

DOT's
Top
Management
Challenges

FY2022 | October 27, 2021

# Highlights

# **DOT's Fiscal Year 2022 Top Management Challenges**

Required by the Reports Consolidation Act of 2000 and OMB Circular A-136 Office of the Secretary of Transportation | PT2022007 | October 27, 2021

## What We Looked At

As required by law, we report annually on the Department of Transportation's (DOT) most significant challenges to meeting its mission. We considered several criteria in identifying DOT's top management challenges for fiscal year 2022, including their impact on safety, documented vulnerabilities, large dollar implications, and the ability of the Department to effect change. In addition, we recognize that the Department faces the extraordinary task of meeting these challenges while also responding to the COVID-19 pandemic. Accordingly, we included COVID-19 considerations in all nine of our top management challenges.

## What We Found

We identified the following top management challenge areas for fiscal year 2022:

- Aviation safety. Key challenges: maintaining confidence in the aircraft certification process and advancing FAA's air carrier oversight to keep pace with safety management system requirements.
- **Surface transportation safety.** Key challenge: increasing compliance with surface safety transportation regulations and programs by improving monitoring and enforcement.
- Air traffic control and airspace modernization. Key challenges: delivering NextGen benefits to airspace users and deploying controller automation tools to improve efficiency.
- Surface transportation infrastructure. Key challenges: employing effective oversight of Federal funding for response, recovery, and rebuilding projects and enhancing risk-based oversight to improve project delivery and update and maintain surface transportation infrastructure.
- **Contract and grant fund stewardship.** Key challenges: managing domestic preference and supply chain risk and dedicating qualified and sufficient oversight resources for contract and grant funds.
- **Information security.** Key challenges: addressing DOT's recurring cybersecurity weaknesses and protecting DOT's IT infrastructure and sensitive information.
- **Financial management.** Key challenges: avoiding increases in improper payments and improving policies and procedures to monitor and report grantee spending.
- Innovation and the future of transportation. Key challenges: safely integrating new technologies into transportation systems and implementing executive orders and other Federal priorities to tackle the impact of climate change, advance equity, and promote resilience in infrastructure and supply chains.
- Evolving operations and workforce management. Key challenges: integrating lessons learned to facilitate workplace reentry and communicating fully and consistently with employees on workplace procedures, status, flexibility, and expectations.

# **TABLE OF CONTENTS**

Memorandum	1
incinoralitadiii	
Index of DOT Operating Administrations (OAs) Discussed in Each Chapter	4
Aviation Safety	<u>b</u>
	7
Surface Transportation Safety	
	g
Air Traffic Control and Airspace Modernization	
Surface Transportation Infrastructure	11
	10
Contract and Grant Fund Stewardship	13
Information Security	15
information security	
Financial Management	17
	40
Innovation and the Future of Transportation	19
	22
Evolving Operations and Workforce Management	
	0.4
Exhibit A. List of Last Year's Top Management Challenges	<b>Z4</b>
	OF
Exhibit B. List of Acronyms	25 26
	OC
Appendix. Department Response	20



# Memorandum

Date: October 27, 2021

Subject: INFORMATION: DOT's Fiscal Year 2022 Top Management Challenges

Vin Godin

Report No. PT2022007

From: Eric J. Soskin

Inspector General

To: The Secretary

**Deputy Secretary** 

Transportation plays a fundamental role in the lives of every American, connecting us to our communities, our jobs, and each other. As such, the Department of Transportation's (DOT) mission is to create the safest, most efficient, and modern transportation system in the world, one which boosts our economic productivity and global competitiveness and enhances our quality of life.

The Office of Inspector General (OIG) supports the Department's mission by conducting audits and investigations to identify needed improvements to the management and execution of transportation programs. Each year, as required by law, we report on DOT's top management challenges to aid the Department in meeting its strategic priorities across various program areas. These priorities include keeping travelers safe, engaging with emerging technologies, and maintaining and improving America's infrastructure.

As it works to meet these priorities, DOT continues to face the extraordinary challenge of responding to the global pandemic of Coronavirus Disease 2019 (COVID-19). COVID-19 brought unprecedented impacts to the transportation industry that continue to play out across our Nation's economy, workforce, and lives. In particular, the Department has received more than \$106 billion in funding for COVID-19 relief across all modes of transportation. While DOT is moving quickly to distribute these funds, the speed at which they are disbursed presents oversight challenges to ensure they are spent efficiently and effectively. Accordingly, our report integrates a discussion of COVID-19 challenges within each priority area for the Department.

For example, DOT's top priority remains ensuring transportation safety. It will be critical for the Federal Aviation Administration to strengthen its oversight of aircraft certification processes and air carrier safety programs, while also enhancing risk-based decisions as air travelers and the aviation industry continue to respond to the pandemic. In addition, the safety of our Nation's roads, rails, and pipelines depends on the Department's efforts to ensure compliance with safety regulations. Strengthening its oversight of surface transportation safety programs will also include addressing the economic effects of the pandemic on State and local transportation program funding.

Maintaining and upgrading our Nation's transportation infrastructure is another priority made further complex by the challenges of COVID-19. For example, the pandemic's impact on air traffic levels has delayed efforts to modernize our Nation's air traffic system. Further, the Department is now responsible for disbursing and overseeing billions of COVID-19 relief funds on top of its existing efforts to oversee construction and improvement of the Nation's aging highways, bridges, and tunnels. A key step will be to adjust the Department's oversight approach to account for the pandemic's impact on program risks and operations, such as inperson inspections and travel.

Overall, the large influx of COVID-19 relief funds will challenge DOT to sharpen its focus on its contract, grant award, and administrative practices to safeguard Federal tax dollars and detect fraud, waste, and abuse. This includes monitoring significantly more grants and grantees to reduce the increased risk of improper payments Departmentwide. Equally important will be protecting the integrity of DOT's financial management information systems to effectively administer and oversee COVID-19 relief funds, while partnering with other agencies and industry partners to resolve new and recurring cybersecurity challenges.

As DOT addresses these and other challenges, it will also be focused on another strategic priority—preparing America's transportation systems for a future in which America is a leader in innovation and providing opportunity to all Americans. Among the many facets the Department must tackle will be the safe integration of new transportation technologies, including advanced energy sources, Unmanned Aircraft Systems (UAS), commercial space operations, and vehicle automation. At the same time, DOT will need to apply lessons learned from the pandemic's impact on transportation supply chains and incorporate issues such as climate change into its decision-making processes.

Finally, the Department has faced COVID-19-related challenges to its overall operations and workforce management. On March 16, 2020, DOT transitioned to maximum telework. With the emergence of new COVID variants and the need to adapt to evolving public health guidance, it will be critical for DOT to realign its processes with operational and employee needs as it prepares to safely bring its workplace into the future and transition employees and contractors beyond a maximum-telework posture.

We considered several criteria to identify the Department's top management challenges for fiscal year 2022, including safety impact, documented vulnerabilities, large dollar implications, and the Department's ability to effect change. In the enclosed report, we identify and discuss the following challenge areas:

- Aviation Safety
- Surface Transportation Safety
- Air Traffic Control and Airspace Modernization
- Surface Transportation Infrastructure
- Contract and Grant Fund Stewardship

- Information Security
- Financial Management
- Innovation and the Future of Transportation
- Evolving Operations and Workforce Management

As always, we will continue to work closely with DOT officials to support the Department's efforts to improve safety, enhance efficiency, and protect resources, including overseeing COVID-19 relief funds. We appreciate the Department's commitment to prompt action in response to the challenges we have identified. Our final report and the Department's response will be included in DOT's Annual Financial Report, as required by law.

If you have any questions regarding this report, please contact me at (202) 366-1959. You may also contact Barry J. DeWeese, Principal Assistant Inspector General for Auditing and Evaluation, at (202) 366-1302.

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cc: DOT Audit Liaison, M-1

# Index of DOT Operating Administrations (OAs) Discussed in Each Chapter

OPERATING ADMINISTRATIONS	CHAPTER
Federal Aviation Administration (FAA)	Aviation Safety Air Traffic Control and Airspace Modernization Innovation and the Future of Transportation
Federal Highway Administration (FHWA)	Surface Transportation Infrastructure Innovation and the Future of Transportation
Federal Motor Carrier Safety Administration (FMCSA)	Surface Transportation Safety Innovation and the Future of Transportation
Federal Railroad Administration (FRA)	Surface Transportation Safety Surface Transportation Infrastructure
Federal Transit Administration (FTA)	Surface Transportation Infrastructure
National Highway Traffic Safety Administration (NHTSA)	Surface Transportation Safety Innovation and the Future of Transportation
Maritime Administration (MARAD)	Contract and Grant Fund Stewardship
Pipeline and Hazardous Materials Safety Administration (PHMSA)	Surface Transportation Safety Surface Transportation Infrastructure
Cross-modal/Departmentwide	Contract and Grant Fund Stewardship Information Security Financial Management Evolving Operations and Workforce Management



# **AVIATION SAFETY**

**OAs Impacted FAA** 

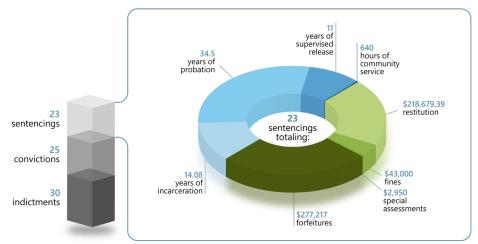
**Related DOT Priorities** Safety

Maintaining the safety of our National Airspace System is FAA's primary mission. While FAA and industry have maintained an otherwise excellent safety record, two fatal accidents in 2018 and 2019 involving the Boeing 737 MAX raised concerns about the Agency's aircraft certification and delegation oversight. In addition, FAA is not fully prepared to oversee evolving air carrier safety management systems, which help ensure regulatory compliance and mitigate safety risks. Another key challenge for FAA is to ensure that pilots are qualified to safely fly aircraft, which includes preventing and detecting airmen certificate fraud (see figure).

# Maintaining Confidence in the Aircraft Certification Process

- · Multiple OIG reviews have highlighted significant issues related to FAA's oversight of the aircraft certification process. Federal law allows FAA to delegate certain functions to organizations like Boeing to determine compliance with regulations. For example, FAA delegated an increasing amount of work to Boeing during MAX certification, which, according to FAA managers, is typical as systems mature. These delegated tasks included certification plans containing key flight control software.
- · As we recently reported, however, FAA's certification guidance does not adequately address integrating new technologies into existing aircraft models. Moreover, FAA did not have a complete understanding of Boeing's safety assessments until after the first accident. Communication gaps between FAA certification offices, and between FAA and Boeing, further hindered the effectiveness of the MAX certification process.
- FAA has limited ability to assess and mitigate risks with functions delegated to Boeing as the Agency lacks a risk-based approach to delegation oversight. FAA engineers also continue to face challenges in balancing certification and oversight responsibilities. Moreover, Boeing's processes and structure do not ensure its delegation personnel are adequately independent.
- Although FAA is working to address recommendations from multiple organizations, including OIG, continued management attention will be critical to maintaining confidence in the aircraft certification process. We are continuing to examine FAA's risk assessments related to the grounding of the MAX and Agency efforts related to its return to service.

## OIG Investigative Outcomes for Cases Related to Airman Certificate Fraud



Since FY 2017, OIG conducted 72 investigations and complaints involving airman certificate fraud, including commercial and non-commercial certificate fraud, medical fraud, and unauthorized operation of an aircraft. Source: OIG

## COVID-19 Impact and Response

The COVID-19 pandemic has created many challenges for FAA and the aviation industry. These include:

- · On-Board Safety. FAA has reported an increase in the number of unruly passengers. About 2,867 (74 percent) of these reports are of passengers refusing to comply with the Federal face mask mandate.
- · Oversight Activities. FAA established guidance and temporary exemptions to address challenges for air carriers and repair stations. For example, the Agency allowed carriers to implement alternative training methods and provided inspector guidance on extending certificates of some repair stations outside of the United States that were subject to travel limitations. As demand for air travel rebounds following the pandemic, FAA will need to remain vigilant in its oversight efforts to enhance risk-based decisions during pandemics and ensure certificate holders fulfill regulatory requirements.

## Advancing FAA's Air Carrier Oversight To Keep Pace With Safety Management System Requirements

- FAA requires that air carriers use a Safety Management System (SMS) to identify and analyze all potential hazards and mitigate risk. However, FAA faces challenges in achieving the proactive benefits of SMS while also ensuring regulatory compliance. Specifically, FAA is responsible for ensuring that air carriers' SMS effectively manage safety risks and maintain compliance with existing regulatory standards. Additionally, FAA inspectors are required to evaluate whether air carrier's risk assessments contain acceptable risk ratings, root cause analysis, and proposed corrective actions.
- Our work has shown that FAA's oversight structure is not keeping pace with these system requirements. Last year, we reported that FAA inspectors for Southwest Airlines' were not evaluating air carrier risk assessments or safety culture—key components of SMS. Yet, FAA used the air carrier's SMS risk assessments to justify continued non-compliance with safety regulations.
- We also recently reported that FAA inspectors for American Airlines accepted root cause analysis, corrective actions, and risk controls that were insufficient when overseeing the carrier. Therefore, a key challenge for FAA will be providing the comprehensive training, tools, and guidance inspectors need to be fully prepared to oversee SMS.
- Further, FAA must have a sufficient inspector workforce in place to conduct necessary oversight of SMS and other critical areas. We recently reported that FAA has taken steps to improve its inspector staffing model. However, the Agency has not yet addressed some long-standing recommendations from the National Research Council, such as establishing performance measures to assess the model's accuracy. Until FAA makes further improvements, including updates to reflect organizational changes, the Agency will continue to face challenges in determining its inspector staffing needs.

The Four Components of Safety Management Systems



For more information on the issues identified in this chapter, please contact:



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# Recent Progress Reported by the Department

- Boeing 737 MAX Certification and Delegation. FAA is taking steps to address recommendations from multiple external and internal reviews, including areas we identified in our February 2021 report, such as determining whether Boeing had met the requirements of the 2015 Settlement Agreement.
- Advancing FAA's Air Carrier Oversight. FAA has completed actions on 6 of 18 recommendations and continues to work on implementing inspector guidance and training in a number of SMS areas, including root cause analysis, air carrier safety culture, and regulatory compliance.

## Related OIG Work

FAA Lacks Effective Oversight Controls To Determine Whether American <u>Airlines Appropriately Identifies</u>, <u>Assesses</u>, and <u>Mitigates Aircraft</u> Maintenance Risks (October 20, 2021)

>> 7 recommendations (7 open, 0 closed)

FAA Can Increase Its Inspector Staffing Model's Effectiveness by Implementing System Improvements and Maximizing Its Capabilities (August 11, 2021)

>> 7 recommendations (7 open, 0 closed)

Weaknesses in FAA's Certification and <u>Delegation Processes Hindered Its</u> Oversight of the 737 MAX 8 (February 23, 2021)

>> 14 recommendations (13 open, 1 closed)

<u>Timeline of Activities Leading to the</u> Certification of the Boeing 737 MAX 8 Aircraft and Actions Taken After the October 2018 Lion Air Accident (June 29, 2020)

>> No recommendations

FAA Has Not Effectively Overseen Southwest Airlines' Systems for Managing Safety Risks (June 29, 2020)

>> 11 recommendations (5 open, 6 closed)



# **SURFACE TRANSPORTATION SAFETY**

**OAs Impacted** FMCSA, FRA, NHTSA, PHMSA

**Related DOT Priorities** Safety

One of DOT's top priorities is to ensure the U.S. transportation system is the safest in the world, and it has continually focused on making highways, railroads, and pipelines safer. While fatalities due to motor vehicle crashes had been decreasing in recent years, NHTSA estimated that over 38,000 people died in crashes during 2020—the largest number since 2007 (see figure). To further enhance safety, the Department must increase compliance with safety regulations by improving its monitoring and enforcement of surface transportation safety programs.

# Increasing Compliance With Safety Regulations and Programs by Improving Monitoring and Enforcement

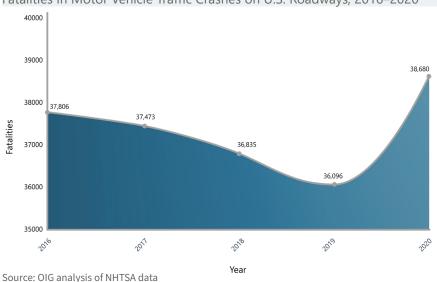
## **Motor Carrier Safety**

- Fatalities involving large trucks and buses have increased in recent years. This year, we reported that weaknesses in FMCSA's oversight of commercial driver medical certification and commercial driver license (CDL) disqualification requirements increase the risk of negative safety impacts. Robust oversight of States' compliance with requirements for commercial driver programs is vital to FMCSA's efforts to improve highway safety. Additionally, our investigations in the last 5 fiscal years have uncovered a variety of types of CDL fraud (see graphic on next page).
- Targeting high-risk motor carriers also plays a key role in FMCSA's efforts to improve motor carrier safety. To ensure the effectiveness of its carrier interventions, FMCSA must take steps to improve the quality and transparency of data, safety measures, and its assessment of carrier safety rankings.

#### Rail Safety

• Enhancing rail safety will require FRA to take action to improve its conductor certification and drug and alcohol programs. FRA also has opportunities to develop audit procedures, staff training, and planning and support tools to address regulations governing positive train control, system safety, and risk reduction. Taking these actions will help focus the Agency's limited resources on oversight and enforcement for high-risk railroad safety requirements and performance areas.

## Fatalities in Motor Vehicle Traffic Crashes on U.S. Roadways, 2016–2020



# COVID-19 Impact and Response

The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) authorized DOT to temporarily waive certain Federal requirements associated with surface safety programs. For example, in April 2020, NHTSA waived or postponed seven statutory or regulatory requirements for its Highway Safety Grant Program and extended two of the seven waivers in April 2021. While these NHTSA waivers and most other DOT waivers expired at the end of fiscal year 2021, DOT must remain vigilant in monitoring the use of ongoing waivers. Vigilance includes providing transparency, ensuring waivers do not adversely impact program effectiveness and public safety, and meeting congressional reporting requirements. DOT will also need to address economic impacts the pandemic may have on State and local funding for surface transportation safety programs and to understand and mitigate causes of the 2020 surge in roadway fatalities.

## *Increasing Compliance (Continued)*

## Pipeline and Hazardous Materials Safety

• Nurturing a positive safety culture that supports oversight of the safe transportation of natural gas, petroleum, and other hazardous material is another challenge for DOT. A positive safety culture is essential to any organization that directly or indirectly deals with addressing high hazard risks. While PHMSA exhibits several indicators of a positive safety culture, there are key focus areas—including trust and communication—where the Agency's safety culture could be enhanced.

#### Vehicle and Highway Safety

- Identifying vehicle safety defects and monitoring recalls remains essential to reducing traffic fatalities. To help meet this challenge, NHTSA established an online portal for manufacturer recall submissions, enhanced requirements for notifying owners about defects, and adopted a risk-based approach to review recalls for adequate scope and remedy. NHTSA believes this has resulted in process improvements among manufacturers and more timely identification of recalls and increased recall completion rates. While these are positive steps, NHTSA must focus on manufacturers' adherence to these process improvements because safety defects, such as faulty Takata airbags, remain in vehicles and pose a risk to vehicle occupants.
- Ensuring that all vehicles meet Federal Motor Vehicle Safety Standards is critical to NHTSA's safety mission. NHTSA can reduce the risk of unsafe vehicles operating on U.S. roads by updating standardized procedures for acting on rulemaking petitions on time and reviewing compliance test reports. The Agency also has an opportunity to improve staff training to better identify and enforce noncompliance.

## Accounting for User Behavior Across Transportation Modes

• These Operating Administrations have a common purpose to facilitate the safe movement of people and goods. However, transportation users may respond to regulations implemented by one Operating Administration by changing their behavior and choosing a different mode, such as driving rather than flying. The COVID-19 pandemic and other events have highlighted a need to understand the impact of users' decisions on overall transportation safety.

## OIG Investigative Outcomes for Cases Related to CDL Fraud



From October 1, 2016, through July 21, 2021, OIG opened 39 investigations and complaints involving CDL fraud in the following four subcategories: (1) CDL, (2) fraud involving a school or third-party tester, (3) public corruption of a DOT of Motor Vehicles employee, and (4) attempted bribery and drug and alcohol program violations. Source: OIG

For more information on the issues identified in this chapter, please contact:



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## Recent Progress Reported by the Department

- Updating Data From Medical Examiners. FMCSA issued a deadline of September 30, 2021, for medical examiners to complete uploads to the National Registry of Certified Medical Examiners of driver examinations they conducted during a lengthy National Registry outage. This action implements our recommendation that FMCSA eliminate the backlog of driver examination results held by medical examiners.
- Exchanging Commercial Driver History Data. FMCSA published a final rule, effective August 23, 2021, requiring State driver licensing agencies to implement a system and practices for the exclusively electronic exchange of driver history record information. Such practices include posting convictions, withdrawals, and disqualifications. The rule aligns FMCSA's regulations with existing statutory requirements and requires that States comply within 3 years.

## Related OIG Work

FMCSA Has Gaps and Challenges in Its Oversight of CDL Disqualification Regulations (July 14, 2021)

>> 7 recommendations (7 open, 0 closed)

PHMSA's Safety Culture Efforts (January 13, 2021)

>> 2 recommendations (2 open, 0 closed)

FMCSA Has Not Fully Met Oversight Requirements as It Rebuilds the National Registry of Certified Medical Examiners

(January 13, 2021)

>> 4 recommendations (3 open, 1 closed)



# AIR TRAFFIC CONTROL AND AIRSPACE MODERNIZATION

**OAs Impacted FAA** 

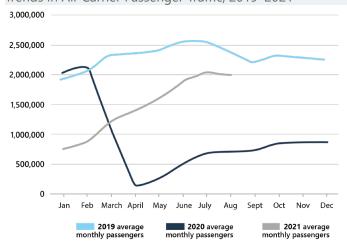
**Related DOT Priorities** Safety, Infrastructure, Innovation

Aimed at modernizing our Nation's aging air traffic system, FAA's Next Generation Air Transportation System (NextGen) requires joint investment from FAA (new ground-based systems for controllers) and air carriers (new avionics and displays for pilots). FAA and air carriers are expected to invest more than \$36 billion in NextGen by 2030, including up to \$15 billion by air carriers. However, to date, NextGen programs have only achieved a small percentage of the expected benefits. FAA will have to continue working with industry to secure additional investments, while also deploying controller automation tools that are intended to provide safer and more efficient air traffic management.

## Managing Expectations of NextGen Benefits To Justify Investments

- NextGen was expected to benefit airspace users by accommodating a significant projected growth in air traffic and passengers while reducing congestion-based delays. However, as we reported in March 2021, NextGen benefits have not kept pace with expectations because of overly optimistic air traffic and passenger growth projections, which the COVID-19 pandemic further affected.
- During summer 2021, air traffic began returning to pre-pandemic levels (see figure), and FAA expects reliance on NextGen programs to grow in tandem to reduce congestion-based delays. Nevertheless, considerable uncertainties remain about how continued COVID-19 concerns both domestically and internationally may impact air traffic levels, travel patterns, and the mix of passenger and cargo traffic. In any case, NextGen's impact on delays is difficult to measure due to the complexity of our National Airspace System and factors outside FAA's control, such as weather and airline business decisions. To justify its investment and convince air carriers, FAA should continue to develop metrics to capture NextGen performance while accounting for these offsetting factors to communicate actual benefits to airspace users.
- Realizing full capabilities and benefits of NextGen technologies—such as performancebased navigation (PBN), Data Communications, and Automatic Dependent Surveillance-Broadcast—depends on airlines' willingness to install costly avionics. While FAA has collaborated with industry to prioritize, implement, and measure NextGen benefits, sustained demonstration and prioritization of its most beneficial capabilities are key to securing industry's continued investment.

Trends in Air Carrier Passenger Traffic, 2019–2021



Source: Transportation Security Administration data on passenger volumes at security checkpoints.

## COVID-19 Impact and Response

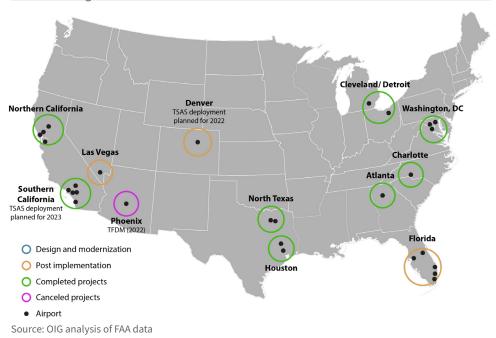
The COVID-19 pandemic has challenged FAA's airspace modernization efforts in a number of areas, including:

- NextGen Implementation. The COVID-19 pandemic has led to implementation delays for key NextGen programs, including Terminal Flight Data Manager and Data Communications.
- Metroplex and Controller Automation Tools. Due to reduced traffic levels, FAA delayed post-implementation data gathering for the Denver Metroplex project—which aims to implement new flight procedures to more efficiently manage air traffic in metropolitan areas. The pandemic also contributed to delays in deployment of Terminal Sequencing and Spacing (TSAS), a key controller automation tool.

# Deploying Controller Automation Tools To Improve Efficiency

- FAA and industry's top NextGen priorities include implementing PBN to provide more direct flight paths and improving surface operations to increase efficient movement between airport gates and runways. To help controllers manage this traffic, FAA is deploying new automated tools, which can also help optimize airspace user benefits.
- However, FAA has not effectively implemented one controller tool, Time-Based Flow Management, and has experienced delays with implementing the TSAS tool in airspace close to airports. TSAS deployment has been delayed at least 3 years and is currently planned for only two locations (Denver and Southern California)—reduced from nine previously planned locations—due to other priorities, a furlough, and the pandemic. These obstacles have contributed to less than expected benefits for the Metroplex program, which aimed to implement PBN in 12 congested metropolitan areas (see figure).
- FAA also faces challenges in deploying the Terminal Flight Data Manager (TFDM), a new \$869 million surface management system, including electronic flight strips to more efficiently track flights. FAA must address complex interdependencies within the wide range of systems needed to boost airport surface operations and integrate TFDM with other traffic management systems.

Metroplex and Controller Automation Tools Implementation Sites and Their Status Through 2023



For more information on the issues identified in this chapter, please contact:



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## Recent Progress Reported by the Department

FAA has taken appropriate steps to close the remaining two of our 2019 report's five recommendations regarding its Metroplex program. Actions included establishing processes to track and evaluate actions taken to address identified obstacles—such as deployment of automation tools.

## Related OIG Work

NextGen Benefits Have Not Kept Pace With Initial Projections, but Opportunities Remain To Improve Future Modernization Efforts (March 30, 2021)

>> 3 recommendations (3 open, 0 closed)

Letter to Chairman Bill Shuster and Chairman Frank LoBiondo Regarding FAA's July 2016 NextGen Business Case (August 15, 2017)

>> No recommendations

FAA Has Made Progress in Implementing Its Metroplex Program, but Benefits for Airspace Users Have Fallen Short of Expectations (August 27, 2019)

>> 5 recommendations (5 open, 0 closed)



# SURFACE TRANSPORTATION **INFRASTRUCTURE**

OAs Impacted FHWA, FRA, FTA

**Related DOT Priorities** Infrastructure

DOT annually invests over \$60 billion in our Nation's transportation infrastructure through vital highway, transit, and railroad programs. Our work has shown that DOT faces the ongoing challenge of managing these programs and funds, as well as ensuring adherence to Federal requirements and priorities. Further, the Department must now effectively oversee an additional \$83+ billion in COVID-19 relief funding. For these funds to be well-spent, DOT must ensure that States and other grantees use sound practices to oversee this influx of Federal funding and use these funds to address maintaining, improving, and updating the Nation's aging surface transportation infrastructure.

# Employing Effective Oversight of Federal Funding for Response, Recovery, and Rebuilding Projects

- DOT must rethink its oversight approach given the pandemic's impact on program risks and operations—such as in-person inspections and travel—and adjust its oversight to ensure that recipients meet new requirements and use funds only for eligible purposes. For example, while FTA was monitoring and providing guidance to grant recipients, it postponed fiscal year 2020 oversight reviews until fiscal year 2021. In April 2021, FTA reported that it had incorporated oversight of COVID-19 relief funds into the Agency's existing oversight program and developed a new proactive approach that focuses on technical assistance for fund recipients. In summer 2021, FTA planned to begin supplemental oversight activities for COVID-19 relief funding recipients not scheduled for a Triennial or State Management Review in 2021. However, pandemic-related restrictions and alternative work arrangements remain in effect and are planned to continue into 2022, posing continued challenges to comprehensive oversight.
- DOT's challenges also include tracking recovery data and providing clear direction to grantees on Federal requirements for documenting expenditures of COVID-19 relief funds. In 2021, we reported that FTA inconsistently tracks and reports Hurricane Sandy funding data and does not fully comply with Federal guidance, which hinders the usefulness and reduces the transparency of such data for internal users, decision makers, and the public. Our 2018 report on FHWA's Emergency Relief Program (ERP) found weaknesses in how the Agency tracks data on resilience improvements, which impedes its ability to enhance its stewardship of ERP funds. Two of our three recommendations to strengthen FHWA's ERP guidance remain open. In July 2021, as part of our continuing monitoring of FTA, we announced a new audit of the Agency's COVID-19 relief funding oversight.

COVID-19 Relief Funds Provided to DOT's Surface Transportation Agencies, as of July 6, 2021

#### Laws and Related Funding DOT **CARES Act CRRSA Act** ARP Act **Total by Agency** \$25,000,000,000 \$32,161,356,000 \$26,018,250,000 Agency \$10,000,000,000 **FHWA** NA NA \$10,000,000,000 **FRA** \$1,018,250,000 \$1,000,000,000 \$1,700,000,000 \$3,718,250,000 FTA \$25,000,000,000 \$14,000,000,000 \$30,461,356,000 \$69,461,356,000 Total COVID-19 Relief Funds Under the three Acts: \$83,179,606,000 Legend **CARES Act** CRRSA Act ARP Act

Source: DOT Office of the Chief Financial Officer

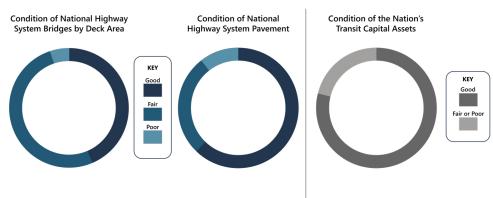
## COVID-19 Impact and Response

COVID-19 has had a widereaching impact on the transportation industry and our economy. Given the over \$83 billion in COVID-19 relief funds DOT's surface transportation agencies have received (see figure), the Department will need to maintain focus on the most significant risk areas related to surface transportation infrastructure. In addition, DOT will have to apply robust internal controls to spend COVID-19 relief funds effectively; prevent fraud, waste, and abuse; ensure compliance with the law; and carry out its mission. Meeting these goals will maximize the value of taxpayer dollars during this critical time.

## Enhancing Risk-Based Oversight To Improve Project Delivery and Update and Maintain Surface Transportation Infrastructure

- FHWA oversees over \$40 billion in annual Federal funds to construct and improve the Nation's highways, many of which are aging and in need of repair (see figure). The effectiveness of the Agency's oversight relies on its ability to leverage its limited resources to implement its risk-based oversight process. Specifically, FHWA's approach involves integrating risk management into its performance planning process for stewardship and oversight of Federal-aid programs and projects to ensure successful project delivery. However, FHWA has faced challenges to its ability to conduct and document project risk assessments in accordance with its guidance and approving and monitoring public-private partnerships used to construct highway infrastructure. Accordingly, 12 OIG recommendations from three recent audits related to FHWA's planning and use of risk-based processes and oversight methods for infrastructure projects remain open. Timely action on these recommendations will help strengthen the Agency's risk-based project involvement.
- FRA oversees annual Federal funding for Amtrak, which totaled \$2 billion in fiscal year 2020. In June 2021, we reported that sustained FRA action is needed to improve its oversight of Amtrak's use of these Federal funds, including adopting a grants management framework for its Amtrak oversight. Such a framework should contain measurable goals and metrics and a centralized grants management system. These enhancements will also help the Agency oversee the \$3.7 billion in supplemental funding appropriated to Amtrak to mitigate the impact of COVID-19.

#### Condition of DOT's Surface Transportation Infrastructure, 2019–2020



Note: The condition of transit assets, including vehicles, facilities, and track infrastructure, are assessed in different ways to a state of good repair benchmark. For transit assets, the percentage of "good" and "poor or fair" represent those that meet and do not meet the benchmark.

Source: OIG analysis of DOT data

For more information on the issues identified in this chapter, please contact:



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# Recent Progress Reported by the Department

- FRA Oversight. In response to our 2020 report, FRA took action to strengthen oversight of its High-Speed Rail Program, resulting in the closure of all four recommendations. FRA's corrective actions included revising and implementing policies, procedures, and guidance for its assessment and mitigation of risks, documentation of decisions on escalating grant noncompliance issues within FRA, and processes for overseeing grantees' compliance with Federal expenditure requirements.
- FHWA Risk-Based Oversight. In response to our 2020 report, FHWA has acted to improve its guidance for risk-based project involvement, resulting in the closure of five related recommendations.

## Related OIG Work

FTA Made Progress in Providing **Hurricane Sandy Funds but** Weaknesses in Tracking and Reporting Reduce Transparency Into Their Use (July 21, 2021)

>> 2 recommendations (2 open, 0 closed)

Fully Implementing a Grants Management Framework Will Enhance FRA's Amtrak Funding Oversight (June 30, 2021)

>> 4 recommendations (4 open, 0 closed)

Improved FRA Decision Making and Financial Oversight Processes Could Have Reduced Federal Risks from the California High-Speed Rail Project (January 22, 2020)

>> 4 recommendations (4 open, 0 closed)

Gaps in FHWA's Guidance and the Florida Division's Process for Risk-Based Project Involvement May Limit Their Effectiveness (May 12, 2020)

>> 8 recommendations (3 open, 5 closed)



# **CONTRACT AND GRANT** FUND STEWARDSHIP

**OAs Impacted** Departmentwide

**Related DOT Priorities** Infrastructure, Safety

In addition to its typical pre-pandemic annual contract and grant obligations totaling over \$74 billion in fiscal year 2019—DOT is also responsible for obligating the over \$106 billion it received from Congress for COVID-19 relief across all modes of transportation. Given this large influx of funds, DOT must sharpen its focus on its contract, grant award, and administrative practices. This includes ensuring compliance with a number of domestic preference and supply chain requirements, as well as dedicating qualified and sufficient oversight staff equipped with the necessary tools to protect these funds from waste, fraud, and abuse.

## Managing Domestic Preference and Supply Chain Risk

- To strengthen the economy and national security—a need greatly magnified by the impact of the pandemic—Federal agencies have been directed to make domestic preference and supply chain risk management a priority when expending funds. As such, DOT must comply with several requirements—such as the Buy American Act—when awarding and administering contracts and grants. DOT must also mitigate other supply-chain risks including: protecting against prohibited sources; adversarial risks such as use of counterfeit or grey-market parts or products, or malicious software; and non-adversarial risks such as poor quality services or practices in design and manufacturing of parts or products.
- · These requirements are complex, difficult to administer, and affect all phases of the acquisition lifecycle. For example, awarding officials must ensure vendors certify domestic content, waivers are appropriately applied, and telecommunications equipment or services are not purchased or supplied from prohibited sources.
- · Given the rigors of these requirements, DOT will be challenged to ensure compliance. Our recent review of FAA's compliance with the Buy American laws identified up to \$127 million in funds that could be put to better use. This is because contracts were missing vendor certifications that are required to validate domestic content and protect the Agency from purchasing unauthorized foreign supplies. To manage these and other risks, it is critical DOT update its guidance; conduct training; and keep up with evolving requirements, including additions to the prohibited sources list.

Contract and Grant Administration Burden Added by CARES Act 2020

DOT Agency	COVID-19* Budget Authority [*CARES, CRRSA, and ARP Acts]	FY 19 Contract and Grant Obligations
FTA	\$69,461,360,000	\$15,506,400,000
FAA	\$20,034,000,000	\$7,944,000,000
FHWA	\$10,000,000,000	\$46,037,000,000
FRA	\$3,718,250,000	\$2,076,400,000
OST	\$3,081,090,000	\$957,900,000
MARAD	\$4,100,000	\$457,100,000
FMCSA	\$150,000	\$406,400,000
Legend	COVID-19* Budget Authority (rounded to ten thousands)	FY 19 Contract and Grant Obligations (rounded to hundred thousands)

Source: OIG analysis of DOT data

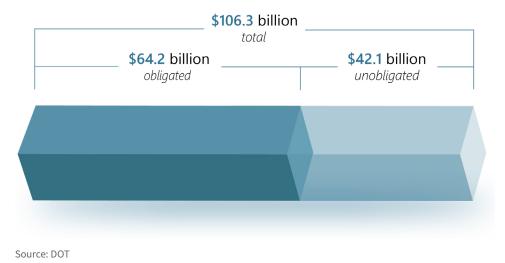
## COVID-19 Impact and Response

Congress appropriated \$106 billion to OST and six DOT agencies for their COVID-19 response efforts (see figure). These agencies represented over 98 percent of the Department's fiscal year 2019 contract and grant obligations. Most of these COVID-19 relief funds came with distinct requirements on their use and with the intent of being awarded quickly. Our previous emergency and disaster response work has demonstrated that compliant award and administration practices and focused oversight are critical to support DOT's proper stewardship and accountability of funds.

## Dedicating Qualified and Sufficient Oversight Resources for Contract and Grant Funds

- With the addition of billions in COVID-19 relief funds on top of DOT's already multibillion-dollar annual contract and grant spending, it is critical the Department improve the qualifications and training of its staff who manage and oversee these funds. DOT must also equip them with sufficient tools to carry out their oversight responsibilities.
- In our recent audit of FAA's acquisition workforce, we found nearly half of the 69 Contracting Officer's Representatives in our sample lacked required certifications. FAA may be putting Federal funds at risk by allowing its acquisition workforce to manage complex, costly, and mission-critical contracts without the required qualifications. In our recent audit of MARAD's National Security Multi-Mission Vessels (NSMV) program management, we found MARAD lacked a tool to help adequately monitor project management risks for the billion-plus dollar program. This inhibited MARAD's ability to implement effective mitigation strategies and focus resources on the greatest risks. Finally, several of our past audits—including for disaster relief response—found DOT did not ensure oversight support staff consistently documented their reviews or that resulting recommendations were tracked and resolved at the grantee and Federal
- Given the sizeable increase in contract and grant dollars from COVID-19 relief funds, DOT will be challenged to dedicate sufficient and qualified oversight to help ensure these funds are properly used.

DOT Progress in Obligating COVID-19 Relief Funding, as of October 4, 2021



For more information on the issues identified in this chapter, please contact:



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# Recent Progress Reported by the Department

- DOT is making progress in distributing its \$106 billion in COVID-19 relief funding. DOT reported that, as of October 4, 2021, it has obligated over \$64 billion (see figure).
- · MARAD has taken actions to address our recommendations to improve its NSMV program management. This includes developing and implementing a risk management process and vessel construction manager oversight plans. These actions will assist MARAD in making informed program management decisions to help mitigate adverse cost, schedule, or performance impacts.
- · FAA is taking positive steps toward establishing a risk-based oversight approach and has categorized all COVID-related relief grants as "high risk," thus strengthening its ability to manage these grant funds.

## Related OIG Work

FAA Faces Challenges in Tracking Its Acquisition Workforce and **Ensuring Compliance With** <u>Training Certification</u>, and Warrant Requirements (September 27, 2021)

>> 8 recommendations (8 opened, 0 closed)

Gaps in Guidance, Training, and Oversight Impede FAA's Ability To Comply With Buy American Laws (June 2, 2021)

>> 8 recommendations (8 open, 0 closed)

<u>Vulnerabilities in MARAD's NSMV</u> Program May Hinder Effective <u>Achievement of Program Goals</u> (March 2, 2021)

>> 2 recommendations (0 open, 2 closed)



# **INFORMATION SECURITY**

**OAs Impacted** Departmentwide

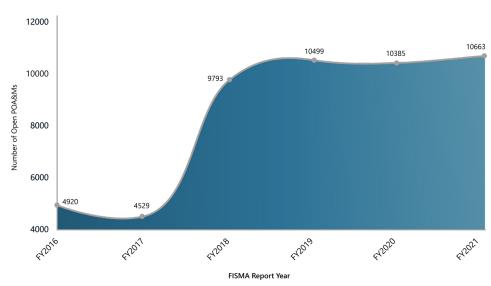
**Related DOT Priorities** Innovation, Infrastructure

DOT relies on over 400 information technology (IT) systems to carry out its mission, including safe air traffic control, annual disbursement of billions of dollars, and privacy and sensitive data protection. However, recurring cybersecurity weaknesses reduce the effectiveness of DOT's information security and may leave key systems vulnerable to cyberattacks, takeovers, and data breaches. Remediating these weaknesses and strengthening internal controls is key to protecting departmental IT infrastructure and sensitive security information and improving DOT's cybersecurity posture. Also important is DOT's coordination with other agencies and industry partners to ensure cybersecurity in the transportation sector.

## Addressing DOT's Recurring Cybersecurity Weaknesses

- To resolve the 66 open recommendations we made in our last 10 Federal Information Security Modernization Act (FISMA) audits, DOT needs a holistic approach with sustained focus and direction. These recommendations include 10,663 security weaknesses identified in departmental plans of actions and milestones (POA&Ms; see figure). In particular, DOT still does not enforce all Federal requirements, including timely weakness remediation, as its delayed 9,074 POA&Ms indicate.
- Our 2021 FISMA assessment of DOT's Common Operating Environment, which provides centralized IT services to OAs, revealed high-risk security vulnerabilities that an attacker could exploit to control systems or access files and data. For example, weaknesses such as inconsistent software updates could jeopardize data integrity and confidentiality. We identified similar weaknesses as early as 2012 and will issue an updated report with recommendations this year.
- Since 2013, DOT has not had a comprehensive and accurate inventory of its information systems, including cloud systems. The lack of such an inventory creates a risk that DOT may be unaware of some systems and unable to identify and address all vulnerabilities. The Department has also not resolved our 2018 recommendation to develop and maintain accurate inventories of cloud systems, contractor systems, and websites that allow public access. The lack of accurate inventories may be all the more important in light of the increased use of telework in response to COVID-19.

#### Total Number of Open POA&Ms Departmentwide Since 2016



Source: OIG analysis of DOT data

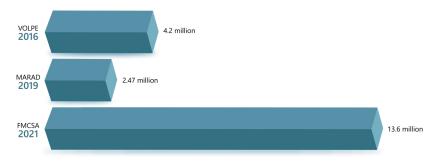
## COVID-19 Impact and Response

On March 16, 2020, DOT transitioned to maximum telework, and the Department has largely remained in this posture ever since, affecting the access of DOT staff to Department IT systems and introducing potential security vulnerabilities. For example, the pandemic affected FTA's ability to approve and disburse COVID-19 relief funds through its financial management systems. Given the influx of billions of dollars in COVID-19 relief funds and their rapid distribution, it is important for DOT to minimize the risk of compromise to the financial management systems it uses to process and monitor billions in funding and to distribute payments.

## Protecting DOT's IT Infrastructure and Sensitive Information

- DOT continues to face challenges in protecting the IT infrastructure that it and its OAs manage and monitor. This includes protecting sensitive information, particularly the personally identifiable information (PII) in systems that the Department hosts. In our recent audits of Volpe's, MARAD's, and FMSCA's cybersecurity postures, we identified and could have exploited security weaknesses and accessed millions of data records.
- During these audits, we also identified recurring weaknesses that we could exploit, including poor security practices, such as weak administrative-level login credentials, unpatched servers and workstations, and a lack of encryption of sensitive data. We were able to access millions of sensitive records, including PII (see figure), which could have cost the Department millions of dollars in credit monitoring fees for affected individuals to protect them from identity theft.

Number of Unauthorized PII Records That OIG Was Able To Access From Volpe, MARAD, and FMCSA



Source: Results of OIG audits of Volpe, MARAD, and FMCSA security postures conducted in 2016, 2019, and 2021, respectively.

# Coordinating With Other Agencies and Industry Partners To Ensure Cybersecurity in the Transportation Sector

- On May 8, 2021, the Colonial Pipeline Company announced that it had halted its pipeline operations due to a ransomware attack, disrupting critical supplies of gasoline and other refined products throughout the East Coast. The Colonial Pipeline and other cyberattacks have elevated concerns about the security of the Nation's energy pipelines and Government programs to protect critical infrastructure.
- On May 12, 2021, the President issued Executive Order 14028 charging the Federal Government to improve its efforts to identify, deter, protect against, detect, and respond to increasingly sophisticated malicious cyber campaigns facing the United States. The Order also states that protecting our Nation from malicious cyber actors requires the Federal Government to partner with the private sector.
- As a lead agency in protecting the critical infrastructure of the Nation's transportation sector, DOT must coordinate with other Federal agencies and industry partners to mitigate vulnerabilities and ensure cybersecurity. For example, the FAA Extension, Safety, and Security Act of 2016 directs FAA to develop a comprehensive, strategic framework to reduce cybersecurity risks to civil aviation. FAA's efforts to implement this framework involve coordination and collaboration on aviation cybersecurity with the Departments of Homeland Security and Defense through the Aviation Cyber Initiative.

For more information on the issues identified in this chapter, please contact:



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## Recent Progress Reported by the Department

According to senior officials, when faced with stay-at-home orders in March 2020, DOT successfully transitioned to 100 percent telework-ready in 5 days. The Department adjusted operations by expediting the acquisitions process, distributing 15,000 laptops, and focusing on technology updates. The Office of Chief Information Officer tripled departmental network bandwidth and upgraded security to ensure that employees working from home could access systems and data to fulfill their responsibilities.

## Related OIG Work

FISMA 2021–Quality Control Review of the Independent <u>Auditor's Report on the</u> Assessment of DOT's Information Security Program and Practices (October 25, 2021)

>> 5 recommendations (5 open, 0 closed)

FMCSA's IT Infrastructure Is at Risk for Compromise (October 20, 2021)

>> 13 recommendations (13 open, 0 closed)

FISMA 2020-Quality Control Review of the Independent <u>Auditor's Report on the</u> Assessment of DOT's Information Security Program and Practices (October 26, 2020)

>> 18 recommendations (18 open, 0 closed)

FAA and Its Partner Agencies Have Begun Work on the Aviation Cyber <u>Initiative and Are Implementing</u> Priorities (September 2, 2020)

>> 1 recommendation (0 open, 1 closed)

The Maritime Administration's IT Infrastructure Is at Risk for Compromise (July 24, 2019)

>> 19 recommendations (8 open, 11 closed)



# FINANCIAL MANAGEMENT

**OAs Impacted** Departmentwide

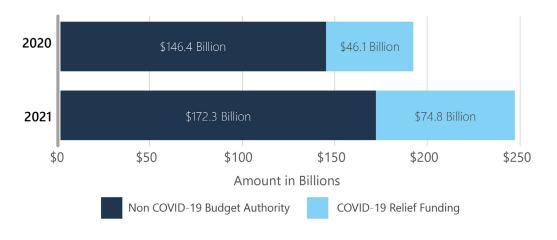
**Related DOT Priorities** Infrastructure

For fiscal year 2021, DOT's budget included \$247 billion to fund programs and other operations through grants, contracts, and other means. DOT has made progress in its financial management, including reduction of improper payments, but following more than \$100 billion in COVID-19 relief funding, DOT now monitors significantly more grants. Given the significant influx of new grant funding, DOT may be challenged to provide effective financial management. Improving grant monitoring procedures with consistent oversight and maintaining controls to avoid increases in improper payments is critical to helping the Department safeguard assets.

## Avoiding Increases in Improper Payments

- Internal controls to detect and prevent improper payments help ensure that grantees meet Federal requirements. The Payment Integrity Information Act of 2019 (PIIA) requires agencies to identify, report, and reduce improper payments in their programs.
- · PIIA emphasizes payment integrity and improper payment reduction and requires agencies to develop plans to prevent improper payments and inspectors general to evaluate these efforts.
- The drastic growth in disbursements and volume of transactions related to COVID-19 relief will increase DOT programs' susceptibility to improper payments, as our reviews have identified in connection with previous large-dollar emergency relief programs such as the American Recovery and Reinvestment Act of 2009 (ARRA). The Department will need to maintain focus on controls for detecting and preventing improper payments in order to safeguard billions of dollars in payments and ensure DOT's continued compliance with PIIA.

Increase in DOT Budget Authority for COVID-19 Relief Funding, 2020 versus 2021



Note: Budget authority is the authority provided by Federal law to incur financial obligations that will result in

Source: DOT quarterly financial statements as of June 30, 2020 and June 30, 2021 (unaudited)

# COVID-19 Impact and Response

Grants carry an inherent risk because grantees may intentionally or unintentionally use grant funds in ways that do not align with the purpose or guidelines of the DOT program. The significant increases in the number of grants and total disbursement dollars due to CARES Act and other COVID-19 relief appropriations heighten this risk (see figure) and will call for strong internal controls and oversight.

The increased workload placed on DOT staff who are processing these funds further increases this risk. For example, because a supervisor may have to review more transactions in less time, review quality may go down and risk for improper payments may go up.

# Improving Policies and Procedures To Monitor and Report **Grantee Spending**

- · DOT will need to timely resolve reported single audit findings to mitigate the risk of misuse of Federal funds. OMB's Uniform Guidance requires agencies to follow up on these findings and verify the appropriateness of grantees' actions to resolve them. We have communicated our concerns about untimely follow up on single audit findings to the Department. These findings directly affect DOT grant programs, and if uncorrected, future awards may be susceptible to the same weaknesses. Therefore, addressing this challenge is of growing importance as DOT grantees are receiving significantly increased funding through COVID-19 relief programs.
- Accurate grantee spending reports are also key for overseeing Federal funds. The Data Accountability and Transparency (DATA) Act establishes standards for financial data reporting and requires agencies to submit accurate, searchable data on grantee spending for decision makers and the public.
- In our review of DOT's DATA Act implementation for fiscal year 2021, we found that although data quality was classified as "higher," some data were incomplete, inaccurate, or untimely.
- DOT must provide accurate grantee spending data to mitigate risks and enhance accountability as it disburses COVID-19 relief and other funds. To do so successfully, DOT will have to continue to implement improved data quality procedures for DATA Act reporting, such as expanding the existing quarterly reviews to ensure potential data quality issues are investigated.

# DID YOU KNOW?

An improper payment is a payment that should not have been made, or a payment in the incorrect amount.

Reasons a payment may be improper:

- Ineligible recipients
- Ineligible good or services
- Goods or services that were
- Uncredited discounts

not received

- **Duplicate payments**
- Overpayments/underpayments
- Insufficient documentation to define a payment as proper

For more information on the issues identified in this chapter, please contact:



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## Recent Progress Reported by the Department

- We recently reported that DOT complied with PIIA in fiscal year 2020, surpassed its improper payment reduction target of 0.85 percent, and reported an overall decrease in improper payments from 2019 of about \$224 million. Further, during FY 2020, FHWA introduced new training content and additional guidance to help reduce the number of improper payments in State grant programs.
- In June 2020, the Department identified risk areas associated with each of its CARES Act programs. In particular, for FTA, the Department recognized that the CARES Act tripled FTA's budget and increased the amount of funding used for operating assistance by an even greater amount. To mitigate the risk of improper payments, FTA reported that it planned to dedicate additional staff to overseeing grantees and grants close-out.

## Related OIG Work

Quality Control Review of the Independent Auditor's Review of DOT's Compliance With the Digital Accountability and Transparency Act (October 6, 2021)

>> 4 recommendations (4 open, 0 closed)

DOT's Fiscal Year 2020 Payment <u>Integrity Information Act Compliance</u>

Review (July 14, 2021)

>> No recommendations

DOT's Fiscal Year 2019 IPERA Compliance Review (April 27, 2020)

>> 2 recommendations (2 open, 0 closed)

ARRA Lessons Learned: FTA Needs To Improve Its Grant Oversight To Prevent Improper Payments (April 2, 2014)

>> 5 recommendations (0 open, 5 closed)



# INNOVATION AND THE **FUTURE OF TRANSPORTATION**

**OAs Impacted** FAA, FHWA, FMCSA, FRA, FTA, NHTSA

**Related DOT Priorities** Innovation, Safety

Preparing for the future of transportation is a fundamental challenge for DOT. This includes safely integrating new and evolving transportation technologies, including advanced energy sources, Unmanned Aircraft Systems (UAS), commercial space operations, and vehicle automation. DOT must also apply lessons learned from the COVID-19 pandemic's impact on transportation supply chains to better position the transportation industry for the future, while incorporating into its decision-making such issues as climate change and equity in infrastructure investments.

# Safely Integrating New Technologies Into Transportation **Systems**

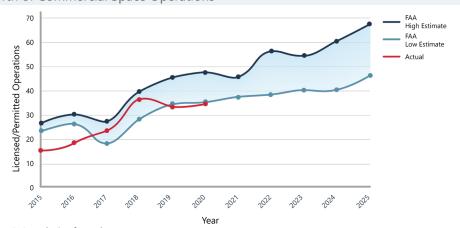
#### **Unmanned Aircraft Systems**

- · Recognizing that UAS is the fastest growing aviation segment, FAA partnered with private and Government entities to advance and collect data on complex operations, such as package delivery and infrastructure inspection. However, FAA has yet to issue rulemaking to address operating UAS beyond visual line of sight throughout the National Airspace System (NAS). As a result, achieving full and safe integration of UAS remains an ongoing challenge.
- The growth of UAS also comes with the risk of nefarious uses of these systems. Federal agencies that have the statutory authority to mitigate UAS threats must coordinate with FAA to ensure counter-UAS technologies are safely tested and employed. Our office also continues to investigate cases related to unlawful use of UAS (see figure on p. 21).

## **Commercial Space Operations**

• FAA reported that over the past 5 years, it has gone from licensing approximately one commercial space launch every month to more than one every week, including newly introduced passenger flights (see figure below). With the Federal Government and private industry increasingly relying on commercial space operators to meet its needs, and to instill public confidence in this changing industry, it is critical to strike the right balance between supporting the industry's continued development while safely integrating its operations into the NAS. This will require effective coordination with industry and other Federal agencies, continued regulatory enhancements, and deployment of new technologies, such as the Space Data Integrator.

## **Growth of Commercial Space Operations**



Source: OIG analysis of FAA data

## COVID-19 Impact and Response

The COVID-19 pandemic highlighted the importance of developing and maintaining resilient supply chains in industries that are essential to the Nation's economic vitality, national security, and public health. In particular, supply chain challenges for items such as medical supplies and semiconductor chips during the pandemic raised concerns about the United States' reliance on imports from foreign nations. These challenges also exposed the potential vulnerability to supply disruptions from a variety of sources ranging from international trade, global pandemics, and strategic competitors.

## Safely Integrating New Technologies (Continued)

#### Vehicle Automation

- As the technology for automated vehicles evolves, DOT will need to apply lessons learned and the results of new data analysis to integrate these systems safely into transportation networks. The Department will face a significant challenge to develop standards and test new tools, while also assessing and overseeing the impact on surface infrastructure.
- DOT is collaborating with industry and other stakeholders to develop vehicle-toeverything technologies, which allow vehicles to communicate with surrounding traffic systems. However, much work remains to fully deploy these technologies.

#### **Energy Innovation and Diversification**

• For decades, an overwhelming proportion of many transportation systems have been powered by the combustion of fossil fuels. Private innovation coupled with Federal and State regulation have sparked the emergence of alternative energy sources in surface and air transportation, as well as transportation hubs including ports, airports, and city centers. However, technologies such as high energy-density batteries and the integration of supporting infrastructure into surface and air transportation networks present new safety challenges that must be monitored and addressed. Further, traditional energy sources and the infrastructure to support them will remain in place for decades to come, introducing additional complexity to transportation regulation.

# Implementing Executive Orders and Other Federal Priorities To Tackle the Impact of Climate Change, Advance Equity, and Promote Resilience in Infrastructure and Supply Chains

- The Department is currently working to implement a series of Executive Orders (EOs) that address important transportation issues. For example, in accordance with EOs 14008 and 13985, DOT has identified addressing the impacts of climate change and longstanding inequities in infrastructure as among the Department's key principles.
- More specifically, EO 14008 requires Federal agencies to assess, disclose, and mitigate climate pollution and climate-related risks to increase national resilience. Successfully addressing this challenge will require DOT agencies to pursue a coordinated approach from planning to implementation, coupled with substantive engagement by all stakeholders.
- Additionally, to advance racial equity and support for underserved communities, EO 13985 requires Agency heads to review a selection of their Agency's programs and policies to assess whether underserved communities face systemic barriers in accessing benefits and opportunities.

# Recent Progress Reported by the Department

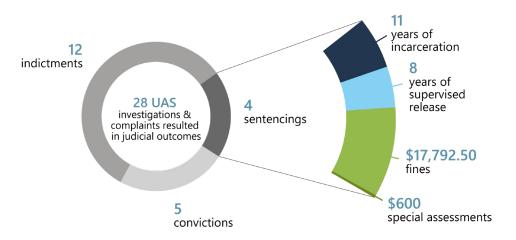
- · UAS and Commercial Space. FAA recently issued final rules addressing UAS remote identification and operations over people and formed a rulemaking committee on beyond line of sight operations. The Agency also published a final rule for commercial space that streamlined launch and reentry regulations into a single, performance-based regulation.
- Guidance on Emerging Technologies. In 2019, DOT launched the Non-Traditional and Emerging Transportation Technology (NETT) Council to identify and resolve jurisdictional and regulatory gaps for new technologies. In July 2020, the NETT Council released Pathways to the Future of Transportation, which set forth a DOT framework for engaging emerging technologies and innovators.
- Resilience in Infrastructure. In January 2021, DOT released the Complementary Positioning, Navigation, and Timing (PNT) and GPS Backup Technologies Demonstration Report, which described the results of demonstrations conducted by a DOT team of Federal staff and contractors of suitable, mature, and commercially available technologies to back up or complement the timing services of GPS.

## *Implementing Executive Orders and Other Priorities (Continued)*

- · As DOT invests resources in pursuing these and other objectives, it will need to determine whether new policies, regulations, or guidance are necessary to achieve departmental goals. DOT's efforts will also require development of equity data and analysis, which will allow comprehensive transportation analysis with an emphasis on equity, climate safety, and economic impact and other evidence-building efforts to respond to the climate crisis.
- The COVID-19 pandemic, recent cyber-attacks, extreme weather events, and geopolitical and economic competition have all highlighted the importance of resilient, diverse, and secure supply chains to ensure our economic prosperity and national security. In support of this goal, the recently issued EO 14017, America's Supply Chains, requires DOT to develop greater visibility into the supply chains supporting the transportation industrial base. Doing so will allow DOT to evaluate vulnerabilities and provide a foundation for developing and maintaining resilient transportation supply chains.
- Congress has also tasked DOT with leadership in resilience, including the responsibility to provide for the establishment, sustainment, and operation of a land-based, resilient, and reliable alternative timing system to provide a complement to and backup for the timing component of the Global Positioning System (GPS) that, to the maximum extent practicable, will be resilient and extremely difficult to disrupt or degrade.

## OIG Investigative Outcomes on Cases Related to Unlawful UAS Activities

As UAS technology grows in popularity, legal cases involving unlawful use of UAS are starting to accumulate. OIG's criminal investigations related to UAS primarily involve individuals operating unregistered UAS and/or using UAS to deliver contraband to State Department of Corrections facilities. From FY 2017 to July 21, 2021, OIG conducted 36 investigations and complaints involving UAS, with 28 resulting in the following judicial outcomes:



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**David Pouliott** 

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Related OIG Work

Opportunities Exist for FAA To Strengthen Its Review and Oversight Processes for <u>Unmanned Aircraft System</u> Waivers (November 7, 2018)

>> 8 recommendations (0 open, 8 closed)

FAA Lacks a Risk-Based Oversight Process for Civil Unmanned Aircraft Systems (December 1, 2016)

>> 6 recommendations (0 open, 6 closed)



# **EVOLVING OPERATIONS AND WORKFORCE MANAGEMENT**

**OAs Impacted** Departmentwide

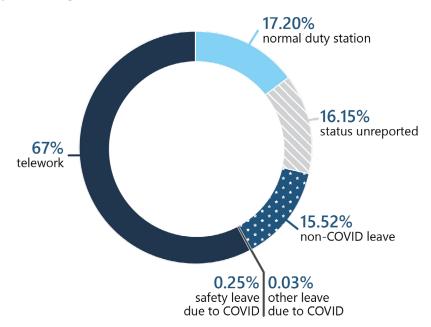
**Related DOT Priorities** Safety

In response to COVID-19, on March 16, 2020, DOT transitioned to maximum telework for the health and welfare of its employees, consistent with the fulfillment of the Department's critical safety mission. Significant progress was made in the fight against the COVID-19 pandemic throughout spring 2021. However, the emergence of new variants and the continuing evolution of public health guidance over the last several months is again challenging DOT to respond effectively. Accordingly, DOT needs to continue to act prudently, while planning for an effective, orderly, and safe return of Federal employees and contractors to the physical workplace.

## Integrating Lessons Learned To Facilitate Workplace Reentry

- DOT's ability to integrate lessons learned into its plans and align its procedures with operational and employee needs is critical to the successful transition from the current maximum teleworking environment. During the pandemic, only a fraction of DOT employees were working in their normal duty stations—such as only 17.2 percent of employees on August 4, 2021, according to DOT (see figure).
- In a January 2021 assessment of DOT's plans, we reported that the Department faced several challenges in safely transitioning personnel back to their duty stations. These included ensuring Operating Administrations have work plans that contain required elements and cover all duty stations, making detailed and current COVID-19 procedures available to all employees, and communicating fully with employees on reopening procedures and status.
- · Since our assessment, OMB released new guidance for Federal agencies on reentry planning, but the challenges to safe workforce reentry we identified in January remain relevant. Importantly, OMB's guidance specifically states that Agency plans for reentry and post-reentry should be informed by lessons learned throughout the pandemic.
- DOT must also balance workplace needs with employee priorities and increased staff reliance on telework flexibilities over the extended period of maximum telework. According to OMB, the Federal Government's eventual operating state may differ in significant ways from its pre-pandemic operations. DOT will need to balance priorities when making decisions related to postreentry personnel policies and the work environment, including through consideration of workforce needs such as mentoring, connectedness, supervision, and training. Overall, DOT's decisions must be guided by how to effectively achieve its agencies' missions in an evolving work environment.

Work Status of DOT Employees on August 4, 2021



Source: DOT data, unverified by OIG

# Communicating Fully and Consistently With Employees on Workplace Procedures, Status, Flexibility, and Expectations

- The Department's ability to communicate fully and consistently with employees on workplace procedures, status, flexibilities, and expectations is critical to the successful transition of agency operations to a new work environment.
- Our January 2021 assessment of the Department's planning efforts to return to normal operations identified communication as a significant challenge. Specifically, communication to DOT employees regarding the potential for office reopenings was fragmented and incomplete. Furthermore, COVID-19 communications originated from multiple sources within the Department and via multiple methods, including emails, DOT's intranet site, and physically posted signage (see figure). Consequently, there was no central source of return-to-work guidance, procedures, or information.
- In addition, DOT did not have a standard written policy for face coverings that Headquarters employees could reference, and the signage posted did not always clarify where in the building employees should wear masks. Subsequently, DOT has strengthened its mask mandate and requires face coverings in all common areas.
- Since our assessment, DOT has issued new guidance related to office reopenings and workplace safety multiple times. However, the Department must be prepared to adapt again as the COVID-19 pandemic evolves and guidance from the Centers for Disease Control and Prevention responds accordingly.
- The recognition by DOT and OMB that workforce reentry is closely linked to the future of work adds to the complexity of communications. Persuasively setting forth this future to Department employees and other stakeholders requires explaining not only the "what," but the "why," including with respect to issues such as the benefits of in-office, telework, and remote-work arrangements. In this dynamic pandemic environment, DOT's communications with its workforce will remain key to successfully continuing to meet its mission.

# Recent Progress Reported by the Department

- On May 14, 2021, DOT updated its COVID-19 Workplace Safety Plan with implementation guidance. Applicable DOT-wide, the guidance focuses on the health and safety of all Federal employees, onsite contractors, visitors, and their families.
- On August 5, 2021, DOT released plans and guidelines for the DOT Future of Work, including revising the Department's telework policy. These plans announced the introduction of new work schedules for DOT employees in three phases beginning in October, with all employees starting their new work schedules by January 3, 2022.
- On September 3, 2021, the Department issued new guidance stating that Phase One reentry had been postponed from October to November 2021, to ensure that the Department has appropriate safety protocols in place.

## Signage at DOT Headquarters During COVID-19





Source: OIG photo taken November 19, 2020

For more information on the issues identified in this chapter, please contact:



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## Related OIG Work

<u>Challenges To Implementing DOT's</u> Framework for Return to Normal Operations (January 15, 2021)

>> No recommendations

# Exhibit A. List of Last Year's Top Management Challenges

FY 2021 TOP MANAGEMENT CHALLENGES	KEY CHALLENGES
Aviation Safety	<ul> <li>Improving FAA's oversight of aircraft certification processes</li> <li>Enhancing aviation safety oversight while working in a collaborative environment</li> </ul>
Surface Transportation Safety	<ul> <li>Enhancing oversight of surface transportation projects</li> <li>Employing effective asset and performance management</li> </ul>
Air Traffic Control and Airspace Modernization	<ul> <li>Modernizing new systems while introducing new capabilities</li> <li>Implementing new performance-based navigation flight procedures and delivering benefits to airspace users</li> </ul>
Surface Transportation Infrastructure	<ul> <li>Enhancing oversight of surface transportation projects</li> <li>Employing effective asset and performance management</li> </ul>
Contract and Grant Fund Stewardship	<ul> <li>Awarding pandemic relief and other DOT contracts and grants efficiently, effectively, and for intended purposes</li> <li>Enhancing contract and grant management and oversight to achieve desired results and compliance with requirements</li> </ul>
Information Security	<ul> <li>Addressing longstanding cybersecurity weaknesses</li> <li>Developing Departmentwide policy to validate the proper adopting and security of cloud services</li> </ul>
Financial Management	<ul> <li>Strengthening procedures to monitor and report grantee spending</li> <li>Preventing an increase in improper payments</li> </ul>
Innovation and the Future of Transportation	<ul> <li>Adapting oversight approaches for emerging vehicle automation technologies</li> <li>Ensuring the safe integration of Unmanned Aircraft Systems in the National Airspace System</li> </ul>

Note: Prior OIG reports are available on our website at <a href="http://www.oig.dot.gov/">http://www.oig.dot.gov/</a>.

# **Exhibit B. List of Acronyms**

**ARP Act** American Rescue Plan Act of 2021

American Recovery and Reinvestment Act of 2009 **ARRA CARES Act** Coronavirus Aid, Relief, and Economic Security Act

**CRSSA Act** Coronavirus Response and Relief Supplemental Appropriations Act of 2021

CDL commercial driver's license COVID-19 Coronavirus Disease 2019

DATA Act Digital Accountability and Transparency Act

DOT **Department of Transportation ERP Emergency Relief Program** 

**Executive Order** EO

Federal Aviation Administration FAA FHWA Federal Highway Administration

Federal Information Security Management Act FISMA **FMCSA** Federal Motor Carrier Safety Administration

FRA Federal Railroad Administration FTA Federal Transit Administration FTA Global Positioning System

**IPERA** Improper Payments Elimination and Recovery Act

Maritime Administration MARAD National Airspace System NAS

**NETT** Non-Traditional and Emerging Transportation Technology Council

NextGen Next Generation Air Transportation System

National Highway Traffic Safety Administration NHTSA

NSMV National Security Multi-Mission Vessels

**Operating Administration** OA Office of Inspector General OIG PBN performance-based navigation

**PHMSA** Pipeline and Hazardous Materials Safety Administration

PII personally identifiable information

PIIA Payment Integrity Information Act of 2019

**PNT** Positioning, Navigation, and Training

plans of actions and milestones POA&Ms **SMS** Safety Management System Terminal Flight Data Manager TFDM TIC trusted internet connection

Terminal Sequencing and Spacing **TSAS** 

**Unmanned Aircraft Systems** UAS

# Appendix. Department Response



# Memorandum

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

Subject: INFORMATION: Management Response to the

Office of Inspector General (OIG) Draft Report:

DOT's Fiscal Year (FY) 2022 Top Management Challenges

From: Victoria B. Wassmer Deputy Assistant Secretary for Finance and Budget

VICTORIA BAECHER WASSMER

Digitally signed by VICTORIA BAECHER Date: 2021.10.18 15:17:39 -04'00'

**To:** Eric J. Soskin **Inspector General** 

The mission of the Department of Transportation (DOT or Department) is to ensure the Nation has the safest, most equitable, reliable, and modern transportation system in the world to increase economic strength, improve climate outcomes, and build global competitiveness for the American people. The OIG FY 2022 Top Management Challenges report highlights risks that DOT continues to mitigate in pursuit of its mission in the following nine challenge areas.

**Aviation Safety.** DOT is taking steps to maintain trust in the Federal Aviation Administration's (FAA) aircraft certification process. Work is underway to implement a comprehensive action plan to address aircraft certification recommendations through rulemaking, policy, staff, data, and external partnership efforts. FAA's oversight function assures the highest level of safety in the National Airspace System (NAS) by verifying that an aviation organization complies with and uses safety-related standards, regulations, and associated procedures. The Safety Assurance System (SAS) is the oversight tool to perform certification, surveillance, and Continued Operational Safety. Using SAS, FAA optimizes safety by identifying hazards, managing the associated risk, and eliminating or controlling associated risks through design and performance oversight. This system also allows aviation safety inspectors to utilize standardized protocols built upon FAA policy and procedure to effectively evaluate certificate holder programs so that they can focus their work on the highest area of risk.

Surface Transportation Safety. The Department's efforts in enhancing surface transportation safety involve increasing compliance with regulations and programs by improving monitoring and enforcement. For example, the Federal Motor Carrier Safety Administration (FMCSA) is working to use research data integration and overall collaboration to identify and promote new policies and practices to improve motor carrier safety. FMCSA will conduct program evaluations to understand the effectiveness of the activities and interventions. Likewise, the Federal Railroad Administration's (FRA) comprehensive strategy merges proven approaches to safety—like inspections and enforcement—with measures that improve safety culture, harness technology,

and apply lessons learned to establish benchmarks, develop and adhere to best practices, and implement risk-based collaborative safety management programs. In addition, FRA is conducting focused field surveys in areas with high numbers of trespass fatalities, identifying local root causes and contributing factors, and identifying site/location-specific risk mitigation strategies.

Air Traffic Control and Airspace Modernization. Air Traffic Control and Airspace Modernization have been key focus areas for the Department. Through the Next Generation Air Transportation System (NextGen) program, vast improvements and modernization of the NAS operations are being implemented using advanced technologies. Improvements include replacing voice-only communications with digital communications and shifting from ground-based routes and radar-only surveillance to utilizing satellites to plan routes and obtain near-real-time surveillance. FAA is implementing decision support system automation to replace tactical and reactive air traffic control with strategic integrated air traffic management. These are only a few of the benefits of NextGen that have already been delivered to Airspace Users. The FAA seeks to gain further efficiencies by deploying Performance Based Navigation and Controller Automation Tools that work to manage flight routes and procedures, leading to improved schedule adherence and reduced fuel consumption and engine exhaust emissions.

**Surface Transportation Infrastructure**. Employing effective oversight of Federal funding and enhancing risk-based oversight to improve project delivery are critical priorities for DOT. DOT maintains strong enterprise risk management (ERM) systems and internal controls so that checks and balances are built into our programs and financial systems. Together these tools ensure an effective control environment so that reliable information is available to assist all levels of the Department in decision-making and project management. Effective stewardship of taxpayer funds helps DOT gain valuable insight that guides future planning. For example, DOT has a centralized approach for managing risks and oversight of COVID-19-related funds/programs. This approach allows DOT to efficiently issue standardized policy, collect data, identify broad issues, and track success, trends, and program outcomes. Operating in a centralized manner and monitoring the lifecycle status of programs (e.g., developing policy, launching materials like funding opportunities or announcements, and monitoring funding already awarded) enable DOT to report on the important "moments that matter" and significant implementation milestones to White House leadership, the Office of Management and Budget, the Pandemic Response Accountability Committee, and DOT's OIG. In addition, DOT implemented a Department-wide internal control toolkit to identify and document new or modified internal controls resulting from the implementation of emergency funding. The information documented in the toolkit directly links to OA's internal control and ERM activities.

<u>Contract and Grant Fund Stewardship</u>. The Department remains committed to promoting effective stewardship of contract and grant funding and ensuring qualified and sufficient oversight of these resources. In support of the Program Management Improvement Accountability Act (PMIAA), the Office of the Senior Procurement Executive requested and received funding in mid-FY 2021 for resources to assist in effective program-level oversight and implementation of PMIAA objectives. These analysts will also help to mature the program and project management discipline within the Department. In addition, the Department will continue to leverage its primary and effective procurement oversight mechanisms—the Acquisition Strategy Review Board and Procurement Management Review program—to ensure effective and compliant management of Federal contract dollars. The Department is also thoroughly engaged

in efforts to manage domestic preference and supply chain risk. Through participation in the government-wide Biden-Harris Administration Supply Chain Disruptions Task Force, DOT is addressing congestion at U.S. ports. For example, through its Consolidated Rail Infrastructure and Safety Improvements Grant Program, FRA can help reduce congestion by enhancing multimodal connections and improving service integration between rail and other modes at port facilities. The Department also established a cross-modal implementation team to address and implement the enhanced Buy America and Buy American requirements required by Executive Order 14005 – Ensuring the Future Is Made in All of America by All of America's Workers.

<u>Information Security</u>. The Department places the highest importance on Information Security and is committed to addressing recurring cybersecurity weaknesses and ensuring DOT's IT Infrastructure and Sensitive Information are protected. Work has begun in the Office of the Chief Information Officer (OCIO) to realign and consolidate commodity functions and personnel to reduce the complexity of the control environment and implement best practices to improve coverage and efficiencies in cybersecurity, privacy, and IT operations. The OCIO has also begun investment in new technologies to improve the security of DOT systems and to better protect information and users, including the deployment of advanced analytics and automation that will interface to the Department of Homeland Security/Cybersecurity and Infrastructure Security Agency for improved detection, protection, response, and mitigation capabilities against advanced cybersecurity threats.

**Financial Management**. In response to the COVID-19 pandemic, DOT and its financial management professionals came together, like no time before, to ensure the agency's mission and financial management objectives were achieved. To assist in recovery, the Department was appropriated new COVID-19 funding in the amounts of \$27 billion through the Coronavirus Response and Relief Supplemental Appropriations Act and \$43 billion through the American Rescue Plan Act in FY 2021. Through advanced planning and implementation and the lessons learned from previous challenging situations, the Department continues to help ensure that every dollar spent is used to the maximum benefit of the taxpayer. DOT quickly made funds available to recipients, processed disbursements, and continuously monitored the status of funds to maximize the impact of these much-needed resources. DOT also continued the execution and timely reporting of the \$36 billion through the Coronavirus Aid, Relief, and Economic Security Act (CARES). In collaboration with DOT program officials, the finance community utilized a centralized approach for the management of risks and oversight of COVID-19 funds/programs to allow for standardized policy, efficient data collection, identification of issues and trends, and defining outcomes. The team supported all these improvements by ensuring they were implemented on time and that appropriate controls were in place to ensure reliability and auditability. In addition, the Department remains committed to improving the accuracy, reliability, and transparency of spending data and made significant improvements during FY 2021. These efforts include the development and implementation of enhanced guidance and processes to identify and correct potential data quality issues, as well as the implementation of all new reporting requirements resulting from the passage of the CARES Act. These actions also include the implementation of enhanced dashboards to continually review and improve the quality of its award descriptions to increase transparency and ensure the American public is able to assess whether funding is achieving the intended goals and objectives.

**Innovation and the Future of Transportation**. The Department's determination to support innovation and the future of transportation includes focusing on safely integrating new technologies and participants into transportation systems. The commercial space transportation industry continues to grow rapidly due to increasing human commercial space flight, growth in launches and reentries previously accomplished by government entities, and advances in innovation and technology, such as reusability and automation, that bring costs down. In response, the FAA is implementing a new Space Launch and Reentry Licensing Requirements rule under 14 CFR Part 450 which consolidates multiple launch and reentry rules, simplifies the licensing process, and allows industry innovation through performance-based requirements and flexible means of compliance. The rule was developed with extensive industry and government partner input. It is designed to reduce the regulatory compliance burden, reduce costs, and facilitate more rapid innovation within the commercial space industry while maintaining the same level of public safety. The future of transportation will be further augmented by DOT's activities in support of Executive Orders and other Federal priorities to tackle the impact of climate change, advance equity, and promote resilience in infrastructure and supply chains. For example, the FY 2021 round of DOT's Infrastructure for Rebuilding America (INFRA) discretionary grant program will fund transportation projects of national and regional significance, support economic opportunities for workers, improve safety, apply transformative technology, address climate change, environmental justice, and racial equity. Selection criteria will include evaluating if projects were planned as part of a comprehensive strategy to address climate change and whether they support strategies to reduce greenhouse gas emissions, the extent to which project sponsors have completed equity-focused community outreach, and if projects are designed to improve connections to underserved communities to reduce barriers to opportunity.

**Evolving Operations and Workforce Management.** As the COVID-19 pandemic continues, DOT remains vigilant in its commitment to employee and Federal contractor employee safety while continuing to accomplish work for the American people. Integrating lessons learned to facilitate workplace reentry is critical in adapting to evolving operations and changes to workforce management. DOT established a COVID-19 Coordination Team responsible for conducting assessments to develop, implement, and monitor compliance with safety protocols for physical space and masking; and determinations of on-site and telework/remote working. This team meets monthly to review compliance with agency COVID-19 workplace safety plans and protocols, consider potential revisions to agency COVID-19 workplace safety plans and protocols, and address pressing operational needs. Furthermore, ensuring complete and consistent communication with employees and Federal contractors on workplace procedures, status, flexibility, and expectations is extremely important to DOT's leadership team to alleviate concerns with reentry and the post-pandemic workplace.

We appreciate the opportunity to respond to the OIG draft report. The incredible dedication exhibited every day by our workforce enables the continuous advancement of DOT's mission of safe and reliable transportation. We appreciate the OIG's partnership in these efforts, and we will continue to work together to identify fraud, waste, abuse, or mismanagement in the Department's programs, activities, or operations. Please contact Madeline M. Chulumovich, Director, Office of Audit Relations and Program Improvement, at (202) 366-6512, with any questions.



# Fraud & Safety Hotline

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