
Office of Inspector General

TOP MANAGEMENT CHALLENGES FOR FISCAL YEAR 2015

Department of Transportation

*Report Number: PT-2015-007
Date Issued: November 17, 2014*





Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **INFORMATION:** DOT's Fiscal Year 2015
Top Management Challenges
Department of Transportation
Report Number PT-2015-007

Date: November 17, 2014

From: Calvin L. Scovel III
Inspector General

Reply to
Attn. of: J-1

To: The Secretary
Deputy Secretary

The safe and efficient movement of people, goods, and information is vital to our Nation's economic growth, global partnerships, and quality of life. The Department of Transportation (DOT) spends more than \$70 billion each year on programs to protect and manage U.S. transportation systems and prepare them for increasing travel demands. It is critical that DOT carry out this mission within a framework of diligent stewardship of taxpayer funds, and we continue to support the Department's efforts through our audits and investigations.

DOT is working to address both continuing and emerging challenges with its efforts to modernize the Nation's air transportation system. A key issue is setting investment priorities and realistic plans for the Next Generation Air Transportation System (NextGen). Sustained management attention will be critical to effectively deploy NextGen foundational programs, evaluate needed changes to air traffic facilities, and safely integrate Unmanned Aircraft Systems. To maintain the Nation's excellent aviation safety record, the Department will need to better leverage safety data to reduce risks, address weaknesses with aircraft certification processes, bolster oversight of repair stations at home and abroad, and improve runway safety.

With regard to surface transportation, the Department must continue to address our prior recommendations as well as newer safety oversight requirements enacted in the Moving Ahead for Progress in the 21st Century Act (MAP-21). Key priorities include proactively identifying vehicle safety defects and unsafe motor carriers; following through on data-driven, risk-based oversight for bridges; creating a national tunnel safety program; and ensuring robust oversight of pipelines and hazardous materials. The Department is also working to fulfill other MAP-21 requirements to accelerate

surface infrastructure projects nationwide and employ performance-based management. DOT must also finalize two significant infrastructure initiatives so that it is well positioned to implement a comprehensive national rail plan and an emergency relief program that effectively addresses disasters impacting public transportation.

A critical part of DOT's efforts to ensure the safety and continued improvement of transportation programs is effectively securing and channeling investments to finance them. This will require the Department to work with stakeholders to stabilize the Highway Trust Fund and strengthen credit programs that can leverage private investment for transportation projects. At the same time, DOT must better manage its own sizeable annual investments in contracts and grants to maximize program performance; meet Federal requirements; and prevent fraud, waste, and abuse of taxpayer funds.

Finally, we continue to find opportunities for the Department to better protect the hundreds of information systems it relies on to operate our Nation's transportation framework. To mitigate the risk of cybercrime and system failures, DOT will need to resolve longstanding vulnerabilities with its privacy protection policies as well as carry out Presidential directives to improve physical access controls and implement effective system monitoring and cloud computing.

We remain committed to assisting the Department as it works to improve the management and execution of its programs and protect its resources. We considered several criteria in identifying the Department's top management challenges for fiscal year 2015, including their impact on safety, documented vulnerabilities, large dollar implications, and the ability of the Department to effect change in these areas:

- Modernizing the National Airspace System and Addressing Organizational Challenges
- Enhancing Safety and Oversight of a Diverse and Dynamic U.S. Aviation Industry
- Increasing Efforts To Promote Highway, Vehicle, Pipeline, and Hazmat Safety
- Improving Oversight, Project Delivery, and System Performance of Surface Transportation Programs
- Leveraging Existing Funding Mechanisms To Finance Surface Transportation Projects in a Challenging Fiscal Environment
- Managing Acquisitions and Grants To Maximize Performance and Save Federal Funds
- Securing Information Technology Resources

We appreciate the Department's commitment to taking prompt actions in response to the issues we have identified. This report and the Department's response will be included in the Department's Annual Financial Report, as required by law. The Department's response is included in its entirety in the appendix to this report. If you have any questions regarding this report, please contact me at (202) 366-1959. You may also contact Lou E. Dixon, Principal Assistant Inspector General for Auditing and Evaluation, at (202) 366-1427.

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cc: DOT Audit Liaison, M-1

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Modernizing the National Airspace System and Addressing Organizational Challenges



Source: FAA

The Federal Aviation Administration's (FAA) Next Generation Air Transportation System (NextGen) is a complex, multibillion-dollar infrastructure project needed to modernize our Nation's aging air traffic system and provide more efficient air traffic management. For almost a decade, we have reported on FAA's longstanding challenges with this effort—challenges that have been exacerbated by unrealistic plans, budgets, and expectations for NextGen capabilities. Continuing to work toward resolution of these management problems is key to protect the investment in NextGen and prepare for emerging challenges with the introduction of unmanned aircraft and realignment of air traffic facilities that will also impact NextGen in the near future.

Key Challenges

- Addressing underlying causes for limited NextGen progress
- Implementing NextGen investment priorities
- Deploying key controller automation systems and resolving vulnerabilities
- Integrating Unmanned Aircraft Systems
- Consolidating FAA's vast network of facilities

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Addressing Underlying Causes for Limited NextGen Progress As we reported in February 2014, FAA’s NextGen plans—which initially estimated completion by 2025 at a cost of \$40 billion—have proven to be unrealistic, lacking stable investment priorities and requirements for NextGen systems. Moreover, FAA’s organizational culture has historically focused primarily on operations and safety, limiting focus on modernization. Gaps in leadership have further undermined the Agency’s progress on NextGen efforts; while FAA put new leadership in place in 2013, it remains unclear whether these changes will advance NextGen. These weaknesses have contributed to stakeholders’ skepticism about NextGen’s feasibility and airspace users’ reluctance to invest in costly equipment.

Implementing NextGen Investment Priorities The success of FAA’s NextGen efforts depends on the Agency’s ability to set priorities, deliver benefits, and maintain stakeholder support. FAA is currently responding to a September 2013 report from the Government-industry NextGen Advisory Committee on industry’s highest priorities for NextGen. Since April 2014, FAA and industry have been working to develop a master implementation plan for (1) advancing Performance-Based Navigation (PBN)—the top priority since it could provide the most near-term benefits, (2) employing closely spaced parallel runway operations, (3) enhancing airport surface operations through data sharing, and (4) developing data communications capabilities between the cockpit and air traffic control. However, several longstanding NextGen challenges could undermine FAA’s efforts to finalize and execute this plan. These include addressing differing priorities between FAA and industry, resolving key barriers to implementing PBN (e.g., the lengthy development and approval process for new PBN procedures), and establishing accountability for implementing its upcoming plan.

Deploying Key Controller Automation Systems and Resolving Vulnerabilities FAA’s near- and mid-term NextGen goals also depend on the success of its efforts to deploy new automation systems that controllers use to manage air traffic. The En Route Automation Modernization (ERAM) program—a more than \$2.5 billion system for processing en route flight data—is integral to achieving benefits from other NextGen surveillance and data programs. FAA is now using ERAM at all 20 of its en route air traffic facilities either on a full- or part-time basis. However, system outages this year at major air traffic facilities exposed new vulnerabilities, raising questions about ERAM’s security and mid- and long-term NextGen capabilities. FAA is working to address the root causes for these outages and plans for all 20 sites to be fully operational by March 2015.

Technical challenges have also impeded FAA’s efforts to modernize terminal air traffic control facilities. In 2010, FAA began its current and final phase of this effort with a goal to deploy Standard Terminal Automation Replacement System (STARS) at 11 large Terminal Radar Approach Control (TRACON) facilities by 2017 for \$438 million. However, as we reported in 2014, STARS deployment remains at significant risk of cost and schedule overruns and performance shortfalls, largely due to unstable software requirements, which call for additional modifications to systems. Until FAA can determine the site-specific capabilities needed, the cost to complete the STARS effort will remain unknown.

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Integrating Unmanned Aircraft Systems Integrating Unmanned Aircraft Systems (UAS)¹ into the National Airspace System (NAS) represents an enormous economic opportunity for the United States, with some forecasts projecting as much as \$89 billion in UAS investment worldwide over the next 10 years. The FAA Modernization and Reform Act of 2012² required FAA to safely integrate UAS into the NAS no later than September 30, 2015. FAA recently took a step forward in broadening commercial UAS use by approving regulatory exemptions for six film industry companies to operate UAS on a limited basis. However, the Agency has not fully addressed the significant technological, regulatory, and management barriers to achieve safe integration for all UAS. These include reaching consensus with industry on standards for technology that would enable UAS to detect and avoid other aircraft, establishing an overall regulatory framework for UAS integration, and effectively collecting and analyzing UAS safety data to identify risks. In addition, FAA is behind in issuing a key final rule to govern small UAS operations³ and has not finalized how it will leverage data from its six congressionally mandated test sites.

Consolidating FAA's Vast Network of Facilities An important component of FAA's NextGen efforts is the extent to which FAA realigns and consolidates the Nation's aging air traffic control facilities. FAA provided Congress with a facility consolidation and realignment plan in 2013, as required by the FAA Modernization and Reform Act of 2012. However, the plan is less comprehensive than FAA's previous plans, as it does not include en route facilities that manage high-altitude traffic.⁴ FAA is in the early stages of evaluating its terminal facility consolidations and has not developed recommendations on which facilities should be realigned. Finalizing these plans and aligning them with other NextGen modernization efforts will be important to determine Agency funding and workforce requirements.

¹ UAS consist of systems of aircraft and ground control stations where operators control the movements of aircraft remotely. These aircraft can serve diverse purposes, such as enhancing border security, monitoring forest fires, and aiding law enforcement, as well as potential commercial use, such as food and package delivery.

² Pub. L. No. 112-95 (2012).

³ The rule is intended to establish operating and performance criteria for small UAS (under 55 pounds) in the NAS that are operated within line-of-sight of a pilot or ground observer below 400 feet.

⁴ En route centers guide airplanes flying at high altitudes through large sections of airspace.

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Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *Management Advisory on Weaknesses With Site-Specific Deployment Requirements and Specialist Training for STARS*, August 14, 2014
- *FAA Faces Significant Barriers To Safely Integrate Unmanned Aircraft Systems Into the National Airspace System*, June 26, 2014
- *Progress and Challenges in Meeting Expectations for NextGen*, June 25, 2014
- *FAA Faces Significant Obstacles in Advancing the Implementation and Use of Performance-Based Navigation Procedures*, June 17, 2014
- *Addressing Underlying Causes for NextGen Delays Will Require Sustained FAA Leadership and Action*, February 25, 2014
- *FAA's Implementation of the FAA Modernization and Reform Act of 2012 Remains Incomplete*, February 5, 2014
- *FAA Has Made Limited Progress in Implementing Provisions of the FAA Modernization and Reform Act of 2012*, January 28, 2014

For more information on the issues identified in this chapter, please contact Matthew Hampton, Assistant Inspector General for Aviation Audits, at (202) 366-0500.

Enhancing Safety and Oversight of a Diverse and Dynamic U.S. Aviation Industry



Source: OIG

The Federal Aviation Administration (FAA) continues to focus its efforts on implementing new initiatives aimed at collecting and analyzing safety risk data and enhancing its safety oversight of the National Airspace System. However, our audit work indicates that FAA needs to further improve its safety data analysis, aircraft certification process, and repair station and runway safety oversight.

Key Challenges

- Leveraging data to reduce risk
- Managing FAA's aircraft certification processes
- Bolstering oversight of aircraft repair stations
- Improving runway safety

Leveraging Data To Reduce Risk FAA's efforts to maintain the Nation's excellent aviation safety record depend on effectively leveraging its valuable safety data sources. Two data sources, the Voluntary Disclosure Reporting Program (VDRP)⁵ and the Aviation Safety

⁵ VDRP allows air carriers to voluntarily report and correct—without civil penalty—non-compliances with airline operations, maintenance, training programs, and transport of hazardous materials.

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Information Analysis and Sharing (ASIAS)⁶ program, play a vital role in improving commercial air carrier safety. Both of these programs provide FAA with important safety information that might otherwise remain unknown and could help increase inspectors' awareness of industry-wide safety issues. However, our work has found a number of oversight and data concerns that impede these programs' full potential. For example, the VDRP process does not require air carriers to identify the root cause of reported violations, and FAA does not ensure air carriers implement all corrective actions or verify whether the actions resolved the problems. FAA also does not collect, analyze, or trend VDRP data to identify safety risks at the national level, which could aid the inspection planning process. In addition, FAA does not allow its inspectors and analysts to use ASIAS data for their air carrier oversight due to proprietary data concerns. Yet, 74 percent of 292 field inspectors and analysts we surveyed stated that access to national-level data provided through ASIAS would improve air carrier safety oversight. Until such limitations are addressed, FAA is missing a significant opportunity to better target safety oversight to areas of highest risk.

Managing FAA's Aircraft Certification Processes Our work has identified management weaknesses with a number of FAA's certification processes. Of particular concern are inconsistencies in FAA's program for delegating certain oversight functions, such as approving new aircraft designs, to private individuals or organizations. FAA has historically played a large role in selecting such individuals. However, under the Organization Designation Authorization (ODA) program, implemented in 2009, ODA companies now have most of this responsibility. With less FAA involvement, the Agency cannot be assured that individuals selected by companies have the qualifications to conduct certification duties on FAA's behalf. Our 2011 report identified inconsistencies in how FAA aircraft certification offices interpreted FAA's role and tracked and selected ODA personnel. For example, not all FAA offices consulted FAA's database to pre-screen performance histories of prospective ODA personnel. In response to our recommendations, FAA clarified guidance on tracking ODA employee performance history. We are conducting a follow-up review of the ODA program.

Our 2014 review of FAA's certification process for aircraft operators and repair stations also disclosed inefficiencies. For example, weaknesses in the certification process and management at one FAA office caused significant delays, some of which also impacted FAA's certification efforts nationwide. As of October 2013, there were more than 1,000 entities awaiting certification across the United States, with 138 applicants delayed more than 3 years. Several factors contributed to this backlog, including an ineffective method for prioritizing new applicants, the lack of a standardized process for new certifications, and poor communication to field inspectors on certification policy. While FAA recently issued new guidance to expedite certifications of waitlisted applicants, it is unclear how this guidance will improve the overall process and alleviate the backlog. Given the expected continued growth of the aviation industry, it is critical for FAA to establish clear standards and increase efficiency for all of its certification processes.

⁶ ASIAS enables authorized users to obtain data from confidential databases, as well as publicly available data sources to proactively identify and address risks that may lead to accidents.

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Bolstering Oversight of Aircraft Repair Stations Under a new aviation safety agreement between the United States and the European Union (EU), National Aviation Authority (NAA) safety inspectors oversee nearly 400 EU repair stations performing maintenance on U.S.-registered aircraft for FAA. These agreements utilize similarities in partner countries' surveillance systems and regulatory requirements to minimize duplicative surveillance. In 2011, the United States expanded its partnership from 3 to 18 EU countries. However, our ongoing work shows that FAA's initial assessments to evaluate NAA's capabilities to perform inspections on its behalf were incomplete and the results were not well substantiated. In addition, inspector training, procedural, and data quality weaknesses have impeded FAA's ability to effectively monitor EU foreign repair stations to ensure they continue to meet FAA standards. The weaknesses in FAA's processes could also negatively impact its plans to expand this agreement to other countries. We plan to issue our report on these issues later this year.

Improving Runway Safety With the millions of flights that take off and land on runways in the United States each year, runway safety remains a critical safety priority. In recent years, the total number of reported runway incursions has increased, even though overall air traffic levels have declined. FAA data show that, from fiscal year 2011 to fiscal year 2013, the most serious runway incursions increased from 7 to 11, respectively, rising up to 18 in fiscal year 2012. The total number of reported runway incursions also increased by 30 percent during that time—from 954 in fiscal year 2011 to 1,241 in fiscal year 2013. FAA has taken action to reduce runway incursions, such as enhancing pilot training and identifying higher safety risk areas at the Nation's airports. However, FAA's Runway Safety Group⁷—which is responsible for implementing and overseeing runway safety initiatives across multiple FAA lines of business—is under FAA's Air Traffic Organization, limiting its authority to coordinate and oversee other organizations' runway safety efforts. FAA's plans to improve runway safety also face operational and technical challenges. For example, FAA plans to integrate the Airport Surface Detection Equipment—Model X (ASDE-X)⁸ system with Runway Status Lights (RWSL)⁹ to give pilots a visible warning when runways are occupied by other aircraft but has encountered software deficiencies. Consequently, FAA reduced the number of planned RWSL systems from 23 to 17, increased the program costs by approximately \$40 million, and extended completion from 2015 to 2017. Due to problems with signal accuracy and frequency interference, FAA also has halted work on a longstanding recommendation by the National Transportation Safety Board to use ASDE-X with the Automatic Dependent Surveillance-Broadcast system to provide surface alerts for pilots. Until FAA resolves these issues, it will be unable to determine how or when it can pursue efforts that will be key to enhancing pilots' ability to prevent incidents on runways and taxiways.

⁷ FAA's Runway Safety Group tracks all reported runway incursions and categorizes them in terms of severity.

⁸ ASDE-X is a surface surveillance system designed to help maintain safe separation of aircraft and vehicles on the airport surface and aid controllers in avoiding ground collisions.

⁹ RWSL consists of a series of lights that automatically give pilots a visible warning when runways are unsafe to enter, cross, or depart.

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Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *FAA Operational and Programmatic Deficiencies Impede Integration of Runway Safety Technologies*, June 26, 2014
- *Weak Processes Have Led to a Backlog of Flight Standards Certification Applications*, June 12, 2014
- *Further Actions Are Needed To Improve FAA’s Oversight of the Voluntary Disclosure Reporting Program*, April 10, 2014
- *FAA’s Safety Data Analysis and Sharing System Shows Progress, but More Advanced Capabilities and Inspector Access Remain Limited*, December 18, 2013
- *FAA Continues To Face Challenges in Implementing a Risk-Based Approach to Repair Station Oversight*, May 1, 2013
- *FAA’s Progress and Challenges in Advancing Safety Oversight Initiatives*, April 16, 2013
- *FAA’s Efforts To Track and Mitigate Air Traffic Losses of Separation Are Limited by Data Collection and Implementation Challenges*, February 27, 2013

For more information on the issues identified in this chapter, please contact Matthew Hampton, Assistant Inspector General for Aviation Audits, at (202) 366-0500.

Increasing Efforts To Promote Highway, Vehicle, Pipeline, and Hazmat Safety



Source: DOT

The Department plays a key role in improving and overseeing the Nation's surface transportation systems that are critical to efficiently move people and energy resources. Sustained focus on managing oversight data to mitigate safety risks with highways, bridges, and pipelines will be essential to the Department's efforts as well as creating new policies and training programs to fulfill key safety requirements enacted in the Moving Ahead for Progress in the 21st Century Act (MAP-21).¹⁰

Key Challenges

- Strengthening efforts to identify and address vehicle safety defects
- Enhancing actions that promote motor carrier safety
- Maintaining momentum on key bridge and tunnel safety initiatives
- Building on efforts to ensure pipeline and hazardous materials safety

Strengthening Efforts To Identify and Address Vehicle Safety Defects While the National Highway Traffic Safety Administration (NHTSA) is working to better identify and address vehicle safety defects, they remain a significant concern given the numerous related fatalities over the last 10 years. NHTSA's Office of Defects Investigation (ODI) is

¹⁰ Pub. L. No. 112-141 (2012).

charged with collecting and analyzing safety-related defect data and identifying potential defects that may be unknown to vehicle manufacturers. In 2009 and 2010, reports of Toyota vehicles suddenly accelerating out of control brought significant attention to ODI's oversight of vehicle safety. Earlier this year, ODI's oversight was again questioned by the public, media, and Congress when General Motors Corporation reported an ignition switch defect to ODI that could unintentionally shut down the engine or disable power steering, power brakes, and airbags on millions of older model vehicles. Our 2011 report identified weaknesses in ODI's processes for recording, tracking, retaining, and storing information on potential vehicle safety defects. ODI has since implemented most of our recommendations by enhancing complaint tracking, investigative documentation, and staff training. However, ODI has not completed a workforce assessment that is critical to determine the number and skill mix of staff needed to meet its oversight objectives. At the request of the Secretary, we are currently reviewing NHTSA to assess how ODI manages information to identify and act on safety-related vehicle defects and determine its progress in addressing our prior recommendations.

Enhancing Actions That Promote Motor Carrier Safety Between 2011 and 2012, large truck and bus crashes decreased by 7.8 percent; however, associated fatalities were up by 1.8 percent.¹¹ Although the Federal Motor Carrier Safety Administration (FMCSA) has taken actions to remove high-risk carriers from the road, National Transportation Safety Board (NTSB) investigations of accidents continue to identify pre-existing risk factors that should have prompted strong FMCSA and State-level interventions. These risk factors included longstanding, insufficient carrier safety management practices; poor performance by carriers during roadside inspections; and data indicating the carriers posed significant crash risks. As a result, NTSB recommended that DOT conduct audits to determine why FMCSA's investigative practices may be missing certain carrier safety violations, whether its quality assurance mechanisms are sufficient; and whether its focused compliance reviews are effective. In March 2014, FMCSA and the Federal Aviation Administration (FAA) agreed that FAA would conduct a peer review of FMCSA's efforts to meet NTSB's recommendations.

We recently reported that FMCSA made progress toward a more data-driven, risk-based approach to motor carrier oversight, as called for by its Compliance, Safety, and Accountability (CSA) program.¹² However, FMCSA has yet to complete promised actions in key areas, which will make it difficult to effectively implement CSA nationwide. These include improving its processes for reviewing carrier requests to correct data on their operations or violations used to measure carrier performance and developing a plan to implement CSA enforcement interventions in all the States.

Maintaining Momentum on Key Bridge and Tunnel Safety Initiatives The proper inventory and inspection of the Nation's bridges and tunnels continues to be a top safety

¹¹ Latest available data reported by FMCSA as of December 31, 2013.

¹² The CSA program is the enforcement and compliance model FMCSA began using in December 2010 to improve large truck and bus safety. It is designed to measure carriers' safety performance in seven areas and identify poor performers for enforcement action.

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priority. One-fourth of the Nation's more than 600,000 bridges are deficient according to the Federal Highway Administration (FHWA). FHWA needs to maintain momentum on key initiatives in response to our recommendations to implement a data-driven, risk-based approach to overseeing States' efforts to meet National Bridge Inspection Standards (NBIS). For example, a key challenge for FHWA is to ensure that its 52 Division Offices effectively and consistently employ the Agency's metric-based approach to assessing each State's compliance with NBIS. FHWA must also continue to implement MAP-21 bridge requirements to ensure States promptly correct errors in the National Bridge Inventory. At the same time, FHWA is implementing MAP-21 requirements to establish a new national tunnel inspection program and inventory. FHWA plans to issue in fiscal year 2015 new rules on tunnel inspection standards with qualifications, certification procedures, and formal training for tunnel inspectors as well as periodic State inspections and reports on the condition of the Nation's tunnels—similar to the bridge inspection program. Once issued, FHWA will have the additional responsibilities of helping States and tunnel owners to implement the program and annually reviewing States' compliance as mandated by MAP-21.

Building on Efforts To Ensure Pipeline and Hazardous Materials Safety

Transport of hazardous materials (hazmat) requires the Pipeline and Hazardous Material Safety Administration (PHMSA) to have a robust oversight approach to mitigate potential catastrophes given the significant public and environmental impact. In the past 4 years, there were 2,379 pipeline spills and accidents in the United States. In 2011, NTSB reported weaknesses in PHMSA and State oversight of pipeline safety¹³ and included pipeline safety on its Most Wanted List for 2014.¹⁴ Similarly, our recent review of PHMSA's State Pipeline Safety Program—which authorizes States to oversee and enforce operators' compliance with Federal pipeline safety regulations—found a lack of effective management and oversight. For example, PHMSA's guidance to States does not detail how they should consider risk factors when scheduling inspections. PHMSA also did not require reviews to determine whether States have adequate inspection procedures, comply with program evaluation requirements,¹⁵ or audit all grant funds. In response to our recommendations, PHMSA is refining its oversight policies and procedures to ensure States fulfill their role in pipeline safety. Actions include implementing a new training program for PHMSA evaluators who review State safety programs.

PHMSA has also taken action to address weaknesses in its oversight of hazmat safety, although some vulnerabilities remain. Of particular concern is PHMSA's process for regulating applicants seeking special permits to transport hazmat under conditions not specified in Hazardous Materials Regulations. Specifically, PHMSA started developing a new

¹³ NTSB, "Pacific Gas and Electric Company Natural Gas Transmission Pipeline Rupture and Fire San Bruno, California, September 9, 2010," NTSB/PAR-11/01 PB2011-916501.

¹⁴ The Most Wanted List represents the NTSB's advocacy priorities. It is designed to increase awareness of, and support for, the most critical changes needed to reduce transportation accidents and save lives.

¹⁵ PHMSA's program evaluation requirements include States performing all inspections within required timeframes, having the required procedures for all types of inspections, and conducting trend analyses of pipeline operators' annual reports.

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information system in 2010 to improve how it reviews special permit applications. However, PHMSA did not fully implement the system because it lacked a method for accurately identifying applicants who have complex structures (e.g., those with parent-subordinate relationships or doing business under a different name). As a result, PHMSA does not use the system to process applications for new special permits. PHMSA has begun to resolve this issue by acquiring and analyzing more complete data such as companies' parent-subsidary relationships and locations. However, the Agency stated that it needs additional time and funding to fully resolve the issue. The lack of a fully functioning company identifier undermines PHMSA's ability to combine its data with those of other agencies (i.e., FAA, FMCSA, FRA, and U.S. Coast Guard) to develop better risk profiles of special permit applicants and use Agency resources most effectively. Finally, recent increases in the transportation of crude oil by rail will require that PHMSA effectively coordinate with FRA to ensure FRA implements PHMSA's safety regulations as it oversees the safety of hazmat transported by rail.

Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *FHWA Has Not Fully Implemented All MAP-21 Bridge Provisions and Prior OIG Recommendations*, August 26, 2014
- *PHMSA Has Addressed Most Weaknesses We Identified in Its Special Permit and Approval Processes*, July 17, 2014
- *PHMSA's State Pipeline Safety Program Lacks Effective Management and Oversight*, May 7, 2014
- *Identifying and Investigating Vehicle Safety Defects*, April 2, 2014
- *Actions Are Needed To Strengthen FMCSA's Compliance, Safety, Accountability Program*, March 5, 2014
- *Process Improvements Are Needed for Identifying and Addressing Vehicle Safety Defects*, October 6, 2011
- *Letter to Chairmen Rockefeller and Pryor Regarding Whether Former NHTSA Employees Exerted Undue Influence on Safety Defect Investigations*, April 4, 2011

For more information on the issues identified in this chapter, please contact Mitchell Behm or Thomas Yatsco, Assistant Inspectors General for Surface Transportation Audits, at (202) 366-5630.

Improving Oversight, Project Delivery, and System Performance of Surface Transportation Programs



Source: Federal Highway Administration Project Financial Plan

DOT receives over \$50 billion in Federal dollars annually to fund projects to build, repair, and maintain the Nation's surface transportation system and received an additional \$13 billion in 2013 for Hurricane Sandy-related projects. However, the Nation's infrastructure needs continue to outpace financial resources. Accordingly, it is critical that DOT continually improve its stewardship and oversight for highway, rail, and transit projects to maximize Federal dollars. As part of this effort, it must fully implement the Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements to strengthen program oversight, accelerate project delivery and efficiency, and target Federal funds based on performance. At the same time, DOT must continue efforts to oversee grants for establishing a national high-speed rail program.

Key Challenges

- Improving oversight of highway and transit infrastructure programs and expediting project delivery
- Implementing tools to provide effective oversight of emergency relief funds
- Continuing the transition to performance-based infrastructure investments
- Following through on actions to implement FRA's high-speed rail grant program

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Improving Oversight of Highway and Transit Infrastructure Programs and Expediting Project Delivery

MAP-21 provided \$105 billion to the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) for fiscal years 2013 and 2014. Both agencies have efforts underway to improve oversight of this significant Federal investment. A key challenge for FHWA is following through on our recommendations to enhance its Stewardship and Oversight Agreements with States. In response, FHWA has issued new guidance and required its Division Offices to execute new stewardship and oversight agreements with their respective States in 2015. Also, FHWA has begun to implement a national, risk-based stewardship and oversight framework. This framework utilizes a risk assessment to identify areas that require enhanced review and is intended to allow for a more data-driven, consistent approach to project-level involvement to provide an appropriate level of oversight. National review personnel perform quality assurance and check program consistency and implementation across 52 Division Offices. FHWA has begun revising its 52 stewardship and oversight agreements with States and implementing the risk-based stewardship and oversight framework. While FHWA has made significant progress, it will need to institutionalize the framework it has developed across the Division Offices.

FTA is also working to address our prior recommendations to improve its grant oversight processes. Specifically, FTA must ensure that its contractors and regional offices are effectively identifying, tracking, and following up on grantee deficiencies identified in financial management reviews. In addition, FTA has a large portfolio of major transit projects across the country. FTA's challenge is to effectively use its oversight contractors to proactively assess these projects' cost, schedule, and financial risks. FTA must also direct its resources at monitoring grantees to ensure they take timely and effective actions to address identified risks, address areas of potential stakeholder disagreements, and enforce applicable third-party agreements.

MAP-21 included key directives to the Department (known as Subtitle C) to promote reforms to accelerate the delivery of surface transportation projects. The Department has developed a plan with 42 actions to implement all required sections of Subtitle C—most of which address environmental issues that occur during the planning and design phase of highway and transit projects. The Department has experienced some delays in issuing key rulemakings and guidance because it can take considerable time to complete the rulemaking process and coordinate with other Federal agencies. However, we found that the Department did not assign estimated completion dates to a number of planned actions including final rulemakings, making it difficult to gauge progress. Sustained management attention by the Department is critical to ensure the timely completion of planned actions and successful implementation of MAP-21.

Implementing Tools To Provide Effective Oversight of Emergency Relief Funds

In late 2012, Hurricane Sandy substantially damaged transit infrastructure in the mid-Atlantic and northeastern United States. To assist State and local agencies in their recovery and resiliency efforts, DOT received approximately \$13 billion in relief funds—\$10 billion of

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which was allocated to FTA.¹⁶ Our review of FTA's initial response and oversight of its newly established Emergency Relief Program (ERP) found that FTA had not fully carried out its oversight plan, such as grantee and project risk assessments. FTA will also need to work with grantees to establish measures to mitigate identified risks and ensure that grantees who receive Sandy-related insurance proceeds do not receive duplicate reimbursements from FTA for their losses. FTA recently issued the Final Rule for its ERP. Our 2013 report noted a number of lessons learned from Federal emergency responses and best practices for Federal recipients' acquisitions that FTA can incorporate into this program to effectively address future Federal emergency relief efforts involving public transportation. These include mitigating the risk of overpayment for some services in emergencies, establishing timeframes to limit requests for emergency relief funds after events occur, setting a minimum amount for providing emergency relief funds, and reviewing a sample of emergency grantee acquisitions.

Continuing the Transition to Performance-Based Infrastructure Investments

MAP-21 required DOT to implement performance-based investment management of its highway and transit programs through several key actions, which are currently underway. These include establishing new rules, performance standards, and modifications to oversight systems. In particular, DOT must fully implement performance measures that incorporate the Department's national goals: safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. This transition may take some time for the Department to fully implement given the number of multi-faceted actions required across several DOT agencies. For example, FHWA has yet to finalize related rulemakings on States' use of asset and performance management, which are behind schedule and may delay States' ability to meet MAP-21's key performance and accountability requirements.

Following Through on Actions To Implement FRA's High-Speed Rail Grant Program

The Passenger Rail Investment and Improvement (PRIIA) Act of 2008¹⁷ gave the Federal Railroad Administration (FRA) critical new responsibilities—including establishing major grant programs to fund high-speed rail projects and integrating rail planning for the entire country. Six years later, the Agency has disbursed approximately \$2.5 billion of the over \$10 billion Congress appropriated for the High Speed Intercity Passenger Rail (HSIPR) grant program.¹⁸ Balancing oversight of its existing HSIPR grant portfolio as the Agency continues to create, develop, and refine its approach to managing and overseeing that portfolio will likely be a challenge for FRA over the next several years. At the same time, FRA's national rail planning efforts remain incomplete. While it undertook several rail planning activities, FRA has not fully articulated a national rail plan. According to FRA officials, the Agency's strategy was developed in response to the challenges of competing stakeholder expectations and limited Federal funding. Until FRA finalizes this strategic

¹⁶ In response to the storm, Congress passed, and the President signed into law, the Disaster Relief Appropriations Act, Pub. L. No. 113-2, in January 2013.

¹⁷ Pub. L. No. 110-432 Div. B.

¹⁸ \$8 billion of which was appropriated by the American Recovery and Reinvestment Act of 2009 (ARRA). FRA has obligated nearly all of the \$10.1 billion in grant funding.

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framework, it will be difficult to make effective decisions on stakeholders' roles and the funding, structure, implementation, and performance measurement of its infrastructure development program.

Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *FHWA Has Not Fully Implemented All MAP-21 Bridge Provisions and Prior OIG Recommendations*, August 21, 2014
- *FHWA's Workforce Planning Processes Generally Align With Best Practices, but Some Components Are Inconsistently Implemented or Lack MAP-21 Consideration*, June 19, 2014
- *Initial Assessment of FTA's Oversight of the Emergency Relief Program and Hurricane Sandy Relief Funds*, December 3, 2013
- *Status of DOT's Actions To Address Subtitle C of the Moving Ahead for Progress in the 21st Century Act*, September 18, 2013
- *FHWA Is Monitoring Unexpended Recovery Act Highway Funds, but Some Funds May Remain Unused*, September 4, 2013
- *Letter to Congress on the Status of MAP-21, Subtitle C: Acceleration of Project Delivery*, May 22, 2013
- *Lessons Learned From ARRA Could Improve the Federal Highway Administration's Use of Full Oversight*, May 7, 2013
- *DOT Has Opportunities To Address Key Risk Areas for Phase 2 of the Dulles Corridor Metrorail Project Upon Approval of Federal Financing*, March 20, 2013
- *FHWA Has Opportunities To Improve Oversight of ARRA High Dollar Projects and the Federal-Aid Highway Program*, November 14, 2012
- *Improvements Needed in the FTA's Grant Oversight Program*, August 2, 2012

For more information on the issues identified in this chapter, please contact Thomas Yatsco, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630.

Leveraging Existing Funding Mechanisms To Finance Surface Transportation Projects in a Challenging Fiscal Environment



Source: Federal Highway Administration

Governments at all levels in the United States are finding it difficult to keep pace with the demand for transportation investment. In 2013, the Federal Highway Administration (FHWA) identified the need for average annual capital investment of up to \$86 billion to maintain and up to \$146 billion to improve highway and bridge infrastructure.¹⁹ DOT's primary Federal tool for channeling investment—the Highway Trust Fund (HTF)—devotes about \$50 billion annually to highway and transit projects and has needed short-term cash infusions to stay solvent in recent years. The Department also has credit programs that can leverage private investment and help fund projects that are not supported by dedicated sources. However, process inefficiencies and challenges with managing program expansion may prevent these programs from reaching their full potential.

Key Challenges

- Ensuring the long-term solvency of the Highway Trust Fund
- Leveraging DOT credit programs to help meet demand for financing future projects

Ensuring the Long-Term Solvency of the Highway Trust Fund Historically, cash receipts into HTF have exceeded its expenditures, leading to a surplus that peaked at \$31.1 billion at the end of fiscal year 2000. However, legislation enacted in 1998 and subsequent years significantly increased HTF expenditures, while high fuel prices, increased use of fuel-efficient cars, and a lagging economy caused HTF cash receipts to decline and its cash balance to deteriorate. Since 2008, Congress has executed a number of short-term

¹⁹ 2013 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance Report.

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cash infusions from the U.S. Treasury general fund to prevent shortfalls—including \$11 billion earlier this year to keep the fund solvent through May 2015. Any short-term disruptions in HTF’s reimbursements could have severe economic consequences, possibly causing States to suspend billions of dollars in highway projects and transit agencies to scale back or suspend public transportation services. The Department continues to face challenges in obtaining agreement among congressional and other stakeholders on the combination of reduced spending levels and alternative funding mechanisms—such as a fee for vehicle miles travelled or an increased Federal excise tax, which would bring HTF spending and revenues into balance for the long term.

Leveraging DOT Credit Programs To Help Meet Demand for Financing Future Projects DOT’s credit programs, such as the RRIF (Railroad Rehabilitation and Improvement Financing) and TIFIA (Transportation Infrastructure Finance and Innovation Act), can help the Department reduce the funding gap for surface transportation projects. However, the Department has yet to address management and process challenges in reaching these programs’ full potential.

RRIF, administered by the Federal Railroad Administration (FRA), provides loans and loan guarantees for rail infrastructure projects. RRIF allows applicants to borrow up to 100 percent of a project for up to 35 years at interest rates equal to the Federal Government’s cost of borrowing. However, as we recently reported, program participation has not met expectations, with only 33 RRIF loans issued to date totaling roughly \$1.7 billion—less than 5 percent of the program’s authorized \$35 billion spending limit. Limited participation has been due to insufficient guidance on the RRIF application process, lengthy application processing times, and costs incurred by applicants to apply for RRIF loans. Based on our work, FRA is developing new guidance and a revised application process but needs to follow through to ensure these changes are implemented effectively.

TIFIA, administered by the Federal Highway Administration (FHWA), uses innovative financing mechanisms to provide loans, loan guarantees, and lines of credit to support multimodal surface transportation projects, making them more appealing to private investors. As a result, each Federal dollar can provide up to \$30 in infrastructure development. In response to heavy demand, Congress increased TIFIA’s annual appropriation from \$122 million in fiscal year 2012 to \$1 billion in fiscal year 2014 and modified the program to provide increased funding for eligible projects.²⁰ As a result, FHWA will need to maintain TIFIA’s high level of performance while implementing new changes, such as increased program size, a revised application process, and modified program requirements.

²⁰ Congress increased this funding through the Moving Ahead for Progress in the 21st Century Act (MAP-21), Pub. L. No. 112-141.

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Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *Process Inefficiencies and Costs Discourage Participation in FRA's RRIF Program*, June 10, 2014
- *Letter to Senate Budget Committee Ranking Member Gregg Regarding DOT's Projections of Highway Trust Fund Solvency*, June 24, 2009
- *Financial Analysis of Transportation-Related Public Private Partnerships*, July 28, 2011
- *Growth in Highway Construction and Maintenance Costs*, September 26, 2007
- *Report on Highway Administration's 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, Assistant Inspector General for Surface Transportation Audits, at (202) 366-9970.

Managing Acquisitions and Grants To Maximize Performance and Save Federal Funds



Source: DOT

DOT spent over \$61 billion on contracts and grants in fiscal year 2013.²¹ The President and Office of Management and Budget (OMB) have tasked the Federal Government to develop smarter acquisition processes and contracts that deliver the best value, especially given current fiscal constraints. Our work continues to find areas where the Department can more diligently manage resources and enhance oversight of contracts and grants to help prevent fraud, waste, and abuse of taxpayer funds.²²

Key Challenges

- Improving acquisition practices for management support services
- Strengthening contract and grant management and oversight of departmental programs
- Enhancing oversight of grant recipient contracting practices

Improving Acquisition Practices for Management Support Services DOT awards more than \$1 billion annually for management support services contracts in areas such as automated information systems, engineering, and technical services. Our work has identified management weaknesses in various DOT acquisition practices when obtaining support services through its award of contracts and grants.

- **Improving Management of the Air Traffic Control Optimum Training Solution (ATCOTS) Training Support Contract.** The Federal Aviation Administration (FAA) awarded the ATCOTS contract in 2008 to help train about 11,700 new air traffic

²¹ DOT's complete fiscal year 2014 data were not available at the time of this report.

²² In addition to our audit work, in fiscal year 2013, contract and grant fraud represented 46 percent of our investigative caseload and resulted in over \$31 million in recoveries.

controllers over 10 years. FAA extended the contract in 2012—despite the program’s \$89 million in cost overruns for the first 4 years of the contract and failure to achieve key contract goals to reduce controller training times and costs and produce training innovations. Since 2010 we have identified critical management weaknesses with the contract that impede FAA’s ability to meet these goals. In recent testimony before the Senate Subcommittee on Financial and Contracting Oversight, we highlighted (1) lack of clearly defined training requirements, (2) insufficient contract funding for training innovations, (3) ineffective cost incentives and award fees, and (4) inadequate contract oversight and ineffective communication with contract oversight staff. FAA agreed to address these areas in response to our December 2013 report, and we will continue to monitor its progress.

- **Reducing Spending on Management Support Services Contracts.** In 2014, we reported that DOT did not meet OMB’s goal for agencies to reduce spending on management support services contracts by 15 percent by the end of fiscal year 2012.²³ Instead, DOT’s annual spending on management support services contracts increased by 17 percent. Over half of these involve high-risk contract types, such as time-and-materials and cost-reimbursement contracts. While DOT launched a strategic sourcing initiative to accomplish this goal, it did not develop an implementation plan, assign responsibilities for meeting spending targets, or implement OMB’s suggested internal controls for overseeing obligations. The Department agreed with our recommendations to develop a policy and plan to reduce the number of management support service contracts and institute internal controls to better manage them, but efforts on planned actions have already been delayed.

Strengthening Contract and Grant Management and Oversight of Departmental Programs DOT’s contract and grant programs play a critical role in maximizing resources, promoting efficient operations, and achieving DOT’s missions. Yet, our work has found key areas where the Department can improve its management and accountability.

- **Improving DOT’s Suspension and Debarment (S&D) Program.** Despite DOT’s efforts to address our 2010 audit findings and recommendations with its S&D program, our 2014 report found continuing management weaknesses with program oversight, controls, and implementation. These include a lack of comprehensive oversight procedures and unreliable S&D data. Such weaknesses allow DOT Operating Administrations to exceed required timeframes for initiating S&D decisions and reporting to the Governmentwide System for Award Management.²⁴ This condition puts the Federal Government at greater risk of doing business with prohibited, unethical parties.

²³ The 15-percent decrease is measured based on fiscal year 2010 spending levels to the end of fiscal year 2012.

²⁴ The System for Award Management (SAM) is the Governmentwide S&D system, formerly the Excluded Parties List System, managed by the General Services Administration. All Federal agencies are required to report their excluded parties in SAM, with the intent of preventing excluded parties from receiving Federal awards, certain subcontracts, or certain types of Federal assistance and benefits across the Government.

- **Evaluating Bid Prices for the Federal Highway Administration’s (FHWA) Federal Lands Highway (FLH) Contracts.** In 2014 we reported that FLH is not thoroughly evaluating bids to ensure FHWA receives fair and reasonable prices in its fixed price road contracts. FHWA has established sealed bid contracting guidance under its Federal-aid Highway Program, but it has not done so for its FLH program. Such guidance is critical to providing thorough and consistent evaluations of bid prices and ensuring FLH gets the best possible prices on its sizeable fixed price contract awards, which totaled \$305 million between October 2012 and September 2013.

Enhancing Oversight of Grant Recipient Contracting Practices Grants represented over \$55 billion of DOT’s \$61 billion in contract and grant spending in fiscal year 2013. However, due to weaknesses in Department oversight, recipients do not always comply with Federal grant requirements or have adequate financial controls in place to account for DOT funds. Improving DOT’s recipient oversight is critical to help ensure proper stewardship of taxpayer dollars.

- **Enhancing Grants Management in the Metropolitan Washington Airport Authority (MWAA).** In January 2014, we reported weaknesses in MWAA’s management of \$975 million in FTA grant funds for Phase 1 of the Dulles Rail project, resulting in unsupported and unallowable costs being claimed. For example, although FTA grant regulations require recipients to document costs claimed for reimbursement, we found that MWAA’s processes do not adequately document these costs, and FTA does not verify grant recipients’ support for them on a regular basis. Given that \$251 million in Federal funds remain available for disbursement as of September 2014, FTA must scrutinize MWAA’s use of Federal grants and ensure MWAA improves its financial management controls.
- **Improving DOT’s Oversight of the Disadvantaged Business Enterprise (DBE) Program.** In 2012, Congress directed us to review new DBE participation at the Nation’s largest airports. In June 2014, we reported that new DBEs that received contracts and leases in fiscal year 2012 represented just 5 percent of the 1,600 DBEs doing business at the 64 largest airports. Yet, in verifying the data supporting these statistics, we found errors in over one-third of DBE reports that these airports submit annually to FAA. For example, the San Francisco airport did not report about \$57 million in rental car revenue, and the Portland airport over-reported concessions revenue by about \$5 million. These errors are due in part to shortfalls in the Agency’s data collection system, verification process, and oversight resources—all of which limit FAA’s ability to evaluate the effectiveness of the airports’ DBE/ACDBE programs. For instance, FAA has only eight full-time staff assigned to oversee the entire national airport DBE program. Our April 2013 report also highlighted a number of weaknesses in the Department’s management and oversight of its DBE program, including inadequate oversight of recipients’ program implementation as well as the accuracy of their annual DBE awards and payments data.

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Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *DOT Suspension and Debarment Program Continues To Have Insufficient Controls*, October 15, 2014
- *FHWA's Federal Lands Highway Program Lacks Adequate Processes for Thoroughly Evaluating Contract Bid Prices*, October 9, 2014
- *New Disadvantaged Business Enterprise Firms Face Barriers to Obtaining Work at the Nation's Largest Airports*, June 12, 2014
- *MWAA's Financial Management Controls Are Not Sufficient To Ensure Eligibility of Expenses on FTA's Dulles Rail Project Grant*, January 16, 2014
- *DOT's Efforts To Reduce Spending on Management Support Services Contracts Have Been Delayed*, January 15, 2014
- *The Success of FAA's Air Traffic Controller Optimum Training Solution Relies on Sound Contracting and Program Management Practices*, January 14, 2014
- *FAA Needs To Improve ATCOTS Contract Management To Achieve Its Air Traffic Controller Training Goals*, December 18, 2013
- *Weaknesses in the Department's Disadvantaged Business Enterprise Program Limit Achievement of Its Objectives*, April 23, 2013

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

Securing Information Technology Resources



Source: National Institute of Standards and Technology

DOT uses 454 information systems to operate some of the Nation's most critical transportation systems. However, for the past 4 years, DOT has reported a material weakness in its information security program, which increases the risks of cybercrime, system failures, and unreliable data. To fend off cyber attacks while keeping needed data available and accurate, DOT is working to implement a number of related Presidential priorities²⁵ and initiatives.²⁶ However, longstanding cyber security weaknesses and challenges with integrating and coordinating shared security controls could hinder DOT in meeting its IT security goals.

Key Challenges

- Implementing Presidential priorities and initiatives
- Resolving longstanding security vulnerabilities
- Integrating and coordinating shared security controls

²⁵ According to the Department of Homeland Security's guidance for conducting Federal Information Security Management Act (FISMA) work, these priorities include metrics for personal identity verification (PIV) cards and continuous monitoring of security controls.

²⁶ The Office of Management and Budget identifies cloud computing as a Government-wide initiative.

Implementing Presidential Priorities and Initiatives To address the wide range of persistent cyber security threats, the Administration established priorities and initiatives in a number of key areas:

- **Personal Identification Verification (PIV) Cards.** In 2013, we reported that DOT did not meet the Office of Management and Budget’s (OMB) deadline requiring that all Federal personnel use PIV cards to log on to Agency computers by 2012. Although DOT reports that over 97 percent of its system users have cards, they can use the PIV card to log on to only 13 percent of its systems. In addition, DOT has not adapted all its facilities to accept PIV cards for physical access. For example, the Federal Aviation Administration will not complete upgrades needed to use PIV cards to enter its facilities until fiscal year 2018. As a result of this limited PIV use, it is difficult for DOT to ensure that only authorized personnel can access its information, systems, and facilities.
- **Continuous Monitoring.** The Administration’s commitment to implement continuous monitoring challenges DOT to develop dynamic, ongoing processes that provide near real-time security information to senior leaders. OMB requires all Federal agencies to fully implement continuous monitoring²⁷ by 2017. However, DOT’s continuous monitoring procedures are insufficient to ensure that all of its Operating Administrations comply with them. As a result, most DOT agencies still lack a comprehensive continuous monitoring program—which reduces their ability to identify and quickly respond to system security threats on an ongoing basis.
- **Cloud Computing.** In December 2010, OMB issued a “cloud first” policy that requires agencies to implement cloud-based solutions whenever a secure, reliable, and cost-effective option exists.²⁸ However, DOT does not have a reliable inventory of cloud-based systems, and Operating Administrations that use clouds cannot demonstrate compliance with OMB security requirements. As a result, DOT cannot ensure that it is using cloud computing in a secure manner.

Resolving Longstanding Security Vulnerabilities For several years, the Department has lacked effective processes to promptly address security weaknesses. OMB requires agencies to develop a plan of action and milestones (POA&M) to track and prioritize system weaknesses and remediation. While DOT issued POA&M policy and guidance, its agencies are still not adequately reporting, managing, and monitoring them in a timely manner, in part because DOT does not enforce this policy. In 2013, we reported that DOT’s Operating Administrations have a backlog of more than 6,700 open POA&Ms, an increase of almost 28 percent from the prior year, with some dating back to 2005. In addition, Operating Administrations were not recording all security weaknesses in the central repository that

²⁷ Implementing continuous monitoring requires that Agency security controls and organizational risks are assessed and analyzed at a frequency sufficient to support risk-based security decisions to adequately protect organization information.

²⁸ Cloud computing provides on-demand access to a shared pool of computing resources; can be provisioned on a scalable basis; and reportedly has the potential to deliver services faster, more efficiently, and at a lower cost than custom-developed systems.

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the Department uses for tracking and remediation. Unresolved POA&Ms make it difficult for DOT to ensure systems are adequately secured and protected from further compromise.

In addition, DOT has not fully addressed weaknesses related to protecting the privacy of personally identifiable information (PII). DOT has 167 systems that contain PII, including social security numbers. DOT has made progress toward its plan to reduce the amount of PII collected and stored in its systems. However, our 2014 report identified a number of longstanding, unresolved weaknesses with DOT's privacy protection policies, the processes used to complete privacy impact assessments, and technological security controls to safeguard PII confidentiality.

Integrating and Coordinating Shared Security Controls The high degree of interconnectivity between DOT systems demands increased and more efficient security through the use of common system security controls (i.e., controls that exist in one system that can be used to protect other systems). For example, many DOT systems rely on controls provided by the Common Operating Environment. If these controls change or fail, the systems that rely on them may also be placed at risk. Our work has determined that DOT did not coordinate use of common controls within its systems or Operating Administrations to mitigate this risk and that DOT users of common controls did not verify their functionality when assessing system security. As a result, some Operating Administrations may be relying on common controls that have changed over time and are no longer adequate to protect their systems.

CHAPTER 7

Related Products The following related documents can be found on the OIG Web site at <http://www.oig.dot.gov>.

- *Quality Control Review for the Audit of DOT Protection of Privacy Information*, June 5, 2014
- *Quality Control Review of Audited Consolidated Financial Statements for Fiscal Years 2013 and 2012*, Department of Transportation, December 16, 2013
- *FISMA 2013: DOT Has Made Progress, but Its Systems Remain Vulnerable to Significant Security Threats*, November 22, 2013
- *Security Weaknesses in DOT's Common Operating Environment Expose Its Systems and Data to Compromise*, September 10, 2013
- *Quality Control Review of Audited Consolidated Financial Statements for Fiscal Years 2012 and 2011*, Department of Transportation, November 15, 2012
- *FISMA 2012: Ongoing Weaknesses Impede DOT's Progress Toward Effective Information Security*, November 14, 2012
- *Quality Control Review of Audited Consolidated Financial Statements for Fiscal Years 2011 and 2010*, Department of Transportation, November 15, 2011
- *FISMA 2011: Persistent Weaknesses in DOT's Controls Challenge the Protection and Security of Its Information Systems*, November 14, 2011
- *Quality Control Review of Audited Consolidated Financial Statements for Fiscal Years 2010 and 2009*, Department of Transportation, November 15, 2010
- *FISMA 2010: Timely Actions Needed To Improve DOT's Cybersecurity*, November 15, 2010

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

EXHIBIT

Comparison of Fiscal Years 2015 and 2014 Top Management Challenges

Fiscal Year 2015 Challenges	Fiscal Year 2014 Challenges
<ul style="list-style-type: none">• Modernizing the National Airspace System and Addressing Organizational Challenges	<ul style="list-style-type: none">• Identifying and Addressing Root Causes of Problems With NextGen and Setting Investment Priorities
<ul style="list-style-type: none">• Enhancing Safety and Oversight of a Diverse and Dynamic U.S. Aviation Industry	<ul style="list-style-type: none">• Improving FAA’s Oversight of the Aviation Industry and the Operations of the National Airspace System
<ul style="list-style-type: none">• Increasing Efforts To Promote Highway, Vehicle, Pipeline, and Hazmat Safety	<ul style="list-style-type: none">• Continuing Actions To Strengthen Highway, Transit, and Pipeline Safety
<ul style="list-style-type: none">• Improving Oversight, Project Delivery, and System Performance of Surface Transportation Programs	<ul style="list-style-type: none">• Improving Oversight of Surface Infrastructure Investments and Implementing Statutory Requirements
<ul style="list-style-type: none">• Leveraging Existing Funding Mechanisms To Finance Surface Transportation Projects in a Challenging Fiscal Environment	
<ul style="list-style-type: none">• Managing Acquisitions and Grants To Maximize Performance and Save Federal Funds	<ul style="list-style-type: none">• Managing Acquisitions and Contracts To Achieve Results and Save Taxpayer Dollars
<ul style="list-style-type: none">• Securing Information Technology Resources	<ul style="list-style-type: none">• Building a Secure and Modern Information Technology Infrastructure
	<ul style="list-style-type: none">• Implementing Requirements To Address the Federal Railroad Administration’s Expanded and Traditional Responsibilities

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

Memorandum

Subject: ACTION: Management Position on Office of Inspector General Report on Top Management Challenges 2015

From:  Sylvia I. Garcia
Chief Financial Officer and Assistant Secretary for Budget and Programs

To: Calvin L. Scovel III
Inspector General

The Department is actively engaged in all the issues discussed in the Office of Inspector General (OIG) Management Challenges report, and continues to make significant progress in achieving ever higher levels of safety in the air and on the ground. While maintaining safety as our top priority, the Department continuously utilizes its statutory authority to ensure that it serves as a prudent and effective steward of taxpayer dollars. Our information systems continue to address contemporary cybersecurity challenges, and our acquisition systems are being refined to produce significant savings and better ensure that each and every dollar is spent prudently. In addition, the Department maintains a comprehensive situational awareness of transportation issues through its daily interactions with transportation industry experts and its partners at state and local transportation authorities across the nation.

While the OIG management challenges report continues to enumerate issues identified over the last few years, it does not discuss the extensive actions the Department has taken and the significant tangible results achieved. The following sections offer highlights of accomplishments in these areas that have made a significant contribution to the well-being of the travelling public.

Surface Transportation Systems Continue to Grow Safer

The Department's actions continue to support the positive long-term trends that provide enhanced safety across all transportation modes.

The Nation's highways have grown safer. In 1995, 41,796 people lost their lives on the nation's highways. By 2013, this number had been cut to 33,561, **a reduction of 20 percent**. While each and every fatality is one too many, this reduction occurred amidst significant increases in risk exposure from factors including increased: vehicle miles traveled; motorcycle use including people riding without sufficient protective gear; and distractions presented by rapidly emerging new technologies.

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The long-term trends demonstrate that the Department's efforts to improve safety have been successful, including those intended to increase seat belt use, improve roadway infrastructure and markings, and prevent impaired driving. For example, the use of seat belts has increased **tremendously to 87 percent in 2013** from only 60 percent of vehicle occupants in 1995, thanks to NHTSA's unflagging efforts. Safer vehicles have also been introduced pursuant to statutory and regulatory requirements. To illustrate, the increasing market penetration of vehicles with stability control systems is estimated to have saved 2,200 lives between 2008 and 2010.

Under PHMSA's oversight, state pipeline safety programs have reduced the rate of serious pipeline incidents for gas distribution pipelines by approximately two-thirds over the last 30 years. The total number of serious incidents on distribution pipelines in calendar years 2012 and 2013 were 24 and 21, respectively, **which were the lowest number of serious incidents on record for the past 30 years.**

Finally, the Department has been proactive in addressing new risk factors, proposing regulations with enhanced safety requirements for the increasing carriage of flammable liquids, including crude oil from the Bakken that contains higher levels of dissolved natural gas. These regulations are on the "fast track" to provide the American people greatly enhanced levels of safety.

US Commercial Aviation Remains the Safest in the World

The FAA continues to maintain an aviation safety record that is the model for the world. **In 2012, over 790 million persons traveled on board US commercial carriers with zero fatalities.** Tentative data for 2013 also indicate *zero* fatalities for passengers on US commercial air carriers. These exemplary statistics are the result of FAA identifying and taking proactive actions to address known and suspected system hazards that contribute to accidents. FAA continues its efforts to address risk factors and further improve aviation safety. For example, **FAA has achieved a 57 percent reduction in significant runway incursion incidents over the last decade.**

FAA Completing Major Modernization Elements and Providing NextGen Benefits

FAA completed deployment of ground station infrastructure for the Automatic Dependent Surveillance-Broadcast (ADS-B) system, which provides the critical link between satellites and aircraft. Having completed the design, testing, installation and implementation of the system with about 700 facilities, FAA has already begun delivering the benefits of the system in locations across the country.

FAA will also complete the En-Route Automation Modernization (ERAM) system at all en-route Air Traffic Control centers by the spring of 2015. This system provides FAA with a contemporary IT backbone to manage the deluge of data that will be required for full NextGen implementation. ERAM provides the capability to handle increased air traffic in an environment that will provide airlines with more efficient routes, saving fuel, reducing emissions, and potentially enhancing system capacity.

FAA and the NextGen Advisory Committee have also reached agreement on near term NextGen priorities, and delivered a joint implementation plan to Congress on October 17,

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2014. This significant accomplishment, documents FAA's agreement with the aviation industry and provides a detailed implementation plan that will guide deployment of NextGen ATC systems over the next 3 years.

NextGen is already producing benefits. For example, in May 2014, the FAA's Houston Metroplex site went live. Airspace users can now benefit from 61 new satellite-based procedures in the Houston area. These procedures include Optimized Profile Descents, which allow pilots to reduce fuel use while the aircraft descends at a constant rate. In Atlanta, FAA implemented the new standards in June of this year. After 90 days, Delta Airlines is reporting a 2.3 minute reduction in taxi out times and a 14 to 24 percent reduction in departure queue delays. On the arrival side, Delta is also benefiting from each aircraft spending two minutes less in the TRACON airspace. These efficiencies are reducing fuel use and emissions. Last year, FAA started using new wake separation standards in Louisville, and UPS is saving 52,000 pounds of fuel per night on arrivals. The same procedures in Memphis increased airport capacity by more than 20 percent.

Highway Trust Fund Solvency Depends on Congressional Action

The solvency of the Nation's highway trust fund requires that Congress pass legislation to provide a sufficient and stable source of funding commensurate with the infrastructure needs of our nation's transportation system. In FY 2014, Secretary Foxx and his leadership team have been at the forefront in calling for long-term action to address the continuing shortfalls in the Highway Trust Fund. The insolvency of the Highway Trust Fund -- and its potential to negatively impact our economy - is not a new issue for our Nation. For the last seven years, the Highway Trust Fund has come perilously close to insolvency several times. In each case, Congress provided additional resources which addressed short-term issues but did not offer a long-term solution.

Recognizing this issue as a major transportation concern, **Secretary Foxx made the solvency of the Highway Trust Fund one of his top priorities in FY 2014.** He convened the senior leadership teams from the surface transportation operating administrations to develop a surface transportation reauthorization plan that would address improvements in program delivery while at the same time providing a long-term funding solution for the Highway Trust Fund. After many months of work, on April 29, 2014 the Department formally submitted to the Congress the "Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America" – or "GROW AMERICA Act. The "GROW AMERICA" proposal represents a robust \$302 billion surface transportation reauthorization plan that will guide the country's surface transportation programs over a four-year period. Secretary Foxx has continued his efforts in providing assistance in encouraging action on the GROW AMERICA Act.

New Procurement Systems Enhance Oversight and Produce Savings

To further enhance oversight of high risk acquisitions, the Office of the Senior Procurement Executive (OSPE) established and conducted 10 Acquisition Strategy Review Board (ASRB) reviews during FY 14. These reviews are a collaborative effort between the OSPE and the Assistant Secretary for Administration, the Office of the Chief Financial Officer, and the Office of the Chief Information Officer and has focused efforts to: (1) minimize the use of

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high-risk contracts; (2) enhance contract planning and competition; (3) initiate active involvement of Program and Project Managers with the requisite certification levels; (4) ensure clearly articulated consideration for small business opportunities; and (5) intensify awareness of “sourcing opportunities,” which offer the potential for enhanced productivity and reduced costs.

Overall, the Department’s efforts have strengthened contract and grant management and provided enhanced oversight, producing tangible results. For example, the Department is one of only 3 Federal agencies to achieve an A+ rating from the Small Business Administration for meeting/exceeding our small business goals in every category in fiscal year 2013. The use of competitively awarded contracts has increased, accounting for 83 percent of awards in 2013, compared to 71 percent in 2009. **The Department also saved more than \$60 million in FY13/FY14 through strategic sourcing of services and commodities.**

DOT Strengthens Cybersecurity Capability to Address Major Challenges

The DOT Chief Information Officer has made significant progress improving cybersecurity during this past year, both in deploying and enhancing capabilities required by the Administration’s Cross-Agency Priority (CAP) Goals for Cybersecurity, and implementing specific enhancements to the Department’s own systems. The Department’s cybersecurity efforts must continuously address the massive efforts by hackers using increasingly sophisticated and dangerous methods to disrupt the Department’s and the Federal Government’s information technology (IT) infrastructure. Despite the scale of the threat, **the Department’s Chief Information Security Office continues to successfully maintain full operational capability for the Department’s information technology infrastructure.**

Key actions taken this year include:

- Effective response to multiple Federal cyber incidents, breaches, and risks, and implementation of effective remediation measures;
- Successful implementation of the Continuous Diagnostics and Mitigation (CDM) component of the DOT Information Security Continuous Monitoring (ISCM) program through participation in the Federal CDM initiative led by the Department of Homeland Security;
- Enhanced capabilities for vulnerability assessment, identification and management leveraging the DHS cyber hygiene services; and
- Implementation and regular, coordinated exercise of the DOT Cyber Incident Response Plan.

Personal Identification Verification (PIV) Card Use Grows Exponentially

PIV use for mandatory access of network accounts has tripled over the course of FY14, with **100 percent of logical access for qualified accounts outside FAA now requiring the use of PIV authentication.** Once in the network, after the initial PIV access has been granted, the number of DOT Systems that support PIV authentication has nearly quadrupled to 117 systems over the course of the year, while the other systems still benefit from additional password authentication.

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In addition, during the course of FY 14, the Department instituted a standardized waiver process to ensure business and mission continuity and support in situations where PIV card usage cannot currently be made mandatory for technical reasons. The Department recognizes that the use of a DOT PIV card to access a DOT network is a first-line defensive measure. However, it has not always been clear in OIG reporting that even those systems not yet specifically PIV enabled, require additional verification factors, such as a password, after being initially accessed through the DOT PIV enabled network, providing multiple layers of authentication and protection.

DOT Nears Full Implementation of Continuous Monitoring

During FY 2014, **the Department doubled its continuous monitoring of IT systems, now covering 95 percent of required assets**, and has continued to make significant strides. During the year, DOT submitted an Information Security Continuous Monitoring Strategy and Plan that was accepted by OMB and DHS. It also signed a memorandum of agreement with DHS for participation in the Federal Continuous Diagnostics and Mitigation (CDM) program, and has been an active participant in program activities. Further, all but three DOT components (75% of the agency) have documented Component-level Continuous Monitoring strategies and plans, and are in the process of implementation. All DOT Components are using the Continuous Monitoring guidance issued by the DOT Chief Information Security Officer.

DOT Carefully Tracks and Prioritizes Action on Cybersecurity Issues

While the Department is tracking over 5000 security issues over its IT portfolio, during the fiscal year, it reduced the number of weaknesses by 22 percent. Fully sixty percent of the pending issues are considered low or very low in terms of criticality, implying they are minor documentation or process issues and not significant deficiencies. Less than 4 percent of the pending issues are considered high priority issues, and actions have been scheduled to address them based on the availability of necessary resources. Finally, based on the CIO's analyses, actions to remediate cyber issues have been timely. Fully 94 percent of the issues in the tracking system have been entered into the tracking system within the past 24 months, and no open issue has been in the system in excess of 5 years.

This impressive list of achievements has been accomplished despite severe resource challenges facing the Department's lead office for cyber security. Up until this year, this office functioned with only 3 full time employees. Several additional resources have been added during the course of the year and the CIO continues its efforts to secure additional resources that will be critical to ensuring sufficient cyber security for the Department.