisory: DOT's Suspension and Debarment Program, May 18, 2009.
- American Recovery and Reinvestment Act: DOT's Implementation Challenges and the OIG's Strategy for Continued Oversight of Funds and Programs, April 30, 2009, and April 29, 2009.
- American Recovery and Reinvestment Act of 2009: Oversight Challenges Facing the Department of Transportation, March 31, 2009.
- Top Management Challenges Facing the Department of Transportation, March 10, 2009.

***For more information on the issues identified in this chapter, please contact Madeline Chulumovich, Special Assistant for Economic Recovery, at (202) 366-6512.***

# Enhancing Surface Safety Programs To Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety



**D**espite recent decreases, motor vehicle-related crashes cause nearly 95 percent of all transportation deaths.<sup>4</sup> In 2008, such crashes killed more than 37,000 people and injured an estimated 2.35 million. Some types of fatalities, such as those involving motorcycles, increased in 2008, and serious problems—such as alcohol-impaired driving and unrestrained occupants—persist. Motor vehicle-related fatalities and injuries also have significant public health and economic consequences. Motor vehicle crashes cost about \$230 billion for medical care, property damage, and lost productivity in 2000, the most recent data available. The Department continues its commitment to improving safety. Recently, the Transportation Secretary announced an initiative to combat distracted driving—a contributing factor in about 16 percent of fatal crashes and 22 percent of injury crashes.

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<sup>4</sup> All data in this chapter from National Highway Traffic Safety Administration sources, unless otherwise noted.

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# Enhancing Surface Safety Programs To Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety

### Key Challenges

- Promoting meaningful performance indicators to consistently measure states' progress in improving safety.
- Targeting unsafe motor carriers and commercial drivers for enforcement and enhancing the Commercial Driver's License (CDL) program.
- Overseeing the safety of public transit systems.

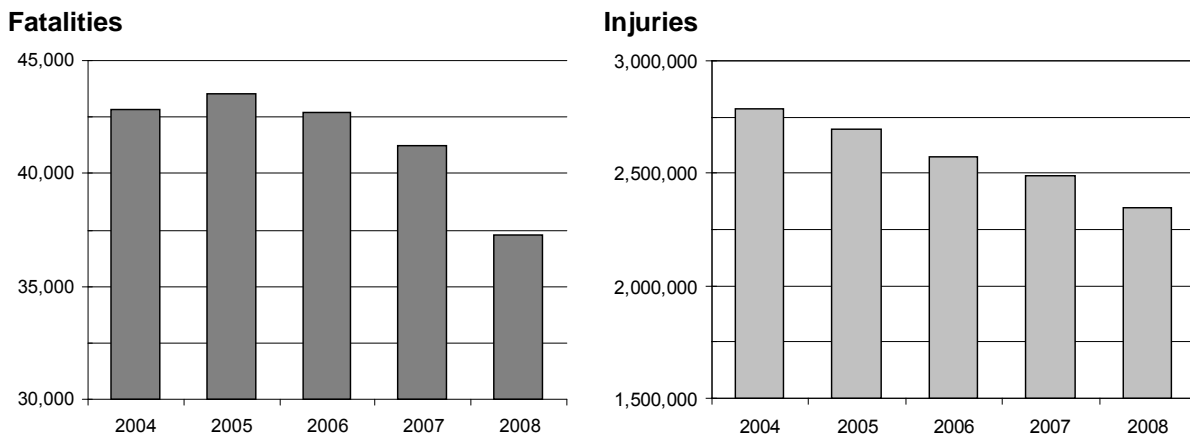
### **Promoting Meaningful Performance Indicators to Consistently Measure States' Progress in Improving Safety**

The Department has helped reduce highway fatalities and injuries by establishing motor vehicle safety standards, providing safety grants to states, funding road and bridge improvements, and supporting research on driving behavior. As vehicle miles traveled decreased during the economic recession, the number of people killed and injured in motor vehicle crashes also decreased (see figure 2-1). However, fatalities in alcohol-impaired driving crashes accounted for 32 percent of all traffic fatalities in 2007 and 2008. Further, the percentage of unrestrained passenger fatalities rose to 55 percent of all passenger fatalities in 2008. Recent fatalities and injuries in other modes of surface transportation—particularly transit—also raise concerns.

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# Enhancing Surface Safety Programs To Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety

**Figure 2-1. U.S. Highway Fatalities and Injuries, 2004 through 2008**



Source: National Highway Traffic Safety Administration

Each year, the Department provides about \$600 million in Federal grants for state and local highway safety programs, including those aimed at reducing alcohol-impaired driving and promoting seat belt use.<sup>5</sup> The Department must continue working with states to reinforce current safety initiatives and introduce new initiatives through strong leadership, clear Federal standards, and empirical evidence regarding safety program performance. Our work has shown that the Department can improve its ability to measure the effectiveness of Federal resources and state strategies by requiring states to use more meaningful performance indicators linked to proven strategies, such as year-round sustained enforcement of alcohol-impaired driving laws. Performance indicators would provide states with better tools to judge their progress, allow the Department to compare states' success and promulgate best practices, and enhance public accountability.

The Department and the Governors Highway Safety Association developed a set of 14 minimum performance measures for states to use in priority programs. The Department committed to work with states to develop uniform definitions, protocols, and reporting requirements for each measure. However, to monitor the success of these efforts, the

<sup>5</sup> United States Department of Transportation, Fiscal Year 2008 Budget In Brief.

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# Enhancing Surface Safety Programs To Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety

Department will need to ensure states establish measureable goals and report their progress in meeting these goals.

**Targeting Unsafe Motor Carriers and Commercial Drivers for Enforcement and Enhancing the CDL Program** Approximately 4,500, or 1 in 8 overall fatalities in 2008 were related to crashes involving large trucks or buses.<sup>6</sup> To reduce these fatalities, the Department must take on several challenges. First, the Department must take stringent enforcement action against carriers that repeatedly violate safety regulations—an action we recommended in 2006—and ensure that unsafe carriers are placed out of service and not re-issued authority under new identities. In response to our work, the Federal Motor Carrier Safety Administration (FMCSA) revised its policies to enhance controls for assessing maximum fines for repeat violations of motor carrier regulations. FMCSA has also proposed stronger CDL standards and implemented a more stringent motor carrier application vetting process to identify carriers that might have had a previous authority revoked for unsafe operations.

Second, the Department must improve enforcement and data systems used to oversee the motor carrier industry and commercial motor vehicle drivers. For example, we identified weaknesses in the Commercial Driver's License Information System, including state tardiness in posting commercial driver convictions and inadequate system security. The Department also lacks reliable traffic conviction data on holders of commercial driver's licenses from Mexico, diminishing its ability to effectively oversee cross-border trucking. Finally, the Department must implement our long-standing recommendations for revising knowledge and skills testing standards, implementing fraud prevention efforts, and establishing new minimum standards for states to issue commercial driver's permits.

The Department's Comprehensive Safety Analysis 2010 initiative—an initiative to increase the effectiveness of compliance and enforcement programs—will rely heavily on information systems and data reporting. Accordingly, it is imperative that the Department continue improving the quality of crash, inspection, and census data. The Department must take enforcement action against carriers that do not comply with census data reporting requirements, as these data are vital to the success of the Department's new motor carrier applicant vetting and safety rating processes.

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<sup>6</sup> National Highway Traffic Safety Administration and Federal Motor Carrier Safety Administration, Motor Carrier Safety Progress Report, June 30, 2009.

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# Enhancing Surface Safety Programs To Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety

Finally, the Department should continue working with OIG investigators and state and local agencies to identify and stop CDL holders who are not properly licensed. For example, as part of one of our criminal investigations, FMCSA has sent notices to more than 5,000 CDL holders that they need to be retested. Our investigation indicates that employees of a private driving academy might have improperly administered CDL tests for some students who attended this driving academy.

**Overseeing the Safety of Public Transit Systems** In 2008, transit systems' ridership continued to increase, with over 10 billion trips. Historically, transit systems have provided safe transportation relative to other modes, particularly motor vehicles. However, the June 2009 collision of two Metrorail trains outside Washington, D.C., which killed 9 people and injured more than 70, as well as other recent transit incidents have elevated concerns about the safety of these systems and the Federal role in ensuring safety. Of particular concern are issues related to operator performance, physical infrastructure, fleet operations and control systems, and management of rail cars and transit buses.

The Department faces challenges in defining a transit safety oversight structure, including closing gaps in regulatory and enforcement authority. The Department must explore options for a complete approach to safety and to address statutory authority issues that could impede the Federal role in ensuring that safety. Accordingly, the Department established a multimodal team of safety officials and experts to address transit safety and statutory authority reform. A critical challenge facing this group will be to identify safety practices that can be applied effectively by all transit agencies.

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# Enhancing Surface Safety Programs To Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety

**Related Products** The following related reports and testimonies can be found on the OIG website at <http://www.oig.dot.gov>.

- Follow-up Audit on the Implementation of NAFTA's Cross-Border Trucking Provisions, August 17, 2009.
- Audit of the Data Integrity of the Commercial Driver's License Information System, July 30, 2009.
- Status Report on NAFTA Cross-Border Trucking Demonstration Project, February 2, 2009.
- Use of Income Derived from the Commercial Driver's License Information System for Modernization, July 10, 2008.
- Best Practices for Improving Oversight of State Highway Safety Programs, March 25, 2008.
- Cross-Border Trucking Demonstration Project, Testimony, March 11, 2008.
- Interim Report on NAFTA Cross-Border Trucking Demonstration Project, March 10, 2008.
- Effectiveness of Federal Drunk Driving Programs, October 25, 2007.
- Issues Pertaining to the Proposed NAFTA Cross-Border Trucking Demonstration Project, September 6, 2007.
- Follow-Up Audit of the Implementation of the North American Free Trade Agreement's (NAFTA) Cross-Border Trucking Provisions, August 6, 2007.
- Motor Carrier Safety: Oversight of High Risk Trucking Companies, July 11, 2007.
- Audit of the National Highway Traffic Safety Administration's Alcohol-Impaired Driving Traffic Safety Program, March 5, 2007.

***For more information on the issues identified in this chapter, please contact Joseph Com , Assistant Inspector General for Surface and Maritime Program Audits, at (202)-366-5630, or Timothy Barry, Principal Assistant Inspector General for Investigations, at (202) 366-1967.***



## Maximizing Federal Surface Infrastructure Investments by Helping States Better Allocate Resources and Providing Effective Oversight



Source: DOT

**A** 2009 report from the American Society of Civil Engineers (ASCE) noted that one-third of the Nation's major roads are in poor or mediocre condition and that more than one-quarter of our bridges are deficient. According to ASCE, current spending on roads is well below the estimated \$186 billion needed annually to substantially improve them; FHWA recently estimated that \$65 billion could be invested immediately to address current bridge deficiencies. Meanwhile, the Highway Trust Fund<sup>7</sup>, which provides most of the funding for highway and transit programs, faces an ongoing cash flow problem.

### Key Challenges

- Developing improved tools and techniques to help states better allocate scarce resources.
- Providing effective oversight of Federal investments through better use of data, management tools, and performance measures.

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<sup>7</sup> See Chapter 8 for a discussion of Highway Trust Fund issues.

# Maximizing Federal Surface Infrastructure Investments by Helping States Better Allocate Resources and Providing Effective Oversight

### **Developing Improved Tools and Techniques To Help States Better Allocate Scarce Resources**

Maximizing Federal investment in surface infrastructure is particularly challenging because the majority of the Department's federally assisted highway programs are administered by states, which have broad flexibility in deciding how to use their funds, which projects to pick, and how to implement them. For example, in fiscal year 2009, states received over \$5 billion through the Highway Bridge Program—the primary Federal funding program for replacing and rehabilitating bridges nationwide—and states may transfer up to 50 percent of these funds to other Federal-aid highway programs. Some states have chosen to make such transfers, such as Pennsylvania, which from fiscal years 2001 to 2008 transferred approximately \$1.2 billion of its \$3.5 billion in Highway Bridge Program funding to other Federal-aid highway programs.

The Department can assist states in making better resource allocation decisions by developing improved tools and techniques. In early 2009, we reported that FHWA could strengthen its oversight role by expanding states' use of bridge management systems—computerized systems that prioritize replacement and repair projects and thereby allow states to more effectively use their resources, preserve existing infrastructure, and best serve the public. By routinely collecting and evaluating information on states' use of bridge management systems, FHWA can target technical and training resources and provide other assistance to states most in need of help in implementing effective systems. FHWA has begun to take such action, but a sustained effort will be needed to help ensure states use their bridge funds wisely.

### **Providing Effective Oversight of Federal Investments through Better Use of Data, Management Tools, and Performance Measures**

DOT has begun to develop data systems, management tools, and performance measures to improve its oversight over Federal infrastructure investments. However, additional improvements in these ongoing efforts would enable the Department to better determine whether programs are achieving intended results and assist in holding states and other grantees accountable for results.

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# Maximizing Federal Surface Infrastructure Investments by Helping States Better Allocate Resources and Providing Effective Oversight

A major concern is the monitoring of funds disbursed through the Highway Bridge Program, which was authorized \$21.6 billion through 2009 to improve the condition of deficient bridges through replacement and rehabilitation.<sup>8</sup> FHWA is responsible for overseeing the efficient and effective use of these and other Federal-aid highway funds.<sup>9</sup> However, our recent work has shown that FHWA lacks the tools needed to effectively track bridge expenditures and measure performance. Specifically, FHWA is currently unable to determine how much of the funding provided to states is actually spent on deficient bridges because its financial management system lacks the details necessary to link expenditures to improvements made to deficient bridges. FHWA also lacks a systematic approach for establishing performance goals and sharing with states and other stakeholders the results of their performance—key strategies in assessing the impact of Federal dollars on bridge conditions and targeting oversight activities. FHWA must ensure that the significant investment in the Highway Bridge Program is used effectively by states to improve the condition of the Nation’s deficient bridges.

We also reported in late 2008 on weaknesses in FTA’s oversight of \$4.55 billion in Federal funds to reconstruct Lower Manhattan’s transportation infrastructure following its extensive devastation on September 11, 2001. While FTA’s risk management tool identified project management issues, including those that contributed to cost increases and schedule delays, FTA’s efforts to identify and mitigate risks to grantee performance were not fully successful in keeping the Lower Manhattan Recovery Projects within budget and on schedule. Over a period of 2 years, there was a continuing trend of escalating project costs and schedule delays. FTA has enhanced its risk management process to establish new guidelines and milestones for managing cost and schedule risks. To make its use of the risk management tool fully effective, FTA must follow through and ensure that grantees mitigate risks in a timely manner. Successful use of such tools will be critical as FTA oversees work on the Access to the Region’s Core project in the New York-New Jersey area—a project currently estimated at \$9 billion.

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<sup>8</sup> States are also allowed to use Highway Bridge Program funds for other activities, such as systematic preventative maintenance, regardless of a bridge’s deficiency status.

<sup>9</sup> 23 U.S.C. §106 (2006).

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# Maximizing Federal Surface Infrastructure Investments by Helping States Better Allocate Resources and Providing Effective Oversight

**Related Products** The following related reports and testimonies can be found on the OIG website at <http://www.oig.dot.gov>.

- National Bridge Inspection Program: Assessment of FHWA's Implementation of Data-Driven, Risk-Based Oversight, January 12, 2009.
- DOT's FY 2009 Top Management Challenges, November 17, 2008.
- Baseline Report on the Lower Manhattan Recovery Projects, September, 26, 2008.
- FHWA Can Do More in the Short Term To Improve Oversight of Structurally Deficient Bridges, September 20, 2007.
- Federal Highway Administration's Oversight of Structurally Deficient Bridges, September 5, 2007.

***For more information on the issues identified in this chapter, please contact Joseph Com , Assistant Inspector General for Surface and Maritime Program Audits, at (202)-366-5630.***

# Addressing Human Factors and Strengthening the Regulatory and Oversight Framework for Aviation Safety



Source: Federal Aviation Administration

The past several years have been one of the safest periods in history for the aviation industry, largely due to the Federal Aviation Administration's (FAA) and the aviation industry's dedicated efforts to improve safety. A dramatic example of aviation skill was witnessed last January when U.S. Airways flight 1549 made an emergency landing in the Hudson River and all 155 passengers and crew survived. However, the crash of Continental Connection flight 3407, which occurred just weeks later and resulted in 50 fatalities, confirmed the need for constant vigilance over aviation safety.

## Key Challenges

- Increasing efforts to address human factors.
- Providing an equivalent level of safety for passengers flying on-demand carriers by strengthening FAA regulations and oversight.
- Maintaining momentum in joint FAA/industry efforts to improve runway safety.

# Addressing Human Factors and Strengthening the Regulatory and Oversight Framework for Aviation Safety

**Increasing Efforts To Address Human Factors** Human factors such as fatigue have been on the National Transportation Safety Board's (NTSB) Most Wanted Safety List of Safety Improvements since the list was created 19 years ago. According to NTSB, fatigue has been associated with 250 air carrier fatalities in the last 16 years. NTSB's preliminary investigation into the cause of the Continental accident last February found some evidence that suggests pilot fatigue and lack of training may have contributed to the crash. While NTSB identified these issues as areas of concern for all air carriers, they are particularly critical at regional carriers, which were involved in the last six fatal Part 121<sup>10</sup> accidents. NTSB cited pilot performance as a potential factor in four of those accidents.

Our work indicates that operational differences between regional and mainline carriers could affect safety issues such as pilot fatigue. For example, regional carriers typically perform short and medium hauls to hub airports, which can result in many short flights in 1 day for a regional air carrier pilot. Multiple studies by agencies such as the National Aeronautics and Space Administration have concluded that these types of operations can contribute to pilot fatigue. Despite these differences, FAA has yet to revise its rules governing crew rest requirements. FAA is reviewing its pilot rest requirements to determine what changes should be made, and expects to issue a Notice of Proposed Rulemaking by the end of the year.

Fatigue among air traffic controllers is also a major air safety issue. For example, NTSB expressed concerns about the effect controller fatigue had on the August 2006 crash of Comair Flight 5191. In its investigative report, NTSB noted that the lone controller on duty at the time of the accident had only 2 hours of sleep prior to his shift. Our June 2009 report on controller fatigue found that minimal hours between shifts, counter rotational shifts with progressively earlier start times, scheduled overtime, and on-the-job training likely contribute to controller fatigue.<sup>11</sup> FAA is amending its policies governing controller rest requirements; however, changes have not yet been implemented. Given the serious risks pilot and controller fatigue poses to aviation safety, FAA needs to implement its proposed rulemaking and regulation changes expeditiously.

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<sup>10</sup> 14 CFR 121, Operating Requirements: Domestic, Flag, and Supplemental Operations. This FAA regulation governs commercial air carriers, including regional air carriers, with primarily scheduled flights.

<sup>11</sup> OIG Report Number AV-2009-065, Air Traffic Control: Potential Fatigue Factors, June 29, 2009.

# Addressing Human Factors and Strengthening the Regulatory and Oversight Framework for Aviation Safety

### **Providing an Equivalent Level of Safety for Passengers Flying On-Demand Carriers by Strengthening FAA Regulations and Oversight**

In 2007 and 2008, small, commercial on-demand carriers experienced 33 fatal accidents resulting in 109 deaths—a bleak safety record when compared to large U.S. commercial air carriers, which had no passenger deaths in the same period. In addition to air tour flights and cargo operations, on-demand operators provide critical services, such as emergency medical, rescue, and human organ transportation, as well as air service to small remote communities. However, these carriers typically operate in a riskier environment than commercial aircraft. They perform more takeoffs and landings, making them more vulnerable to terrain, weather, and other obstacles.

Despite these risks, we reported in July 2009 that on-demand operators have less restrictive regulations and oversight than commercial carriers.<sup>12</sup> For example, on-demand regulations allow lower minimum pilot experience for flight crews than commercial air carriers and maintenance inspection requirements are less restrictive for smaller on-demand aircraft. In addition, not all on-demand operators are required to have advanced equipment that commercial aircraft must have, such as ground proximity warning systems and traffic alert and collision avoidance systems. Further, many of the existing regulations for on-demand operators have not been updated to address changes in the industry. Some regulations date as far back as 1978.

Our work has shown that targeted, risk-based oversight from FAA could help mitigate these risk factors and better address the diversity of on-demand operators. However, FAA oversight of on-demand operators is based on compliance with regulations rather than where risk dictates. FAA is developing a new risk-based oversight approach for on-demand operators, but this new system is not scheduled for full deployment for at least another 4 years. Because of the high fatality rate associated with on-demand operations, FAA needs to implement an interim process that considers the inherent operational risk factors in on-demand operations.

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<sup>12</sup> OIG Report Number AV-2009-066, On-Demand Operators: Less Stringent Safety Requirements and Oversight than Large Commercial Carriers, July 13, 2009.

# Addressing Human Factors and Strengthening the Regulatory and Oversight Framework for Aviation Safety

### **Maintaining Momentum in Joint FAA/Industry Efforts To Improve Runway Safety**

Reducing the risk of runway collisions and other runway incursions is a critical issue that requires ongoing efforts on the part of FAA, airlines, and airport operators. While new FAA technologies provide potential solutions to improving runway safety in the future, our reviews of three such technologies<sup>13</sup> disclosed serious concerns about the timeliness of these solutions and underscored the need for more near-term solutions. In August 2007, FAA, airline, and airport officials created a Call to Action Plan that identified a series of short-, mid-, and long-term initiatives to reduce runway incursions. These included addressing needed near-term solutions such as airport-specific infrastructure and procedural changes.

Since the plan's inception, the most serious runway incursions have decreased by 50 percent (from 24 to 12). However, factors outside the Plan's actions may have also contributed to the significant decrease in serious incidents. For example, since fiscal year 2007, airport operations have decreased 14 percent, resulting in fewer aircraft and vehicles using runways, taxiways, and airport ramps, thus diminishing the potential for runway incursions to occur. Additionally, many safety improvements at airports were implemented before the Plan was established.

Nevertheless, most airport, airline, and air traffic control officials we spoke with credited the Plan for creating an environment of heightened attention about runway safety among all users—a substantial accomplishment. To sustain this momentum and achieve its overall goal of reducing runway incursions by 10 percent by fiscal year 2013, FAA needs to fully vet and set milestones for the Plan's mid- and long-term initiatives. Our past work has shown that FAA's actions to improve runway safety diminished as it met its overall goal for reducing runway incursions.<sup>14</sup>

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<sup>13</sup> Automatic Dependent Surveillance Broadcast—a satellite-based technology that allows aircraft to broadcast their position to other aircraft and ground systems; the Airport Surface Detection Equipment-Model-X—a ground surveillance system intended to alert controllers to potential ground collisions; and Runway Status Lights—automated, surveillance-driven lights to alert pilots in departing or crossing aircraft that the runway is occupied.

<sup>14</sup> OIG Report Number AV-2007-050, Progress Has Been Made in Reducing Runway Incursions, but Recent Incidents Underscore the Need for Further Proactive Efforts, May 24, 2007.



## CHAPTER 4

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# Addressing Human Factors and Strengthening the Regulatory and Oversight Framework for Aviation Safety

**Related Products** The following related reports and testimonies can be found on the OIG website at <http://www.oig.dot.gov>.

- Report on On–Demand Operators: Less Stringent Safety Requirements and Oversight than Large Commercial Air Carriers, July 13, 2009.
- Air Traffic Control: Potential Fatigue Factors, June 29, 2009.
- Testimony before the House Subcommittee on Aviation: Regional Air Carriers and Pilot Workforce Issues. June 11, 2009.
- Training Failures Among Newly Hired Air traffic Controllers. June 8, 2009.
- FAA Is Not Realizing the Full Benefits of the Aviation Safety Action Program, May 14, 2009.
- Controller Staffing at Key California Air Traffic Control Facilities, April 23, 2009.
- Actions Taken and Needed to Improve FAA’s Runway Safety Area Program, March 3, 2009.
- Review of FAA’s Oversight of Airlines and Use of Regulatory Partnership Programs, June 30, 2008.
- Progress Has Been Made in Reducing Runway Incursions, but Recent Incidents Underscore the Need for Further Proactive Efforts, May 24, 2007.

***For more information on the issues identified in this chapter, please contact Lou Dixon, Assistant Inspector General for Aviation and Special Programs, at (202) 366-0500.***

# Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System



Source: Federal Aviation Administration

**T**he National Airspace System handles almost 50,000 flights per day and more than 700 million passengers per year. Historically, steadily increasing levels of air traffic have resulted in increasing delays and cancellations, particularly at heavily congested airports such as Newark International, John F. Kennedy International, and Atlanta Hartsfield-Jackson International. To better manage air traffic and congestion, the Federal Aviation Administration (FAA) is developing the Next Generation Air Transportation System (NextGen), which is expected to yield significant benefits in terms of reducing delays, saving fuel, adding capacity, improving access, enhancing safety, and reducing environmental impact. NextGen, however, is a high-risk effort involving billion-dollar investments from both the Government and the airline industry. NextGen's challenges are multi-dimensional and involve research and development, complex software development and integration for existing and new systems, workforce changes, and policy questions about how to spur aircraft equipage.

## CHAPTER 5

# Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System

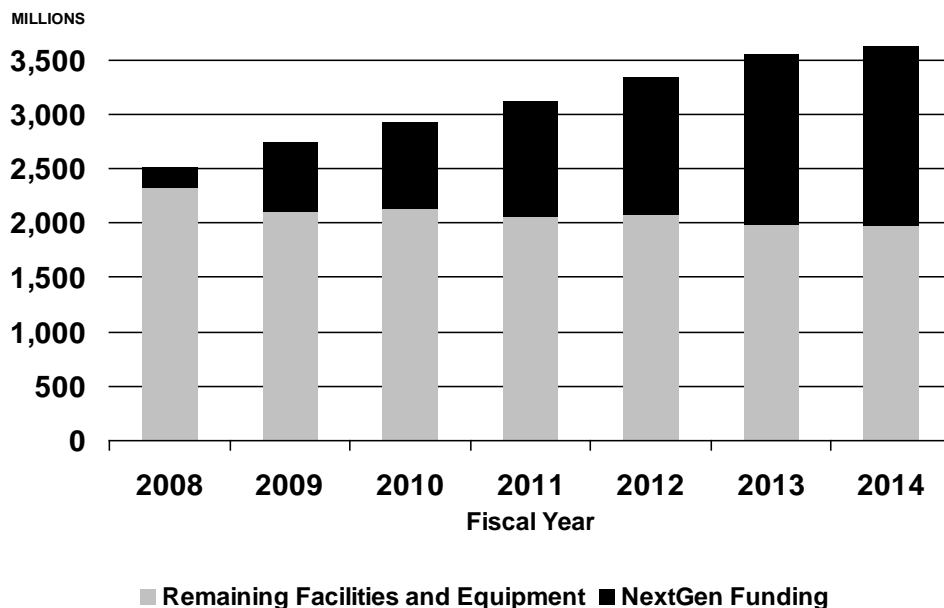
### Key Challenges

- Taking actions to deliver NextGen benefits in the near- and mid-term.
- Maximizing the benefits of performance-based navigation in the national airspace system and keeping airspace redesign projects on track.
- Improving programs for developing the next generation of air traffic controllers.

### Taking Actions To Deliver NextGen Benefits in the Near- and Mid-Term

A key challenge for the Department and FAA involves setting realistic expectations for what NextGen can deliver in the near- and mid-term. Between fiscal years 2009 and 2014, FAA plans to spend about \$7 billion on NextGen-related programs, which include a new satellite-based system for surveillance and a new information sharing system (see figure 5-1).

**Figure 5-1. FAA Capital Funding for Fiscal Years 2008 through 2014**



Source: Federal Aviation Administration

# Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System

However, a recent FAA analysis<sup>15</sup> indicates that NextGen capabilities, originally envisioned for 2025, would cost several times the current projected cost estimate of \$40 billion. Further, it is likely that some of NextGen’s advanced automated air and ground capabilities will not be implemented until 2035 or later. Consequently, keeping existing projects on track is critical because about 30 projects serve as enabling platforms for NextGen initiatives. For example, core NextGen capabilities, such as data link communications, rely on enhancements to the \$2.1 billion En Route Automation Modernization (ERAM) program, which provides new hardware and software for facilities that manage high-altitude traffic. While the effort remains on schedule, ERAM has experienced some technical problems, and future ERAM software requirements related to NextGen are undefined and costs are uncertain.

In September 2009, an FAA-sponsored government-industry task force issued a report detailing what can be done in the next 3 to 5 years. The task force made 28 recommendations, including maximizing existing aircraft navigation capabilities, improving the use of runways at congested airports, and enhancing airport surface operations. FAA is committed to implementing the task force’s recommendations, but several areas require sustained management attention to advance NextGen in the near- and mid-term and build confidence with congressional and aviation stakeholders:

- Clearly establish and articulate budget priorities for the near-term and identify programmatic interdependencies.
- Keep existing projects, such as the billion-dollar ERAM effort, on schedule.
- Continue to refine a mid-point architecture (a technical road map) for the 2015 to 2018 time frame that provides a transition path for existing acquisitions.
- Assess and obtain the necessary skills with respect to contract management and systems engineering needed to manage and execute NextGen.
- Establish metrics for assessing progress with NextGen that focus on enhancing capacity, boosting productivity, and reducing operating costs.

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<sup>15</sup> The analysis—referred to as the NextGen portfolio or “trade space” analysis—was sponsored by FAA’s Joint Planning and Development Office. The analysis began in October 2008, and interim results were available in May 2009. FAA is continuing to update and revise the analysis.

# Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System

### **Maximizing the Benefits of Performance-Based Navigation in the National Airspace System and Keeping Airspace Redesign Projects on Track**

A fundamental building block of FAA's NextGen efforts is establishing new Performance-Based Navigation (PBN) routes and procedures, using Area Navigation (RNAV) and Required Navigation Performance (RNP) specifications.<sup>16</sup> The potential benefits of RNAV and RNP are significant and include shorter, more direct flight paths; improved airport arrival and departure efficiency; enhanced controller productivity; fuel savings; and reduced aircraft noise. FAA faces several challenges in implementing these initiatives. First, air carriers are not satisfied with most of the FAA's new RNP approach procedures because the procedures rely heavily on laying RNP routes over existing routes to deploy them more quickly. Second, use of RNAV/RNP procedures at some airports has been limited due to continuing operational issues and concerns over workload and training for controllers and pilots. Third, the role of non-government third parties in developing RNAV/RNP procedures is unclear, and industry representatives are skeptical of FAA's ability to deliver the more complex procedures in a timely manner.

In addition, FAA has not yet made adjustments to key programs that will be needed to realize the expected benefits of RNAV and RNP, such as airspace redesign efforts. Currently, FAA is pursuing six airspace projects nationwide, including a major but controversial effort to revamp airspace in the New York/New Jersey/Philadelphia area. A level of coordination between airspace redesign projects and RNAV/RNP procedures—which currently does not exist—will be essential as procedures move beyond overlays and local operations to networking routes between city pairs.

As we noted in July 2009,<sup>17</sup> several areas will require sustained management attention to get RNAV and RNP on track. These include producing quality RNP procedures that have significant benefits rather than focusing on the number of procedures, establishing priorities for new routes and funding requirements for related airspace redesign projects, ensuring air traffic controllers and pilots are properly trained on procedures before they are implemented, and developing an effective oversight strategy for the third parties.

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<sup>16</sup> RNAV is a method of navigation in which aircraft use avionics, such as Global Positioning Systems, to fly any desired flight path without the limitations imposed by ground-based navigation systems. RNP is a form of RNAV that adds on-board monitoring and alerting capabilities for pilots; thus, allowing aircraft to fly more precise flight paths.

<sup>17</sup> OIG Testimony CC-2009-086, Challenges in Implementing Performance-Based Navigation in the U.S. Air Transportation System, July 29, 2009.

# Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System

### **Improving Programs for Developing the Next Generation of Air Traffic Controllers**

Over the next decade, FAA plans to hire and train nearly 15,000 new controllers to replace those who are close to retirement. Ensuring that these controllers are properly trained and certified at FAA's more than 300 air traffic control facilities is a key watch item for the Department and Congress. Currently, new controllers require 2 to 3 years of training before they are able to fully certify at their assigned location.

Effective national oversight and accurate metrics for measuring progress are critical tools for addressing this challenge. Since 2004, we have issued a series of reports focusing on FAA's programs for developing the air traffic controller workforce. Our work has repeatedly found that improved national oversight is needed. FAA is taking some steps to address our concerns such as appointing a national director for training and creating a national training data base to centrally monitor progress at individual locations. However, our current work shows that continued management focus is still needed.

Most recently, we reported that FAA does not have accurate metrics for effectively monitoring training failures among newly hired air traffic controllers to identify trends and take corrective actions.<sup>18</sup> Effective national oversight of controller training is even more critical as FAA now relies heavily on outside contractor support to accomplish this mission. In September 2008, FAA awarded a 10-year, nearly \$900 million contract to Raytheon Technical Services Corporation to provide extensive training support for controllers. Our past work has shown that FAA has a poor track record in effectively managing and overseeing large acquisition and support services contracts.

FAA must also focus on its programs for screening and placing new controllers with no prior air traffic control experience—whose numbers increased from 7 percent of all newly hired controllers to over 72 percent in just a year and a half. Initial results of our current review of new controller screening and placement indicate that FAA needs to improve its process for integrating new controllers into the workforce. Currently, FAA places new controllers at locations based primarily on preferences rather than on potential abilities and likelihood of success. In fact, controller candidates are assigned to a facility even before entering initial training at the FAA Academy.

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<sup>18</sup> OIG Report Number AV- 2009-059, Training Failures Among Newly Hired Air Traffic Controllers, June 8, 2009.

## CHAPTER 5

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# Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System

**Related Products** The following related reports and testimonies can be found on the OIG website at <http://www.oig.dot.gov>.

- Challenges in Implementing Performance-Based Navigation in the U.S. Air Transportation System, July 29, 2009.
- Training Failures Among Newly Hired Air Traffic Controllers, June 8, 2009.
- Progress and Remaining Challenges in Reducing Flight Delays and Improving Airline Customer Service, May 20, 2009.
- Aviation Industry Performance: A Review of the Aviation Industry in 2008, May 6, 2009.
- Controller Staffing at Key California Air Traffic Control Facilities, April 23, 2009.
- Federal Aviation Administration: Actions Needed To Achieve Mid-Term NextGen Goals, March 18, 2009.
- Key Issues for Reauthorizing the Federal Aviation Administration, February 11, 2009.
- Observations on Short-Term Capacity Initiatives, September 26, 2008.

***For more information on the issues identified in this chapter, please contact Lou Dixon, Assistant Inspector General for Aviation and Special Programs, at (202)-366-0500.***

# Improving Contract Management and Oversight



Source: AAA Foundation for Traffic Safety, used with permission

**D**OT spent about \$5.5 billion in fiscal year 2009<sup>19</sup> on contracts for goods and services to support its mission, ranging from strategic planning and program management to software engineering and road maintenance. Our audits and investigations continue to find weaknesses in the Department’s contract planning, administration, and oversight. Recent Governmentwide efforts to stimulate the economy and reduce spending heighten the need for DOT to address these weaknesses.<sup>20</sup>

## Key Challenges

- Strengthening DOT’s suspension and debarment program to effectively safeguard against awards to improper parties.
- Improving award-fee contracting processes to meet acquisition outcomes.
- Maintaining high ethical standards among DOT employees and fund recipients.

<sup>19</sup> Based on data from the Federal Procurement Data System-Next Generation (FPDS-NG) provided by DOT’s Office of the Senior Procurement Executive.

<sup>20</sup> In July 2009, the Office of Management and Budget issued a Governmentwide memorandum requiring agencies to (1) review their existing contracts and acquisition practices and develop a plan to save 7 percent of baseline contract spending by the end of fiscal year 2011 and (2) reduce by 10 percent the share of dollars obligated in fiscal year 2010 under new contract actions awarded with high-risk contracting authorities.



# Improving Contract Management and Oversight

### **Strengthening DOT's Suspension and Debarment Program To Effectively Safeguard Against Awards to Improper Parties**

To better ensure taxpayer dollars are spent wisely, Federal suspension and debarment (S&D) regulations permit agencies to exclude unethical, dishonest, or otherwise irresponsible businesses and individuals from receiving Federal contracts and grants. Over the past 2 years, we have identified weaknesses in DOT's S&D program that increase the risk of awarding contracts and grants to irresponsible contractors—a risk that has escalated with the recent disbursement of Recovery Act funds.

Of particular concern are the significant delays in making and reporting S&D decisions. Timely S&D decisions and reporting are critical to helping ensure that government contractors who have acted unethically do not receive additional government dollars. In June 2005, DOT revised its S&D policy to include established deadlines for making S&D decisions. However, our ongoing work indicates that Operating Administrations' S&D processes remain inefficient and time-consuming. For example, between June 2005 and December 2008, FAA, FHWA, and FTA took an average of 301 days to make a suspension decision and 415 days to make a debarment decision. DOT's revised policy also calls for timely reporting of S&D decisions to the General Services Administration (GSA) and annual reporting of all S&D actions. Yet nearly half of the decisions we reviewed were not entered into GSA's Excluded Party Listing System in accordance with DOT's 5-day requirement—and almost one-quarter of these were delayed by more than 3 months.

DOT has taken several actions in response to our May 2009 ARRA Advisory, which highlighted our concerns about the efficiency and effectiveness of its Suspension and Debarment Program.<sup>21</sup> For example, DOT issued a memorandum clarifying its policies for making and reporting S&D actions. Also, DOT a recently drafted and distributed for review a new S&D Order. Ensuring Operating Administrations understand and adhere to these policies—along with other needed actions to address weaknesses we identified—will be critical to establishing an efficient and effective S&D program.

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<sup>21</sup> U.S. Department of Transportation, Office of Inspector General, *ARRA Advisory – DOT's Suspension and Debarment Program*, AA-2009-001, May 18, 2009. OIG reports can be found on our website: [www.oig.dot.gov](http://www.oig.dot.gov).

# Improving Contract Management and Oversight

### **Improving Award-Fee Contracting Processes to Meet Acquisition Outcomes**

As of June 2008, DOT had 47 cost-plus-award-fee contracts with a potential value of approximately \$5.5 billion, including about \$271.4 million in potential award fees. Award-fee contracts are intended to spur innovation to create cost and schedule efficiencies and improve performance. Because payments to contractors are based on their performance, award-fee contracts have the potential to minimize cost risks to the Government. However, Congress recently expressed concerns about Governmentwide contracting practices, including paying fees on award-fee contracts, regardless of whether the fees paid were reasonable and linked to achieving acquisition outcomes.<sup>22</sup> In March 2009, the President stressed that Federal agencies have the capacity to carry out robust and thorough management and oversight of its contracts in order to achieve program goals, avoid significant overcharges, and curb wasteful spending.<sup>23</sup>

From fiscal year 2003 through fiscal year 2007, DOT has paid contractors millions of dollars in award fees on contracts that were not sufficiently justified, designed, and administered, as required by regulations. Between February and October 2008, we issued several reports that identified approximately \$230 million that DOT could have better used had it developed clear and measurable award-fee criteria for evaluating contractor performance and justified the use of an award-fee contract by performing a cost/benefit analysis.<sup>24</sup> For example, FAA's performance evaluation plan for its National Airspace System Implementation Support II Bridge contract—valued at approximately \$234 million with about \$18.2 million in award fees—did not include clear and measurable award-fee criteria to adequately evaluate contractor performance, calling into question the reasonableness of the high fees paid under the contract.

In response to our report on the National Airway Systems support services contract, valued at approximately \$316 million, FAA decided to modify the award-fee contract to a cost-

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<sup>22</sup> Pub.L. 110-417, Duncan Hunter National Defense Authorization Act for Fiscal Year 2009, Section 867, requires that the Federal Acquisition Regulation be revised to ensure that all new contracts using award fees link such fees to acquisition outcomes and establish standards for the percentage of award fees paid.

<sup>23</sup> Memorandum for the Heads of Executive Departments and Agencies on Government Contracting, March 4, 2009.

<sup>24</sup> See *Interim Report on Award-Fee Criteria for the System Engineering and Technical Assistance II (SETA-II) Contract*, October 7, 2008; *Interim Report on Award-Fee Criteria for the Transportation Information Project Support (TRIPS) Contract*, August 14, 2008; *Interim Report on Award-Fee Criteria for the National Airway Systems Contract*, May 28, 2008; and *Interim Report on Award-Fee Criteria for the National Airspace System Implementation Support II Contract and Bridge Contract*, February 27, 2008.

# Improving Contract Management and Oversight

plus-fixed-fee contract because the cost and time required for it to oversee, monitor, and document the award-fee process outweighed the benefits to administer the contract. To better ensure taxpayer dollars are used efficiently, FAA will need to continue to take such actions. Moreover, it will need to provide guidance and training to its acquisition workforce to ensure the use of these contracts is justified and that its award-fee contracts are designed and administered appropriately to help ensure they achieve intended acquisition outcomes. Without such actions, the costs risks to the American taxpayer are significant.

### **Maintaining High Ethical Standards Among DOT Employees and Fund Recipients**

Ensuring DOT employees, contractors, and their grantees focus on preventing, detecting, and reporting potential fraud is essential to ensuring transparency and accountability. DOT's oversight of over \$40 billion in Recovery Act funds heightens the importance of vigilance on ethics training and awareness. While DOT has an annual ethics training program for its acquisition and grant management personnel, the Department and its Operating Administrations need to keep a sustained focus to fully implement this important annual training requirement. The Department also needs to increase its outreach to recipients of DOT funding to ensure they and their contractors have meaningful ethics programs and sound internal controls to prevent and detect fraud involving DOT funding.

Contract and grant fraud cases currently comprise about 36 percent of active OIG investigations, and employee integrity cases represent about 10 percent. The following examples of OIG investigations illustrate the need for DOT's continued attention to procurement integrity issues:

- A former New Jersey FAA supervisor was sentenced to 2 years' imprisonment for accepting bribes from a computer engineering company to which he issued \$2.5 million in purchase orders.

# Improving Contract Management and Oversight

- The Federal Highway Administration (FHWA), using our lead, determined a project scheduled to receive \$750,000 in ARRA funds in Washington State was ineligible for Federal participation. In this case, FHWA learned a county official overseeing the project had a potential conflict of interest due to ownership of property adjacent to the proposed project and his role in designing and acquiring property for the project.
- Following the sentencing of two former FAA employees for Procurement Integrity Act violations, OIG began investigations of 31 FAA procurement officials. We initiated the investigations, in part, on comments made by a Federal judge at sentencing, who expressed appall by the many letters from FAA employees trying to justify the defendants' behavior, which involved the release of confidential bid data to help a contractor win an FAA contract. Our investigations, which we are completing, revealed that approximately one-third of the 31 FAA officials accepted gratuities from prohibited sources.

DOT's stewardship over billions of taxpayer dollars requires the Department to promote and maintain high ethical standards among its employees and recipients of DOT funding. For DOT employees, this involves fully implementing annual ethics training requirements. Outside DOT, this involves expanding its outreach to ensure that contractors and grantees prevent and detect fraud involving DOT funding.

**Related Products** The following related reports, testimonies, and advisories can be found on the OIG website at <http://www.oig.dot.gov>.

- ARRA Advisory—DOT's Suspension and Debarment Program, May 18, 2009.
- American Recovery and Reinvestment Act of 2009: Oversight Challenges Facing the Department of Transportation, March 31, 2009.
- Interim Report on Award-Fee Criteria for the FAA's System Engineering and Technical Assistance II (SETA-II) Contract, October 7, 2008.

# Improving Contract Management and Oversight

- Interim Report on Award-Fee Criteria for the Transportation Information Project Support (TRIPS) Contract, August 14, 2008.
- Interim Report on Award-Fee Criteria for the National Airway Systems Contract, May 28, 2008.
- Interim Report on Award-Fee Criteria for the National Airspace System Implementation Support II Contract and Bridge Contract, February 27, 2008.

***For more information on the issues identified in this chapter, please contact Mark Zabarsky, Assistant Inspector General for Procurement and Acquisition Audits, at (202) 366-5225 and Timothy Barry, Principal Assistant Inspector General for Investigations, at (202) 366-1967.***

# Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources



Source: Federal Aviation Administration

In May 2009, the White House reported on the urgent need to secure the Nation’s digital infrastructure from hackers, who “pose some of the most serious economic and national security challenges of the 21st Century.”<sup>25</sup> DOT’s financial systems manage and disburse over \$50 billion in Federal funds each year. At the same time, DOT’s information technology (IT) budget covers more than 400 information systems across its 13 Operating Administrations—nearly two-thirds of which belong to the Federal Aviation Administration (FAA). Given the scope and complexity of these systems, it is critical that DOT effectively manage and secure its IT resources.

## Key Challenges

- Establishing a robust information security program to support the Department’s missions.
- Increasing security protection and resilience of the air traffic control system to reduce the risks of cyber attacks.

<sup>25</sup> Cyberspace Policy Review Report “Assuring a Trusted and Resilient Information and Communication Infrastructure,” May 2009.

### Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources

- Strengthening the privacy protection program to secure personally identifiable information.
- Enhancing control of IT investments through oversight and accountability.

**Establishing a Robust Information Security Program to Support the Department's Missions** The Federal Information Security Management Act of 2002 requires each agency to establish an information security program to help protect agency information systems. Last year, we reported that the Department's information security program was ineffective in meeting Federal IT security standards. While the Department made progress in enhancing security protection during fiscal year 2009, it continues to face several challenges.

First, persistent security deficiencies in key control areas—including management of information security weaknesses, system authorization, configuration management, security awareness and training, and contingency planning—continue to make the Department vulnerable to cyber attacks. For example, in February 2009, hackers gained unauthorized access to the personal records of 48,000 current and former FAA employees. To build an information security program that adequately protects DOT from cyber threats, the Department needs to address these security deficiencies in a manner that is sustainable and flexible enough to allow DOT to quickly adapt to avert new threats.

Second, the Department's Chief Information Officer (CIO) continues to lack sufficient influence over DOT's Operating Administrations. Unlike some Federal agencies, DOT's CIO does not have budget or performance evaluation authority over Operating Administrations. In response to this concern, the CIO developed performance objectives to be included in each modal CIO's performance plan. However, the CIO's office does not provide input into modal performance evaluations. Until the Department's CIO can influence Operating Administration's CIO performance, DOT policy may not get implemented.

Finally, DOT has yet to meet OMB's October 2008 deadline for issuing Personal Identity Verification (PIV) cards to employees and contractors—a key governmentwide initiative to secure Federal information and information systems. The responsibility of managing PIV card issuance is shared among the CIO, the Assistant Secretary of Administration, and FAA. As of September 2009, only 31 percent of DOT's approximately 75,000 employees and contractors had a PIV card. Despite this significant lag in implementing OMB's directive,

# Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources

DOT has yet to develop a plan to complete issuance of PIV cards to its remaining employees and contractors. In addition, the Department lacks an approved process for issuing PIVs and does not adequately secure the information systems used to store, process, and transmit personally identifiable information. Until DOT takes action to address these weaknesses, the Department not only risks issuing PIVs to non-DOT employees and contractors, it cannot secure personal information such as Social Security numbers (SSN).

**Increasing Security Protection and Resilience of the Air Traffic Control System To Reduce the Risks of Cyber Attacks** To modernize air traffic control systems, FAA is increasingly relying on the use of Internet Protocol (IP)-based commercial software rather than proprietary software. While this strategy has enabled FAA to efficiently collect and disseminate information to facilitate air traffic control services, it poses a higher security risk due to the vulnerabilities inherent in using commercial IP products.

Web applications used in supporting air traffic control systems have been vulnerable to attacks. For example, in August 2008, hackers executed malicious codes and took control of FAA's critical network servers. We were also able to gain unauthorized access to an air traffic control system used to monitor critical power supply at six en route centers—which control high-altitude traffic and disseminate flight plan information to all other air traffic control facilities. While most cyber attacks to date have primarily disrupted FAA's traffic control mission-support function, the threat to real-time control services exists. FAA needs to ensure Web applications are configured according to security standards.

The Department's Cyber Security Management Center (CSMC) has limited capability to monitor and detect cyber incidents in air traffic control facilities. When cyber incidents have been detected, remediation has not always been timely. For example, none of the air traffic control operational systems at FAA air traffic control facilities were monitored by CSMC, and 17 percent of the security incidents detected at FAA in fiscal year 2008 remained unresolved at the end of the year. Without comprehensive monitoring and timely remediation of identified cyber threats, air traffic control systems remain vulnerable to catastrophic subterfuge. FAA needs to assign priority to implementing its corrective actions.



# Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources

FAA also lacks sufficient on-site review procedures to ensure required security controls are in place. FAA has enhanced the process used to review and certify the adequacy of security for air traffic control systems deployed to operational sites. However, the process still lacks an effective means to target security reviews for operational sites at risk of having unauthorized system configurations. These configuration variances have led to security weaknesses and disrupted system operations. For example, flight data supporting various services had to be manually disseminated. In addition, security reviews conducted at operational sites to ensure proper implementation of security controls relied primarily on interviews with system operators and lacked examination and testing. FAA needs to strengthen security reviews of air traffic control systems supporting live operations.

In the event air traffic control systems are disrupted—either maliciously or inadvertently—a Homeland Security Presidential Directive requires the Department to resume essential services in a timely manner to minimize the impact on the Nation’s economy and citizens’ mobility and safety. FAA is in the final stage of implementing a recovery center where operations would be resumed if any en route center becomes inoperable. However, FAA must conduct a more comprehensive analysis of the impact on domestic air travel and demonstrate that activating the recovery center will not compromise its safety.

The potential for exploitation of air traffic control systems is expected to increase with FAA’s implementation of the NextGen—a multibillion dollar system that will adopt IP-based commercial software and Web-enabled design technologies to collect, exchange, and disseminate air traffic information among controllers, pilots, support staff, and industry partners. While NextGen has great potential to improve air travel, the White House Cyberspace Policy Review report emphasized the importance of developing a robust security design for NextGen. Another concern is the level of oversight needed to ensure security is properly reserved in contractor-owned systems, such as NextGen’s nationwide ground infrastructure, and their interface with the rest of air traffic control infrastructure.

# Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources

### **Strengthening the Privacy Protection Program to Secure Personally Identifiable Information**

In fiscal year 2009, the Department made progress in addressing its statutory responsibility to protect personally identifiable information. In response to our previous recommendations, the Department completed a Breach Notification Policy, developed a status report to track weekly meetings with modal privacy personnel, held advanced training sessions for modal privacy personnel, and performed an analysis on all DOT IT systems to identify those containing personally identifiable information.

Despite these actions, personally identifiable information remains unsecure—in part because the Department has been unable to get an accurate count of the systems that contain this information. Last year, the Department reported that 109 out of 425 IT systems contained personally identifiable information. Further analyses identified additional systems, but the results of these analyses were inconsistent. In 2009, the Department reported three separate counts over 5 months, ranging from 132 to 201. While system inventory is not static, the magnitude of the flux suggested the need for further verification. Without an accurate count, DOT has no assurance that its systems with personally identifiable information are properly secured and meet regulatory requirements. For those systems that were consistently identified as containing personally identifiable information, not all were secured according to Department requirements, leaving them vulnerable to unauthorized access. For example, we found one system that lacked basic security controls contained personally identifiable information on 3 million individuals. To secure personally identifiable information, the Department must finalize the inventory and properly secure the systems.

To minimize the risks associated with the unauthorized disclosure of personally identifiable information, OMB required agencies to eliminate the unneeded use of SSNs by November 2009. While DOT has preliminarily identified 70 systems that need to be evaluated for SSN elimination, it does not plan to complete the elimination until 2015. To protect the public's privacy and comply with OMB requirements, the Department must assign a priority to meet the mandate of eliminating unneeded use of SSNs in a more timely manner.

The reporting structure of the Chief Privacy Officer has also contributed to deficiencies in privacy protection. Specifically, the departmental CIO is also the designated Chief Privacy Officer. However, the manager responsible for privacy program operations does not report directly to the Chief Information/Privacy Officer. According to privacy experts, privacy

# Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources

officials require direct access to top management to better ensure the timely implementation of sound privacy policies and processes. In view of continued deficiencies in this area, the Department needs to re-evaluate the reporting structure of the privacy program.

**Enhancing Controls of IT Investments through Oversight and Accountability** The Clinger-Cohen Act of 1996<sup>26</sup> requires Federal agencies to establish effective management structures to govern and improve IT investments. With close to \$3 billion annual IT investments, the Department is responsible for managing one of the largest IT portfolios among civilian agencies and relies on cost and schedule variances for early identification of investments that require management attention. Both OMB and the Department require Operating Administrations to use Earned Value Management (EVM)—which compares the value of work accomplished in a given period against the planned value of work scheduled for that period—to compile the cost and schedule variances. However, Operating Administrations did not specify EVM requirements in acquisition contracts; contractors' systems for compiling EVM data were not certified, as required by OMB; and standard work breakdown structures were not used in compiling reliable EVM measures. In response, the Department issued detailed EVM implementation guidance. The Department needs to evaluate whether Operating Administrations have implemented the EVM system in compliance with Department guidance.

Another area requiring senior management's continued attention is the monitoring and oversight of the Department's major IT investment projects. The Department initially established an Investment Review Board to oversee DOT's major IT investments. In fiscal year 2007, the Department delegated oversight responsibility to Operating Administration review boards, which include modal CIOs, Chief Financial Officers, Heads or Chiefs of Contracting, Chief Counsels, and Administrators (if appropriate). However, Operating Administrations did not perform this duty properly. For example, some Operating Administrations were not meeting to review investments. The Department needs to hold Operating Administrations' senior management accountable for overseeing the performance of their major IT investment projects.

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<sup>26</sup> Pub.L. 104-106, Information Technology Management Reform Act of 1996, February 10, 1996.

## CHAPTER 7

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# Enhancing the Ability To Combat Cyber Attacks and Improving the Governance of Information Technology Resources

**Related Products** The following related reports, testimonies, and advisories can be found on the OIG website at <http://www.oig.dot.gov>.

- Data Integrity of the Commercial Driver’s License Information System, July 30, 2009.
- Web Applications Security and Intrusion Detection in Air Traffic Control Systems, May 4, 2009.
- Department’s Implementation of Earned Value management and Security Cost Reporting, April 24, 2009.
- DOT Information Security Program, October 8, 2008.
- DOT Privacy Policies and Procedures, September 9, 2008.

***For more information on the issues identified in this chapter, please contact, Rebecca Leng, Assistant Inspector General for Financial and Information Technology Audits, at (202) 366-1407.***

# Developing a Funding Framework for the Next Surface Transportation Reauthorization



Source: Missouri Department of Labor and Industrial Relations

In fiscal year 2009, the Federal Government spent over \$38 billion to help states preserve and enhance America's roadways. Despite this spending, over one-half of the Nation's roads are in less than good condition and more than one-quarter of the Nation's bridges are structurally deficient or functionally obsolete. Further, this spending is mostly directed at existing infrastructure not on new capacity. Over the past few decades, the total number of miles traveled by automobiles and trucks roughly doubled, while total number of highway lane miles grew only 4.4 percent. The next surface transportation reauthorization will need to provide a comprehensive funding framework for addressing infrastructure needs.

## Key Challenges

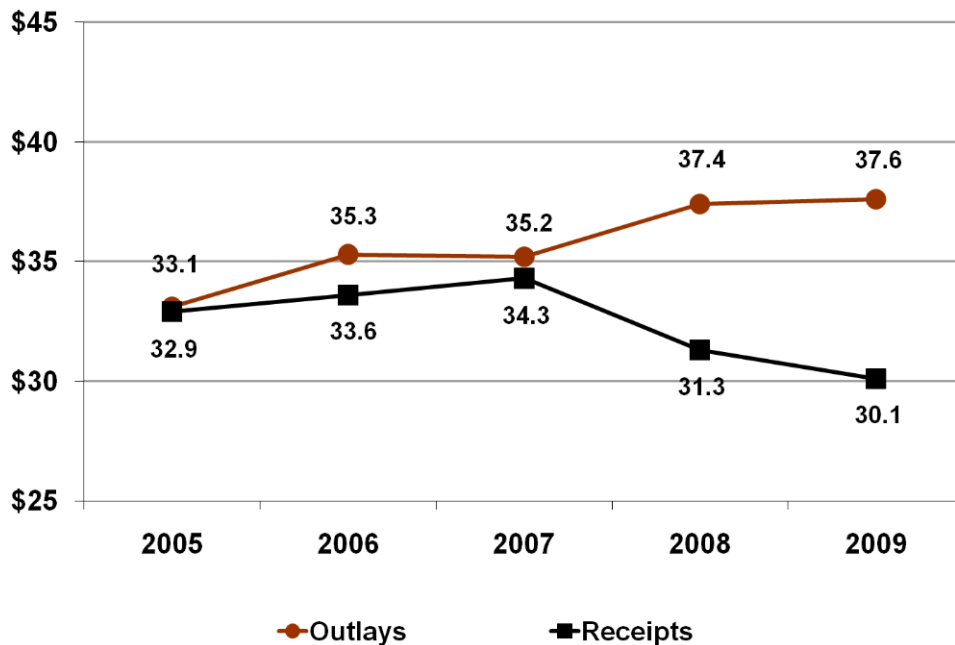
- Ensuring the short-term solvency of the Highway Trust Fund (HTF).
- Assessing the annual Federal funding needed to preserve and enhance surface transportation infrastructure.
- Developing a comprehensive funding framework for the future.

Developing a Funding Framework for the Next Surface Transportation Reauthorization

**Ensuring the Short-Term Solvency of HTF** HTF confronted a severe cash crisis during each of the past 2 fiscal years, necessitating an \$8 billion and \$7 billion cash infusion from the general fund in fiscal years 2008 and 2009, respectively. Several actions contributed to this crisis.

First, beginning in FY 2001, halfway through the period authorized by the Transportation Equity Act for the 21st Century (TEA-21), outlays began to outpace receipts and erode a cash surplus. The surplus was further eroded following the enactment of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which increased contract authority over TEA-21 without an associated increase in receipts (see figure 8-1).

**Figure 8-1. Highway Account - Comparison of Outlays to Receipts under SAFETEA-LU, Fiscal Year in Billions of Dollars**



Note: Fiscal years 2008 and 2009 receipts do not include the \$8 billion and \$7 billion general fund transfers, respectively.

Source: Federal Highway Administration

## CHAPTER 8

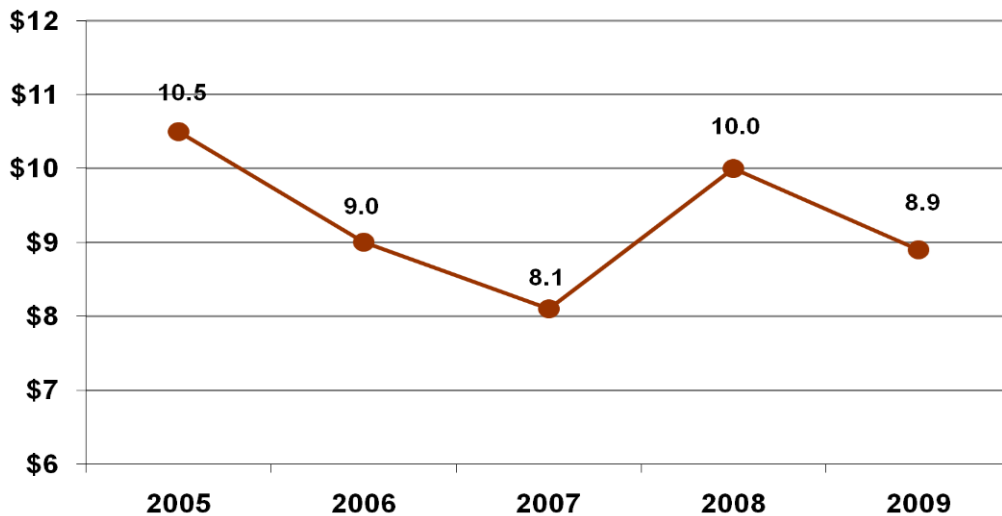
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### Developing a Funding Framework for the Next Surface Transportation Reauthorization

Second, the unforeseen decline in vehicle miles travelled over the past couple of years—due to high fuel prices and a lagging economy—also caused the Highway Account balance to decline more rapidly than anticipated (see figure 8-2). Barring congressional intervention, the Department would have been forced to reduce or suspend reimbursements to states for eligible highway expenditures.

**Figure 8-2. Highway Account – Ending Cash Balance under SAFETEA-LU, Fiscal Year in Billions of Dollars**

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Source: Federal Highway Administration

Finally, because the current highway authorization, SAFETEA-LU, expired at the end of fiscal year 2009 and was extended rather than reauthorized, measures to address future shortfalls in HTF have yet to be addressed. To avoid disruptions in payments to states, the Department must work with Congress to manage HTF's on-going solvency concerns and replenish HTF funds.

# Developing a Funding Framework for the Next Surface Transportation Reauthorization

**Assessing the Annual Federal Funding Needed To Preserve and Enhance Surface Transportation Infrastructure** While the Department and Congress agree that the surface transportation infrastructure plays a key role in the growth of the Nation's economy and that an increase in Federal spending in support of surface transportation is needed, what the increase should be has yet to be determined.

The House Transportation and Infrastructure Committee recently proposed legislation that would channel \$500 billion—\$450 billion for highway, public transportation and safety programs and \$50 billion for high speed rail—in Federal funding to support state surface transportation programs over 6 years. This proposed funding level is significantly higher than the spending levels laid out in SAFETEA-LU, which authorized \$244 billion in Federal funding over a 5-year period.

While the Department recognizes the need for an increase in Federal spending in support of state highway programs, it has yet to propose spending levels for the next surface transportation reauthorization. Consequently, the Department must work closely with Congress and other stakeholder groups to develop a consensus on what an appropriate level of Federal surface infrastructure investment should be.

**Developing a Comprehensive Funding Framework for the Future** The Department's ability to reimburse states for authorized expenditures depends on the HTF balance, which has been declining steadily—partly because the fuel tax rate is not adjusted for inflation and has not been increased since 1993. Essentially, in response to unprecedented increases in fuel prices during fiscal year 2008, followed by the ongoing economic recession, motorists began cutting back on their driving and fuel purchases and purchases of new heavy trucks dropped dramatically, thereby generating fewer tax receipts for HTF. Since the beginning of SAFETEA-LU, the current funding mechanism was barely able to raise \$30 billion to \$34 billion annually for the Highway Account compared to annual outlays of \$33 billion to \$38 billion, which led to a significant deterioration in the cash available to HTF's Highway Account.

The current funding mechanism is unable to generate adequate cash receipts to meet current outlay levels, let alone the higher levels implied by an increase in the Federal funding for surface transportation. Since the Administration has opposed any increase in the gas tax given the economic environment, the Department will have to work closely



## CHAPTER 8

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# Developing a Funding Framework for the Next Surface Transportation Reauthorization

with Congress, states, and other stakeholders to evaluate all options—including potential changes to the current funding mechanism as well as the use of alternative funding mechanisms—to address the resulting funding gap.

The Department must work with Congress to enact a comprehensive funding framework for the next surface transportation reauthorization that sufficiently increases HTF's cash receipts to match its outlays. Barring this, HTF will continue to experience cash shortfalls that could impede the flow of Federal funding for surface transportation.

**Related Products** The following related reports and testimonies can be found on the OIG website at <http://www.oig.dot.gov>.

- Letter to Senate Budget Committee Ranking Member Gregg Regarding DOT's Projections of Highway Trust Fund Solvency, June 24, 2009.
- Growth in Highway Construction and Maintenance Costs, September 26, 2007.
- Report on Federal Highway Administrations Oversight of Load Ratings and Postings on Structurally Deficient Bridges on the National Highway System, March 21, 2006.

***For more information on the issues identified in this chapter, please contact Mitchell Behm, Program Director for Amtrak, High-Speed Rail, and Economic Analysis, at (202) 366-1995.***

## Strengthening the Department's Acquisition Workforce



Source: Colorado Department of Transportation, used with permission

**D**OT's acquisition workforce is responsible for managing and overseeing the Department's contracts for goods and services, which DOT estimated at \$5.5 billion<sup>27</sup> in fiscal year 2009. Since 2001, human capital management has been identified as a Governmentwide high-risk area. With the expanding and increasingly complex acquisition workload, addressing this risk is critical.<sup>28</sup> Succession planning is a major concern across the Government—at DOT alone, about 46 percent of contracting specialists are eligible for retirement in less than 5 years. DOT has completed several initial assessments of its acquisition workforce to meet OMB and Office of Personnel Management mandates. However, DOT needs to do more to ensure it has the needed size and skill levels to support its mission, especially given its need to oversee billions of dollars in Recovery Act funds.

<sup>27</sup> Based on data from the Federal Procurement Data System-Next Generation (FPDS-NG) provided by DOT's Office of the Senior Procurement Executive.

<sup>28</sup> GAO, *High-Risk Series, An Update*, January 2009, GAO-09-271.

# Strengthening the Department's Acquisition Workforce

### Key Challenges

- Addressing acquisition workforce retention and recruitment concerns.
- Ensuring a sufficient and competent acquisition workforce to meet mission needs.

### Addressing Acquisition Workforce Retention and Recruitment Concerns

DOT's acquisition workforce is facing a potential retirement wave. According to the Federal Acquisition Institute, the percentage of current employees in DOT's contracting series<sup>29</sup> who are eligible to retire will more than triple—from 20 percent (77 employees) to 63 percent (241 employees)—between fiscal years 2008 and 2018 (see figure 9-1). This rate is about 10 percent higher than the average for civilian agencies. The bulk of contract specialists eligible to retire are experienced mid-managers, heightening the need for DOT's attention. While DOT developed a Strategic Acquisition Workforce Succession Plan in 2009, the plan is based on a Department survey of less than half of its acquisition workforce and may not adequately capture retirement rates.<sup>30</sup> For example, the plan shows an estimated 27 percent of DOT's contract series workforce will be eligible to retire in 2014, while the Federal Acquisition Institute estimates 47 percent will be retirement eligible in 2013. To better capture retirement rates, DOT may need to reevaluate its succession plan and the underlying acquisition workforce data upon which it is based.

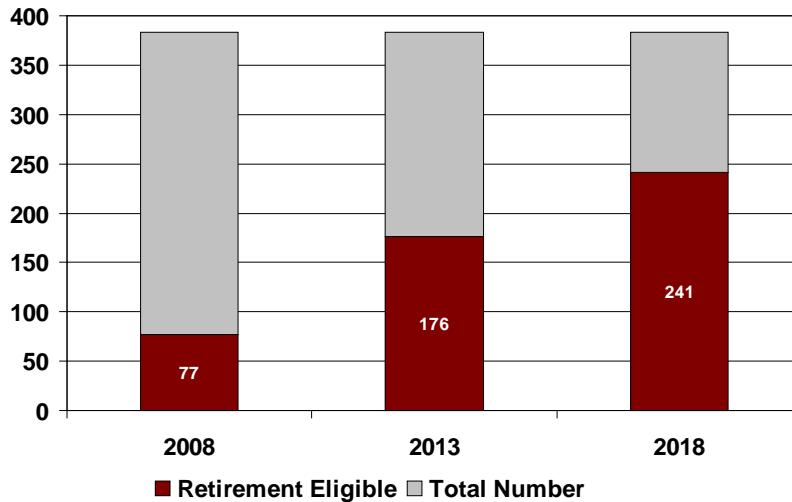
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<sup>29</sup> Under U.S. Office of Personnel Management position classification standards, the contracting series (GS-1102) includes positions that manage, supervise, perform, or develop policies and procedures for professional work involving the procurement of supplies, services, construction, or research and development using formal advertising or negotiation procedures; the evaluation of contract price proposals; and the administration or termination and close out of contracts.

<sup>30</sup> DOT had a 44.7 percent survey response rate; 553 of DOT's acquisition employees in the following work areas responded to the survey: contracting (1102s), COTRs, and project managers.

Strengthening the Department's Acquisition Workforce

**Figure 9-1. Retirement Eligibility of DOT's Contracting Series Workforce by Fiscal Year**



Source: Federal Acquisition Institute Fiscal Year 2008 Annual Report on the Federal Acquisition Workforce

DOT has taken actions to address recruitment and retention issues facing its acquisition workforce, including establishing an Acquisition Workforce Working Group, comprised of contracting and human resource officials from across the Department, to focus on these issues. FAA similarly created action teams to develop plans and identify resources required to implement strategies for core National Airspace Systems projects.

DOT has defined acquisition as a mission critical function. As such, the Department needs to keep moving forward in implementing initiatives to strategically assess its acquisition workforce to ensure it is sufficient and competent.

Strengthening the Department’s Acquisition Workforce

**Ensuring a Sufficient and Competent Acquisition Workforce To Meet Mission Needs**

In February 2009, DOT issued its first Strategic Acquisition Workforce Succession Plan.<sup>31</sup> However, according to a senior Office of Senior Procurement Executive official responsible for workforce issues, DOT did not thoroughly assess its acquisition workforce and contract needs across the Department. While DOT has completed an inventory of acquisition positions for contracting officers and specialists, program managers, and contracting officer technical representatives (COTR), the plan does not show the relationship between its existing and planned contract awards and the acquisition workforce needed to accomplish this work. The Department has also identified hiring, retention, and skills development strategies to address its acquisition workforce needs. However, Operating Administrations have not made sufficient progress in implementing these strategies—in part because DOT has not determined the optimal size for its workforce or planned for obtaining needed resources and staff to implement the strategies and the new demands of ARRA.

At the same time, DOT issued an Acquisition Workforce Gap Analysis and Improvement Plan that highlights weaknesses in several key competencies in its contracting, COTR, and project manager functions (see table 9-1).<sup>32</sup>

**Table 9-1. Key Competency Gaps by Function**

<b>Contracting</b>	<b>COTRs</b>	<b>Project Managers</b>
<ul style="list-style-type: none"> <li>• Defining government requirements</li> <li>• Defining performance-based acquisitions</li> <li>• Conducting proposal analysis and evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-award communication</li> <li>• Contract management</li> </ul>	<ul style="list-style-type: none"> <li>• Business cost-estimating and financial management</li> <li>• Life cycle logistics</li> <li>• Contracting</li> </ul>

Source: OIG analysis of DOT’s Acquisition Workforce Gap Analysis and Improvement Plan

DOT is designing strategies to address several of these gaps, and in June 2009, submitted a progress report to OPM on its efforts. For example, DOT reported that the Office of the Senior Procurement Executive has begun to develop a training curriculum for program

<sup>31</sup> DOT developed the -plan to meet National Defense Authorization Act, Fiscal Year 2008, Pub.L. 110-181, 855, which required agencies to address recruitment and training needs of their acquisition workforce.

<sup>32</sup> The plan used results from the Federal Acquisition Institute’s (FAI) 2008 survey of the Federal acquisition workforce, based on the FAI’s Federal Competency Assessment Tool-Acquisition Workforce.

# Strengthening the Department's Acquisition Workforce

managers, and that several Operating Administrations developed their own training plans for their program managers. While training strategies are likely needed given project management's role in the day-to-day planning and oversight of acquisitions, it is not clear that DOT's efforts are appropriately targeted because its gap analysis is based on the Department's survey of less than half of its acquisition workforce. To better prioritize its acquisition workforce development strategies, DOT will need to base future improvements on surveys that are more representative of its workforce.

FAA, whose procurement function is autonomous from DOT's, has made some progress in developing an acquisition workforce plan and created action teams to implement it.<sup>33</sup> The plan is based on FAA's Lifecycle Management Process, which is used to manage the acquisition of major capital investments supporting the National Airspace System. Consistent with other Federal agencies that manage large procurements, FAA broadly defines its acquisition workforce to include employees in disciplines such as research/engineering, business and finance, and test and evaluation. Based on its need to sustain systems and support new Next Generation Air Transportation System programs, FAA's plan identifies a requirement to increase the acquisition workforce by 35 percent (as least 350 positions) through fiscal year 2011.<sup>34</sup> FAA faces significant challenges in implementing its acquisition workforce plan, including executing a sourcing/hiring plan; reviewing acquisition supply/demand across the organization to meet priorities; creating an acquisition career development plan; and institutionalizing an acquisition workforce planning process.

DOT also established career development programs to help ensure that its acquisition workforce meets Federal Acquisition Institute and OMB certification requirements. FAA, while not covered by these mandates, established similar career development programs. However, all of DOT's workforce is not yet certified to the level as required for their positions. DOT will need to ensure that its managers provide sufficient funds and time for staff to complete required certification and training requirements and that its workforce follows through to meet these requirements.

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<sup>33</sup> FAA is exempt from the Federal Procurement Policy Act.

<sup>34</sup> Increased positions are based on a comparison of existing positions for the first quarter of fiscal year 2009 to projected staffing needs at the end of fiscal year 2011.

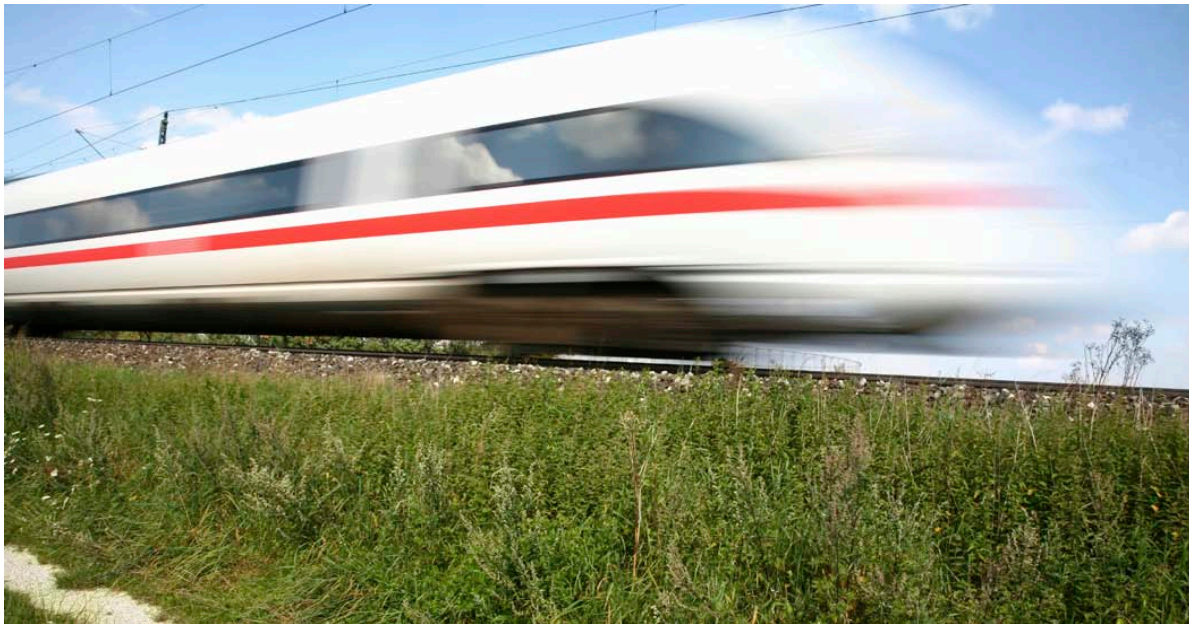
## Strengthening the Department's Acquisition Workforce

**Related Product** The following related report can be found on the OIG website at <http://www.oig.dot.gov>.

- American Recovery and Reinvestment Act of 2009: Oversight Challenges Facing the Department of Transportation, March 31, 2009.

***For more information on the issues identified in this chapter, please contact Mark Zabarsky, Assistant Inspector General for Procurement and Acquisition Audits, at (202) 366-5225.***

# Successfully Implementing the Newly Created Multi-Billion Dollar High-Speed Intercity Passenger Rail Program



In April 2009, the President, along with the Vice President and the Transportation Secretary, announced a new vision for a national network of high-speed rail corridors.<sup>35</sup> Implementing DOT’s High-Speed Intercity Passenger Rail (HSIPR) Program represents a significant change to the Nation’s transportation system—one that will require substantial planning on the part of states and the Federal Government. Three key pieces of legislation establish the framework for HSIPR: DOT Appropriations Acts for fiscal years 2008 and 2009, the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), and the American Recovery and Reinvestment Act of 2009 (ARRA).

### Key Challenges

- Designing and implementing the HSIPR program from the ground up.
- Establishing policies and practices for the program’s grant lifecycle process and oversight activities.

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<sup>35</sup> High-speed rail is a family of transportation options that address longer-distance passenger transport needs in heavily populated corridors.



# Successfully Implementing the Newly Created Multi-Billion Dollar High-Speed Intercity Passenger Rail Program

## Designing and Implementing the HSIPR Program from the Ground Up

The HSIPR program demands that the Federal Railroad Administration (FRA) undergo a major organizational transformation, from a relatively small agency focused primarily on rail safety issues to a grant-making agency responsible for starting up a large, long-term program—one that is likely to receive significant public attention and scrutiny. Taking on the new responsibilities that come with this transformation has been a challenge for FRA. Consequently, FRA asked Congress to increase the amount of ARRA funds it can use to set up, administer, and oversee the HSIPR program from \$20 million to \$80 million—or 1 percent of its total ARRA funding. FRA has also requested an additional 27 full-time equivalents (FTE) in its fiscal year 2010 budget—a large portion of which are planned to help support the HSIPR program.<sup>36</sup>

FRA has yet to acquire sufficient capacity to effectively manage the program, and start-up deadlines are tight. FRA was required to issue its strategic plan for HSIPR by April 2009—just 2 months after ARRA’s enactment—and interim guidance by June 2009. Funding for HSIPR is divided among four tracks.

- **Track 1** focuses on intercity passenger rail projects funded under ARRA and under PRIIA. Eligible projects include infrastructure, facilities, and equipment. These projects also fall under the competitive grant programs authorized by Section 301 or Section 302 of PRIIA, for the benefit of existing services, including those that support development of high-speed rail.
- **Track 2** focuses on new high-speed rail corridor and intercity passenger rail services, or substantial upgrades to existing corridor services. According to FRA’s ARRA-required interim guidance, track 2 programs represent the long-term emphasis of the HSIPR program. In addition to being eligible under PRIIA section 301, track 2 projects are also eligible under PRIIA Section 501.
- **Track 3** focuses on establishing a pipeline of future high-speed rail and intercity passenger rail projects and service development programs. This will be done by advancing planning activities for applicants at an earlier stage of the development process. Under track 3, FRA will enter into cooperative agreements for preparing service development programs, state rail plans, and service-level environmental documents.

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<sup>36</sup> These staff are to be distributed between FRA’s Office of Railroad Development (22 positions), Office of Chief Counsel (2 positions), and Office of Financial Management and Administration (3 positions). FRA already started hiring and anticipates these new staff will be on-board by the second quarter of FY 2010.

## CHAPTER 10

# Successfully Implementing the Newly Created Multi-Billion Dollar High-Speed Intercity Passenger Rail Program

- **Track 4** provides an alternative for projects that would otherwise fit under track 1, but requires at least a 50-percent non-Federal funding match.

The program's grant selection and award process for each of its four tracks was also fast paced (see table 10-1).

**Table 10-1. ARRA Track Deadlines According to FRA's Interim Guidance**

Track 1	Track 2	Track 3	Track 4
<b>Preapplication</b>			
July 10, 2009	July 10, 2009	July 10, 2009	July 10, 2009
<b>Application</b>			
Aug. 24, 2009	Oct. 2, 2009	Aug. 24, 2009	Aug. 24, 2009
<b>FRA Obligation</b>			
By Sept. 30, 2010	By Sept. 30, 2011	As soon as possible after selection	As soon as possible after selection
<b>Project(s) Completion</b>			
Within 2 years of obligation	Sept. 30, 2017	Within 2 years of obligation	Within 5 years of obligation

Source: Federal Railroad Administration

In the face of these tight deadlines, FRA has acknowledged it lacks the capacity to start up and effectively manage HSIPR—shortfalls it attributes to the limited availability of staff to dedicate to the program and the limited operating funds authorized in ARRA. According to FRA officials, the money currently allotted for program management will be depleted during the grant evaluation and award phase, leaving no money for grant administration oversight.

**Establishing Policies and Practices for the Program's Grant Lifecycle Process and Oversight Activities** While FRA officials recognize the challenge before them, the Agency has not finalized or fully documented its program implementation strategy. FRA has developed a grants management master plan (GMMP) that contains over 400 action items, but the plan does not contain deadlines or contingencies for performing

# Successfully Implementing the Newly Created Multi-Billion Dollar High-Speed Intercity Passenger Rail Program

critical pre-award tasks, such as establishing standard grant agreements and standard operating procedures, tools, or templates to help oversee projects and conduct site visits.<sup>37</sup>

FRA planned to begin awarding its first round of grants in Fall 2009. However, following receipt of our draft report that discussed the risks associated with trying to award the grants that early without a fully documented process, FRA decided to delay the awards until early 2010.

In addition, while the initial process of evaluating applications has been completed, questions still remain as to how FRA will evaluate cost, schedule, and ridership estimates. For example, FRA has not fully determined how it will assess the accuracy of applicants' rider and revenue forecasts—a key aspect of how the merit and feasibility of proposed projects will be determined. FRA officials indicated that, given the tight time frames placed on the Agency by ARRA, they are currently addressing only the tasks they deem to be on the “critical path.” Concurrent implementation and integration of a new electronic management system for administering grants further heightens implementation risks in the rush to meet statutory deadlines.<sup>38</sup>

**Related Products** The following related reports and testimonies can be found on the OIG website at <http://www.oig.dot.gov>.

- American Recovery and Reinvestment Act: DOT's Implementation Challenges and the OIG's Strategy for Continued Oversight of Funds and Programs, April 30, 2009, and April 29, 2009.
- American Recovery and Reinvestment Act of 2009: Oversight Challenges Facing the Department of Transportation,” March 31, 2009.

***For more information on the issues identified in this chapter, please contact Mitch Behm, Program Director for Amtrak, High-Speed Rail, and Economic Analysis, at (202)-366-1995.***

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<sup>37</sup> With the assistance of a contractor, FRA expects to complete a grant management manual, which will include comprehensive grants management policies and procedures by March 2010.

<sup>38</sup> ARRA requires FRA to select all projects by September 30, 2012.

## EXHIBIT. COMPARISON OF FY 2010 AND FY 2009 TOP MANAGEMENT CHALLENGES

Items in FY 2010 Report	Items in FY 2009 Report
<ul style="list-style-type: none"> <li>Maximizing the Department's Economic Recovery Investments</li> </ul>	
<ul style="list-style-type: none"> <li>Enhancing Surface Safety Programs to Reduce Injuries and Fatalities While Defining a New Federal Role in Transit Safety</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing and Deploying Programs for Reducing the Serious Consequences of Surface Transportation Crashes</li> </ul>
<ul style="list-style-type: none"> <li>Maximizing Federal Surface Infrastructure Investments by Helping States Better Allocate Resources and Providing Effective Oversight</li> </ul>	<ul style="list-style-type: none"> <li>Maximizing Current Highway and Transit Infrastructure Investments</li> <li>Preventing Catastrophic Failures and Obsolescence in the Nation's Aging Surface Transportation Infrastructure</li> </ul>
<ul style="list-style-type: none"> <li>Addressing Human Factors and Strengthening the Regulatory Oversight Framework for Aviation Safety</li> </ul>	<ul style="list-style-type: none"> <li>Enhancing Aviation Safety and Maintaining Confidence in FAA's Ability to Provide Effective Oversight of a Rapidly Changing Industry</li> </ul>
<ul style="list-style-type: none"> <li>Moving Toward the Next Generation Air Transportation System and Improving Performance of the National Airspace System</li> </ul>	<ul style="list-style-type: none"> <li>Operating the National Airspace System While Developing and Transitioning to the Next Generation Air Transportation System</li> </ul>
<ul style="list-style-type: none"> <li>Improving Contract Management and Oversight</li> </ul>	<ul style="list-style-type: none"> <li>Improving Contract Operations and Maintaining Procurement Integrity</li> </ul>
<ul style="list-style-type: none"> <li>Enhancing the Ability to Combat Cyber Attacks and Improving the Governance of Information Technology Resources</li> </ul>	<ul style="list-style-type: none"> <li>Protecting Against Increasing Cyber Security Risks and Managing Limited Information Technology Resources More Effectively</li> </ul>
<ul style="list-style-type: none"> <li>Developing a Funding Framework for the Next Surface Transportation Reauthorization</li> </ul>	<ul style="list-style-type: none"> <li>Developing a Plan to Address Projected Highway and Transit Funding Shortfalls</li> </ul>
<ul style="list-style-type: none"> <li>Strengthening the Department's Acquisition Workforce</li> </ul>	<ul style="list-style-type: none"> <li>Improving Contract Operations and Maintaining Procurement Integrity</li> </ul>
<ul style="list-style-type: none"> <li>Successfully Implementing the Newly Created Multi-Billion Dollar High-Speed Intercity Passenger Rail Program</li> </ul>	
	<ul style="list-style-type: none"> <li>Enhancing Mobility and Reducing Congestion in America's Transportation System</li> </ul>




U.S. Department of  
Transportation  
Office of the Secretary  
of Transportation

# Memorandum

Subject: **ACTION:** Response to Office of Inspector General (OIG)  
draft report, "Top Management Challenges for Fiscal Year  
2010"

Date: November 6, 2009

From: Christopher Bertram   
Assistant Secretary for Budget and Programs, and  
Chief Financial Officer

Reply to  
Attn. of:

To: Calvin L. Scovel III  
Inspector General

During this past year, the Department of Transportation (DOT) demonstrated once again a capability to not only meet, but exceed expectations in service to the Nation. Faced with the daunting challenge of implementing, within unprecedented timeframes, two major programs, the Car Allowance Rebate System (CARS) and the American Recovery and Reinvestment Act of 2009 (Recovery Act), the employees of DOT exceeded all expectations. This required extraordinary dedication and hard work. Together, these programs stimulated economic activity in the Nation, focused job creation in some of the country's most economically distressed areas, and improved the environment and reduced energy consumption. The CARS program replaced almost 700,000 cars with vehicles that were on average 60 percent more efficient. The Recovery Act will generate a large number of transportation-related jobs, while providing numerous benefits including improving services to some of our Nation's most vulnerable populations.

## **Safety is our Top Priority**

The Secretary has reaffirmed the Department's long-standing commitment to improve aviation and surface transportation safety as its top priority. DOT has demonstrated its commitment to safety by meeting 8 of its 10 safety goals this year. In particular, DOT continues to focus on safety initiatives that reduce the highway fatality rate. The Department is moving forward with other innovative new initiatives and approaches intended to make the best possible use of available expertise and resources, starting with an intermodal approach to safety. Recently, the Secretary formed a Transportation Safety Council to tackle critical transportation safety issues. The Council will ensure that there is a formal process for sharing data, best practices, and strategies among the Department's operating administrations. The Council also will serve a critical broad-based safety advocacy role and help break down organizational stovepipes, continuing the intermodal functionality we saw demonstrated so well in the Department's approach to implementing the Recovery Act. The intent of the Council is to provide an effective forum for an action-oriented, data-driven approach to improving safety, emphasizing open dialogue about common issues, and providing fresh ideas and new perspectives.

The Department has also set a new course of action to address the hazards of distracted driving, and particularly the challenges posed by the use of cell phones, portable email devices and other electronics in vehicles. Tests have demonstrated the dangers of distracted drivers on our roads, and these data are further supported by testimonial evidence presented at DOT's recent summit on distracted driving. The Obama Administration with Secretary LaHood's leadership is working to end distracted driving. President Obama signed an executive order directing federal employees not to text while driving and DOT will continue to work on additional efforts for commercial drivers license holders. Additional actions are also being planned to better educate our Nation's drivers to the dangers of distracted driving while stepping up high visibility enforcement campaigns.

Further improving rail transit safety is another important new safety initiative underway at DOT. While rail transit is one of the safest modes of transportation, a series of crashes in Washington DC, Chicago, Boston and San Francisco over the last few years demonstrate the need for a fresh look at innovative approaches to addressing this challenge. The Department is addressing this challenge by reviewing both the state of good repair for transit equipment and the rules under which transit operates. The Federal Transit Administration (FTA) recently assessed the level of capital investment required to attain and maintain a state of good repair for the nation's seven largest transit operators, which carry 80 percent of the nation's rail transit ridership. FTA found that more than one-third of rail-transit assets are in marginal or poor condition, with many having already met or exceeded their useful life. Next, FTA plans to expand this study beyond the seven largest transit agencies to gain an industry-wide perspective and better understand the level of transit investment for safety critical infrastructure. In addition, the Deputy Secretary, is leading an intermodal team to focus on developing options for transit safety reforms, which may extend to bus operations as well. This team will review the many alternative models within DOT that could be used to address transit safety challenges, as well as review the statutory authority alternatives for addressing transit safety.

### **The Department Continues to Seek Long Term Funding Solutions**

The financing methods that fund the highway and aviation trust funds are established by statute. It has become increasingly clear that the existing statutory approaches to financing the trust funds are not sustainable and will need to be addressed during the reauthorization processes. The Department is working with the Congress to identify the implications of alternative actions to address the long term funding needs for its aviation and surface programs as part of the reauthorization processes. To facilitate these future discussions, the Department is closely monitoring the balances in the Highway Trust Fund and is sharing this information on a regular basis with Office of Management and Budget (OMB) and the Congress.

### **DOT Is Focused on Strengthening Procurement Systems**

The Department is taking a multifaceted approach to further strengthen its procurement programs and provide strong sustained oversight. The requirements for Suspension and

Debarment have been revised and updated, and will be implemented over the coming months. These revised requirements, along with new, improved electronic data systems to track actions, are intended to help ensure that potential inappropriate behavior by contractors is dealt with promptly, effectively, and is communicated throughout the Federal Government. On November 2, 2009, the Department provided the OMB with a plan for dealing with high risk contracting. This plan identified new approaches for ensuring that procurement activities efficiently accomplish their intended objectives with minimal risk to the Department. With regard to the acquisition workforce, DOT has taken a proactive approach by designing and implementing an annual requirement for supplemental ethics training provided as a joint effort between the Office of General Counsel and the Department's Senior Procurement Executive. We are also applying innovative approaches to help ensure that the Department has an adequate acquisition workforce. For example, we plan to enhance the applicant pool by running a continuous job announcement from which the operating administrations may identify qualified applicants. Each procurement organization in the Department will utilize individual development plans for its procurement workforce, ensuring they are certified in accordance with Federal Acquisition Certification program.

### **Preventing Cyber Attacks Requires Constant Vigilance**

The Department has achieved considerable progress in securing its networks and systems against intrusions and cyber attacks, yet work remains. Every day we encounter new threats to our networks and new risks. Capabilities are growing for increasingly sophisticated attacks on critical information technology infrastructure. Some of these issues can be addressed within our approach to and implementation of countermeasures. Other elements are larger than individual departments, and progress will depend on concerted efforts throughout the Federal government. The Department continues putting the systems and processes in place to address cyber security challenges, and has achieved significant progress this the past year. For example, the Department promulgated a comprehensive new set of cyber security policies. These policies will provide an up-to-date systematic foundation to guide further evolutionary progress in cyber security. On the hardware side, the Department has significantly greater situational awareness and visibility than it did one year ago thanks to the completion of network sensors covering all DOT networks. DOT's Chief Information Office has also demonstrated exceptional responsiveness to the cyber security and information technology issues raised by OIG, by closing an unprecedented 92 percent of its pending recommendations, and effectively addressing long standing issues. The Deputy Secretary has included this as a top priority assignment for the White House Fellow, demonstrating the Department's commitment to continued improvements in this critical area.

In closing, we agree that the Department faces formidable management challenges in the years ahead. DOT has demonstrated the qualities of resilience, ingenuity, and innovation in facing those challenges, both anticipated and unanticipated. We will continue to do so. We appreciate the perspectives offered by the Office of Inspector General in its management challenges report and will use them to assist the Department in developing our plans for addressing these critical areas.