Office of Inspector General

TOP MANAGEMENT CHALLENGES FOR FISCAL YEAR 2014

Department of Transportation

Report Number: PT-2014-009
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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 2014 Top Management Challenges Department of Transportation Report Number PT-2014-009

Date: December 16, 2013

From: Calvin L. Scovel III
Inspector General

Reply to Attn. of: J-1

To: The Secretary
Deputy Secretary

A safe and well-managed transportation system is key for the U.S. economy and the quality of life for the traveling public. The Department of Transportation (DOT) provides over $70 billion annually to fund a wide range of programs. Consequently, it is critical for the Department to provide rigorous stewardship of taxpayer funds while carrying out its mission.

Safety remains the Department's top priority, and DOT has a number of initiatives underway to enhance safety in the air and on the ground. To maintain the Nation's excellent aviation safety record, the Department must continue to improve pilot, runway, and repair station safety oversight; assess its recent policy changes to prevent controller fatigue; and enhance the data it collects to prevent separation losses between aircraft. At the same time, the Department must set investment priorities and realistic plans for the Next Generation Air Transportation System (NextGen)—a complex and costly effort that is vital to provide safer and more efficient air traffic management. This will require difficult trade-offs among diverse capital programs.

With regard to highways, transit, and pipelines, the Department must address our longstanding recommendations and new safety oversight requirements in the Moving Ahead for Progress in the 21st Century Act (MAP-21). Key priorities include implementing data-driven, risk-based oversight for bridge inspections; developing a national tunnel safety program; removing unsafe motor carriers from our Nation's roads; setting effective policies for its newly expanded rail transit oversight role; and strengthening States' pipeline safety programs.

The Department must also continue efforts to meet other MAP-21 requirements for surface infrastructure projects nationwide to accelerate their delivery and employ performance-based management. In addition, the Department faces a new challenge to effectively manage the influx of relief funds to restore transit systems damaged by Hurricane Sandy in the northeastern United States and establish an emergency relief program for future disasters. Securing the Department's information technology (IT) infrastructure also remains a top priority, as we continue to find information security deficiencies in critical systems. To protect its mission and credibility, the Department must help its Operating Administrations address cyber threats; protect sensitive information; and develop a strategic vision to better manage its current technologies, plan for future systems, and maximize cost savings.

Finally, we continue to identify opportunities for the Department to save taxpayer dollars and better manage its contracts and resources. Key focus areas include reducing use of high-risk contract types, improving oversight of major IT acquisitions, and better protecting high-dollar recipient programs from fraud, waste, and abuse.

We remain committed to assisting the Department in improving the management and execution of its programs and protecting its resources through our audits and investigations. As required by law, we have identified the Department's top management challenges for fiscal year 2014. We considered several criteria in identifying the following seven challenges, including their impact on safety, documented vulnerabilities, large dollar implications, and the ability of the Department to effect change in these areas:

- Improving FAA's Oversight of the Aviation Industry and the Operations of the National Airspace System
- Identifying and Addressing Root Causes of Problems With NextGen and Setting Investment Priorities
- Continuing Actions To Strengthen Highway, Transit, and Pipeline Safety
- Improving Oversight of Surface Infrastructure Investments and Implementing Statutory Requirements
- Implementing Requirements To Address the Federal Railroad Administration's Expanded and Traditional Responsibilities
- Managing Acquisitions and Contracts To Achieve Results and Save Taxpayer Dollars
- Building a Secure and Modern Information Technology Infrastructure

We appreciate the Department's commitment to taking prompt corrective action in response to our findings and recommendations. This report and the Department's response will be included in the Department's Annual Financial Report. 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 Audits and Evaluation, at (202) 366-1427.

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cc: DOT Audit Liaison, M-1

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Improving FAA's Oversight of the Aviation Industry and the Operations of the National Airspace System

Source: Federal Aviation Administration

The Federal Aviation Administration (FAA) operates the world's safest air transportation system and has a number of initiatives underway to enhance safety in the National Airspace System (NAS). However, our audit work as well as recent aircraft accidents and incidents underscore the need for FAA to further improve its pilot safety initiatives, controller workforce management, repair station and runway oversight, and safety data analysis.

Key Challenges

- Advancing initiatives to improve pilot training, mentoring, and record keeping
- Improving air traffic controller training, scheduling, and performance
- Implementing a risk-based approach for repair station oversight
- Enhancing runway safety
- Improving data collection and analysis to identify and mitigate risks with aircraft separation losses and air carrier operations

Advancing Initiatives To Improve Pilot Training, Mentoring, and Record Keeping Investigations of recent accidents, including the July 2013 crash of Asiana Airlines flight 214, have focused attention on airline pilots' training, performance, and

qualifications. The 2010 Airline Safety and FAA Extension Act[1] required improvements in these areas, and FAA has made important progress on many of them. For example, in recent weeks, FAA issued a final rule to significantly advance commercial pilot training, and in July 2013, FAA completed a rule that raised airline pilot qualifications for first officers from 250 flight hours to 1,500. Last year, FAA also updated its rule on flight and duty requirements to help ensure pilots are rested when they fly. These are significant achievements for the Agency and should further enhance aviation safety.

Despite these improvements, the Agency is still experiencing delays in issuing rules required by the act to develop pilot mentoring and leadership programs, and establish better processes for managing safety risks. Additionally, FAA has been slow to make long-term implementation decisions on a new electronic database for pilot records. Effectively implementing the database will require FAA to ensure air carriers are retaining pilot records and that records contain enough information to help carriers identify specific performance deficiencies.

Improving Air Traffic Controller Training, Scheduling, and Performance Training new air traffic controllers to replace the large number of retirees remains a key priority for FAA—especially in light of FAA's transition to the Next Generation Air Transportation System (NextGen). In August 2013, we reported that while FAA has taken actions to improve its controller training program, such as determining whether to base new hires' facility placement on their performance at the FAA Academy, it needs to track the progress of these actions and establish efficient mechanisms to assess their impact. We also found that further steps are needed to ensure that air traffic facilities have the training support resources they need. In July 2012, FAA reduced its use of contracted instructors at its 22 en route centers by 62 percent. This resulted in some facility managers taking certified controllers off of their air traffic control positions to supplement training.

We also recently completed a review of FAA's policy changes to address controller fatigue. These include placing an additional air traffic controller on the midnight shift at certain facilities and mandating a minimum of 9 hours off between evening and day shifts. While the new policies are positive steps to improve safety in this area, they lack clarity and metrics to measure the effects of fatigue on controllers. For example, facility managers were concerned about the lack of explicit guidance on what activities are allowed during recuperative breaks. They also expressed concern over the ability to recall employees on their breaks.

Implementing a Risk-Based Approach for Repair Station Oversight FAA's development of the Safety Assurance System (SAS), a new risk-based approach to enhance oversight of repair stations, has been delayed 2 years. The Agency now projects inspectors will not begin using this system until fiscal year 2015. When fully implemented, SAS should address our recommendations to target inspector resources based on risk and develop a risk-based system suitable for oversight of foreign repair stations. In the meantime, FAA has proposed interim solutions to address some of our recommendations, such as providing

[1] Airline Safety and Federal Aviation Administration Extension Act of 2010, Pub. L. No. 111-216 (2010).

inspectors with more comprehensive, standardized procedures for conducting inspections and reporting findings. However, further delays in implementing the new risk-based system will likely hinder FAA's ability to improve its oversight of repair stations.

FAA must also ensure it effectively monitors FAA-certificated repair stations in the European Union. In 2011, the United States and the European Union entered into an agreement, which in part directed FAA to begin transferring oversight of its repair stations to the national aviation authorities of those countries to reduce duplicative oversight. As of May 2013, these authorities assumed responsibility for inspecting, on FAA's behalf, nearly 400 FAA-certificated repair stations located in 18 countries. This presents a unique challenge for FAA because, despite its diminished oversight presence at European repair stations, it must still ensure that these repair stations continue to meet FAA standards. We are reviewing this issue and plan to report on the process early next year.

Enhancing Runway Safety FAA's Runway Safety Program Office tracks all reported runway incursions and categorizes them in terms of risk. FAA met its goal to reduce the rate of serious runway incursions—those in which a collision was barely avoided—for fiscal year 2012.[2] However, between fiscal years 2010 and 2012, the number of serious incursions tripled—from 6 to 18. Additionally, the total number of all runway incursions increased by 21 percent (954 to 1,150) between fiscal years 2011 and 2012, and continues to rise, despite a slight decline in total air traffic operations. While FAA recently reorganized its Runway Safety Office and changed the way it reports runway incursions, it has not assessed the impact of these changes.

FAA is also working to deploy technology that could help prevent collisions on runways. For example, in fiscal year 2011, FAA completed deployment of the Airport Surface Detection Equipment-Model X (ASDE-X) system at 35 major airports, which provides detailed information to air traffic controllers regarding aircraft operations on runways and taxiways. While ASDE-X is a step in the right direction, it does not provide alerts directly to pilots, a longstanding National Transportation Safety Board (NTSB) recommendation. To address this shortcoming, FAA is integrating ASDE-X with two other systems—Runway Status Lights (RWSL)[3] and Automatic Dependent Surveillance-Broadcast (ADS-B)[4]—to simultaneously alert controllers and pilots of potential ground collisions. However, progress toward these enhancements depends on a number of other actions, such as establishing requirements for technical upgrades, testing system integrity, and determining whether ASDE-X capabilities will meet FAA's goals of increasing capacity while improving safety.

Improving Data Collection and Analysis To Identify and Mitigate Risks With Aircraft Separation Losses and Air Carrier Operations Accurately counting and identifying trends that contribute to separation losses and operational errors continues to

[2] FAA's serious runway incursion rate goal for fiscal year 2012 was 0.395 runway incursions per 1 million operations. The actual rate for serious runway incursions was 0.356 for fiscal year 2012.

[3] RWSL consists of red lights embedded into the runway designed to provide a visible warning to pilots when runways are not clear to enter, cross, or depart.

[4] ADS-B is a satellite-based effort expected to provide more precise information about the position of aircraft and vehicles operating on airport surfaces to both pilots and controllers.

be a top priority for FAA. In April 2013, we reported that between fiscal years 2011 and 2012, operational errors appeared to increase by as much as 32 percent (from 1,895 to 2,509)[5]; the most serious reported errors (category A[6]) also increased (from 55 to 275).

According to FAA, the increase in reported operational errors between fiscal years 2011 and 2012 was largely due to increased reporting through programs such as the Air Traffic Safety Action Program (ATSAP)[7] and the Traffic Analysis and Review Program (TARP), an automated system to detect losses of separation at air traffic terminal facilities.[8] However, we found that the increase in reported errors was linked in part to a rise in actual errors rather than increased reporting. For example, FAA's air route traffic control centers (ARTCC)[9]—which have had an automated system in place for years to detect and investigate reported errors—had a 32 percent increase in operational errors during the same period.

FAA is taking action to mitigate separation losses. For example, FAA has developed a Risk Analysis Process to evaluate the risk of separation losses, an annual list of the five highest risk separation losses, and corrective actions to address such hazards. FAA states it has implemented over 90 percent of the mitigation strategies within the corrective plans that address the fiscal year 2012 Top Five Hazards and has begun developing corrective action plans for the fiscal year 2013 list.

FAA is also moving toward a data-driven approach to identify and mitigate risks related to airline operations. As part of this initiative, FAA implemented the Aviation Safety Information Analysis and Sharing (ASIAS) system in 2007, which collects and analyzes data from multiple databases to proactively identify accident risks. ASIAS enables authorized users to obtain data from confidential databases—such as airline voluntary safety reporting programs—as well as publicly available data sources. These data could help increase inspectors' awareness of industry-wide safety issues. We are currently reviewing ASIAS and expect to issue a report later this year. Thus far, we have found that FAA is improving ASIAS by increasing the number of participating commercial airlines and capturing key confidential voluntary safety data, such as those from air carrier Flight Operational Quality Assurance[10]

[5] Based on FAA data, we calculated that the total number of operational errors may have increased up to 2,509 in fiscal year 2012. We are unable to state that our calculations for FY 2012 are 100 percent accurate due to limitations in FAA data. Specifically, FAA stopped using the term "operational errors" in 2012.

[6] Prior to fiscal year 2011, FAA reported the rate of category A and B errors per every 1,000 operations as a performance measure. FAA rated operational errors by severity based on aircraft proximity using A, B, or C—with A being the most severe risk and C the least severe. In FY 2011, FAA began reporting its System Risk Event Rate (SRER) performance measure, which also considers repeatability and severity of events. According to FAA, using its SRER performance measure, the rate of high risk events per 1,000 losses of separation decreased nearly every month during fiscal year 2012 from 24.38 in October 2011 to 9.33 in September 2012.

[7] ATSAP is a voluntary, non-punitive program in which controllers can self-report safety instances and concerns. In July 2012, we issued a separate report on FAA's implementation of ATSAP: *Long-Term Success of ATSAP Will Require Improvements in Oversight, Accountability, and Transparency* (OIG Report Number 2012-152), July 19, 2012. OIG reports are available on our Web site at http://www.oig.dot.gov/.

[8] Terminal facilities include air traffic control towers and Terminal Radar Approach Control (TRACON) facilities. Air traffic control towers separate aircraft on the airport surface and guide aircraft as they take off and land. TRACONs guide aircraft as they approach or leave airspace surrounding airports to about 40 miles away.

[9] ARTCC guide aircraft flying at high altitudes, generally above 17,000 feet.

[10] FOQA is a voluntary safety program that allows for the routine collection and analyses of digital flight data generated during aircraft operations.

programs and Aviation Safety Action Programs.[11] However, FAA's plan to use ASIAS as a fully predictive tool is still several years away due to a number of challenges. These include enhancing automated capabilities and analytical methodologies, improving the quality of data ASIAS receives from carriers, and addressing access issues and airline concerns over using confidential ASIAS data.

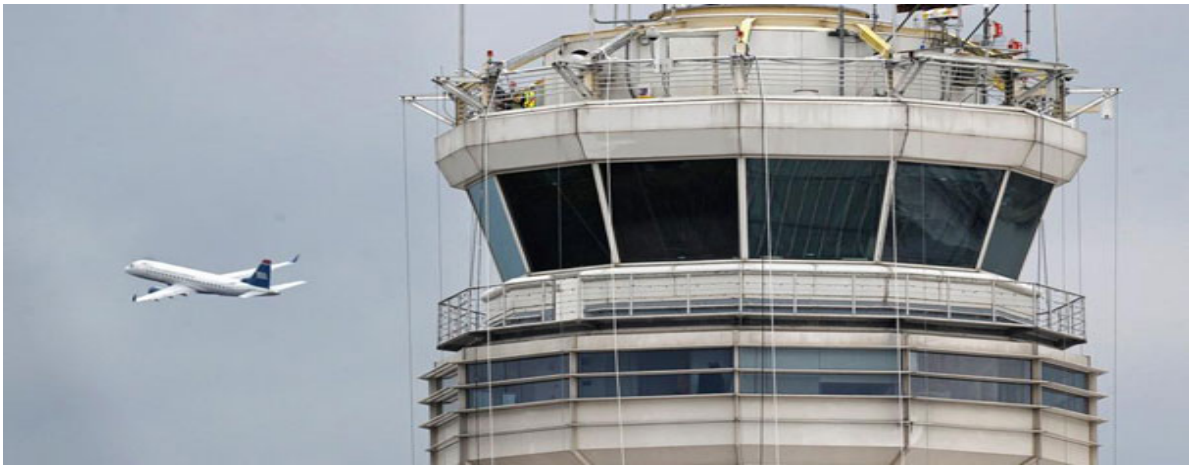
Related Products The following related documents can be found on the OIG Web site at http://www.oig.dot.gov.

- *FAA's Controller Scheduling Practices Can Impact Human Fatigue, Controller Performance, and Agency Costs*, August 27, 2013
- *FAA Is Making Progress but Improvements in Its Air Traffic Controller Facility Training Are Still Needed*, August 27, 2013
- *FAA Lacks a Reliable Model for Determining the Number of Flight Standards Safety Inspectors It Needs*, June 20, 2013
- *FAA Continues To Face Challenges in Implementing a Risk-Based Approach to Repair Station Oversight*, May 1, 2013
- *FAA's Fiscal Year 2014 Budget Request: Key Issues Facing the Agency*, April 18, 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
- *FAA and Industry Are Advancing the Airline Safety Act, but Challenges Remain To Achieve Its Full Measure*, January 31, 2013

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

[11] ASAP is a voluntary safety program that allows *aviation employees* to self-report safety violations to air carriers and FAA without fear of reprisal through legal or disciplinary actions.

Identifying and Addressing Root Causes of Problems With NextGen and Setting Investment Priorities



Source: Associated Press

The Next Generation Air Transportation System (NextGen) is a multibillion-dollar transportation infrastructure project that is necessary to modernize our Nation's aging air traffic system and provide safer and more efficient air traffic management. NextGen is also a complex undertaking that involves new technologies and procedures and multiple stakeholders whose priorities may conflict. In response to a more constrained budget environment and the need for more realistic plans, the Federal Aviation Administration (FAA) is working with industry to set investment priorities for NextGen and make trade-offs among programs, plans, and funding profiles. Since the effort began almost a decade ago, we have reported on cost increases and delays with modernization projects and other key management challenges that FAA must address to successfully transform the National Airspace System (NAS).

Key Challenges

- Identifying and addressing the underlying causes of cost increases and schedule delays
- Integrating new performance-based navigation routes to maximize near-term benefits and gain user support
- Implementing an integrated master schedule for NextGen programs
- Mitigating implementation risks with key automation systems that controllers rely on to manage air traffic
- Further developing and implementing consolidation and modernization plans
- Safely integrating unmanned aircraft systems in the NAS

Identifying and Addressing the Underlying Causes of Delays FAA's NextGen plans—which initially targeted completion for 2025 at a cost of $40 billion—lacked sound strategies for achieving a system that could handle three times more traffic while reducing FAA's operating costs. FAA has been unable to set realistic plans, budgets, and expectations for key NextGen programs due to a lack of firm requirements for NextGen's most critical capabilities. FAA's organizational culture has also been slow to embrace NextGen's transformational vision, and gaps in leadership have further undermined the Agency's efforts to advance NextGen. Recognizing the need to better position itself to execute NextGen, FAA announced a major reorganization in 2011, creating an Assistant Administrator for NextGen who reports directly to the FAA Deputy Administrator and establishing a new Program Management Office. While these changes could enhance FAA's management of NextGen, it remains unclear whether they will be sufficient to successfully implement NextGen.

Integrating New Performance-Based Navigation Routes To Maximize Near-Term Benefits and Gain User Support A central question with NextGen has been when users will begin realizing benefits. Near-term benefits—such as more direct flights, improved on-time aircraft arrival rates, and greater fuel savings—can be achieved through new performance-based navigation (PBN) procedures, such as Area Navigation (RNAV) and Required Navigation Performance (RNP).[12] However, FAA's implementation and airlines' use of PBN procedures has been inconsistent. For example, according to preliminary data, RNP use is high at some small- to medium-sized airports, such as Oakland, CA, but overall RNP use is low, particularly at busy airports, such as those in the New York area. Several obstacles undermine FAA's efforts to increase use of PBN procedures. These include a lack of updated PBN policies and procedures for controllers, a lengthy flight procedure development process, and a lack of controller tools to manage and sequence aircraft. Until FAA addresses these obstacles and clearly demonstrates the type and timing of expected benefits, airspace users will remain reluctant to equip with new avionics needed to advance new procedures and NextGen.

Implementing an Integrated Master Schedule for NextGen Programs In response to our April 2012 recommendation, FAA continues to develop an integrated master schedule for NextGen's transformational programs[13] and related efforts. The integrated master schedule is a key tool for FAA and the Department to manage NextGen given the complex interdependencies between new NextGen technologies and existing air traffic systems. Without an effective master schedule, it will be difficult for FAA to (1) fully address operational, technical, programmatic risks; (2) prioritize and make informed trade-offs among capital programs consistent with industry recommendations; and (3) determine what capabilities should be delivered first and at what locations. FAA plans to begin using the integrated master schedule in March 2014 and demonstrate its capabilities by showing

[12] 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, thereby allowing aircraft to fly more precise flight paths.

[13] These six programs are Automatic Dependent Surveillance-Broadcast (ADS-B), System Wide Information Management (SWIM), Data Communications (DataComm), NextGen Network Enabled Weather (NNEW), NAS Voice System (NVS), and Collaborative Air Traffic Management Technologies (CATM-T).

the linkages and dependencies among NextGen programs through 2015. FAA also states that it will need to further refine and update the schedule to reflect developmental efforts it plans to implement through 2020.

Mitigating Implementation Risks With Key Automation Systems That Controllers Rely on To Manage Air Traffic FAA's long-term goals for NextGen, such as increasing airspace capacity and reducing flight delays, depend on fully implementing the En Route Automation Modernization (ERAM) program—a $2.4 billion system to replace hardware and software at FAA's facilities that manage high-altitude traffic. After experiencing significant delays and cost increases due to extensive software-related problems, FAA began making progress deploying ERAM over the last 2 years. FAA is using the new system either on a full- or part-time basis at 17 air traffic facilities. However, FAA is now revising ERAM plans due to the impacts of sequestration, increased costs incurred to fix problems, and the remaining work required to implement the system at the Nation's busiest facilities on the East Coast. FAA plans to complete ERAM in March 2015.

FAA's Terminal Automation Modernization/Replacement (TAMR) program is also a prerequisite for introducing new NextGen capabilities. This program involves about $1 billion through 2018 to replace aging displays and processors with a single automation platform that controllers rely on to manage takeoffs and landings, the most critical phases of flight. FAA recently approved plans to begin transitioning to a new terminal automation system at 11 large Terminal Radar Approach Control (TRACON) facilities through 2017 at a cost of $438 million. However, FAA has not identified and finalized all hardware and software requirements or "gaps" needed to successfully replace the existing system. While FAA is developing software to address 94 gaps, it anticipates finding more as it deploys the system. To achieve future NextGen capabilities, continued management attention from the Department and FAA is essential to ensure timely implementation of these foundational programs.

Further Developing and Implementing Consolidation and Modernization Plans An important and controversial component of FAA's NextGen efforts is the extent to which the Agency consolidates or realigns the Nation's extensive network of aging air traffic control facilities. FAA's consolidation plans will impact various NextGen programs that already have established baselines, including automation and communication projects. Moreover, these programs were originally based on FAA's current facility set-up for en route centers and TRACONs—not consolidated facilities. However, FAA has not made changes to its Capital Investment Plan, and the full extent of any changes will remain unknown until FAA makes decisions for the first integrated facility in the New York area. These issues include cost, schedule, technical capabilities, and the impact on the aviation workforce. To date, FAA has been unable to quantify the potential cost savings and benefits from realigning air traffic facilities for airspace users and the traveling public. FAA expects to provide a detailed cost estimate for the integrated New York facility by the end of 2014.

Safely Integrating Unmanned Aircraft Systems in the NAS FAA predicts there will be roughly 7,500 small commercial Unmanned Aircraft Systems (UAS)[14] in 5 years, with the aerospace industry investing over $89 billion in UAS technology over the next 10 years. Integrating UAS in domestic US airspace will impact several FAA lines of business and offices, including safety and air traffic modernization. In 2012, FAA appointed a senior executive to lead its UAS Program Office. In 2013, this became the UAS Integration Office, with Aviation Safety and Air Traffic personnel combined into one office. However, it took over a year to fully establish the office due to difficulties with creating a hybrid organization for an emerging technology. FAA is still working on the necessary internal agreements to establish roles and responsibilities between the UAS Integration Office and other FAA lines of business. At the same time, FAA is behind in meeting requirements of the FAA Modernization and Reform Act of 2012,[15] which calls for FAA to safely integrate UAS into the NAS by September 2015. For example, FAA has neither completed the requirements to establish six test ranges, which were due in 2012, nor provided Congress with a comprehensive UAS integration plan, which was due by February 2013. FAA states that problems in meeting the act's requirements are due to the complexity of the problem, privacy issues, and unresolved coordination issues with other Federal agencies.

In addition, FAA must resolve a number of UAS-specific safety issues. While UAS capabilities have improved, their ability to detect, sense, and avoid other air traffic is limited. Although UAS are now operating in the NAS, FAA has not developed standard air traffic procedures for safely co-managing them with manned aircraft. FAA must continue to work with other Federal agencies and the aerospace industry to establish certification standards, obtain reliable safety data, address privacy concerns, and align changes with its capital investments.

[14] A UAS is comprised of a pilotless aircraft, satellite or radio link, and ground control station where an operator controls the movements of the aircraft. UAS aircraft range in size from those with a wingspan as large as a Boeing 737 to smaller than a radio-controlled model airplane. UAS can serve diverse purposes, such as conducting military operations, enhancing border security, and monitoring forest fires.

[15] FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, February 14, 2012.

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

- *FAA Has Made Progress Fielding ERAM, but Critical Work on Complex Sites and Key Capabilities Remains*, August 15, 2013
- *FAA's Progress and Challenges in Advancing the Next Generation Air Transportation System*, July 17, 2013
- *FAA's Acquisition Strategy for Terminal Modernization Is at Risk for Cost Increases, Schedule Delays, and Performance Shortfalls*, May 29, 2013
- *Weaknesses in Program and Contract Management Contribute to ERAM Delays and Put Other NextGen Initiatives at Risk*, September 13, 2012
- *Update on FAA's Progress and Challenges in Advancing the Next Generation Air Transportation System*, September 12, 2012
- *Status of Transformational Programs and Risks To Achieving NextGen Goals*, April 23, 2012
- *Challenges With Implementing Near-Term NextGen Capabilities at Congested Airports Could Delay Benefits*, August 1, 2012
- *The Success of FAA's Long-Term Plan for Air Traffic Facility Realignments and Consolidations Depends on Addressing Key Technical, Financial, and Workforce Challenges*, July 17, 2012

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

Continuing Actions To Strengthen Highway, Transit, and Pipeline 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, promote interstate commerce, and grow the U.S. economy. Sustained focus on the safety requirements enacted in the Moving Ahead for Progress in the 21st Century Act (MAP-21)[16] will be an essential part of the Department's oversight across multiple modes of transportation.

Key Challenges

- Strengthening the national bridge inspection program
- Developing a new tunnel safety program
- Enhancing motor carrier safety oversight
- Continuing efforts to build a rail transit safety program
- Providing stronger oversight of pipeline safety programs

Strengthening the National Bridge Inspection Program The May 2013 partial collapse of the Skagit River Bridge on Interstate 5 in Washington State brought renewed attention to the safety and condition of the Nation's bridges. One-fourth of the Nation's more than 600,000 bridges are deficient according to the Federal Highway Administration (FHWA).[17] Our recommendations and new MAP-21 requirements both focus on developing enhanced tools to help States improve safety, allocate scarce resources, measure

[16] Pub. L. No. 112-141 (2012).

[17] Deficient bridges include those that have experienced significant deterioration or have substandard geometric characteristics, such as narrow lane widths or low clearances for the traffic on or under the bridge.

performance, and effectively oversee Federal funds. Since 2006, we have recommended that FHWA improve its oversight of State bridge programs by implementing a data-driven, risk-based approach to assessing States' compliance with National Bridge Inspection Standards, prioritizing and remediating national bridge safety risks, improving bridge inspection and inventory practices, and encouraging States' effective use of bridge management systems. In response, FHWA revised its approach to bridge oversight in 2011 to more objectively assess bridge safety risks. However, FHWA needs to implement our remaining recommendations and meet MAP-21 provisions for strengthening bridge inspection and inventory standards. At the request of the Ranking Member of the House Committee on Transportation and Infrastructure, we are currently assessing FHWA's progress in responding to our prior recommendations and its implementation of MAP-21 bridge provisions.

Developing a New Tunnel Safety Program MAP-21 also requires FHWA to establish a new national tunnel inspection program and a tunnel inventory. These requirements include setting tunnel inspection standards by 2015 with qualifications, certification procedures, and formal training for tunnel inspectors. Similar to FHWA's national bridge inspection program and inventory, MAP-21 requires States to inspect and periodically report on the condition of the Nation's tunnels. To fully implement the MAP-21 provisions and promote consistent application of tunnel safety standards, FHWA will need to take a number of steps, including issuing regulations that clearly specify what dimensions and characteristics constitute a tunnel,[18] ensuring the baseline inventory of highway tunnels is accurate, and establishing a process to assess inspection data. Prior to MAP-21, FHWA issued a proposed rule on tunnel inspection standards in 2010 and developed guidance on tunnel design and other topics. In response to MAP-21, FHWA issued a supplemental proposed rule to add MAP-21 tunnel inspection standards. Any delays in developing training and certification procedures could impact FHWA's ability to oversee compliance with new regulations.

Enhancing Motor Carrier Safety Oversight Between 2010 and 2012, large truck and bus crashes decreased by 3.5 percent (from 129,587 to 125,063); associated fatalities were also down by 4.9 percent[19] (from 4,307 to 4,096). While the Federal Motor Carrier Safety Administration (FMCSA) has taken actions to remove high-risk carriers from the road, DOT must take additional steps to implement MAP-21's large truck and bus safety provisions, which include several rulemakings, programmatic changes, and reports to be completed in the next 2 years. FMCSA and the National Highway Traffic Safety Administration (NHTSA) must complete a number of actions to meet these provisions:

- **Motor Coach Safety Rules:** While NHTSA has the lead on MAP-21 provisions to strengthen motor coach safety regulations for improved occupant protection, passenger evacuation, and crash avoidance, FMCSA is still developing a rule the National Transportation Safety Board (NTSB) recommended to address oversight concerns on

[18] MAP-21 does not specify a definition for tunnel.
[19] According to preliminary data for 2012. Final data for 2012 will be reported later in 2014.

passenger carrier leases. FMCSA is also preparing to initiate a required rulemaking on safety inspections of passenger carrying vehicles.

- **Reincarnated Carriers:** FMCSA issued a rule on revoking reincarnated carriers'[20] operating authority in response to an NTSB recommendation. Since the rule went into effect in May 2012, FMCSA has taken 43 actions, and is pursuing 3 more, against 123 companies to consolidate the records of reincarnated or affiliated carriers. Of the 46 actions, 38 involved motor carriers attempting to avoid existing out-of-service orders. FMCSA must also complete its pilot of a risk-based screening methodology to detect reincarnated carriers and take enforcement action against them to effectively implement the rule.

- **Motor Carrier Data:** FMCSA published its long-delayed Unified Registration System (URS) Final Rule in August 2013, which should streamline the motor carrier registration process and, if properly implemented, enable the Agency to maintain more accurate industry information. FMCSA must implement the URS rule and enforcement mechanisms to ensure accurate information is available to evaluate carriers' safety performance. Such mechanisms include automatic deactivation of DOT numbers for carriers who fail to update company information every 2 years. FMCSA must also ensure data quality in the measurement system it uses to evaluate motor carriers' safety performance under the Compliance, Safety, Accountability Program,[21] and complete nationwide deployment of interventions, such as on- and off-site reviews, which are planned for later this year.

Continuing Efforts To Build a Rail Transit Safety Program MAP-21 enhanced the Federal Transit Administration's (FTA) authority to oversee the safety of the Nation's public transportation systems. FTA must continue to work on initial policies and procedures for its expanded safety oversight role and effectively distribute almost $22 million to State Safety Oversight (SSO) agencies to ensure financial independence from transit agencies.[22] FTA needs to ensure that each State with an SSO has a State safety oversight plan that complies with MAP-21 requirements.[23] FTA must follow through on its plan to adopt a Safety Management System framework to address the need for data-driven risk identification and performance-based measures—concerns highlighted in our prior work. FTA also needs to issue timely guidance, prioritize the greatest safety risks for any rulemakings, and enlist leadership commitment to expedite these rulemakings.

As FTA begins plans for a Transit Asset Management system for rail transit infrastructure, it may want to consider MAP-21 program changes in other DOT modes that are in the process

[20] Motor carriers that attempt to operate as a different entity in an effort to evade enforcement action, out-of-service orders, or both.
[21] Compliance, Safety, Accountability is a 2010 FMCSA initiative to improve large truck and bus safety. It introduces a new enforcement and compliance model that allows FMCSA and its State partners to contact a larger number of carriers earlier to address safety problems before crashes occur.
[22] Many oversight agencies have limited staffing levels and budgets, and some depend on funding from the same rail transit agencies they oversee.
[23] MAP-21 required FTA to make this determination by October 1, 2013.

of implementing similar systems. For example, under MAP-21, FHWA is developing its first national tunnel inventory and safety inspection program, similar to its longstanding bridge safety program. FTA could build on past collaborations with FHWA and discuss opportunities to initiate an inventory and safety inspection program for rail transit bridges and tunnels nationwide.

Providing Stronger Oversight of Pipeline Safety Programs Several recent pipeline accidents highlight the need for the Pipeline and Hazardous Materials Administration (PHMSA) and its State agents to implement an effective performance-based approach for assessing pipeline safety.[24] NTSB has reported weaknesses in this aspect of PHMSA's and States' oversight. After its investigation of the 2010 San Bruno, CA, pipeline explosion,[25] NTSB recommended an audit of PHMSA's certification program[26] to assess the effectiveness of (1) State pipeline safety programs and Federal pipeline safety grants with regard to oversight of intrastate pipeline operations and (2) State inspection and enforcement activities.

We are currently finalizing the results of our review of PHMSA's State Pipeline Safety Program.[27] To date, we have determined that despite several efforts underway to enhance program oversight, PHMSA faces critical challenges, including accurately assessing States' compliance with performance safety factors and scoring their performance. In addition, PHMSA's guidelines for the State Pipeline Safety Program lack elements needed to identify all safety weaknesses. For example, the guidelines do not establish minimum qualifications for State inspectors who lead standard pipeline operator inspections. Consequently, PHMSA cannot be sure that State inspections cover all Federal requirements and that pipeline operators maintain safety standards. The guidelines also do not detail how States should use risk factors for scheduling inspections or specify appropriate time intervals between inspections, making it difficult for PHMSA to ensure States conduct inspections frequently enough to detect and mitigate safety risks. Finally, PHMSA needs to strengthen its oversight of suspension grant funds—funds awarded to States that are fiscally unable to maintain or expand their pipeline safety programs. The Agency's guidance to States on how to account for these funds has proven insufficient, and PHMSA must follow through on its intent to begin auditing the funds in calendar year 2014.

[24] Under the Natural Gas Pipeline Safety Act of 1968, PHMSA manages the State Pipeline Safety Program by requiring State agencies to self-certify that they are qualified to oversee intra-State pipeline operators and enforce Federal pipeline safety regulations.
[25] On September 9, 2010, a 54-year old gas pipeline exploded in San Bruno, CA, killing 8 and injuring 58 people, and destroying 38 homes.
[26] In early 2012, the Secretary stated in a letter to NTSB that our office would conduct the audit.
[27] Through this program, PHMSA authorizes States to oversee and enforce operators' compliance with Federal pipeline safety regulations and allocates grants to State programs. Grant funding increased from $19.5 million in 2008 to $46.3 million in 2012.

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

- *Timely and Targeted FMCSA Action Is Needed To Fully Address National Transportation Safety Board Recommendations for Improving Passenger Carrier Oversight*, April 17, 2012
- *Challenges to Improving Oversight of Rail Transit Safety and Implementing an Enhanced Federal Role*, January 31, 2012
- *Assessment of FHWA Oversight of the Highway Bridge Program and National Bridge Inspection Program*, January 14, 2010
- *National Bridge Inspection Program: Assessment of FHWA's Implementation of Data-Driven, Risk-Based Oversight*, January 12, 2009
- *Audit of 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 Joseph W. Comé, Assistant Inspector General for Highway and Transit Audits, at (202) 366-5630; Jeffrey B. Guzzetti, Assistant Inspector General for Aviation Audits, at (202) 366-0500; or Mitch Behm, Assistant Inspector General for Rail, Maritime, Hazmat Transport, and Economic Analysis, at (202) 366-9970.

Improving Oversight of Surface Infrastructure Investments and Implementing Statutory Requirements

Source: DOT

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.[28] DOT is responsible for effective stewardship of these funds as well as billions in Federal funds provided annually to States and localities to construct and maintain the Nation's roadways, bridges, transit systems, and ports. At the same time, DOT's Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) must meet new requirements of the Moving Ahead for Progress in the 21st Century Act (MAP-21). These requirements include accelerating project delivery, employing performance management, and making oversight activities more risk based. The Maritime Administration (MARAD) must also continue to correct management vulnerabilities with its port projects as it works to develop a framework for ongoing and future port infrastructure projects.

Key Challenges

- Ensuring effective oversight of Hurricane Sandy relief funds and considering lessons learned from Federal emergency responses
- Maintaining efforts to strengthen highway and transit oversight
- Implementing initiatives to expedite project delivery and reduce costs
- Transitioning to a system of performance-based surface transportation investments
- Developing an effective port infrastructure program

[28] 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.

Ensuring Effective Oversight of Hurricane Sandy Relief Funds and Considering Lessons Learned From Federal Emergency Responses FTA is responsible for ensuring appropriate stewardship over the largest allocation—more than $10 billion—of DOT's Hurricane Sandy relief funds. FTA is also required by MAP-21 to establish an Emergency Relief Program to effectively respond to future emergencies. FTA quickly responded to Hurricane Sandy by making more than $5 billion of relief funds available to recipients within 4 months of the Disaster Relief Appropriations Act. Our initial review of FTA's oversight of Hurricane Sandy relief funds identified opportunities for FTA to more effectively allocate, obligate, and oversee them. A key challenge for FTA will be ensuring that oversight plans target key project and grantee risks, such as improper payments. FTA must also develop a process for allocating and awarding the remaining resiliency funds on a competitive basis and define clear and transparent criteria for evaluating proposed resiliency projects.

Drawing on lessons learned from Federal emergency responses and best practices for recipients' acquisitions based on Department and other Federal resources could inform FTA's efforts to finalize a rule for the Emergency Relief Program. These lessons 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. We expect to issue our report later this year.

Maintaining Efforts To Strengthen Highway and Transit Oversight FHWA and FTA took several actions to align their programs with MAP-21 requirements, strengthen oversight of highway and transit investments, and move towards more risk-based approaches to oversight. Maintaining momentum on improving these oversight tools will be critical to ensure proper stewardship of about $40 billion annually in Federal-aid highway funds. For example, FHWA should more clearly and consistently define Federal and State oversight roles and responsibilities within its congressionally required Stewardship and Oversight Agreements with States. In response to our recommendations and MAP-21, FHWA significantly revised its oversight approach. However, actions are needed to link national and local project priorities to a National Program Stewardship and Oversight Plan, implement a new risk assessment process, develop a more data-driven and consistent approach to project level oversight, and use internal Program Management Improvement teams. These actions would help ensure effective and consistent implementation of Federal requirements across FHWA's 52 division offices.

Similarly, FTA must complete a comprehensive review of its oversight program, which relies heavily on private contractors, and implement any changes that emerge from that review. For example, in response to vulnerabilities we identified on the Dulles Corridor Metrorail Project, FTA committed to assess the effectiveness of its project management oversight contractors—who help oversee major transit projects in accordance with FTA guidance. Further, FTA agreed to address vulnerabilities we found in its oversight of billions in grants provided to State and local transit agencies. For example, FTA must follow through on ensuring its regions and contractors accurately enter data into its oversight tracking system

to address repeat findings and trends and to implement performance measures that assess the effectiveness of the oversight program's outcomes.

Implementing Initiatives To Expedite Project Delivery and Reduce Costs MAP-21's Subtitle C is designed to increase efficiency and innovation, with a focus on environmental issues during the planning and design phase of highway and transit projects. According to DOT, fully implementing Subtitle C requires completion of 42 actions. To enable States to fully achieve Subtitle C's anticipated project delivery benefits in a timely manner, DOT must complete rulemakings—including a rule to expand use of categorical exclusions.[29] DOT should also assign estimated completion dates, where feasible, for planned actions that do not have milestones specified by statute and track their progress. Sustained management attention will be critical to ensure the timely completion of rulemakings, guidance, other program initiatives, and reports to Congress.

Transitioning to a System of Performance-Based Surface Transportation Investments MAP-21 requires DOT to move toward more performance-based investment management of its highway and transit programs. MAP-21 also requires States to establish a transportation performance plan that is linked to Federal-aid highway funds. Accordingly, DOT must establish new rules, performance standards, and modify related oversight mechanisms. For example, DOT must implement new performance measures that incorporate the Department's seven national goals: safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. Further, to meet MAP-21 requirements, DOT must use its newly defined performance measures and associated data improvements to better assess and report on the impact of core programs, such as FHWA's Highway Safety Improvement Program (HSIP)—DOT's primary program for reducing fatalities and serious injuries on roadways through infrastructure improvements. FHWA could use existing financial and performance data on HSIP projects, combined with the consistent and complete data on fatalities and serious injuries throughout the United States called for by MAP-21, to develop a more complete picture of HSIP's impact on traffic safety.

Developing an Effective Port Infrastructure Program Since 2003, MARAD has been authorized to administer funds to develop and modernize port infrastructure. In 2009, the National Defense Authorization Act[30] mandated that MARAD establish a Port Infrastructure Development Program to improve port facilities and provide a framework for ongoing and future port infrastructure projects. In recent years, port projects under MARAD's management have experienced setbacks, including construction problems and schedule delays, raising concerns about MARAD's ability to manage its port projects.

While MARAD has taken steps to improve management of its port infrastructure projects, we reported in August 2013 that MARAD could do more to provide effective oversight of its projects and develop a Port Infrastructure Development Program. These steps include

[29] A categorical exclusion is a category of actions that do not individually or cumulatively have a significant effect on the human environment. In these cases, an environmental impact statement or an environmental assessment is not required.
[30] Pub. L. No. 111-84 § 3512 (Oct. 28, 2009).

adequately defining its port project oversight responsibilities and providing guidance to contractors for developing program management plans; establishing a sound risk management process consistent with industry best practices; and establishing a process to systematically store, maintain, and track project progress and funds. MARAD is developing a Port Infrastructure Development Program but has yet to provide a completion date.

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

- *MARAD Has Taken Steps To Develop a Port Infrastructure Development Program but Is Challenged in Managing Its Current Port Projects*, August 2, 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
- *FHWA Provides Sufficient Guidance and Assistance To Implement the Highway Safety Improvement Program but Could Do More To Assess Program Results*, March 26, 2013
- *FHWA Has Opportunities To Improve Oversight of ARRA High Dollar Projects and the Federal-Aid Highway Program*, November 12, 2012
- *Improvements to Stewardship and Oversight Agreements Are Needed To Enhance Federal-aid Highway Program Management*, October 1, 2012
- *Improvements Needed in FTA's Grant Oversight Program*, August 2, 2012
- *Actions Needed To Improve FTA's Oversight of the Dulles Corridor Metrorail Project's Phase 1*, July 26, 2012

For more information on the issues identified in this chapter, please contact Joseph W. Comé, Assistant Inspector General for Highway and Transit Audits, at (202) 366-5630 or Mitch Behm, Assistant Inspector General for Rail, Maritime, Hazmat Transport, and Economic Analysis, at (202) 366-9970.

Implementing Requirements To Address the Federal Railroad Administration's Expanded and Traditional Responsibilities

Sources: National Archives and Records Administration and Amtrak

The Rail Safety Improvement[31] (RSIA) and the Passenger Rail Investment and Improvement[32] (PRIIA) Acts of 2008 directed the Federal Railroad Administration (FRA) to broaden its safety related responsibilities, establish a National Rail Plan, and develop a grant program to fund rail investment. Five years later, the Agency has only disbursed 16 percent of $10.1 billion in grant funds for the High Speed Intercity Passenger Rail Program.[33] FRA's progress toward defining rail safety priorities and completing requirements for new responsibilities has also been limited. Going forward, FRA will need to expedite required rulemakings to mitigate rail safety hazards and address national transportation needs, provide its oversight staff with the training needed to carry out new responsibilities, and ensure that policies and procedures governing its traditional responsibilities reflect the current regulatory environment.

Key Challenges

- Completing implementation of key RSIA and PRIIA provisions
- Updating policies and procedures for traditional responsibilities

Completing Implementation of Key RSIA and PRIIA Provisions RSIA directed FRA to develop 17 new or revised safety regulations governing a wide variety of areas, including positive train control (PTC), track maintenance, minimum training standards for railroad

[31] Pub. L. No. 110-432 Div. A.
[32] Pub. L. No. 110-432 Div. B.
[33] $8 billion of which was appropriated by the American Recovery and Reinvestment Act of 2009 (ARRA). FRA has obligated 99 percent of the $10.1 billion in grant funding.

employees, and highway rail grade crossings.[34] In April 2013, we reported that FRA had issued or made progress on the RSIA-required rules, but its primary focus on developing a PTC rule created delays with other rules. Ultimately, FRA missed statutory deadlines for seven of the eight rules it issued and has now missed the deadlines for seven of the remaining nine. The lack of timely rules delays mitigation of railroad industry hazards that Congress intended the rules to address. For example, FRA has yet to issue a rule on minimum training standards for safety-related railroad employees and a rule on grade crossing inventories. Respectively, these rules are intended to reduce accidents caused by human factors and to mitigate risk of injury and death due to highway-rail grade crossing accidents.

In addition, FRA has not provided updated guidance or training for overseeing compliance with certain new RSIA rules. For example, although FRA's rule on PTC has been in effect since March 2010, the Agency did not update its compliance manual to include information on the new rule until April 2012. FRA uses these compliance manuals to set expectations for inspection tasks and establish investigation requirements. Training has been similarly lacking. For example, PTC oversight staff informed us that they still needed additional training to be confident in their abilities to oversee PTC tests. FRA implemented a new policy in September 2013 requiring staff to develop technical bulletins or other guidance documents outlining new regulations and to develop and host training sessions to explain new regulations; however, it remains to be seen whether this new policy will be effective.

Of the 29 responsibilities PRIIA assigned to FRA, 17 have been completed, 10 are in progress, and 2 have not been started. One critical responsibility—development of a National Rail Plan[35]—is underway. However, rather than producing a single national rail plan, FRA has focused on developing tools and guidance for States and regions to create regional rail plans, as well as criteria and parameters for justifying Federal investments. To date, FRA has primarily focused on regional plans for the Southwest and the Northeast Corridor. Consequently, 5 years after the passage of PRIIA, FRA has still not articulated rail plans and milestones for the rest of the country.

Updating Policies and Procedures for Traditional Responsibilities FRA must ensure that policies and procedures governing its traditional responsibilities reflect the current regulatory environment, such as the National Environmental Policy Act (NEPA),[36] which requires agencies to consider the potential environmental impact of proposed actions including federally funded projects. However, because most of FRA's procedures for the NEPA process have not been updated since 1999, many references in the procedures are outdated, and requirements from subsequent statutes and recommended guidance are

[34] PTC is a communication-based system designed to prevent accidents caused by human factors, including train collisions, derailments due to speed, incursions into work zones, and movement of trains through switches left in wrong positions. Human factor accidents are accidents due to causes such as employee physical condition, improper communications, and improper train handling.
[35] PRIIA directs the Federal Railroad Administrator to develop a long-range national rail plan that is consistent with approved State rail plans and the rail needs of the Nation, as determined by the Secretary in order to promote an integrated, cohesive, efficient, and optimized national rail system for the movement of goods and people.
[36] 42 U.S.C. § 4321-4347, Jan. 1, 1970.

not included. As a result, FRA staff lack guidance to efficiently administer the NEPA process and ensure grantees comply with legal and regulatory requirements.

Finally, improvements are needed in FRA's Railroad Rehabilitation and Improvement Financing (RRIF) program—a $35 billion credit program established in 1998 to provide loans to railroads and other eligible entities to finance rail infrastructure projects. Since its inception, the RRIF program has issued 33 loans totaling approximately $1.7 billion. However, because RRIF has disbursed less than 5 percent of its authorized spending limit and has only issued seven loans since the beginning of 2010, Congress has expressed concerns over the extent to which the program has been used and suggested that lengthy reviews of applications may be contributing to the program's low participation rate. Our analysis found that accepting incomplete applications has affected the timeliness of FRA's RRIF application reviews, which have taken as long as 28 months. Management attention is needed to identify ways to expedite this process as a step toward maximizing this program's full potential.

Related Product The following related document can be found on the OIG Web site at http://www.oig.dot.gov.

- *FRA Is Nearing Completion of Rules Required by the Rail Safety Improvement Act, but Needs To Improve Oversight*, April 17, 2013

For more information on the issues identified in this chapter, please contact Mitch Behm, Assistant Inspector General for Rail, Maritime, Hazmat Transport, and Economic Analysis, at (202) 366-9970.

Managing Acquisitions and Contracts To Achieve Results and Save Taxpayer Dollars

Source: DOT

In fiscal year 2012, DOT obligated approximately $62 billion on contracts and grants.[37] Investing and administering these funds wisely and fulfilling the President's Executive Order[38] and Office of Management and Budget (OMB) initiatives[39] to deliver an efficient, effective, and accountable Government continues to be a challenge for DOT management. Our audits have identified opportunities for DOT to better manage its contracts and resources and save taxpayer dollars.

Key Challenges

- Increasing management focus on reducing high-risk contract types
- Ensuring taxpayer dollars are invested and administered wisely on major contracts
- Improving management oversight of recipients' contract practices to ensure program integrity and efficient use of limited funds

Increasing Management Focus on Reducing High-Risk Contract Types A Government-wide initiative calls for Federal agencies to reduce spending on high-risk contract types—such as cost-reimbursement—and management support services

[37] DOT's fiscal year 2013 data were not available at the time of this report.
[38] Executive Order 13576, "Delivering An Efficient, Effective, and Accountable Government," Jun. 13, 2011.
[39] OMB Memoranda: Reduced Contract Spending for Management Support Services, Nov. 7, 2011, and Improving Government Acquisition, Jul. 29, 2009.

contracts,[40] which are often awarded using high-risk contract types. However, between fiscal years 2009 and 2012, DOT increased its obligations for cost-reimbursement contracts from $1.5 billion to $1.9 billion. While these contracts may be justified in some cases, they pose a high risk for waste of taxpayer funds because they do not provide a direct incentive for contractors to control costs. Similarly, our ongoing work shows that DOT's obligations on management support services contracts have increased by 17 percent (approximately $1.1 billion to almost $1.3 billion) from fiscal years 2010 through 2012. Given DOT's significant investment in high-risk contracts each year, even minimal steps toward reducing the use of these contracts could yield substantial savings for the Government and taxpayers.

In addition, revised Federal Acquisition Regulations (FAR) impose increased oversight requirements on Federal agencies that choose cost-reimbursable contracts over less risky contract types. DOT did not meet at least 25 percent of these FAR revisions on 15 of the 31 cost-reimbursable contract awards we examined. For example, the Operating Administrations we reviewed[41] did not fully comply with acquisition planning and justification requirements or consistently assess oversight risks, properly designate oversight personnel, or verify that contractors' accounting systems were adequate to provide valid and reliable cost data. As a result, the Department is missing opportunities to reduce the Government's risk associated with use of these contract types.

Ensuring Taxpayer Dollars Are Invested and Administered Wisely on Major Contracts Each year, DOT awards billions of dollars for major information technology (IT) and infrastructure improvement contracts. To maximize its investment, the Department needs to administer these funds wisely while meeting program goals. Several concerns require sustained management attention:

- **DOT's Oversight of Major IT Investments:** DOT has made significant progress toward implementing our March 2013 recommendations to strengthen its decision processes and oversight for its major IT investments, which in fiscal year 2012 were just over $2.2 billion. For example, in fiscal year 2013, DOT updated its Investment Review Board's charter to clarify organizational responsibilities and establish the Senior Procurement Executive as a voting member. However, DOT still needs to develop a comprehensive plan to ensure it is equipped to properly oversee all Operating Administrations' IT investments; assign organizational responsibility, accountability, and authority; and develop written implementation policies.

- **MARAD Port Projects:** In August 2013, we reported that inadequate acquisition planning, lack of reliable cost estimates, and noncompliance with Federal contracting requirements on the Port of Anchorage project put the Maritime Administration's (MARAD) ongoing and future port projects at risk. Notably, we found that MARAD acted

[40] Management support services contracts include those for professional and technical support services such as engineering, information technology, acquisition planning, and program management.

[41] Our review included 6 of the 11 Operating Administrations that awarded cost-reimbursement contracts within the timeframe selected for our audit of July 1, 2011, through May 31, 2012. We did not include the Federal Aviation Administration in our audit because the Agency is not required to comply with the FAR.

contrary to the intent of the Small Business Administration's 8(a) program by steering the first Port of Anchorage contract to the Port's preferred firm. According to MARAD's documentation, this project's cost estimate grew from $211 million in 2003 to $1 billion as of January 2011, with scheduled completion slipping by 8 years. Further, MARAD representatives informed us that the Municipality is considering scaling down the project, but they did not have a revised cost estimate at the time we concluded our review. According to MARAD officials, prior to 2011 the Agency's leadership made a policy decision that abdicated programmatic and technical control to local port officials, which contributed to problems with the project. We also found weaknesses in MARAD's contract management of its Port of Guam and Hawaii Harbors projects, including a lack of established contract administration plans, required contractor performance evaluations, and independent Government estimates.

- **Air Traffic Control Optimum Training Solution (ATCOTS):** In 2010, we made several recommendations to improve the Federal Aviation Administration's (FAA) management of its ATCOTS contract, which was awarded in 2008 to provide controller training support, reduce total training time and costs, and develop training innovations. Despite FAA's efforts to address recommendations from our 2010 report, we continue to identify weaknesses in program and contract management. Notably, FAA did not identify training needs, as we recommended, before exercising an option to continue the contract even though it experienced $89 million in cost overruns for the first 4 years. While FAA reduced the number of contractor instructors by 44 percent to prevent future cost overruns, this required FAA to perform more internal training—a cost FAA has not quantified. In addition, FAA was unable to achieve key contract goals to reduce controller training times or produce sufficient training innovations, as the average time to certify controllers increased by 41 percent from fiscal year 2009 through fiscal year 2012. Finally, FAA did not effectively use cost incentives to control contract spending for the first 4 years, and award fees were not linked to the achievement of contract goals. We plan to issue our report by January 2014.

Improving Management Oversight of Recipients' Contract Practices To Ensure Program Integrity and Efficient Use of Limited Funds DOT's Disadvantaged Business Enterprise (DBE) program—a high-dollar recipient program—requires close management attention to mitigate the risk of fraud, waste, and abuse. DOT will need to closely monitor grant recipients' contract award practices to ensure ineligible firms do not receive awards.

- **Overseeing DBE Contract Practices:** In April 2013, we reported deficiencies in the Department's management of its multibillion-dollar DBE program. Specifically, DOT did not provide comprehensive and standardized DBE guidance or sufficient training to recipients—the State and local transportation agencies who implement the program—or assign a DOT organization to integrate and manage the program. In addition, DOT does not regularly assess the effectiveness of the Operating Administrations' oversight of DBE recipients, which was inadequate to ensure compliance with program requirements, such as applicant eligibility. For example, State certification staffs were

unsure of how to calculate an applicant's personal net worth—a key factor in determining DBE eligibility. Such weaknesses increase the risk that ineligible firms will be certified as DBEs. Fraud also remains prevalent in the DBE program, with 40 percent of our active procurement and grant fraud investigations involving DBE fraud as of October 31, 2013. From October 2012 through October 2013, our DBE investigations resulted in 16 indictments, 20 convictions, and financial recoveries over $10.3 million. Finally, the Department has not fully met its regulatory program objective to help DBE firms succeed in the marketplace, as most certified DBEs never receive work on Federal projects. However, because DOT does not assess its achievement of this or other regulatory objectives, it cannot assess program effectiveness or identify needed changes.

- **Preventing Suspended and Debarred Firms From DBE Participation:** DOT must strengthen controls over its DBE program to prevent suspended and debarred firms from participating in the program. Federal regulations exclude these firms from receiving federally funded contracts. However, our review of 26 State DBE directories identified 3 suspended or debarred firms listed as eligible to receive federally funded DBE awards, raising concerns that the total number of suspended or debarred firms currently listed in State DBE directories may be higher than our review indicated. Accordingly, we issued a management advisory to DOT in September 2013 noting that its DBE program may lack the guidance and safeguards to prevent award of DBE work to suspended or debarred firms.

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

- *Management Advisory—Suspended or Debarred Firms Are Listed on State DBE Directories as Eligible for DBE Participation*, September 24, 2013
- *DOT Does Not Fully Comply With Revised Federal Acquisition Regulations on the Use and Management of Cost-Reimbursement Awards*, August 5, 2013
- *MARAD Has Taken Steps To Develop a Port Infrastructure Development Program but Is Challenged in Managing Its Current Port Projects*, August 2, 2013
- *Weaknesses in the Department's Disadvantaged Business Enterprise Program Limit Achievement of Its Objectives*, April 23, 2013
- *Improvements to DOT's Governance Processes Are Needed To Enhance Oversight of Major IT Investments*, March 27, 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 or Timothy Barry, Principal Assistant Inspector General for Investigations, at (202) 366-1967.

Building a Secure and Modern Information Technology Infrastructure

Source: NetConnect Blog

Securing DOT's information technology (IT) infrastructure remains a top priority since breaches by computer hackers have placed a number of major entities at risk and exposed individuals' personal information to unauthorized access. For the last 3 fiscal years, the Department has declared the deficiencies in its information security program to be a material weakness. In addition, to build a secure and modern IT infrastructure, DOT needs an enterprise architecture (EA)—a blueprint for aligning DOT's strategic vision with its IT infrastructure. An effective EA looks beyond immediate IT needs, uses a standardized technology platform, and ensures new IT projects fit into the overall strategy.

Key Challenges

- Securing information technology infrastructure
- Protecting sensitive information
- Building an effective Departmentwide EA program

Securing Information Technology Infrastructure Last year, we reported that the Department improved its information security program by enhancing its cyber security policy and guidance and establishing a repository for software security baselines. However, DOT's information systems still remained vulnerable to significant security threats and risks because the program did not meet key Office of Management and Budget (OMB) and Federal Information Security Management Act (FISMA) requirements to protect agency information and systems. As a result, in 2012, DOT again declared its information security deficiencies a material weakness in its annual assurance statement, which is required by the Federal Managers' Financial Integrity Act.[42]

We determined that the Department's Office of the Chief Information Officer (OCIO), the modal Administrators, and their CIOs could do more to build and sustain strong information security practices. For example, all Operating Administrations' CIOs are still in the process of completing information security procedures for several key areas, including capital planning for IT security and developing continuous monitoring guidance and implementing practices. While DOT has taken actions, such as establishing a repository of secure software settings and acquiring sophisticated security monitoring software, it has been slow to address both our FISMA 2012 recommendations and self-identified weaknesses. Specifically, in 2012 we reported that over 2,000 actions to remediate security weaknesses were behind schedule. We also identified weaknesses in critical Office of the Secretary (OST) and Federal Aviation Administration (FAA) systems. For example, OST's Common Operating Environment (COE), which provides key services, such as email and Internet access to non-FAA Operating Administrations, is vulnerable to hackers. In addition, our ongoing work on air traffic control systems continues to identify weaknesses in access controls and incident reporting that FAA needs to remediate. We plan to issue our 2013 FISMA report later this year. Cooperation between the Department and the Operating Administrations to continue addressing these deficiencies will be key to building a strong information security program—one that can quickly adapt to and avert new cyber threats.

Protecting Sensitive Information In fiscal year 2013, the Department demonstrated its commitment toward providing privacy protections through progress on its plan to identify, reduce, and protect personally identifiable information (PII) collected and stored by its systems. OMB emphasized the importance of protecting PII and provided agencies with simple and cost-effective steps to reduce the volume of data collected, limit access to it, and use encryption and strong authentication procedures.[43] The Department plans to complete these actions by the end of fiscal year 2014; in the meantime, we continue to identify weaknesses that could expose sensitive data. For example, in June 2013 we reported that PII data in FAA's Civil Aviation Registry were not encrypted or adequately protected from compromise through strong authentication techniques. We also found that numerous configuration deficiencies in the system's software rendered the Registry vulnerable to attacks and unauthorized access. FAA states that it will implement upgrades to correct the software vulnerabilities and establish data encryption by the end of 2013. Our

[42] Federal Managers' Financial Integrity Act, Pub. L. No. 97–255 (1982).
[43] OMB Memorandum M-07-16, Safeguarding Against and Responding to the Breach of Personally Identifiable Information, May 22, 2007.

September 2013 report on the Department's COE similarly identified sensitive data that were not adequately protected from hackers or malicious insiders. OST plans to complete actions to secure the COE by the end of fiscal year 2014.

Building an Effective Departmentwide EA Program An agency's EA program helps management understand its current technology infrastructure, define future infrastructure needs to facilitate the accomplishment of its mission, and develop a transition plan. Despite years of effort towards creating an EA, DOT still lacks comprehensive EA policy and procedures, direction in the selection of EA development tools, performance measures, and an approved plan to build a Departmentwide EA. Absent this blueprint, the Department faces significant challenges in maximizing its return on IT investments through cost savings, reduced duplicative systems, aligned information technology and mission, and effective information security spending—all critical elements in an environment of limited resources and increased security risks.

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

- *Security Weaknesses in DOT's Common Operating Environment Expose Its Systems and Data to Compromise*, September 10, 2013
- *FAA's Civil Aviation Registry Lacks Information Needed for Aviation Safety and Security Measures*, June 27, 2013
- *FISMA 2012: Ongoing Weaknesses Impede DOT's Progress Toward Effective Information Security*, November 14, 2012
- *DOT Does Not Have an Effective Enterprise Architecture Program for Management of Information Technology Changes*, April 17, 2012

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.

Comparison of Fiscal Years 2014 and 2013 Top Management Challenges

Fiscal Year 2014 Challenges	Fiscal Year 2013 Challenges
• Improving FAA's Oversight of the Aviation Industry and the Operations of the National Airspace System	• Enhancing FAA's Oversight and Use of Data To Identify and Mitigate Safety Risks
• Identifying and Addressing Root Causes of Problems With NextGen and Setting Investment Priorities	• Ensuring the Next Generation Air Transportation System Advances Safety and Air Travel
• Continuing Actions To Strengthen Highway, Transit, and Pipeline Safety	• Strengthening Existing Surface Safety Programs and Effectively Implementing New Safety Requirements
• Improving Oversight of Surface Infrastructure Investments and Implementing Statutory Requirements	• Maximizing Surface Infrastructure Investments With Effective Program Oversight and Execution of New Legislative Requirements
• Implementing Requirements To Address the Federal Railroad Administration's Expanded and Traditional Responsibilities	• Adequately Overseeing Administration of High Speed Intercity Passenger Rail Grant Funds
• Managing Acquisitions and Contracts To Achieve Results and Save Taxpayer Dollars	• Ensuring Effective Management of DOT's Acquisitions To Maximize Value and Program Performance
• Building a Secure and Modern Information Technology Infrastructure	• Managing and Securing Information Systems To Efficiently Modernize Technology Infrastructure and Protect Sensitive Data from Compromise
	• Overseeing Administration of Key Transportation Assets To Ensure Their Success and Sustainability
	• Strengthening Financial Management Over Grants To Better Use Funds, Create Jobs, and Improve Infrastructure

APPENDIX. DEPARTMENT RESPONSE

Memorandum

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

Subject: **ACTION:** Management Comments on Office of Inspector General Report on Top Management Challenges 2014

Date: November 22, 2013

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

Reply to Attn of:

To: Calvin L. Scovel III
Inspector General

The Department carefully considers and constructively acts upon each of the products and issues identified by the Office of Inspector General (OIG). The Department's actions focus on both macro and micro levels, including both large scale issues and individual programmatic elements. At the macro level, crosscutting the OIG top management challenges report identifies important issues that assist the Department's management in fulfilling our mission to:

- Ensure the safety of the Nation's transportation systems in the air, land and on the water,
- maintain and grow the Nation's transportation infrastructure to provide sound highways, bridges and rail systems that efficiently move people and goods both across the country and across town,
- refine financial systems and controls and oversee compliance both internally and externally to ensure that the Department is a sound and effective steward of taxpayer funds, and
- ensure that the Department has secure and effective internal systems and processes, and provide the strategic vision, programs, guidance and oversight necessary to effectively and expeditiously accomplish our missions.

On a micro level, the Department provides clear and detailed responses to each and every OIG report that served as the foundation for its top management challenges report. The Department has developed strong processes for managing the interactions with the OIG, that include developing detailed responses to every OIG report and working with the OIG to ensure resolution, to the greatest extent possible on every report and every on individual recommendation. The Department further maintains a Recommendation Action Tracking System that provides frequent detailed metrics to management throughout the Department to

track and encourage completion of action on these recommendations until agreement is reached with the OIG that we have indeed accomplished the recommended action.

As a result, of employing both the top down macro approach, and the bottoms up micro approach, the Department has continuously achieved significant progress addressing both the overall issues enumerated in the OIG management challenges report and the individual component reports and recommendations that form its basis.

The Department is pleased with the constructive relationship that continues to develop with its OIG. The OIG provides useful information from its unique and independent perspective on our programs and operations. As the government continues to adapt to constraints on resources, we will continue to rely on OIG that provides useful insights to aid management in further improving programmatic performance while identifying additional efficiencies and potential cost savings.