

**Before the Committee on Appropriations
Subcommittee on Transportation, Housing and Urban Development,
and Related Agencies
United States House of Representatives**

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**Top Management
Challenges Facing the
Department of
Transportation**

**Statement of
The Honorable Calvin L. Scovel III
Inspector General
U.S. Department of Transportation**



Chairman Diaz-Balart, Ranking Member Price, and Members of the Subcommittee:

Thank you for inviting me here today to discuss the Department of Transportation's (DOT) top management challenges. Every year, the Department invests more than \$70 billion in a wide range of programs to operate and modernize our transportation infrastructure. Our office supports these efforts through our audits¹ and criminal investigations, which identify and help protect against fraud, waste, and abuse of Federal funds.² We look forward to working with the Secretary and this Subcommittee as we continue to assist DOT in improving its management of programs and resources.

My statement today will focus on the challenges³ our work has identified along three cross-cutting areas: (1) addressing new and ongoing safety challenges, (2) enhancing stewardship of DOT's financial and growing infrastructure investments, and (3) effectively addressing existing mandates and recommendations. Regardless of whether the Administration and Congress commit to new investments in infrastructure, sustained oversight in these areas is vital to promote safety, efficiency, and effectiveness within DOT's programs and investments.

SUMMARY

As Secretary of Transportation Elaine L. Chao has affirmed, DOT's primary objective is safety. Meeting this objective requires addressing a number of new and ongoing challenges—from ensuring the safe integration of emerging technologies such as Unmanned Aircraft Systems (UAS) and driverless cars to promptly investigating passenger vehicle defects and pipeline safety violations. At the same time, DOT must protect its investments in its multibillion-dollar infrastructure and systems with careful financial scrutiny and sustained management attention. This includes stronger efforts to enhance the capacity and resilience of the National Airspace System (NAS), manage high-risk contracts and evolving public-private financing arrangements, and safeguard our information technology (IT) systems from increasingly complex cybersecurity threats. Finally, as it carries out its mission, DOT must develop strategies to more effectively address safety recommendations and congressional mandates.

ADDRESSING NEW AND ONGOING SAFETY CHALLENGES

Safety remains the Department's highest priority, and DOT is committed to improving how it oversees our Nation's airspace, roads, pipelines, and other critical

¹ For a list of our ongoing audits, see the exhibit.

² As a result of our work, we returned \$54 to the Government for every dollar invested in our office last fiscal year. For the past 5 fiscal years, our return on investment has averaged \$35 to \$1.

³ *Top Management Challenges for Fiscal Year 2017, Department of Transportation* (OIG Report Number PT2017007), November 15, 2016. OIG reports and testimonies are available on our Web site: <https://www.oig.dot.gov>.

systems. Yet, emerging technologies, industry safety concerns, and enforcement issues pose challenges to DOT's safety mission. Key focus areas we have identified for DOT include ensuring its oversight keeps pace with the rapid rise of UAS and driverless cars, improving how it collects and uses vehicle safety recall data, and effectively addressing pipeline safety violations.

Overseeing an Expanding and Dynamic Unmanned Aircraft Systems Industry

Through a sustained focus, DOT, the Federal Aviation Administration (FAA), and industry have maintained a safe aviation system, with no fatal passenger accidents involving domestic commercial carriers in over 7 years. However, the growing demand for commercial UAS operations—for purposes ranging from pipeline monitoring and precision agriculture to package delivery and filmmaking—presents one of the most significant safety challenges for FAA in decades. FAA forecast 1.9 million units in potential annual sales of UAS in 2016, which could increase to 4.3 million units sold annually by 2020. While this represents substantial opportunities for U.S. businesses, it also raises safety concerns, since FAA has not yet established a comprehensive oversight framework to ensure this evolving industry can operate safely in the same airspace with other private, commercial, and military aircraft.

FAA took an important step forward to advance UAS integration in June 2016 with a new rule regulating the use of small UAS⁴ (i.e., systems weighing less than 55 pounds). However, the rule does not yet permit several high-profile aspects of potential UAS use, such as delivering packages beyond the line of sight of the pilot, underscoring the need for further regulatory efforts. Until then, FAA will continue to accommodate some UAS operations through regulatory waivers and exemptions.

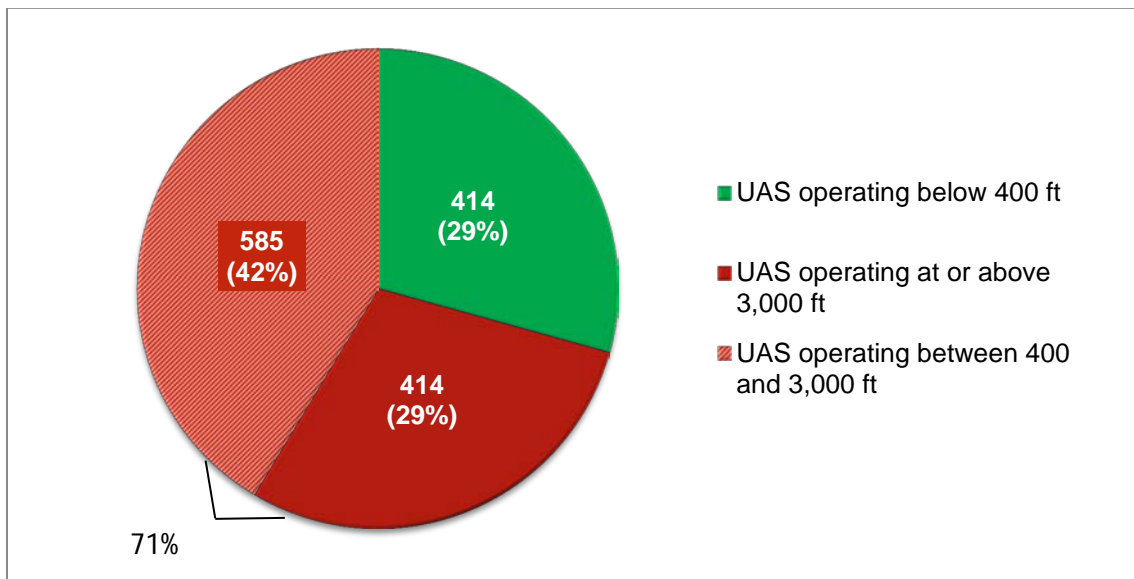
Moreover, as the number of UAS operations has grown, so has the number of UAS sightings by pilots and other sources.⁵ In 2015, there were over 1,100 UAS events reported compared to just 238 in 2014, according to FAA's UAS event data. As shown in the figure below, 71 percent of sightings occurred at altitudes either at or above the 400-foot maximum FAA-authorized altitude for civil UAS—with 29 percent of sightings reported at altitudes at or above 3,000 feet, approaching areas where other aircraft operate.⁶

⁴ 14 CFR Part 107 (June 2016).

⁵ While sightings are primarily reported by pilots, reports also come from air traffic controllers, law enforcement officers, and the general public.

⁶ It is important to note that FAA has not verified the validity of the reports received by air traffic, but the data indicate that a number of UAS operators may be flying their aircraft outside of FAA guidelines.

Figure. UAS Event Reports Above and Below 400 Feet



Source: OIG analysis of FAA data reported between November 2014 and January 2016.

Note: The 400-foot maximum altitude was a requirement of FAA-issued exemptions as well as the special rule for model aircraft prior to FAA's issuance of the Small UAS rule in June 2016.

These events highlight the importance of establishing a risk-based system for UAS oversight, especially since the number of UAS sightings has continued to increase—with over 1,400 reported for the 9-month period ending in September 2016, according to FAA. However, FAA's efforts in this area are incomplete. For example, the Agency lacks a robust data reporting and tracking system for UAS activity. It also has provided only limited UAS-related training and guidance to safety inspectors. As a result, FAA is currently restricted to a reactive approach for addressing UAS incidents and issues as they arise, rather than proactively identifying and mitigating potential risks.

As we recently reported,⁷ to make progress FAA will need to establish the capacity for integrated UAS data and analysis and implement a process to verify UAS operators' compliance with regulations. Further, FAA must continue coordinating with other Government agencies to advance UAS detection technology. These steps are critical to ensure that FAA can meet UAS demand while maintaining the safety of the NAS.

Preparing To Oversee Driverless Cars

The emergence of driverless cars is another developing technology that will present significant regulatory and oversight challenges for DOT. While this is still in the early stages, several companies are already developing and testing driverless cars, and the

⁷ *FAA Lacks a Risk-Based Oversight Process for Civil Unmanned Aircraft Systems*, (OIG Report Number AV2017018) December 1, 2016.

number is expected to grow quickly over the next decade. In September 2016, DOT issued a Federal Automated Vehicles Policy, which sets the framework for the next 50 years with guidance for the safe and rapid development of advanced automated vehicle safety technologies. Along with developing the tools and standards to oversee and regulate this new technology, DOT will need to consider the impact on several of its agencies and work to ensure they can adapt as needed to maintain DOT's commitment to both safety and innovation. For example, the National Highway Traffic Safety Administration (NHTSA) will have to consider whether new authority is needed to ensure that these new vehicles are as safe as standard motor vehicles. Similarly, for commercial motor vehicles, the Federal Motor Carrier Safety Administration (FMCSA) needs to identify any impact to its safety regulations and update operational procedures as required. However, further efforts in these areas will rely on the results of the Secretary's ongoing evaluation of the 2016 policy and any related updates.

Enhancing Processes for Collecting and Analyzing Vehicle Safety Recall Data

Recent large-scale recalls from auto manufacturers highlight a number of safety challenges for the Department. Since 2014, General Motors (GM) has recalled nearly 9 million U.S. vehicles for a defect involving a faulty ignition switch that resulted in GM receiving more than 100 death claims and more than 200 injury claims. In addition, NHTSA is overseeing a recall of Takata airbags installed in tens of millions of U.S. vehicles due to a safety defect that led to 11 fatalities and approximately 180 injuries in the United States. Due in part to our investigative work, Takata Corporation was sentenced last month to pay a total of \$1 billion in criminal penalties.⁸

NHTSA's Office of Defects Investigation (ODI) is responsible for overseeing safety recalls and monitoring recall completion rates. The GM and Takata recalls and others have prompted congressional concerns over NHTSA's safety processes. We have issued numerous audit recommendations over the years to the Agency to strengthen its internal controls and use of safety data. NHTSA is working to address those concerns, but more work remains. For example, NHTSA recently completed work on 14 of the 17 recommendations from our 2015 audit, which found ODI had insufficient processes for verifying that manufacturers submit complete and accurate early warning reporting data.⁹ However, NHTSA has not completed three recommendations to enhance collection and analysis of early warning reporting data and the process for reviewing complaints. We also reported in February 2016¹⁰ that ODI needed better

⁸ *Takata Corporation Pleads Guilty and Is Sentenced To Pay \$1 Billion in Criminal Penalties for Airbag Scheme*, February 27, 2017. <https://www.oig.dot.gov/library-item/35545>

⁹ *Inadequate Data and Analysis Undermine NHTSA's Efforts To Identify and Investigate Vehicle Safety Concerns* (OIG Report Number ST2015063), June 18, 2015.

¹⁰ *Additional Efforts Are Needed To Ensure NHTSA's Full Implementation of OIG's 2011 Recommendations* (OIG Report Number ST2016021), February 24, 2016.

quality control mechanisms to comply with policies that NHTSA established in response to our 2011 recommendations involving documentation and testing weaknesses.¹¹ Two recommendations from our 2016 report remain open.

Last month, we announced¹² an audit of ODI's recall processes as mandated by Congress in the Fixing America's Surface Transportation Act (FAST Act).¹³ Consistent with this mandate, and as agreed to with congressional staff, our audit is examining NHTSA's processes for monitoring manufacturers' proposed recall remedies and scope and overseeing safety recall implementation. We will keep Congress apprised of our progress in this area.

Addressing Violations of Pipeline Safety Regulations

A key DOT mission is mitigating the safety risks posed by the Nation's 2.5 million-mile pipeline transportation system. The Pipeline and Hazardous Materials Safety Administration (PHMSA) develops and enforces regulations for the safe and reliable operation of pipelines. However, PHMSA has faced challenges enforcing some key regulatory safeguards. There have been a number of serious pipeline-related incidents over the past several years. From 2012 to 2016, there were 144 serious pipeline incidents resulting in 63 fatalities. Many of these were due to violations of safety regulations required by the Natural Gas Pipeline Safety Act (PSA).¹⁴

Historically, however, it has been difficult to prosecute such violations due to language in Title 49 U.S.C. Section 60123(a), the criminal statute for pipeline safety violations. This section requires that the violation be committed "knowingly and willfully." Instead, the Department of Justice has had more success prosecuting cases under Section 5124 (the criminal statute for *hazardous materials* violations), which allows prosecutions for "reckless" violations (i.e., display of deliberate indifference or conscious disregard to the consequences of their conduct). In the past 10 years, Federal charges under Section 60123(a) were brought against only four individuals and companies, and in only one case did a prosecution result in a guilty verdict of a utility company for violations of Section 60123(a)—the case against the Pacific Gas and Electric Company (PG&E).

The case against PG&E arose after a natural gas pipeline ruptured in San Bruno, CA, in 2010, killing 8 people. It was investigated by the Department of Justice, our office, the Federal Bureau of Investigation, and local law enforcement. On August 9, 2016, a Federal jury found PG&E guilty of multiple knowing and willful violations of the PSA and of obstructing the National Transportation Safety Board's (NTSB) investigation. On January 26, 2017, the maximum sentence was imposed—5 years of

¹¹ *Process Improvements Are Needed for Identifying and Addressing Vehicle Safety Defects* (OIG Report Number MH2012001), October 6, 2011.

¹² *Audit Initiated of NHTSA's Vehicle Safety Recall Process* (OIG Project ID 17S3002S000), February 8, 2017.

¹³ Pub. L. No. 114-94 (2015).

¹⁴ Pub. L. No. 90-481 (1968).

probation and a \$3 million fine. The court also ordered the company to announce in local and national media that it was found guilty of violating the PSA and obstructing a Federal investigation. While this sentence sends a message to the industry, as a policy matter, DOT and Congress may wish to consider whether the deterrent effect of prosecuting violations of the PSA might be enhanced by amending Section 60123(a) to include reckless violations.

ENHANCING STEWARDSHIP OF DOT'S FINANCIAL AND INFRASTRUCTURE INVESTMENTS

DOT receives billions of Federal dollars annually to fund projects to build, repair, and maintain our Nation's vast transportation infrastructure, ranging from air traffic control tools to roads and bridges and IT systems. Safeguarding these and future investments requires sound financial management and strong upfront risk mitigation strategies for increasing threats. Key challenges for the Department include enhancing the capacity and resiliency of the NAS; increasing oversight of high-risk contracts, highway and bridge infrastructure spending, and Departmentwide financial programs; and effectively addressing rapidly evolving cybersecurity risks.

Enhancing the Capacity, Efficiency, and Resiliency of the NAS

FAA operates the safest aviation system in the world and continues to work with stakeholders to implement new technologies that are providing near-term benefits to airspace users, such as fuel savings and increased airspace capacity and efficiency. However, FAA faces ongoing challenges with its investments to deliver specific capabilities and programs required to implement the Next Generation Air Transportation System (NextGen), which aims to modernize and replace 1950s-era ground radar and equipment.

For example, FAA has worked with industry to identify and begin implementing the four highest priority NextGen capabilities: (1) advancing performance-based navigation (PBN), (2) improving access to closely spaced parallel runways, (3) enhancing airport surface operations, and (4) developing data communications for controllers and pilots. However, FAA is behind schedule in key areas and faces challenges achieving the full range of benefits, particularly with its top priority to develop new PBN procedures. These have faced delays due in part to community concerns over aircraft noise and the lack of automated tools to help controllers sequence and space aircraft.

We also recently reported¹⁵ that FAA has not fully identified the total costs, capabilities, or completion schedules for any of the six NextGen transformational

¹⁵ *Total Costs, Schedules, and Benefits of FAA's NextGen Transformational Programs Remain Uncertain* (OIG Report Number AV2017009), November 10, 2016.

programs¹⁶ that are required to implement NextGen and introduce key capabilities. Cost estimates for these six programs now total over \$5.7 billion (increasing from a \$2.1 billion estimate in 2012), and their completion has been pushed beyond 2020. Many of these programs' benefits remain unquantified as to how they will improve the flow of air traffic or controller workforce productivity. For example, FAA has mandated that all airspace users must purchase and install the Automatic Dependent Surveillance-Broadcast System (ADS-B) *Out*¹⁷ equipment by 2020. However, the majority of benefits are expected from ADS-B *In*, which will enable display of information in the cockpit. Yet, ADS-B *In*'s requirements and associated schedule and costs continue to evolve, making it uncertain when benefits from enhancing NAS capacity will be achieved.

While working to increase capacity and efficiency through NextGen, FAA must also take steps to ensure that the NAS can quickly recover from catastrophic—sometimes intentional—events. For example, in September 2014, an FAA contract employee deliberately started a fire at FAA's Chicago Air Route Traffic Control Center that disrupted air traffic for more than 2 weeks and led to reported industry losses of over \$350 million. The event highlighted weaknesses in FAA's current air traffic control infrastructure, which has limited flexibility to respond to system failures and quickly return to normal operations. We recently reported¹⁸ that while FAA has begun to develop new contingency plans to better respond to such failures, the plans are still incomplete, and many of the key technologies, such as the new NAS Voice System,¹⁹ are years away from implementation.

Enhancing NAS capacity and efficiency depends on ensuring adequate controller staffing levels at its critical air traffic facilities. In our 2016 report,²⁰ we found that when excluding controllers-in-training, six of eight large Terminal Radar and Approach Control (TRACON)²¹ facilities (e.g., New York, Chicago, and Atlanta) had staffing levels below FAA's staffing range (as listed in its Controller Workforce Plan), while some en route facilities had more controllers than the Plan required. For example, New York TRACON had 137 fully certified controllers in December 2016, while FAA's staffing range was 174 to 213 controllers. Without better models, FAA will continue to face challenges in ensuring its critical facilities are well staffed. We recommended that FAA implement a methodology for determining en route staffing ranges. According to FAA officials, its staffing model has been updated and new

¹⁶ The six transformational programs are Automatic Dependent Surveillance–Broadcast (ADS-B), System Wide Information Management (SWIM), Data Communications (DataComm), NAS Voice System (NVS), Common Support Services–Weather (CSS-Wx), and Collaborative Air Traffic Management–Technologies (CATM-T).

¹⁷ ADS-B *Out* involves the broadcast of information to FAA ground systems.

¹⁸ *Although FAA Has Taken Steps To Improve its Operational Contingency Plans, Significant Work Remains To Mitigate Effects of Major System Disruptions* (OIG Report Number AV2017020), January 11, 2017.

¹⁹ NAS Voice System (NVS) is expected to standardize the voice communication infrastructure among FAA air traffic facilities by replacing 11 aging analog voice communication systems with a single digital technology.

²⁰ *FAA Continues To Face Challenges in Ensuring Enough Fully Trained Controllers at Critical Facilities* (OIG Report Number AV2016014), January 11, 2016.

²¹ TRACONs guide aircraft as they approach or leave airspace near a primary airport.

staffing targets will be available in the revised Controller Workforce Plan scheduled for issuance this month.

Increasing Oversight of High-Risk Contracts

DOT relies on billions of dollars in contracts each year to fund programs across all modes of transportation. In fiscal years 2015 and 2016, DOT spent over \$6 billion in contracts annually. Our work has identified areas where the Department can improve its internal controls and accountability in managing its sizable investments, including strengthening oversight and planning for contracts and minimizing the use of contract types that present the greatest financial risks to the Government.

For example, cost-reimbursable contracts are considered high risk because of the potential for cost escalation and the fact that the Government pays a contractor's costs of performance regardless of whether the work is completed. Our review²² of six Operating Administrations found that they did not (1) perform adequate acquisition planning and document their justifications²³ for using this contract type or (2) consistently assess oversight risks, properly designate oversight personnel, or verify that contractors' accounting systems are adequate to provide reliable cost data.

Similarly, we found that FAA—which awards more contract dollars annually than any other Operating Administration—lacked basic internal controls and contracting practices for its sole-source and multiple-award contracts. Sole-source contracts are negotiated without the benefit of competition and carry the risk of overspending. Our work²⁴ found that FAA did not do enough to reduce its use of sole-source contracts, as directed by OMB in 2009. Between fiscal years 2008 and 2014, FAA awarded 624 sole-source contracts with a total value of about \$2.2 billion. For most of the sole-source contracts we reviewed, FAA had not conducted an adequate market analysis or developed independent cost estimates to ensure reasonable prices. We also found issues with FAA multiple-award service contracts. While multiple award service contracts are not by nature high-risk, the various task orders issued under them frequently lack sufficient oversight and competition.

For example, for FAA's \$1.1 billion Systems Engineering 2020 (SE-2020) contracts,²⁵ FAA did not ensure full competition or documentation for task orders or

²² *DOT Does Not Fully Comply With Revised Federal Acquisition Regulations on the Use and Management of Cost-Reimbursement Awards* (OIG Report Number ZA2013118), August 5, 2013.

²³ The Federal Acquisition Regulation states that a cost-reimbursement award may only be used when (1) circumstances do not allow the agency to define its requirements sufficiently to allow for a fixed-price award or (2) uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price award.

²⁴ *FAA Lacks Adequate Controls To Accurately Track and Award Its Sole Source Contracts* (OIG Report Number ZA2016065), May 9, 2016.

²⁵ SE-2020 is a portfolio of contracts that FAA uses to obtain professional and technical services to support its development and implementation of NextGen—the Agency's effort to modernize and maintain the NAS. During our 2012 review of FAA's SE-2020 contracts, the Agency's cumulative maximum value was \$7.3 billion. When we initiated our 2016 follow-up review, FAA reported its current award baseline was \$1.1 billion.

ensure contract oversight staff had the needed skills for their jobs.²⁶ This can increase the risk of cost overruns or payment for services that do not meet DOT's needs.

Improving Stewardship of Credit Programs, Highway and Bridge Infrastructure Projects, and Delinquent Debt

To be an effective steward of taxpayer dollars while financing large infrastructure projects, DOT must carefully manage the consolidation of credit programs that leverage private investment, such as the Transportation Infrastructure Finance and Innovation Act (TIFIA) and the Railroad Rehabilitation and Improvement Financing (RRIF). In 2014, DOT established the Build America Transportation Investment Center (BATIC) to streamline public-private coordination when planning and implementing infrastructure projects. Since BATIC's inception, DOT credit programs have issued credit instruments totaling roughly \$10 billion to 21 projects that support up to \$26 billion in transportation infrastructure. Recognizing BATIC's impact on funding for infrastructure projects, Congress mandated the restructuring of DOT credit programs to consolidate the TIFIA and RRIF programs with BATIC in 2015. This restructuring is ongoing; sustained management attention will be critical to complete and oversee these significant financial arrangements.

Our work has also identified areas where DOT can enhance its stewardship of about \$40 billion in annual Federal funding for highway and bridge infrastructure projects and better deter fraud, waste, and abuse. As DOT has previously reported to Congress, there is a significant funding gap between the amount needed to maintain and improve the conditions and performance of roads and bridges and the amount that Government agencies actually provide—making strong oversight especially vital to maintaining and expanding this infrastructure. For example, we recently found that FHWA is not enforcing a law²⁷ requiring that States fully repay preliminary engineering (PE) funds to the Highway Trust Fund when a project does not acquire right-of-way²⁸ or start construction within 10 years after the PE funds were made available. As a result, FHWA could not ensure that States repaid billions in PE funds or requested extensions when required.

Managing DOT's financial commitments also includes establishing and maintaining internal controls to more effectively identify and collect delinquent debt.²⁹ Our audit work found³⁰ that weak internal controls at DOT contributed to an increase in

²⁶ *FAA's Contracting Practices Are Insufficient To Effectively Manage Its Systems Engineering 2020 Contracts* (OIG Report Number ZA2012082), March 28, 2012.

²⁷ 23 U.S.C. § 102(b).

²⁸ Right-of-way is new real property that must be acquired in order to construct or complete a transportation project.

²⁹ A debt is an amount owed by an individual and/or a non-Federal entity. This includes direct and guaranteed loans, such as those provided to States for financing transportation projects. Administrative debts include civil fines and penalties and payroll overpayments. A debt becomes delinquent when payment is not made by the due date or end of the grace period established in an agreement or specified in the billing notice.

³⁰ *Weak Internal Controls for Collecting Delinquent Debt Put Millions of DOT Dollars at Risk* (OIG Report Number FI2015065), July 9, 2015.

outstanding debt owed the Federal Government by individuals and non-Federal entities and an increased risk that these debts would not be collected and returned to DOT. From fiscal years 1999 to 2013, DOT's reported delinquent debt increased by over 300 percent, from approximately \$170 million to \$737 million. DOT-wide policies and procedures are needed to accurately identify and report delinquent debt and recoveries, collect debts in a timely manner, and ensure DOT has the requisite skills and internal controls for carrying out these programs.

Coordinating Technological Initiatives and Extending Security Boundaries To Address Cybersecurity Risks

As cybersecurity threats become increasingly sophisticated and more numerous, DOT faces the challenge of reevaluating and expanding traditional approaches to secure IT systems. DOT must work to fulfill existing requirements while also implementing new strategies to meet the additional security demands of mobile technology, cloud-based computing, and other technological developments. However, cybersecurity remains a significant challenge for DOT and its Operating Administrations.

To its credit, DOT has supplied personal identification verification (PIV) cards to all its employees. However, DOT has not fully implemented the use of these cards Departmentwide for access to its facilities and information systems. In fact, only 140 of its 460 systems (30 percent) can use PIV cards for access. In addition, 530 FAA facilities do not use PIV cards for physical access. DOT also has not effectively implemented other cybersecurity initiatives, such as programs to actively monitor and mitigate security weaknesses immediately during or after an attack. For example, we recently reported³¹ that DOT's continuous monitoring program lacks sufficient maturity to be effective, leaving the Department's systems vulnerable to exploitable hardware and software.

Furthermore, recent trends in mobile, cloud, and workplace technology—such as the proliferation of smartphones and tablets and an increasing number of remote employees—present new challenges to monitoring and securing DOT's network. As the industry moves towards extending virtual desktop infrastructure³² and cloud computing,³³ DOT will need to change how it stores and manages data in order to effectively respond to cybersecurity incidents. As we recently reported, DOT's current incident monitoring is incomplete due to lack of access to FAA's and cloud service providers' systems.

³¹ *FISMA 2016: DOT Continues To Make Progress, but the Department's Information Security Posture Is Still Not Effective* (OIG Report Number FI2017008), November 9, 2016.

³² Virtual desktop infrastructure enables a user to have a DOT server replicate his or her desktop on devices in addition to his or her Government-issued computer.

³³ Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

EFFECTIVELY ADDRESSING EXISTING MANDATES AND RECOMMENDATIONS

In recent years, DOT has faced a significant challenge to implement mandated and recommended improvements to its safety oversight and program management. These include highway and transit requirements from the 2012 MAP-21 and 2015 FAST acts, as well as reevaluating hours-of-service requirements as mandated in the 2015 Appropriations Act.³⁴ In 2016, the FAA Extension, Safety, and Security Act (Extension Act)³⁵ also set out new requirements for DOT regarding pilot safety issues and oversight of foreign repair stations. At the same time, DOT has struggled to meet deadlines for mandates and recommendations regarding pipeline and hazardous materials safety. Going forward, it will be important for DOT to prioritize actions to meet statutory requirements, weigh which rulemakings will have the greatest safety merit and which existing regulations may require additional scrutiny, and assess steps needed to meet these or any future congressional directives. For example, DOT will need to improve its compliance with the Federal Information Technology Acquisition Reform Act (FITARA),³⁶ which is intended to improve agencies' IT acquisitions and enhance congressional monitoring. DOT recently received a failing grade on the House Committee on Oversight and Government Reform's FITARA Scorecard.

Implementing Legislative Requirements for Highway and Transit Projects

MAP-21 established requirements for States to employ performance-based management of DOT's highway and transit programs, including linking State transportation performance plans to Federal-aid highway funds through an asset management plan. As DOT finalizes rulemakings³⁷ to meet these requirements, it will need to adjust its risk-based oversight to ensure that States consistently comply with the new rules and that the rules achieve desired outcomes. Additionally, MAP-21 called for DOT to accelerate highway, bridge, and transit project delivery. These actions include rulemakings to streamline the environmental review process and required reports to Congress on environmental actions. DOT has implemented half of the actions it initially identified. However, DOT recognizes that it needs to revise a large number of its planned actions to comply with more recent FAST Act requirements that will affect these areas. This includes, for example, a rulemaking that allows States to assume FHWA responsibilities under the National Environmental

³⁴ *Consolidated and Further Continuing Appropriations Act of 2015*. Pub. L. No. 113-235 (2014).

³⁵ Pub. L. No. 114-190 (2016).

³⁶ Federal Information Technology Acquisition Reform provisions of *the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015*, Pub. L. No. 113-291, div. A, title VIII, subtitle D, 128 Stat. 3292, 3438-3450 (Dec. 19, 2014).

³⁷ For example, the Federal Highway Administration (FHWA) has established a process for development of a State risk-based asset management plan, including defining minimum standards for developing and operating bridge and pavement management systems, and a rulemaking for setting performance targets and measures covering bridges and pavement.

Policy Act³⁸ for environmental reviews, consultation, and compliance for Federal highway projects.

Furthermore, FHWA has not implemented key MAP-21 requirements to improve bridge safety programs or addressed several of our related recommendations. These include implementing a mandated final rule on improving bridge inspection and inventory standards and enforcing funding restrictions on States that do not meet requirements. Additionally, in 2015, we made five recommendations to improve FHWA's risk-based oversight of State bridge inspection programs, such as addressing gaps in program guidance and implementing a comprehensive national bridge safety risk management process. FHWA is working to address our recommendations. These actions, once completed, will help ensure the safety and integrity of the Nation's more than 600,000 bridges, of which approximately one-fourth are deficient.

Leveraging Recent Efforts To Inform Research on Hours-of-Service Issues

FMCSA issued hours-of-service regulations, which came into effect in 2013, to establish daily and weekly driving limits and required rest periods for commercial vehicle drivers. The regulations included two additional restart provisions. These provisions required that commercial drivers include at least two nighttime periods in restart breaks and limited use of the restart provision to once every 168 hours. Congress raised concerns about the rule's unintended consequences, such as increased congestion during certain traffic hours, and suspended FMCSA's enforcement of the two provisions in the 2015 Appropriations Act. The act also required DOT to conduct a study of the operational, safety, health, and fatigue impacts of these regulations and mandated that we review the study. As we recently reported to this Subcommittee, we found that DOT's study, provided to us for review in January 2017, met the act's requirements, and we concurred with the Department's conclusion that the study did not explicitly identify a net benefit from the use of the two suspended provisions on driver operations, safety, fatigue, and health.³⁹ Going forward, the challenge for DOT and FMCSA will be determining how best to use the study results to inform future research opportunities on driver schedules and fatigue.

Managing New Safety Requirements From the FAA Extension Act

FAA has several ongoing initiatives to enhance aviation safety but faces challenges to implement new requirements of the 2016 Extension Act. Several of the act's provisions also mirror recommendations from our office. For example, in line with our recent report,⁴⁰ the act includes requirements for new pilot training on monitoring

³⁸ Pub. L. No. 91-190 (1969).

³⁹ *Letter to the House and Senate Committees on Appropriations and the Secretary Regarding OIG's Audit of FMCSA's Hours of Service Restart Study*, (OIG Correspondence Number CC2017007), March 2, 2017.

⁴⁰ *Enhanced FAA Oversight Could Reduce Hazards Associated With Increased Use of Flight Deck Automation*, (OIG Report Number AV2016013), January 7, 2016.

flight automation systems and new inspector guidance for tracking and assessing pilot proficiency in manual flight. FAA will need to ensure that air carrier training programs address these provisions so that pilots maintain the skills needed to fly safely and recover from a failure with cockpit automated systems or an unexpected event, particularly in the critical phases of flight.

A critical safety component reflected in the Extension Act is ensuring air carriers have the information they need on a pilot's training and background to make informed hiring decisions. To meet this goal, the act requires FAA to establish a pilot records database by April 30, 2017. We have monitored FAA's efforts to develop and implement the database since it was first mandated,⁴¹ and we reported in 2015⁴² that FAA did not expect full implementation until 2023. In response to our recommendations, FAA accelerated efforts to launch its portion of the database and now expects it to be available to air carriers this spring. However, FAA has yet to decide how best to obtain and input air carrier records as far back as 2005 given the differences among carriers' data and recordkeeping systems. FAA is working on a rulemaking to address this problem and expects to issue it in 2018 at the earliest.

Another aviation safety priority that we have reported on since 2003 is foreign repair stations. Currently there are approximately 840 repair stations located outside the United States. Under the Extension Act, FAA must ensure that its safety assessment system prioritizes inspections at foreign repair stations performing heavy maintenance for U.S. carriers, using risk-based oversight and data to track corrective actions. However, we continue to find weaknesses in FAA's ability to get the data it needs to assess risk and effectively monitor foreign repair stations covered under the United States and European Union (EU) Aviation Safety Agreement, which went into effect in 2011 and covers more than 400 FAA-certificated repair stations in Europe.⁴³ Under this agreement, foreign authorities are only required to provide FAA with repair station inspection results pertaining to those FAA regulations that differ from the EU's—not complete facility inspection reports. In response to our recommendation in 2015, FAA recently issued guidance to its inspectors to obtain these facility inspection reports, but it is too early to tell whether these procedures will actually help the Agency to better assess risk.

⁴¹ The database was first mandated in the 2010 Airline Safety and Federal Aviation Administration Safety Act (Pub. L. No. 111-216 (2010)) in response to the 2009 Colgan Air accident. On February 12, 2009, Colgan Air Flight 3407 crashed in New York, leading to 50 fatalities. The accident highlighted the need for improvements to pilot hiring programs.

⁴² *FAA Delays in Establishing a Pilot Records Database Limit Air Carriers' Access to Background Information*, (OIG Report Number AV2015079), August 20, 2015.

⁴³ With this agreement, the United States expanded its aviation safety partnership from 3 countries in 1999 (France, Germany, and Ireland) to 18 countries today (the original 3 plus Austria, Belgium, Czech Republic, Denmark, Finland, Italy, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Spain, Sweden, and the United Kingdom). While this agreement minimizes duplicative oversight and relieves FAA inspectors from performing mandatory, annual inspections overseas, FAA still retains its responsibility to ensure its foreign repair stations comply with U.S. regulations.

Addressing Pipeline and Hazardous Materials Safety Recommendations and Mandates

Given the number of pipeline and hazardous materials incidents over the last several years—more than 86,000 incidents between 2012 and 2016—PHMSA has received many mandates and recommendations to improve how it mitigates these safety risks. Specifically, since 2005, PHMSA has received 263 mandates and recommendations. To its credit, PHMSA completed nearly two-thirds of them but in doing so, missed about 75 percent of its mandated deadlines. Our work shows that PHMSA must focus on improving its processes, oversight, and project management to address the remaining or any future recommendations or mandates in a timelier manner. As we reported in October 2016,⁴⁴ 20 of PHMSA’s 81 mandates (25 percent) remain unimplemented, as well as about half of NTSB’s 118 safety recommendations and 7 recommendations from the Government Accountability Office.

In addition, PHMSA is working to address our five recommendations to improve how the Agency implements mandates and recommendations and coordinates with other Operating Administrations involved with the transportation of hazardous materials—FAA, FMCSA, and the Federal Railroad Administration. For example, our work found that PHMSA has not adequately coordinated, as required by a DOT Order,⁴⁵ on rulemaking and international standards development with these agencies, limiting its ability to resolve disputes in a timely manner. PHMSA is working to address these issues through organizational changes. It is too soon to determine whether these plans, once finalized, will aid the Agency’s ability to meet mandates and recommendations in full and on time.

CONCLUSION

The safe and efficient movement of people and goods is vital to our Nation’s economic growth, global partnerships, and quality of life. We remain committed to assisting DOT and the Secretary as they work to improve DOT’s management of programs and resources. Our office has a strong record of identifying weaknesses and recommending enhancements to DOT’s internal controls to better oversee its programs and grants, particularly in large-scale infrastructure investments such as the American Recovery and Reinvestment Act of 2009 and Hurricane Sandy relief funds. We appreciate this Subcommittee’s sustained support, which has allowed us to maximize our efforts to oversee such investments while maintaining our focus on other high-priority areas. We will continue to strive to find innovative ways to ensure the Department fully leverages the fraud detection and prevention resources at hand—such as mining and analyzing data to better predict high-risk areas for fraud, waste,

⁴⁴ *Insufficient Guidance, Oversight, and Coordination Hinder PHMSA’s Full Implementation of Mandates and Recommendations* (OIG Report Number ST2017002), October 14, 2016.

⁴⁵ DOT Order 1100.74A, Department of Transportation Organization Manual: Pipeline and Hazardous Materials Safety Administration, September 2010.

and abuse. We look forward to providing you with any information you may require and pledge our support in promoting safety and efficiency and preventing fraud in any forthcoming infrastructure plans.

This concludes my prepared statement. I will be happy to answer any questions you or other Members of the Subcommittee may have.

EXHIBIT. DOT OIG'S ONGOING AUDITS AS OF MARCH 16, 2017

Project Title	Objectives	Source/Requester
DEPARTMENTWIDE		
DOT's Information Security Continuous Monitoring (ISCM) Program Audit	Our audit objectives are to assess (1) how DOT's ISCM program conforms to OMB and National Institute of Standards and Technology requirements and (2) the status and progress of DOT's implementation of its ISCM program.	Self-Initiated
DOT's Use of Other Transaction Agreements	Our audit objective is to evaluate DOT's use and management of Other Transaction Agreements.	Self-Initiated
DOT's Implementation of the Improper Payments Elimination and Recovery Act of 2010 During Fiscal Year 2016	Our audit objective is to determine whether the Department complied with IPERA's requirements as implemented by the Office of Management and Budget.	Required by the Improper Payments Elimination and Recovery Act of 2010
DOT OCIO Cybersecurity Funding	Our audit objectives are to determine whether DOT (1) adequately planned for its cybersecurity funding needs and (2) expended cybersecurity funds in accordance with congressional direction.	Self-Initiated
OST's Benefit-Cost Analysis of the TIGER Grant Applications	Our audit objective is to assess the Office of the Secretary of Transportation's (OST) policies and procedures for evaluating benefit-cost analyses in determining which TIGER grant applications are forwarded for further review.	Self-Initiated
DOT's Implementation of Earned Value Management System	Our audit objectives are to assess DOT's (1) implementation of EVM policies, procedures, and practices for its IT investments and (2) use of EVM data to plan, monitor, and report the status of its IT investments and related security spending. We have contracted with KPMG LLP, an independent public accounting firm, to conduct this review, subject to OIG's oversight.	Self-Initiated

Project Title	Objectives	Source/Requester
DOT's Implementation of Enterprise Architecture	Our audit objectives are to (1) determine whether DOT has an effective enterprise architecture program and (2) to assess its progress in developing its department-wide EA and an EA performance measurement system. We have contracted with KPMG LLP, an independent public accounting firm, to conduct this review subject to our oversight.	Self-Initiated
DOT's Protection of Privacy Information	Our audit objectives are to determine whether (1) DOT has established adequate procedures for the collection, use, and security of PII; (2) DOT ensures compliance with its own privacy and data protection policies and applicable laws and regulations to prevent unauthorized access to or unintended use of PII; and (3) DOT's Operating Administrations properly evaluate the necessity of using PII to process system data. OIG has contracted with KPMG LLP, an independent public accounting firm, to conduct this review, subject to OIG's oversight.	Required by FY 2005 consolidated appropriations Act for Transportation, Treasury, Independent Agencies and General Government
DOT's Information Security Program and Practices for Fiscal Year 2017	Our audit objective is to determine the effectiveness of DOT's information security program and practices.	Required by the Federal Information Security Modernization Act of 2014
DOT's Fiscal Years 2017 and 2016 Consolidated Financial Statements	OIG has engaged an independent accounting firm, KPMG, to conduct an audit of the DOT's consolidated financial statements for fiscal years 2017 and 2016, subject to OIG oversight.	Required by Chief Financial Officers Act of 1990
DOT's Compliance with the Requirements of the DATA Act for Fiscal Year 2017	Our audit objectives are to assess (1) the completeness, timeliness, quality, and accuracy of fiscal year 2017 second quarter financial and award data submitted for publication on USASpending.gov and (2) the Department's implementation and use of the government-wide financial data standards established by the Office of Management and Budget (OMB) and the Department of Treasury.	Required by the Digital Accountability and Transparency Act of 2014

Project Title	Objectives	Source/Requester
DOT's SSAE-16 Review of the Enterprise Services Center	OIG contracted with KPMG, LLC, an independent public accounting firm, to conduct the review of ESC subject to OIG's oversight. The audit objectives are to determine whether (1) management's descriptions of ESC's systems are fairly presented; (2) ESC's controls are suitably designed; and (3) ESC's controls are operating effectively throughout the period of October 1, 2016, through June 30, 2017. KPMG will do additional testing and issue a follow-up letter to our office for the period July 1, 2017, through September 30, 2017.	Required by the American Institute of Certified Public Accountant' Statement on Standards for Attestation Engagements No. 16
FEDERAL AVIATION ADMINISTRATION		
FAA's Fiscal Years 2017 and 2016 Consolidated Financial Statements	OIG has engaged an independent accounting firm, KPMG, to conduct an audit of the FAA's consolidated financial statements for fiscal years 2017 and 2016, subject to OIG oversight.	Required by Chief Financial Officers Act of 1990
FAA's Runway Safety Initiatives	Our audit objective is to evaluate FAA's progress in implementing initiatives to improve runway safety.	Self-Initiated
FAA's Oversight of Suspected Unapproved Parts	Our audit objectives are to assess the effectiveness of FAA's (1) process for monitoring and investigating suspected unapproved parts and (2) oversight of industry actions to remove unapproved parts from the aviation supply chain.	Requested by the Ranking Members of the House Transportation and Infrastructure Committee and the Subcommittee on Aviation
FAA's Oversight of the Safety of Commercial Airline Flight Decks	Our audit objectives are to assess the effectiveness of FAA's actions to (1) identify vulnerabilities to flight deck security and (2) mitigate identified flight deck vulnerabilities.	Requested by Senator Dianne Feinstein
FAA's Progress With Implementing High-Priority NextGen Capabilities	Our audit objectives in this follow-up audit are to evaluate FAA's (1) process for identifying risks to implementing the four prioritized NextGen capabilities and (2) actions to mitigate any identified risks.	Requested by the Chairmen and Ranking Members of the House Committee on Transportation and Infrastructure and its Subcommittee on Aviation
FAA's Oversight of ADS-B Contract	Our audit objectives are to (1) determine whether the ADS-B contract provides FAA the ability to monitor whether the contractor is providing required ADS-B products and services and (2) evaluate FAA's procedures for determining payments to the contractor.	Required by the FAA Modernization and Reform Act of 2012

Project Title	Objectives	Source/Requester
FAA Terminal Modernization at Large TRACONs	Our audit objective is to assess FAA's progress in ensuring STARS meets FAA requirements at the 11 large TRACONs and supports NextGen capabilities.	Directed by the House Committee on Appropriations
FAA's Oversight of Regional Airlines	Our audit objectives are to evaluate FAA's process for (1) identifying periods of transition and growth at regional carriers and (2) adjusting its oversight to respond to changes in regional air carrier operations.	Requested by the Ranking Members of the House Committee on Transportation and Infrastructure and its Subcommittee on Aviation
FAA's Actions To Address ERAM Outages	Our objectives are to (1) assess the causes of the recent ERAM outages and assess FAA's actions to address them and (2) determine whether tradeoffs were made to ERAM's design requirements to meet revised implementation schedules, and assess the delivery of new NextGen capabilities called for in FAA plans.	Requested by the Chairmen and Ranking Members of the House Transportation and Infrastructure Committee, Aviation Subcommittee, and the Chairman of the Senate Committee on Commerce, Science, and Transportation
FAA's En Route Automation Modernization Program Information Security Controls	Our audit objectives are to determine (1) whether FAA has effectively implemented security controls to address weaknesses identified during our prior review of ERAM and (2) what other security weaknesses, if any, have developed.	Requested by the Senate Committee on Commerce, Science, and Transportation
FAA's Controller Scheduling Policies	Our audit objectives are to (1) determine FAA's progress in adopting and implementing a scheduling tool and (2) identify any challenges that will need to be addressed to realize potential benefits.	House Appropriations Committee
FAA's Process for Staffing and Placing Maintenance Technicians	Our audit objectives are to evaluate FAA's (1) methodology for determining maintenance technician staffing levels and (2) process for placing maintenance technicians.	House Appropriations Committee
FAA's Management of NextGen Pre-Implementation Funding	Our audit objectives are to assess FAA's procedures for (1) selecting, justifying, and measuring the outcomes of projects that received developmental funding and (2) overseeing the execution of these projects.	House Appropriations Committee
FAA's Oversight of the Passenger Facility Charge Program	Our audit objectives are to review FAA's oversight of (1) air carrier compliance with collection and remittance of PFC funds and (2) airport operator compliance with the use of PFC funds.	Self-Initiated

Project Title	Objectives	Source/Requester
FAA's Oversight of Air Carrier Check Pilots	Our audit objective is to assess the effectiveness of FAA's processes for approving and overseeing air carrier check pilots.	Self-Initiated
FAA's Award and Oversight of eFAST Procurements	Our audit objectives are to evaluate FAA's processes for (1) awarding and (2) overseeing eFAST procurements.	Self-Initiated
FAA's SE2020 Program Task Order Award and Oversight	Our audit objective is to assess whether FAA's actions for awarding task orders and overseeing the SE2020 acquisition program were sufficient to meet its program mission.	Self-Initiated
FAA's Oversight of Revenue Use at "Grandfathered" Airports	Our audit objective is to assess FAA's oversight of grandfathered airports' compliance with Federal law related to airport revenue payments.	Self-Initiated
FAA Controls Over Overflight Fees	Our audit objectives are to assess FAA's policies and procedures for (1) accurately computing overflight fees, (2) granting exceptions appropriately, and (3) collecting or referring fees to Treasury for collection in accordance with Federal laws and regulations.	Self-Initiated
FEDERAL HIGHWAY ADMINISTRATION		
FHWA's Use of the Emergency Relief Program To Improve Resilience	Our audit objective is to assess FHWA's processes and guidance for incorporating resilience improvements into emergency relief projects to rebuild damaged highway infrastructure.	Self-Initiated
FHWA Construction Force Account Oversight	Our audit objectives are to (1) determine the scope and magnitude of force-account projects funded through the Federal-aid Highway Program and (2) assess FHWA's processes for overseeing compliance with Federal force-account requirements.	Self-Initiated
FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION		
Commercial Motor Vehicle Loading and Unloading Delays	Our objectives are to (1) assess available data on motor carrier loading and unloading delays and (2) provide information on measuring the potential effects of loading and unloading delays.	Mandated by the Fixing America's Surface Transportation Act of 2015

Project Title	Objectives	Source/Requester
FMCSA's Investigative Practices for High Risk Carriers	Our audit objective is to assess FMCSA's processes for ensuring that reviews of motor carriers flagged for investigation are timely and adequate.	Required by the Consolidated and Further Continuing Appropriations Act of 2015. Also requested by Senator Dick Durbin
FEDERAL RAILROAD ADMINISTRATION		
FRA's Acquisition and Use of Monitoring and Technical Assistance Contractors for High Speed Intercity Passenger Rail Grant Oversight	Our audit objectives are to assess (1) FRA's acquisition of MTACs through the Volpe National Transportation Center and (2) FRA's management and use of oversight services provided by MTACs for HSIPR projects.	Self-Initiated
FRA's Collection and Management of Railroad Safety Data	Our audit objective is to assess FRA's collection and management of railroad safety data.	Self-Initiated
FEDERAL TRANSIT ADMINISTRATION		
FTA's Oversight of Major Capital Projects in the Western Regions	Our audit objectives are to evaluate FTA's (1) processes for identifying and assessing major capital projects' financial risks, and reviewing and approving grantee financial plans and reports and (2) oversight of grantees' mitigation of financial risks.	Self-Initiated
FTA Grantee: the Metropolitan Transit Authority of Harris County, Texas	Our audit objective is to evaluate METRO's financial condition and capacity, including its ability to fund new services while maintaining current operations.	Mandated by House Appropriations Committee Report 114-129
FTA's Oversight of Integrity Monitors for Recipients of Hurricane Sandy Disaster Relief Funds	Our audit objective is to assess FTA's policies for the use of integrity monitors and evaluate the Agency's oversight of integrity monitors.	Self-Initiated
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION		
NHTSA's Vehicle Safety Recall Process	Our audit objectives are to assess NHTSA's processes for (1) monitoring manufacturers' proposed recall remedies and scope and (2) overseeing safety recall implementation, including the sufficiency of recall completion rates.	Required by the Fixing America's Surface Transportation Act of 2015

Project Title	Objectives	Source/Requester
OFFICE OF THE SECRETARY OF TRANSPORTATION		
Office of Small and Disadvantaged Business Utilization Oversight of Small Business Transportation Resource Centers	Our audit objectives are to assess OSDBU's (1) processes for establishing the Centers and (2) oversight of the Centers' compliance with cooperative agreements and achievement of program objectives.	Self-Initiated
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION		
PHMSA's Technical Assistance Grant Program	Our audit objective is to evaluate PHMSA's award and oversight of TAG funds.	Required by the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act of 2016
PHMSA's Workforce Management	Our audit objectives are to determine (1) whether PHMSA has developed geographic allocation plans, identified expected retirement rates, and developed recruitment, retention, and training strategies for OPS to address gaps and challenges, such as hiring and time-to-hire challenges, and (2) whether previous periods of macroeconomic and pipeline industry conditions impacted the ability to fill OPS vacancies and the degree to which special hiring authorities, including direct hiring authority authorized by the Office of Personnel Management, could have alleviated such difficulty.	Required by the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act of 2016