April 29, 2019

The Honorable Elaine L. Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Priority Open Recommendations: U.S. Department of Transportation

Dear Madam Secretary:

The purpose of this letter is to provide an update on the overall status of the U.S. Department of Transportation’s (DOT) implementation of GAO’s recommendations and to call your personal attention to areas where open recommendations should be given high priority.¹ In November 2018, we reported that on a government-wide basis, 77 percent of our recommendations made 4 years ago were implemented.² DOT’s recommendation implementation rate was 81 percent. As of March 2019, DOT had 159 open recommendations. Fully implementing these open recommendations should significantly improve DOT’s operations.

Since our April 2018 letter, DOT has implemented 3 of our 13 open priority recommendations. This work has addressed concerns related to vehicle cybersecurity by defining DOT’s role in responding to vehicle cyberattacks, and addressed safety risks to oil and gas pipelines by updating emergency response regulations. Additionally, DOT has taken actions to improve oversight of federal surface transportation programs and its grantees’ performance, which will help in addressing the high-risk area of improving funding for surface transportation.

DOT has 10 priority recommendations remaining from those we identified in our 2018 letter. We ask your continued attention to these remaining recommendations. We are adding 6 priority recommendations this year related to safety risks related to positive train control implementation, Federal Transit Administration’s (FTA) transition to a state safety oversight model, and improvements to DOT’s cybersecurity infrastructure. This brings the total number of priority recommendations to 16. (See the enclosure for the list of these recommendations.)

The following 16 priority recommendations fall into 6 areas.

Funding surface transportation. As we discuss below, funding surface transportation is among the highest risks facing the government. We have identified two priority

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¹ Priority recommendations are those that GAO believes warrant priority attention from heads of key departments or agencies. They are highlighted because, upon implementation, they may significantly improve government operation, for example, by realizing large dollar savings; eliminating mismanagement, fraud, and abuse; or making progress toward addressing a High Risk or duplication issue.

recommendations central to maximizing resources and improving performance. First, we recommended in December 2016 that DOT issue a directive governing department-wide and modal administration of discretionary grant programs that includes requirements to, among other things, document key decisions and align the grant programs’ policy priorities with the evaluation process. Since 2011, we have found challenges with implementation of discretionary grant programs by DOT and its modal administrations, including problems documenting key evaluation and project selection decisions, most recently in November 2017. As we stated in our April 2018 letter to you concerning DOT’s implementation of GAO’s recommendations, DOT told us it planned to implement this recommendation in 2018 by updating its Financial Assistance Guidance Manual. In response, we noted that in order to address our recommendation, DOT needed to issue a department-wide directive that incorporates all of the elements identified in our report. In March 2019, DOT issued a memo directing secretarial offices and operating administrations involved in awarding discretionary grants to implement our recommendations and to include them in their policies and procedures by June 2019. We are reviewing the Department’s action and assessing the extent to which it addresses our recommendation.

Second, we recommended in September 2014 that DOT include in its National Freight Strategic Plan, which was mandated by Congress, a written statement articulating the federal role, objectives, and goals in mitigating local congestion caused by national freight movements. DOT has stated that it plans to release a final National Freight Strategic Plan in 2019.

**Addressing safety risks.** Five recommendations are critical to addressing safety risks. First, revising the methodology used to compare safety performance across motor carriers would help ensure that Federal Motor Carrier Safety Administration (FMCSA) can better identify and intervene with carriers at highest risk for crashing. We recommended in February 2014 that DOT revise the Safety Measurement System (SMS) methodology to better account for data accuracy and sufficiency limitations in drawing comparisons of safety performance information across carriers.

The Department does not agree with our conclusions, and has requested that we close the recommendation as not implemented. We continue to believe implementing this recommendation will improve the reliability of data used to assess carriers that pose the greatest safety risks. We note that the National Academies of Sciences conducted a congressionally-mandated evaluation of SMS, including the system’s data accuracy and sufficiency, and in 2017 made several recommendations to improve FMCSA’s ability to identify high-risk carriers. In June 2018 FMCSA issued an action plan in response to the National Academies of Sciences recommendations and is developing data improvements and a new methodology, as described in the action plan, to better identify unsafe motor carriers. FMCSA expects to complete full testing of this new methodology by mid-2019. Given the focus of the National Academies of Sciences recommendations we will review any SMS methodology revisions FMCSA implements to see if they also address our findings and recommendations.

Second, we recommended in November 2017 that DOT develop and implement a comprehensive plan to better manage departmental initiatives related to automated vehicles. Automated cars and light-duty trucks—from vehicles already on the road equipped with driver assistance technologies to fully driverless cars still in development—pose safety and infrastructure challenges. In July 2018, DOT released an initial plan related to this recommendation in response to a Congressional requirement associated with the Consolidated Appropriations Act of 2018. This plan outlines DOT’s overall approach for managing policy and research issues related to
automated vehicles across DOT’s modal administrations, and we continue to track the approval process for this plan.

Third, we recommended in March 2018 that the Federal Railroad Administration (FRA) should develop an approach to prioritize the allocation of resources to address the greatest risk related to positive train control (PTC) implementation on passenger rail. DOT concurred with this recommendation. FRA officials have said they will provide GAO with information related to the steps they are taking to meet this recommendation in the coming months.

Fourth and fifth, are two recommendations we made in March 2018 that are critical to successfully implementing the federal public transportation safety program enacted in 2012. We recommended that the Federal Transit Administration (FTA) develop guidance for state safety agencies about how to develop and implement a risk-based inspection program to help ensure state resources are used effectively. We also recommended that FTA develop and communicate a method for how it will monitor the effectiveness of the safety agencies’ enforcement authorities and practices. Without such a method, FTA will lack the information needed to identify ineffective state enforcement, which risks allowing safety deficiencies to remain for long periods of time. FTA agreed with our recommendations and told us it plans to implement them in mid-2019.

Cybersecurity risks. As we discuss below, ensuring cybersecurity of the nation is another of the highest risks facing the government. Four priority recommendations will help address cybersecurity risks in aviation and motor vehicles.

We recommended in April 2015 that FAA develop a plan to fund and implement the latest security controls in National Institute of Standards and Technology's (NIST) revised guidelines for Surveillance Broadcast Services Subsystem (SBSS) and Data Communications programs within OMB's timeframe. FAA has developed a plan and is implementing the relevant controls for SBSS, targeting the end of 2019 for project completion. As for the Data Communications program, FAA reported that it has completed identifying the resources required to implement the latest NIST guidelines. We will continue to track FAA’s development of the plan for implementing the latest NIST guidelines for the Data Communications program.

Also in 2015, we recommended that FAA take steps to (1) ensure that testing of security controls is sufficiently comprehensive to determine whether security controls are in place and operating effectively across the National Airspace System and (2) resolve identified security weaknesses in a timely fashion. FAA has made progress implementing these recommendations. In August 2018, FAA stated that it had updated its testing processes. FAA also updated its National Airspace System (NAS) Remediation Management Plan in December 2015 to include new risk management processes for identified security weaknesses. However, FAA has yet to demonstrate that it has comprehensively tested security controls or resolved identified security weaknesses in a timely manner. For example, FAA has not yet implemented 88 recommendations GAO made in the 2015 report to mitigate known security weaknesses in its air traffic control systems. Implementing these recommendations will bolster the agency’s ability to ensure the safe and uninterrupted operation of the NAS.

And finally, we recommended in February 2018 that DOT, in cooperation with the Department of Homeland Security, should take steps to consult, as appropriate with respective sector partners such as Homeland Security and NIST, to develop methods for determining the level and type of cybersecurity framework adoption by entities across the aviation sector. We found there were consistent challenges in adopting cybersecurity frameworks, such as limited knowledge and
skills for implementation, which was affecting DOT and other agencies. DOT concurred with the recommendation, and we continue to track its progress in implementing this recommendation.

**Improving management of information technology (IT) workforce planning.** We recommended in November 2016 that DOT, as well as four other agencies, implement IT workforce planning practices to facilitate a more rigorous analysis of gaps between current skills and future needs, as well as develop a strategy for filling gaps. Specifically, we stated that the right mix of expertise to recognize problems early and the requisite authority to address them are contingent upon effective IT workforce planning. DOT has not developed a documented IT workforce planning process. However, DOT issued an IT workforce strategy in December 2018 which calls for the development of a workforce planning process and summarizes the results of an assessment of the department’s IT workforce To fully implement this recommendation, DOT needs to prioritize the completion of its IT workforce planning process and then begin implementing the process in phases based on the availability of resources.

**Improving federal grant management.** Three recommendations address issues that could help DOT improve its oversight of awards to nonfederal entities by improving their single audit policies and procedures. In February 2017 we recommended that FTA, as well as other federal agencies, design policies and procedures that reasonably assure that all of its award recipients who are required to submit a single audit do so in accordance with OMB guidance. We also recommended that both FTA and the Federal Highway Administration (FHWA) revise policies and procedures to reasonably assure management decisions contain required OMB elements and are issued in a timely manner. DOT is working to update and implement its official guidance by September 2019.

**Improving transportation readiness.** One recommendation made in September 2015 calls for the Maritime Administration to address the need for improved transportation readiness by fully assessing available maritime personnel resources. While the Maritime Administration has estimated that there is a shortage of qualified mariners available to crew a full and prolonged activation of the reserve fleet, its estimate does not fully account for all of the potential sources of supply. DOT agreed with this recommendation, and has taken actions toward implementation. To fully implement this recommendation, the Maritime Administration should reach out to all potentially qualified mariners to verify their qualifications as well as ascertain their availability and willingness to crew the reserve sealift fleet in a full and prolonged activation. In addition, the Maritime Administration should identify potential solutions to addressing any mariner shortfall that may be identified.

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In March, we issued our biennial update to our high-risk program, which identifies government operations with greater vulnerabilities to fraud, waste, abuse, and mismanagement or the need for transformation to address economy, efficiency, or effectiveness challenges. Our high-risk program has served to identify and help resolve serious weaknesses in areas that involve substantial resources and provide critical service to the public.

One of our high-risk areas, funding the nation’s surface transportation, requires congressional action to develop a sustainable plan while also centering on DOT and the agency’s ability to

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maximize existing resources. Several other government-wide high-risk areas including (1) ensuring cybersecurity of the nation, (2) improving management of IT acquisitions and operations, (3) strategic human capital management, (4) managing federal real property, and (5) government-wide security clearance process, also have direct implications for DOT and its operation. We urge your attention to the DOT and government-wide high-risk issues as they relate to DOT. Progress on high-risk issues has been possible through the concerted actions and efforts of Congress, OMB, and the leadership and staff in agencies, including within DOT. 4

Copies of this report are being sent to the Director of the Office of Management and Budget and appropriate congressional committees including the Committees on Appropriations, Budget, and Homeland Security and Governmental Affairs, United States Senate; and the Committees on Appropriations, Budget, and Oversight and Government Reform, House of Representatives. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

I appreciate DOT’s continued commitment to these important issues. If you have any questions or would like to discuss any of the issues outlined in this letter, please do not hesitate to contact me or Dan Berton, Managing Director, Physical Infrastructure at bertonid@gao.gov or 202-512-2834. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Our teams will continue to coordinate with your staff on all of the 159 open recommendations. Thank you for your attention to these matters.

Sincerely yours,

Gene L. Dodaro
Comptroller General
of the United States

Enclosure(s) – 1

cc: The Honorable Mick Mulvaney, Director, OMB
    Madeline Chulumovich, Office of the Secretary, DOT

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4 For a full discussion of the Funding the Nation’s Surface Transportation System, Ensuring the Cybersecurity of the Nation, and Improving Management of IT Acquisitions and Operations high risk areas, see pages 86 to 90, 178 to 184, and 123 to 127 of our 2019 high risk report, respectively.
DOT Priority Recommendations

Funding Surface Transportation


**Recommendation:** Given DOT’s new discretionary grant programs and similar challenges we have found with previous DOT programs, the Secretary of Transportation should issue a directive that governs department-wide and modal administration discretionary grant programs. Such a directive should include requirements to: (1) develop a plan for evaluating project proposals in advance of issuing a notice of funding availability that defines the stages of the process, including how the process will be overseen to ensure a consistent review of applications; (2) document key decisions, including the reason for any rating changes and the officials responsible for those changes, and how high-level concerns raised during the process were addressed; and (3) align stated program purpose and policy priorities with the evaluation and selection process.

**Action needed:** DOT concurred with this recommendation. To fully implement this recommendation, DOT must issue a directive that incorporates all of the elements listed above and require DOT’s operating administrations to develop and document procedures for all phases of the process for its discretionary grants.

**High Risk Area:** Funding the Nation’s Surface Transportation System

**Director:** Susan Fleming
**Contact information:** flemings@gao.gov and (202) 512-2834


**Recommendation:** Include in the National Freight Strategic Plan a written statement articulating the federal role in freight-related local congestion impacts, by clearly identifying potential objectives and goals (under the general area DOT has established for the Freight Transportation Conditions and Performance Report of reducing adverse environmental and community impacts) for mitigating local congestion caused by national freight movements and the role federal and state stakeholders could play in achieving each objective and goal, and including a written strategy for improving the availability of national data needed to quantify, assess, and establish measures on freight trends and impacts on local traffic congestion.

**Action needed:** DOT concurred with this recommendation. To fully implement this recommendation, DOT should complete and issue a National Freight Strategic Plan. As part of the development of the National Freight Strategic Plan, DOT should articulate the federal role, objectives, and goals in mitigating local congestion caused by national freight movements. DOT stated that it is continuing work on the National Freight Strategic Plan and intends to release the plan in 2019.

**High Risk Area:** Funding the Nation’s Surface Transportation System

**Director:** Susan Fleming
**Contact information:** flemings@gao.gov and (202) 512-2834
Addressing Safety Risks


Recommendation: To improve the Compliance, Safety, Accountability (CSA) program, the Secretary of Transportation should direct the FMCSA Administrator to revise the SMS methodology to better account for limitations in drawing comparisons of safety performance information across carriers; in doing so, the Secretary of Transportation should direct the FMCSA Administrator to conduct a formal analysis that specifically identifies limitations in: (1) the data used to calculate SMS scores including variability in the carrier population and the quality and quantity of data available for carrier safety performance assessments, and (2) the resulting SMS scores, including their precision, confidence, and reliability for the purposes for which they are used.

Action needed: FMCSA did not agree with our recommendation, disputing the methodology and conclusions in our report. However, we continue to believe that addressing Safety Measurement System (SMS) methodology limitations has merit and could help the agency better target FMCSA’s resources to the carriers that pose the highest risk of crashing. For example, we found FMCSA requires a minimum level of information for a carrier to receive an SMS score; however, this requirement is not strong enough to produce sufficiently reliable scores. As a result, FMCSA identified many carriers as high risk that were not later involved in a crash, potentially causing FMCSA to miss opportunities to intervene with higher risk carriers. To fully implement this recommendation, FMCSA should revise SMS methodology to account for data limitations that limit comparisons so that the FMCSA is better positioned to identify and mitigate carriers that pose the greatest safety risks.

Director: Susan Fleming
Contact information: flemings@gao.gov and (202) 512-2834


Recommendation: The Secretary of Transportation should develop and implement a comprehensive plan to better manage departmental initiatives related to automated vehicles. This plan should include leading principles such as goals, priorities, steps to achieve results, milestones, and performance measures to track progress.

Action needed: DOT concurred with this recommendation. In response, DOT has begun to develop a framework to address automated vehicles. DOT indicated the first iteration of this framework will be developed in 2019 and will incorporate leading principles of comprehensive planning.

Director: Susan Fleming
Contact information: flemings@gao.gov and (202) 512-2834

**Recommendation:** The Administrator of FRA should develop an approach to use the information gathered to prioritize the allocation of resources to address the greatest risk.

**Action needed:** DOT concurred with this recommendation. When we confirm what actions FRA has taken in response to this recommendation, we will provide updated information.

**Director:** Susan Fleming  
**Contact information:** flemings@gao.gov and (202) 512-2834


**Recommendation:** The Office of Transit Safety and Oversight should create a plan, with a timeline, for developing guidance for state safety agencies about how to develop and implement a risk-based inspection program.

**Recommendation:** The Office of Transit Safety and Oversight should develop and communicate a method for how it will monitor the effectiveness of the enforcement authorities and practices of state safety agencies.

**Action needed:** DOT concurred with these recommendations. To fully implement these recommendations, DOT should continue with its planning and oversight efforts, including the creating of a plan and timeline for completing guidance for a risk-based inspection program. Additionally, DOT should continue its progress to develop and communicate a methodology for how it will monitor the effectiveness of state safety agencies’ enforcement.

**Director:** Mark Goldstein  
**Contact information:** goldsteinm@gao.gov and (202) 512-2834

**Cybersecurity Risks**


**Recommendation:** Given the challenges FAA faces in meeting Office of Management and Budget (OMB's) guidance to implement the latest security controls in the National Institute of Standards and Technology's (NIST) revised guidelines within one year of issuance, FAA should develop a plan to fund and implement the NIST revisions within OMB's time frames.

**Action needed:** DOT concurred with this recommendation. To fully implement this recommendation, DOT should ensure that FAA can better identify and address potential cybersecurity weaknesses that could be exploited by adversaries in its Surveillance Broadcast Services Subsystem (SBSS) and Data Communications programs. Although FAA has made progress in implementing the latest NIST revisions for SBSS, it still needs to develop a plan to fund and implement these revisions for Data Communications within the OMB specified time frames.
High Risk Area: Ensuring the Cybersecurity of the Nation

Director: Heather Krause
Contact information: krauseh@gao.gov and (202) 512-2834


Recommendation: To fully implement its information security program and ensure that unnecessary risks to the security of NAS systems are mitigated, the Secretary of Transportation should direct the Administrator of FAA to take steps to ensure that testing of security controls is comprehensive enough to determine whether security controls are in place and operating effectively, by, for example, examining artifacts such as audit reports, change tickets, and approval documents.

Recommendation: To fully implement its information security program and ensure that unnecessary risks to the security of NAS systems are mitigated, the Secretary of Transportation should direct the Administrator of FAA to take steps to ensure that identified corrective actions for security weaknesses are implemented within prescribed timeframes.

Action needed: DOT concurred with these recommendations. In August 2018, FAA stated that it had updated its testing processes. FAA also updated its NAS Remediation Management Plan in December 2015 to include new risk management processes for identified security weaknesses. Additionally, the agency has made progress in implementing an effective process for ensuring that corrective actions for security weaknesses are actively managed and tracked. However, as of January 2019 FAA has yet to demonstrate that it has comprehensively tested security controls or implemented corrective actions in a timely manner.

High Risk Area: Ensuring the Cybersecurity of the Nation

Director: Gregory C. Wilshusen
Contact information: wilshuseng@gao.gov and (202) 512-6244


Recommendation: The Secretary of Transportation, in cooperation with the Secretary of Homeland Security, should take steps to consult with respective sector partner(s), such as the SCC, DHS and NIST, as appropriate, to develop methods for determining the level and type of framework adoption by entities across their respective sector.

Action needed: DOT concurred with this recommendation. When we confirm what actions the agency has taken in response to this recommendation, we will provide updated information.

High Risk Area: Ensuring the Cybersecurity of the Nation
Director: Nick Marinos
Contact information: marinosn@gao.gov and (202) 512-9342
**Improving management of information technology (IT) workforce planning**


**Recommendation:** To facilitate the analysis of gaps between current skills and future needs, the development of strategies for filling the gaps, and succession planning, the Secretary of Transportation should require the Chief Information Officer, Chief Human Capital Officer, and other senior managers as appropriate to address the shortfalls in IT workforce planning noted in this report, including the following actions: (1) establish a time frame for when the department is to finalize its draft workforce planning process and maintain that process; (2) develop staffing requirements for all positions; (3) assess competency and staffing needs regularly for all positions; (4) assess gaps in staffing for all components of the workforce; (5) develop strategies and plans to address gaps in competencies and staffing; (6) implement activities that address gaps, including an IT acquisition cadre, cross-functional training of acquisition and program personnel, a career path for program managers, and use of special hiring authorities, if justified and cost-effective; (7) monitor the department’s progress in addressing competency and staffing gaps; and (8) report to department leadership on progress in addressing competency and staffing gaps.

**Action Needed:** DOT agreed with the recommendation and stated that it plans to fully implement the recommendation by December 2019. To fully implement this recommendation, DOT should prioritize the completion of its IT workforce planning process and then begin implementing the process in phases based on the availability of resources.

**High Risk Area:** Improving the management of IT acquisitions and operations

**Director:** Carol C. Harris

**Contact information:** harriscc@gao.gov and 202-512-4456

**Improving federal grant management**


**Recommendation:** The Secretary of Transportation should direct the Administrator of the Federal Transit Administration to design policies and procedures to reasonably assure that all award recipients required to submit single audit reports do so in accordance with OMB guidance.

**Recommendation:** The Secretary of Transportation should direct the Administrator of the Federal Highway Administration to revise policies and procedures to reasonably assure that management decisions contain the required elements and are issued timely in accordance with OMB guidance.

**Recommendation:** The Secretary of Transportation should direct the Administrator of the Federal Transit Administration to revise policies and procedures to reasonably assure that management decisions contain the required elements and are issued timely in accordance with OMB guidance.

**Action Needed:** DOT concurred with these recommendations. To fully implement these recommendations, DOT should provide documentation of the steps it is taking to design and revise policies and procedures to assure that they are in accordance with OMB guidance. In February 2018, DOT issued a memorandum instructing its affected subagencies to design, revise, and implement procedures to comply with federal grant and financial management requirements no later than June 30, 2018. The June 30th deadline was for the subagencies to update their policies and procedures and to submit them to the Office of the Secretary for review and approval.
Improving Transportation Readiness


Recommendation: The Secretary of Transportation should direct the Administrator of MARAD to study the potential availability of all qualified mariners needed to meet a full and prolonged activation of the reserve sealift fleet. In the study, MARAD should identify potential solutions to address the mariner shortfall if one is still identified.

Action Needed: DOT concurred with the recommendation. To fully implement this recommendation, the Maritime Administration should reach out to all mariners identified by the U.S. Coast Guard as having unlimited credentials to both verify their qualifications as well as ascertain their availability and willingness to crew the reserve sealift fleet in a full and prolonged activation. In addition, the Maritime Administration should identify potential solutions to addressing any mariner shortfall that may be identified.

Director: Thomas Melito
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