FY 2020 Performance Plan
FY 2018 Performance Report

Introduction

The U.S. Department of Transportation (DOT) ensures our Nation has the safest, most efficient, and modern transportation system in the world that improves the quality of life for all American people and communities, from rural to urban, and increases the productivity and competitiveness of American workers and businesses. The Department oversees and administers programs, policies, and regulations for aviation and surface transportation that keep the traveling public safe, secure, and mobile, and ensures our transportation system contributes to the Nation's economic growth.

In accordance with the Government Performance and Results Act (GPRA) of 1993, as amended by the GPRA Modernization Act of 2010 (GPRAMA), the Department is pleased to present the fiscal year (FY) 2020 Annual Performance Plan, which identifies the Department's performance goals and objectives while establishing the performance targets against which progress will be assessed, and the FY 2018 Annual Performance Report, which documents the Department's performance during the past year. Further information detailing DOT performance is available at Performance.gov.

The results presented here demonstrate that DOT is performing well across a wide range of activities. In FY 2018, DOT monitored dozens of performance measures to manage Departmental programs and activities as well as to improve the efficiency and effectiveness of these programs. The performance measures included in this report illustrate the Department's progress toward achieving its strategic goals. The information presented spans the Department's nine operating administrations (OAs), the Office of the Secretary of Transportation (OST), and the Office of the Inspector General (OIG), providing details on the work of DOT's 55,000 employees across the country.

Purpose and Structure of this Document

The **Annual Performance Plan (APP)** provides an overview of the Department's performance goals and the strategies used to achieve these goals. The performance goals listed in the APP align with the Department's Strategic Plan and include annual numerical targets. A limited number of these performance goals are designated as **Agency Priority Goals (APG)**. APGs are near-term results or achievements that leadership wants to accomplish within approximately 24 months and that rely predominantly on agency implementation. This plan directly links to the long-term strategic goals in DOT's Strategic Plan and outlines how the Department plans to achieve them over the upcoming fiscal years.

The **Annual Performance Report (APR)** evaluates DOT's success in meeting its performance targets. Each strategic goal is linked to one or more strategic objectives, and progress in each strategic objective is measured by performance metrics, the goals of which were outlined in the APP. The performance information included in these documents is used to inform Departmental budget, policy, and legislative reauthorization decisions.

The structure of this year's APP and APR is updated in two essential ways. First, the Department has integrated the APP and APR. Targets for upcoming years are shown alongside performance

from previous years to display a comprehensive picture of how DOT has progressed from past to present to future on each performance metric. Second, the Department's performance measures are organized by strategic goal whereas previously the measures were organized by OA. This structure more clearly displays the relationship between strategic goals, strategic objectives, performance goals, and APGs.

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Mission Statement

The mission of the U.S. Department of Transportation (DOT) is to:

> *Ensure our Nation has the safest, most efficient and modern transportation system in the world, which improves the quality of life for all American people and communities, from rural to urban, and increases the productivity and competitiveness of American workers and businesses.*

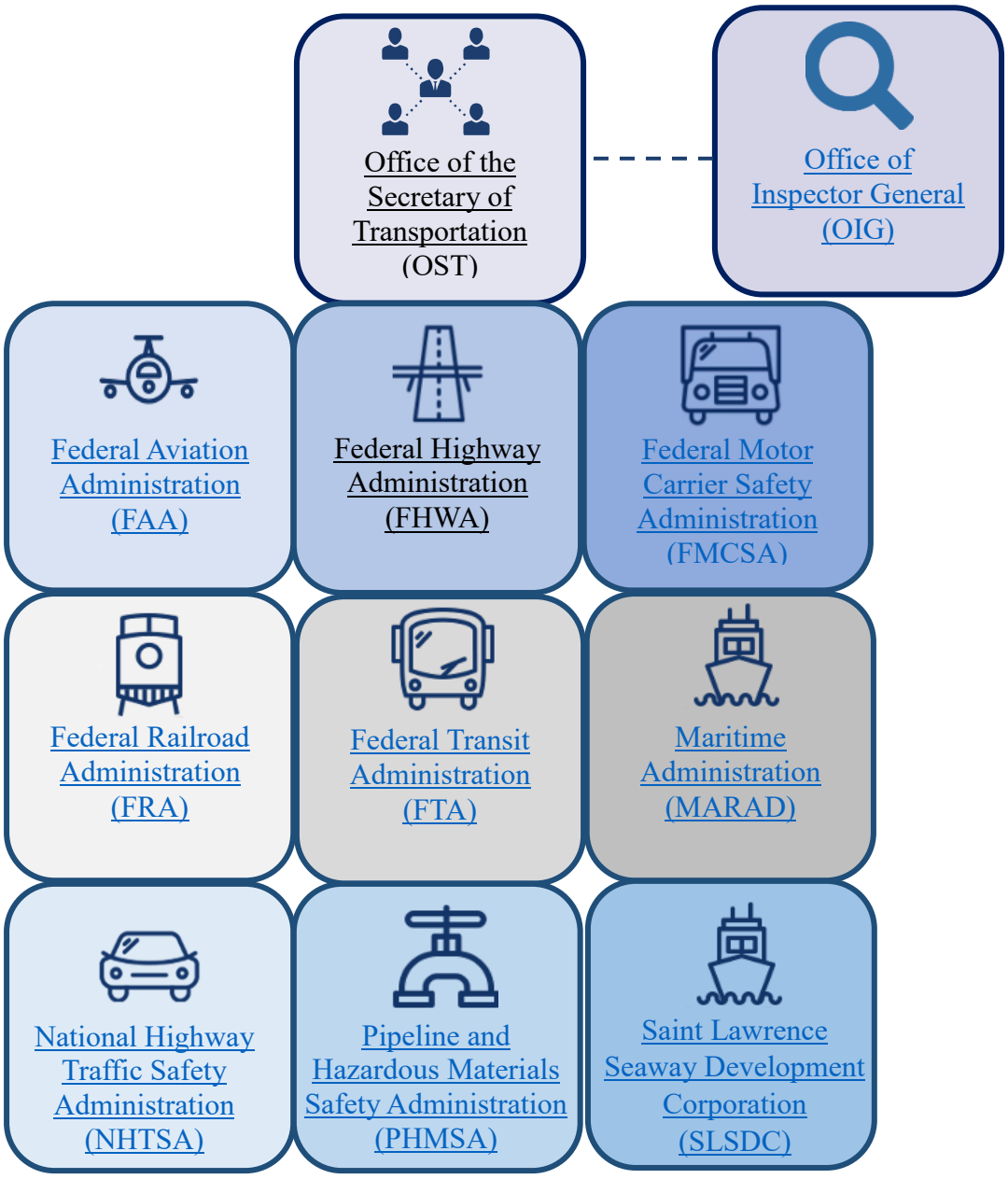
Legislative Authorities

Congress provides the funding and legislative authorities needed to carry out the Department's mission. The Department's authorities are substantially codified under titles 23 (highways), 46 (maritime), and 49 (aviation, railroads, and other surface modes) of the U.S. Code. The following are significant authorization acts for DOT's programs:

- **The Fixing America's Surface Transportation (FAST) Act** (P.L. No. 114-94: December 4, 2015), authorized appropriations to DOT from FY 2016 through FY 2020 to improve the Nation's surface transportation infrastructure, including our roads, bridges, transit systems, and rail transportation network. The Act reforms and strengthens transportation programs, refocuses on National priorities, provides long-term certainty and more flexibility for States and local governments, streamlines project approval processes, and maintains a strong commitment to safety.
- **The FAA Reauthorization Act of 2018** (P.L. No. 115-254: October 5, 2018), provides a bi-partisan, five-year authorization of the FAA, the first significant multi-year reauthorization since the FAA Modernization and Reform Act of 2012 (P.L. 112-95), and the first five-year reauthorization in over a decade. The Act authorizes appropriations to the FAA through FY 2023 and includes important changes related to increasing the safety and pace of Unmanned Aircraft Systems integration, expediting the financing and development of airport capital projects, directing the FAA to advance leadership in the field of international supersonic aircraft policies, reforming the aircraft certification process, addressing aircraft noise, and ensuring safe lithium battery transport.
- **The Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2016** (P.L. No. 114-183: June 22, 2016), authorized the continued oversight of the Nation's 2.7 million miles of oil, gas, and hazardous liquid pipelines, added new authority over the underground storage of natural gas, and authorized research, grants, programs, and the related appropriations from FY 2016 through FY 2019.
- **The John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year 2019** (P.L. No. 115-232: August 13, 2018), authorized appropriations in FY 2019 for MARAD's programs, including the U.S. and State maritime academies, ship operations, the Maritime Security Program, grants to small U.S. shipyards, and loan guarantees for ships constructed or reconditioned in the United States.

Organizational Structure

Congress established DOT in 1967, consolidating 31 transportation agencies and functions under the first U.S. Secretary of Transportation, Alan S. Boyd. During the past half-century, DOT employees have brought innovation and integrity to the work of improving the safety and performance of our multimodal transportation system. Today, 55,000 employees work in 9 operating administrations (OA), the Office of the Secretary of Transportation (OST), and the Office of Inspector General (OIG). The following graphic depicts the agency's structure and provides links to its major components.



Agency Priority Goals

Agency priority goals (APGs) provide agencies with mechanisms to focus leadership priorities, set outcomes, and measure results. They set goals that can be achieved within about 24 months and depend predominantly on agency implementation. DOT currently has five APGs[1]:

- Reduce surface transportation-related fatalities;
- Reduce commercial and general aviation fatalities[2];
- Simplify and enhance environmental review process for major transportation infrastructure projects;
- Improve conditions of America's transportation-related infrastructure; and
- Control regulatory burden by complying with executive orders to reduce number and economic impact of regulations.

Strategic Goals, Objectives, and APGs Overview

DOT has four strategic goals aligned to nine strategic objectives. Within each strategic objective, the Department sets numerous performance goals. Some goals are managed by a single OA, while others are shared among two or more OAs. The following table depicts how all of DOT's strategic goals and strategic objectives fit together[3]:

Goals	Strategic Objectives			
Safety	Systemic Safety Approach			
Infrastructure	Project Delivery, Planning, Environment, Funding and Finance	Life Cycle and Preventive Maintenance	System Operations and Performance	Economic Competitiveness and Workforce
Innovation	Development of Innovation	Deployment of Innovation		
Accountability	Regulatory Reform	Mission Efficiency and Support		

[1] Each APG may have multiple metrics associated with it. APG-associated metrics are highlighted in gold throughout the document.

[2] While commercial and general aviation fatalities are grouped as one APG by the Department, the two components are tracked separately using different metrics. Therefore, the way in which they are presented in this document gives them the appearance of being two separate APGs, though they are technically one single APG.

[3] A full list of the Department's performance metrics is included in Appendix 1.

Strategic Goal 1: Safety

DOT's top priority is to make the U.S. transportation system the safest in the world. The Nation has made progress in reducing overall transportation-related fatalities and injuries during the past two decades, even as the U.S. population and travel rates increased significantly. Over the past 15 calendar years (2003 to 2017), the number of fatalities on the Nation's roadways has dropped by 13.4 percent, from 42,884 to 37,133.

Safety Objective 1: Systemic Safety Approach

DOT, in consultation with the Office of Management and Budget, has determined that performance toward this objective is making noteworthy progress.

This strategic objective focuses on mitigating risks and encouraging behavioral change by using a data-driven, systemic safety approach to identify risks, enhance standards and programs, and evaluate effectiveness. DOT's Systemic Safety Approach is supported by the following goals:

Safety Objective 1: Systemic Safety Approach	
Agency Priority Goal	Reduce Motor Vehicle-Related Fatalities *Overall* (FHWA, NHTSA, FMCSA)
	Reduce Motor Vehicle-Related Fatalities *by Type* (FHWA, NHTSA, FMCSA)
Performance Goals	Reduce High-Risk Motor Carriers (FMCSA)
	Reduce Fatal Motor Carrier Crashes (FMCSA)
	Reduce Rail-Related Fatalities (FRA)
	Reduce Train Accidents (FRA)
	Improve Safe Transport of Hazardous Materials by Rail (FRA)
	Reduce Transit Collisions Involving Persons (FTA)
	Reduce Transit-Related Fatalities (FTA)
	Reduce Transit-Related Fatalities per 100 Million Passenger Miles (FTA)
	Reduce Total Transit Injuries (FTA)
	Increase the Number of Certified State Safety Oversight Programs (FTA)
	Reduce Serious Injuries (NHTSA)

Safety Objective 1: Systemic Safety Approach	
	Improve Safety of Fleet on U.S. Roadways (NHTSA)
	Improve Timeliness of Data (NHTSA)
	Reduce Fatalities Caused by Pipelines and Hazardous Materials (PHMSA)
	Improve Safe Delivery of Pipeline Products and Hazardous Materials (PHMSA)
	Increase Awareness of Calling 811 before Digging (PHMSA)
	Prevent Accidental Damage to Gas and Hazardous Liquid Pipelines (PHMSA)
Agency Priority Goal	Reduce Commercial Aviation Fatalities
	Reduce General Aviation Fatalities
Performance Goals	Reduce Runway Incursions (FAA)
	Exert Global Leadership at ICAO (FAA)

APG: Reduce Surface Transportation-Related Fatalities

APG Goal Statement: *DOT will work to reduce surface transportation-related fatalities by 2019, with specific focus on reducing motor vehicle-related roadway fatalities to 1.02 fatalities per 100 million vehicle miles traveled by September 30, 2019.*

Background and Trends

Safety is DOT's top priority, yet fatalities and injuries on the Nation's roads remain a challenging problem.

- During 2017, an estimated 37,133 people died in crashes on the Nation's roadways, a 1.8 percent decrease from 2016. This came after two years of fatality increases, from 2014 to 2016. The fatality rate also decreased slightly in 2017, to 1.16 fatalities per 100 million vehicle miles traveled. Early estimates for the first six months of 2018 show that trend continuing, with a 3.1 percent decrease in fatalities and a 3.6 decrease in the fatality rate compared to the same period in 2017.

- Low unemployment combined with lower gas prices and a robust economy increase risk exposure with more vehicles miles traveled, especially for young drivers, who have the highest driving risk.
- Human error by drivers is a critical factor in an estimated 94 percent of all serious motor vehicle crashes. This includes errors such as distracted driving, driving too fast for conditions, speeding, drowsy driving, illegal maneuvers, and poor directional control. National safety enforcement campaigns focus on reducing these behavioral choices, such as driving while impaired or distracted driving. They also seek to increase seat belt use rates. In 2018, the National seat belt use rate was 89.6 percent, which is just slightly lower than the all-time high of 90 percent in 2016.
- New technologies and innovations can improve safety in all modes of surface travel. Automated Driving Systems in particular hold great promise for reducing crashes, injuries, and fatalities. This will build on the success of technology such as airbags and electronic stability control (ESC), speed sensors on each wheel that help the driver to maintain steering control when braking. NHTSA estimates that as of 2015, 44,869 lives have been saved by frontal airbags, and 2,252 lives have been saved by side airbags. ESC saved more than 9,200 lives between 2008 and 2015. Another broader NHTSA study found that safety improvements made after the model year 2000 fleet prevented the crashes of 700,000 vehicles; and prevented or mitigated the injuries of 1 million occupants.
- Emerging threats, such as drug-impaired driving, need to be addressed.
- New data sources and more powerful analytical tools can help DOT as well as State and local safety agencies identify problem areas and prioritize safety strategies more quickly.

Figure 1. Trends: Total Fatalities and Fatality Rate per 100 Million Vehicle Miles Traveled

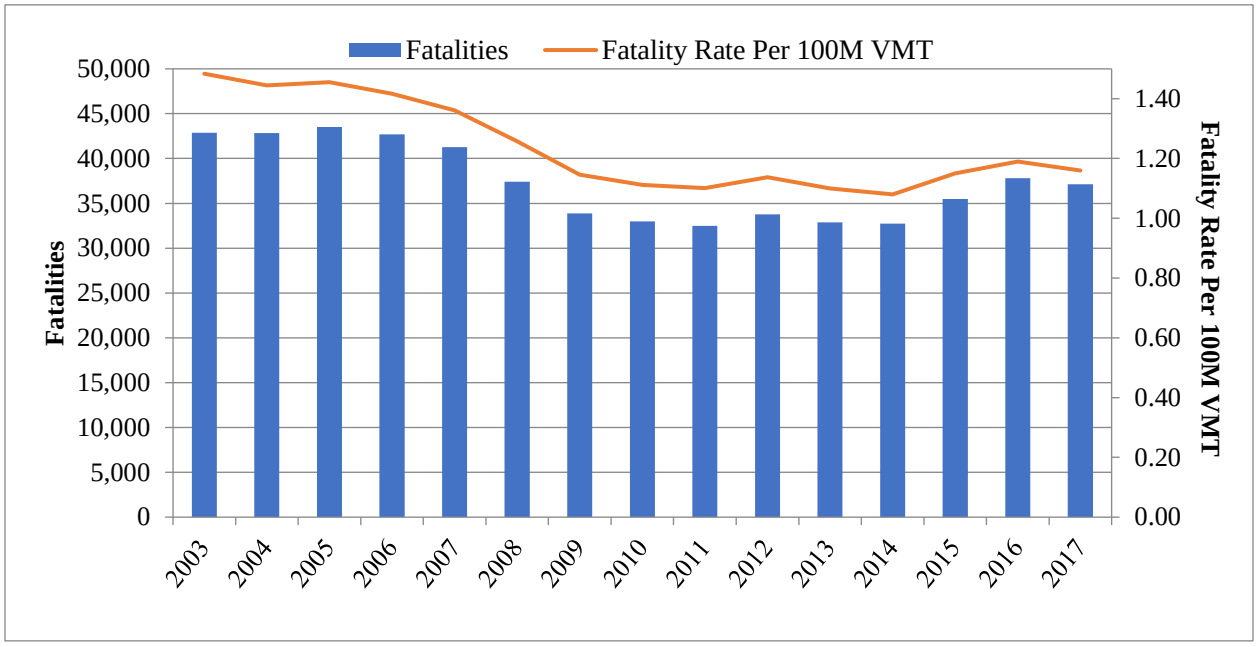


Figure 2. Fatalities by Surface Transportation Mode (2017)

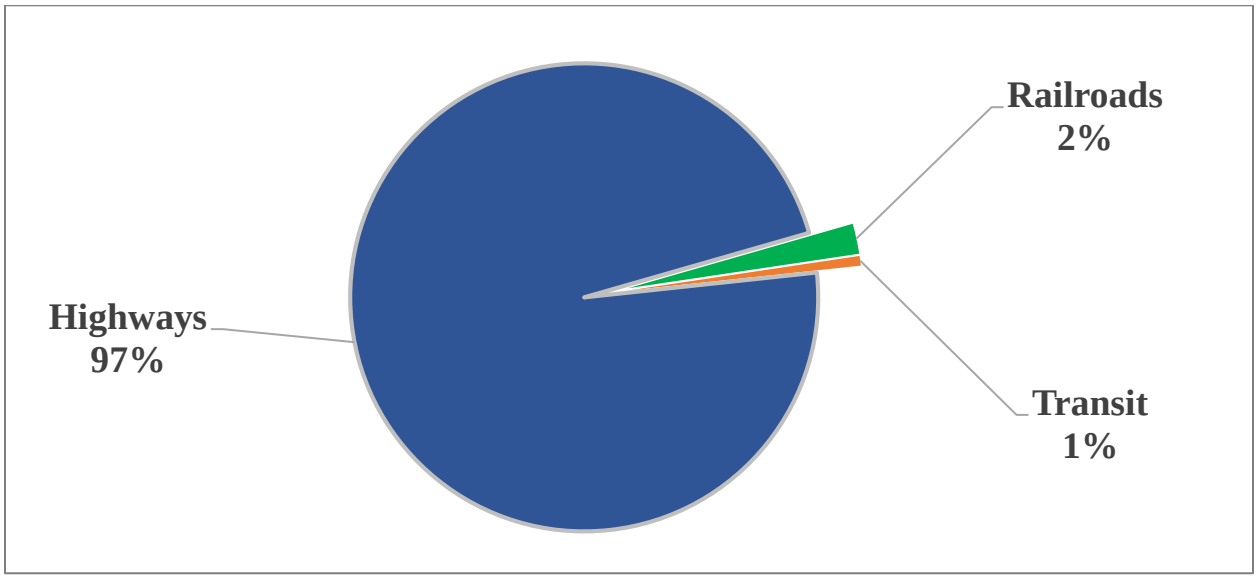


Table 1. Trends: Surface Transportation-Related Fatalities by Type

	CY[4] 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018
Total Motor Vehicle-Related Fatalities	33,782	32,893	32,744	35,485	37,461	37,133	Jan to Jun 17,120 (p)[5]
Motor Vehicle-Related Fatality Rate per 100 Million Vehicle Miles Traveled	1.14	1.10	1.08	1.15	1.19	1.16	1.08
Total Transit Fatalities	265	272	236	254	257	255	142 (p)
Total Rail-Related Fatalities	658	706	744	750	782	795	618 (p)
Total Pipeline Incidents Involving Death or Major Injury[6]	29	26	24	31	31	28	26 (p)
Total Hazardous Materials Incidents Involving Death or Major Injury[7,8]	23	29	29	39	27	17	16 (p)

(p) preliminary.

[4] CY: calendar year, January 1 to December 31. Years not specifically denoted as CY in this document refer to fiscal years (FY), which begin October 1 and end September 30.

[5] The number of fatalities for the first 6 months of 2017 was 17,664 and the rate was 1.12, which suggests the trend of declining fatalities continued in 2018.

[6] Total Pipeline Incidents Involving Death or Major Injury are tracked by ***fiscal year***, not calendar year.

[7] Total Hazardous Materials Incidents Involving Death or Major Injury are tracked by ***fiscal year***, not calendar year.

[8] The Total Hazardous Materials Incidents Involving Death or Major Injury measure includes incidents involving death and major injury from hazardous materials transported by all modes, including aviation.

APGs and Metrics: Surface Safety

APG: Reduce Motor Vehicle-Related Fatalities (FHWA, NHTSA, FMCSA)

Metric: Motor Vehicle-Related Roadway Fatalities Per 100 Million Vehicle Miles Traveled	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020
Targets	1.02	1.02	1.02	1.02	1.01
Actuals	1.19	1.16	1.08 (P)[9]	N/A	N/A

(P) Projected.

N/A not available.

[9] Statistical projection for the first six months of 2018. Fatalities tend to increase through the year, so the final rate will likely be higher.

APG Supporting Indicators: Reduce Motor Vehicle-Related Fatalities by Type (FHWA, NHTSA, FMCSA)

Metric: Motor Vehicle-Related Fatality Supporting Indicators (FHWA, NHTSA, FMCSA)		CY 2016	CY 2017	CY 2018[10]	CY 2019	CY 2020
Passenger Fatalities Per 100 Million Vehicle Miles Traveled	Targets	0.75	0.75	0.75	0.74	0.74
	Actuals	0.75	0.73 (P)	N/A	N/A	N/A
Large Truck and Bus Fatalities Per 100 Million Vehicle Miles Traveled	Targets	0.114	0.114	0.114	0.114	0.114
	Actuals	0.144	0.156	N/A	N/A	N/A
Non-Occupant Fatalities (Pedestrian, Bicycle) Per 100,000 Population	Targets	2.19	2.15	2.15	2.10	2.10
	Actuals	2.19	2.15	N/A	N/A	N/A
Motorcycle Fatalities Per 100,000 Motorcycle Registrations	Targets	62	62	62	62	61
	Actuals	60.9	59.34	N/A	N/A	N/A

(P) Projected. (2018 projected results available December 2019)

N/A not available.

DOT's strategies to accomplish the priority goal of reducing surface transportation fatalities include the following:

- Pursue a systemic safety approach that uses data to identify risks, enhance standards and programs, and evaluate effectiveness;
- Improve and enhance data collection and analysis;

[10] Calendar Year 2018 data expected by December 2019.

- Research and deploy advanced vehicle technology;
- Develop and enforce vehicle safety standards;
- Collaborate with partners to conduct National safety campaigns to promote safe driving practices;
- Work with State and local partners to encourage roadway infrastructure improvements and safer roadway design;
- Boost implementation of proven safety countermeasures, and address risks that impact vulnerable road users and rural communities; and
- Provide oversight to commercial operators and drivers.

FY 2018 Progress Update

DOT released new Federal guidance for automated vehicles, *Preparing for the Future of Transportation: Automated Vehicles 3.0* **(AV 3.0**), that builds upon the voluntary guidance provided in *Automated Driving Systems 2.0: A Vision for Safety*. AV 3.0 supports the safe development of automated vehicle technologies by providing new multimodal guidance, clarifying roles, and outlining a process for working with the Department as technology evolves.

FHWA provided technical assistance to States for updating Strategic Highway Safety Plans and administering $2.4 billion in Highway Safety Improvement Program (HSIP). FHWA is also promoting Safe Transportation for Every Pedestrian (STEP) through workshops, training, and technical assistance. As of June 2019, 31 states indicated they would like to advance their implementation of STEP by December 2020 during the Every Day Counts 5 initiative. FHWA also initiated a jointly-funded, cooperative study with five State DOTs and one city to address driver behavior at multilane roundabouts. Finally, the HSIP Program has shown efficacy in reducing fatalities and injuries. For example, a review of over 1,000 road segments and intersections where HSIP-funded improvements were made and evaluated showed benefit-to-cost ratios ranging from 6.5 to 1.0.

In response to the National opioid epidemic and marijuana legalization in some states, NHTSA prioritized drug-impaired driving prevention as a major new initiative in 2018. This strategy includes conducting research to identify the risks and monitor the scale of the problem, developing new tools to improve the effectiveness of criminal justice processes, creating new educational materials, and providing training and capacity-building programs for state and local officials. A new public awareness and enforcement campaign, *If You Feel Different, You Drive Different,* was launched in August 2018. NHTSA has also hosted public meetings around the country to identify policy and program needs and to share promising practices to stop drug-impaired driving.

FMCSA continued to implement rulemakings to improve safety. The electronic logging device (ELD) rule is intended to help create a safer work environment for drivers and make it easier to track, manage, and share accurate records of duty status data. The ELD final rule is estimated to

annually save 26 lives and prevent 562 injuries from crashes involving large commercial motor vehicles. The commercial driver's license (CDL) drug and alcohol clearinghouse final rule will ensure that CDL holders who have tested positive or refused to submit to testing complete the return-to-duty process before driving a truck.

State, local and tribal stakeholder engagement and dialogue is an essential element for the success of the Department's strategic safety initiatives. NHTSA, FHWA and FMCSA partnered with the National Safety Council to support the development of a coalition that has brought together more than 800 State and local organizations to focus on developing short and long-term strategies to reduce crashes and fatalities.

More information about this APG can be found on www.Performance.gov.

APG Leads

- FHWA: Nicole R. Nason, Administrator
- NHTSA: Heidi King, Deputy Administrator
- FMCSA: Raymond P. Martinez, Administrator

Performance Goals and Metrics: Surface Safety

Performance Goal: Reduce High-Risk Motor Carriers (FMCSA)

Metric: Average Number of Days to Investigate "High Risk" Designated Carriers	2017	2018	2019	2020
Targets	N/A	55	55	55
Actuals	45.6	49.6	N/A*	N/A

**Data not available until 1st quarter FY2020*

N/A not available.

Description

High-risk carriers are the FMCSA's top investigative priority. Passenger carriers are identified as "high risk" if they have not received an onsite investigation in the previous 12 months AND two or more of the following Behavior Analysis and Safety Improvement Categories (BASICs) rank at or above the 90th percentile for one month: Unsafe Driving, Crash Indicator, Hours-of-Service (HOS) Compliance, and Vehicle Maintenance. These are the BASICs most closely correlated with crash risk.

This population demonstrates an average crash rate that is four times the National average. Investigative outcomes show that 45 percent of high-risk carrier investigations result in enforcement actions, compared to the 15 percent enforcement rate observed on non-high-risk carriers.[11]

The high-risk carrier population is identified monthly, and FMCSA policy is to investigate high-risk carriers within 90 days of being identified. FMCSA measures the average number of days from when a "high-risk" identification is made to when an investigation is conducted. In addition to the strategies listed under the APG: Reduce Motor Vehicle-Related Fatalities, FMCSA will achieve the target of reducing high-risk motor carriers by continuing to prioritize high-risk carrier investigations.

FY 2018 Progress Update

FMCSA conducted 2,514 high-risk carrier investigations in FY 2018. 2,371 carriers, or 93.4 percent, were investigated on time (within 90 days of investigation). The average number of days from identification until investigation was 49.6 days in FY 2018.

[11] More information about high-risk carriers is available at https://www.fmcsa.dot.gov/mission/policy/high-risk-carriers-investigation-report for.

Performance Goal: Reduce Fatal Motor Carrier Crashes (FMCSA)

Metric: Number of Motor Carrier Incidents	2016	2017	2018	2019	2020
Targets	N/A	4,045	4,011	3,977	3,943
Actuals	4,079	4,455	N/A*	N/A	N/A

FY 2018 projected results available December 2019.

N/A not available.

Description

This metric is a lagging indicator (2 years). The target is for a five percent reduction from the 2016 baseline by 2022. In addition to the strategies under the APG: Reduce Motor Vehicle-Related Fatalities, FMCSA will carry out the following strategies:

- *Our Roads, Our Safety:* With over 12 million commercial motor vehicles (CMV) on the road, this program helps raise awareness among the driving public about sharing the road and operating safely around large trucks and buses. The program's outreach efforts focus on educating passenger vehicle drivers, CMV drivers, bicyclists, and pedestrians about CMV blind spots or *No Zones*.[12]
- New Entrant Safety Audits: During their initial 18 months of operation, new entrants will continue to be monitored and new entry safety audits will be conducted. A new entrant may be a motor carrier that applies for a U.S. DOT number to initiate interstate commerce operations or to transport hazardous materials within the state boundaries. Carriers remain in the new entrant safety assurance program until they pass the safety audit and have been in business for 18 months. In FY 2018, 36,563 new entrant safety audits were conducted; the pass rate was 89.8 percent.[13]
- CDL Drug and Alcohol Clearinghouse: This rule will ensure that CDL holders who have tested positive or have refused to submit to testing complete the return-to-duty process before driving a truck. The compliance date is January 6, 2020.[14]

[12] More information about *Our Roads, Our Safety* is available at https://www.fmcsa.dot.gov/ourroads/about-campaign.

[13] More information about FMCSA's New Entrant Safety Assurance Program is available at https://www.fmcsa.dot.gov/safety/new-entrant-safety-assurance-program.

[14] More information about the Drug and Alcohol Clearinghouse is available at https://www.fmcsa.dot.gov/regulations/commercial-drivers-license-drug-and-alcohol-clearinghouse.

- Implement Phase 2 of the ELD rule: The ELD rule is intended to help create a safer work environment for drivers, and make it easier, faster to accurately track, manage, and share records of duty status data. The ELD Final Rule is estimated to annually save 26 lives and prevent 562 injuries, resulting from crashes involving large commercial motor vehicles. Phase 2, the Full Compliance Phase, is from December 18, 2017 to December 16, 2019.[15]

FY 2017 Progress Update

In 2017, there were 4,455 fatal crashes involving large trucks and buses, an 8.2 percent increase from 2016. These 4,455 fatal crashes involved 4,657 large trucks and 232 buses. The largest increase in fatal crashes by vehicle size was for large trucks weighing between 10,001 and 14,000 lbs., with a 96.6 percent increase (468 large trucks in 2017 compared to 238 in 2016). Note that final FY 2018 data expected in January 2020

[15] More information about ELDs is available at https://eld.fmcsa.dot.gov/.

Performance Goal: Reduce Rail-Related Fatalities (FRA)

Metric: Rail-Related Fatalities* (FRA)		2017	2018	2019	2020
Highway-rail grade crossing incident rate	Targets	N/A	2.85	2.84	2.84
	Actuals	2.996	3.027	N/A	N/A
Rail right-of way trespass incident rate	Targets	N/A	1.55	1.51	1.48
	Actuals	1.391	1.404	N/A	N/A

** Per million train-miles. Actual data are subject to change and might differ from prior year materials based on the latest information available. As of March 1, 2019.*

N/A not available.

Description

A highway-rail incident is any impact, regardless of severity, between rail and highway users at a public or private crossing. A trespass incident is any event that causes a death or injury in a rail right-of-way, other than at a highway-rail grade crossing.

Highway-rail grade crossing and trespass incidents account for almost all rail-related deaths. The number of grade crossing deaths has averaged more than 250 and the number of trespass deaths has averaged more than 450 per year since 2009.

One of FRA primary strategies to reach the performance targets include education, e.g., public awareness programs about the dangers and consequences of trespassing and how to drive safely around highway-rail grade crossings. Engineering represents another significant strategy. This includes recommending installation of lights, gates, and dividers, and separating highways from train tracks.

FRA is also validating crossing latitude and longitude data, developing human behavior predictive modeling, enhancing law enforcement and first-responder strategies, strengthening State crossing safety action plans, and updating FRA's Crossing Handbook. In addition, FRA partners with States, local governments, and safety organizations that focus on driver behavior.

FY 2018 Progress Update

The FY 2018 grade crossing incident rate exceeded FRA's target by more than 6 percent and the FY 2017 rate by almost 1 percent. Rising motor vehicle and rail traffic as well as higher population density and land development around crossings increase the risk of crossing collisions.

In response, FRA reclassified its 24 grade crossing manager positions into the inspector series, enabling them to write regulatory violations and recommend civil penalty assessments, in addition to outreach and collaboration activities. FRA partnered with NHTSA on media buys

targeted to regions with the worst grade crossing collision histories. FRA also established a small grant program to help law enforcement agencies advance grade crossing safety.

The trespasser incident rate per million train miles is a new performance measure for 2018. Trespassing is the leading cause of rail-related deaths and a complex challenge for the industry, communities, and FRA to address. FRA's report to Congress describes our multiyear trespassing strategy, including research projects, risk models, outreach, and other approaches.[16]

[16] FRA, *National Strategy to Prevent Trespassing on Railroad Property*, February 19, 2019, https://www.fra.dot.gov/eLib/Details/L19817

Performance Goal: Reduce Train Accidents (FRA)

Metric: Train Accidents*	2017	2018	2019	2020
Targets	N/A	2.30	2.30	2.29
Actuals	2.525	2.531	N/A	N/A

**Per million train-miles Actual data are subject to change and might differ from prior year materials based on the latest information available. As of March 1, 2019.*

N/A: not available.

Description

Train accidents involve damage to on-track rail equipment above the annual reporting threshold ($10,700 for calendar year 2018) and exclude grade crossing and trespass incidents.

FRA will accomplish the goal of reducing train accidents through its comprehensive safety program that targets inspections and other oversight activities to railroads and regions with below average performance. FRA subject matter experts provide ongoing technical assistance to railroads and field personnel to address challenges.

FY 2018 Progress Update

The train accident rate per million train miles is another new performance measure. The accident rate exceeded the agency target in 2018. FRA is increasing its analytical capabilities and working with participating railroads through the Confidential Close Call Reporting System[17] to understand and mitigate root causes. As railroads implement positive train control systems and adopt risk reduction programs, FRA expects to see improvement in this measure.

[17] The Confidential Close Call Reporting System (C^3RS) is a partnership among the National Aeronautics and Space Administration, FRA, and participating railroad carriers and labor organizations. The program is designed to improve railroad safety by collecting and analyzing reports which describe unsafe conditions and events in the railroad industry. Employees may report safety issues or "close calls" voluntarily and confidentially.

Performance Goal: Improve Safe Rail Transport of Hazardous Materials (FRA)

Metric: Rate of Non-Accident Releases of Hazardous Materials*	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020
Targets	N/A	N/A	2.30	2.28	2.28
Actuals	2.32	2.42	2.33	N/A	N/A

**Per 10,000 tank-car originations. Projection based on PHMSA Form 5800.1 reports submitted through September 30, 2018; shipping volume estimates based on Surface Transportation Board waybill sample data and commodity movement projections from industry. Final CY 2018 data expected in August 2019.*

N/A: not available.

Description

A non-accident release (NAR) is an unintentional release of a hazardous material while in transport (including loading and unloading while in railroad possession) not caused by derailment, collision, or other rail-related accidents. NARs consist of any amount of product (liquid, solid, or vapor) released from improperly secured or defective valves, fittings, and tank shells. These include undesired venting of non-atmospheric gases from safety relief devices. Most NARs involve small quantities of material. Data are derived from multiple sources, which limits their timeliness.

FRA's tank car program conducts inspections and oversight activities of tank car facilities and tank car fleet owners to ensure compliance with regulations and to ensure tank car owners take necessary measures to reduce risks. In addition, FRA is focusing on ensuring that processes and technologies HAZMAT shippers and receivers have implemented in recent years are accurate and consistent with regulatory requirements. FRA works with the Association of American Railroads' Tank Car Committee to understand emerging issues, improve safety, and enhance oversight of tank car facilities and owners. Moreover, FRA continues to work with PHMSA to implement regulatory and other changes as recommended through processes such as the Rail Safety Advisory Committee and the Tank Car Committee.

CY 2017 Progress Update

During the 2017 calendar year, there were 323 NARs that caused nine injuries, including three related to petroleum crude oil. Approximately 71 percent of NARs in 2017 occurred at shipper origination points. Commodities with the most NARs were: liquefied petroleum gas - 68, alcohols - 37, fuel oil - 33, molten sulfur - 23, and sodium hydroxide solution - 22. The sources of most tank car NARs were liquid valves - 117, hinged and bolted manway – 111, bottom outlet valves - 66, vapor valves - 42, and pressure relief valves – 35. Note that final CY 2018 data expected in August 2019.

Performance Goal: Reduce Rail Transit Collisions Involving Persons (FTA)

Metric: Total Rail Transit Collisions with Persons	2017	2018	2019	2020
Targets	N/A	450	420	415
Actuals	408	424	N/A	N/A

Source: National Transit Database, data pulled as of May 2019. Data is reported by Federal Fiscal Year. Rail transit collisions with persons includes suicides. Targets for FY 2019 and FY 2020 were revised in December 2019 based on FTA exceeding its targets in FY 2018.

N/A not available.

Description

Each year, FTA collects data on transit collisions that involve people and works to reduce that number. This measure includes events only for those systems for which FTA has safety oversight. This measure includes all cases where a rail transit vehicle strikes a person, resulting in either a fatality, a serious injury, or immediate medical transportation away from the scene.

FY 2018 Progress Update

To improve upon its efforts to reduce rail transit collisions, FTA issued the Public Transportation Agency Safety Plan Rule on July 18, 2018. This rule requires all transit rail systems to have a safety plan in place by July 20, 2020. The safety plan for each rail transit system will be based on the Safety Management Systems (SMS) approach to identifying and mitigating risks, including those for rail transit collisions with persons. In addition to the safety plan, FTA also issued the Public Transportation Safety Training Certification Rule, which completes FTA's safety regulatory framework. This rule requires safety oversight personnel in the transit industry to complete a training program by August 20, 2021.

Performance Goal: Reduce Total Transit-Related Fatalities (FTA)

Metric: Total Transit Fatalities	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020
Targets	N/A	N/A	N/A	278*	260	255
Actuals	254	257	241	250	N/A	N/A

**New measure established in 2018.*

N/A not available.

Performance Goal: Reduce Transit-Related Fatalities Per 100 Million Miles (FTA)

Metric: Total Transit Fatalities Per 100 Million Passenger Miles	2015	2016	2017	2018	2019	2020
Targets	N/A	N/A	.543	0.607	0.601	0.596
Actuals	.583	.0582	0.597	0.550	N/A	N/A

Note: The transit fatality rate is calculated by dividing fiscal year fatalities from all transit modes (excluding FRA-regulated transit system) by 100 million passenger miles traveled. The fatality rate provides a way of examining transit deaths relative to the average passenger trip length (exposure). The fatality rate measure is benchmarked using FTA's National Transit Database which collects monthly data for safety events and annual data for passenger miles traveled.

N/A not available.

Performance Goal: Reduce Total Transit Injuries (FTA)

Metric: Total Transit Injuries	2017	2016	2017	2018	2019	2020
Targets	N/A	N/A	N/A	23,000**	22,900	22,800
Actuals	24,299	24, 705	23,715	21,410	N/A	N/A

**Fatalities are calculated by fiscal year. All data is from FY 2018. **New measure established in 2018.*

N/A not available.

Description

Transit continues to be one of the safest modes of transportation. However, to gain a more comprehensive view of transit safety, FTA tracks total transit fatalities, transit fatality rates, and total transit injuries (as can be seen in the preceding three tables). Though transit-related fatalities and injuries have experienced an overall decline in the past five years, it should be noted that the fatality rate for transit modes rose in 2015 and 2016 before experiencing a seven percent decrease in 2017. Additionally, thousands of people are injured each year from transit-related activities. To reduce transit-related fatalities and injuries, FTA has also incorporated a variety of strategies and is using a systemic safety approach in carrying out its safety authority. These strategies include the following:

- Publish the FTA National Safety Plan;

- Implement the State Safety Oversight (SSO) program;
- Publish safety directives and advisories;
- Conduct temporary direct safety oversight;
- Continue the safety certification training program;
- Implement the safety management systems approach and agency safety plans;
- Manage the drug and alcohol program;
- Facilitate the safety data workgroup;
- Assist in the development and publication of SSO standard operating procedures; and
- Achieve SSO agency certification of 31 States;

FY 2018 Progress Update

FTA met and exceeded its total transit fatalities target, as transit-related fatalities have declined. Therefore, FTA adopted more aggressive performance targets; specifically, the target for FY 2019 has been lowered from 276 to 260, and the target for FY 2020 has been lowered from 268 to 255.

Performance Goal: Increase State Safety Oversight Programs (FTA)

Metric: Total Number of Certified States with SSO Programs	2017	2018	2019	2020
Targets	1	16	31	31
Actuals	N/A	27	31*	N/A

**Data is as of March 2019.*

N/A not available.

Description

Under 49 U.S.C. Section 5329(e), as amended by the Moving Ahead for Progress in the 21st Century Act (MAP-21), FTA is required to certify each State's program to ensure compliance with MAP-21.

The purpose of the State Safety Oversight (SSO) program is to oversee safety at rail transit systems. The SSO program is administered by eligible States with rail transit systems under their jurisdictions. FTA provides federal funds through the SSO Formula Grant Program for eligible states to develop or carry out their SSO programs.

In order to obligate funds apportioned under section 5338, to carry out this chapter, effective three years after the date on which a final rule under this subsection becomes effective, an eligible State shall have in effect a State safety oversight program approved by the Secretary under which the State:

- Requires employees and other designated personnel of the eligible State safety oversight agency who are responsible for overseeing rail fixed guideway public transportation safety are qualified to perform such functions through appropriate training, including successful completion of the public transportation safety certification training program established under subsection;
- Prohibits any public transportation agency from providing funds to the State safety oversight agency or an entity designated as the SSO agency.

By April 15, 2019, each State with a rail transit system(s) must be Federally certified for compliance with the SSO program rule.[18] If a State failed to meet the April 15, 2019 deadline, FTA would be prohibited from obligating Federal financial assistance apportioned under Chapter 53 (49 U.S.C. 5338) to any entity in the State that is otherwise eligible to receive that assistance.

In March 2019, FTA completed the SSO Program prior to the April 15, 2019 deadline. FTA managed and provided oversight to the 31 SSO programs responsible for providing state-level safety oversight of rail transit systems. To help states meet the requirements, FTA developed a SSO Certification Toolkit that provides guidance for program requirements and offers technical assistance to SSO agencies. Additionally, FTA provides formula grants to the 31 SSO programs

[18] 49 CFR Part 674.

to help them administer their programs. Prior to certification, FTA conducts on-site verification and requires states to address any deficiencies.

A certification status table by state is available online. https://www.transit.dot.gov/regulations-and-guidance/safety/state-safety-oversight-program-certification-status-table

FY 2018 Progress Update

In FY 2018, the FTA issued two final rules that will strengthen the safety of public transportation systems. The two rules, Public Transportation Agency Safety Plans[19] and Safety Certification Training Programs,[20] lay the regulatory framework for the national public transportation safety program, as authorized by Congress.

To achieve its goals, FTA has been providing safety training to personnel at transit systems and SSO agencies, as established by the Interim Public Transportation Safety Certification Program and continues to monitor compliance with its Drug and Alcohol Testing Program.

In October of 2015, as directed by the Secretary of Transportation, FTA assumed temporary and direct safety oversight of the Washington Metropolitan Area Transit Authority's MetroRail system. FTA provided technical assistance to Maryland, Virginia, and the District of Columbia as they established the Washington Metrorail Safety Commission.

On March 18, 2019 FTA relinquished its safety oversight duties and certified the State Safety Oversight Program of the WMSC, which is now responsible for overseeing and enforcing safety practices on Metrorail.

[19] https://www.govinfo.gov/content/pkg/FR-2018-07-19/pdf/2018-15167.pdf.

[20] https://www.govinfo.gov/content/pkg/FR-2018-07-19/pdf/2018-15168.pdf.

Performance Goal: Reduce Serious Injuries from Motor Vehicle Crashes (NHTSA)

Metric: Occupants Ejected from Passenger Vehicles per 100 Emergency Medical Services (EMS) Motor Vehicle Crash Dispatches	2017	2018	2019	2020
Targets	N/A	1.2*	1.1	1.0
Actuals	N/A	0.75	N/A	N/A

**New measure in 2018; there is no 2017 baseline.*

N/A not available.

Description

Motor vehicles have become much safer over time, due to the Federal Motor Vehicle Safety Standards (FMVSS) promulgated by NHTSA. In fact, more than 600,000 lives were saved between 1960 and 2012 by FMVSS-required safety technology, such as seat belts and airbags. These technologies save lives and reduce serious injuries because they help prevent occupants from being ejected from vehicles, which is one of the most dangerous consequences of a crash. Seat belts are the single most effective vehicle safety technology that can reduce vehicle ejection and injuries. Research shows that they can reduce moderate-to-critical injury to front-seat occupants by 50 percent for passenger cars and by 65 percent for light trucks (SUVs, pick-ups, vans). By reducing ejections and serious injuries, seat belts save lives: an estimated 14,668 lives were saved in 2016. NHTSA conducts a National seat belt enforcement and media campaign to increase belt use. NHTSA also works with its emergency medical services (EMS) partners to track occupant ejections in vehicle crashes through the National EMS Information System.

FY 2018 Progress Update

In 2018, the National seat belt use rate was 89.6 percent – near the all-time high of 90 percent in 2016.

Performance Goal: Improve Safety of Fleet on U.S. Roadways (NHTSA)

Metric: Percentage of Fleet Crash Tested	MY* 2017	MY 2018	MY 2019	MY 2020
Targets	N/A	86%	85%	85%
Actuals	86%	87%	N/A	N/A

**In the United States, manufacturers traditionally release new model year vehicles in the previous year (so 2018 model years are released in 2017, for example). Therefore, the model year often pre-dates the calendar year. NHTSA tests new vehicles by model year.*

N/A not available.

Description

NHTSA's New Car Assessment Program (NCAP) provides comparative new vehicle safety information to assist with consumers' vehicle purchasing decisions and encourage motor vehicle manufacturers to make vehicle safety improvements. To keep pace with advancements in occupant protection and the introduction of advanced technologies, NHTSA periodically updates the program.

MY 2018 Progress Update

NCAP met its target of crash testing 86 percent of new vehicles for FY 2018. Given the growing importance of advanced safety technology, NHTSA has continued to expand the focus of the NCAP program to include information for consumers on forward collision warning, lane departure warning, crash imminent braking and dynamic brake support. When consumers now review the crash test ratings on the NHTSA website, they will also see which vehicles include each of the safety technologies listed above for new vehicles and models going back to 2011.

Performance Goal: Improve Timeliness of Data (NHTSA)

Metric: Percentage of States that Meet the Quarterly Timeliness Benchmark for Reporting	2017	2018	2019	2020
Targets	N/A	80%	82%	84%
Actuals	80%	90%	N/A	N/A

N/A not available.

Description

Collecting motor vehicle crash data provides the foundation to understand and quantify the causes of crashes and injuries as well as to develop evidence-based countermeasures, identify emerging trends, and evaluate program effectiveness. NHTSA works closely with the States to develop and implement crash data collection systems. Ensuring the States meet the quarterly benchmarks for entering data will help ensure the process is as efficient as possible. Relevant and timely data reporting helps government agencies make more informed policy, program, and regulatory decisions that will lead to improved motor vehicle safety.

FY 2018 Progress Update

NHTSA met its data timeliness target for FY 2018 and maintained its ongoing data modernization efforts by increasing the use of electronic data transfer from the States.

Performance Goal: Reduce Fatalities Caused by Pipelines and Hazardous Materials (PHMSA)

Metric: Confirmed Fatalities Caused by the Release of Hazardous Materials Transported via Pipeline or Surface Transportation Conveyance	2017	2018	2019	2020
Targets	N/A	N/A	25	24
Actuals	16	13 (p)	N/A	N/A

(p) preliminary.

N/A not available.

Description

PHMSA tracks incidents involving death or major injury, evacuations, fires, and explosions and determines whether any fatalities or injuries were related to the transport of hazardous materials by pipeline or other modes. For pipelines, these data are derived from pipeline operators' reports.[21] PHMSA regulations require incidents to be reported online through the PHMSA Portal. For all other modes, hazardous materials transportation incident data are derived from reports submitted to PHMSA[22] and through other sources (e.g., state and local law enforcement and first responder reports). These data are maintained in the Hazardous Materials Information System.

In FY 2019, PHMSA refined its performance goal and metric to account for the number of fatalities caused by the release of hazardous materials transported via pipeline or surface transportation. PHMSA arrives at its target through an exponential regression analysis of past year data. These targets project a general declining trend into the near future. PHMSA's target for FY 2020 is not more than 24 fatalities. While this level is higher than 2016 and 2017 actuals, it is lower than the prior years and represents a trend of declining fatalities.

FY 2018 Progress Update

As mentioned above, in FY 2019, PHMSA began using a new performance measure to account for fatalities caused by the release of hazardous materials by all modes, including pipeline. In prior years, PHMSA reported on incidents involving fatalities and serious injuries (combined). PHMSA determined that there were 13 fatalities in FY 2018, based on available incident report data. This represents a continued declining trend.

[21] PHMSA Forms F-7100.1, F-7100.2, F-7100.3, and F-7000-1.

[22] Form DOT F 5800.1.

Performance Goal: Improve Safe Delivery of Pipeline Products and Hazardous Materials (PHMSA)

Metric: Pipeline Products and Hazardous Materials Delivery Data		2017	2018	2019	2020
Incidents Involving Death or Major Injury Resulting from the Transport of Hazardous Materials by All Modes Including Pipelines	Targets	N/A	63	62 (r)	61 (r)
	Actuals	45 (r)	52 (p)	N/A	N/A
Safe Delivery Rate of Hazardous Liquids by Pipeline	Targets	N/A	99.97%	N/A	N/A
	Actuals	99.97%	99.97%	N/A	N/A
Pipeline Hazardous Liquid Spilled, Gross Volume (Barrels)	Targets	N/A	---	55,800	53,500
	Actuals	N/A	55,795 (p)	N/A	N/A
Pipeline Hazardous Liquid Spilled, Net Volume (Barrels)	Targets	N/A	29,300 (r)	23,500 (r)	22,900 (r)
	Actuals	29,251	4,453 (p)	N/A	N/A
Safe Delivery Rate Of Hazardous Materials By Modes Other Than Pipeline	Targets	N/A	99.97%	N/A	N/A
	Actuals	99.97%	99.97%	N/A	N/A
Hazardous Materials Incidents Reported Annually	Targets	N/A	18,000 (r)	17,000 (r)	16,000 (r)
	Actuals	N/A	17,883 (p)	N/A	N/A

(p) preliminary. (r) revised. N/A not available.

Description

PHMSA invests in programs that prevent incidents before they occur. This includes safety standards that assist shippers and carriers in preparing and transporting hazardous materials safely and programs that prepare communities and first responders for the threats these hazardous materials and pipelines pose. PHMSA supports several State and local activities (state inspection grants, training of state inspectors, etc.) that help prevent leaks, spills, and other incidents. PHMSA provides funding to states through one-call and state damage prevention grants. PHMSA also provides direct outreach and education to communities for the prevention of pipeline accidents.

To achieve further gains, PHMSA will continue to focus on safety rulemakings, safe transportation of energy products, risk-based inspections, and enforcement and outreach activities to improve safety. PHMSA will also encourage operators to be vigilant in their operating practices. Pipeline operators and other industries have demonstrated success in improving safety through safety management systems (SMS). Therefore, PHMSA will continue to engage with regulated industries to implement SMS and improve safety cultures to further

improve safety outcomes. PHMSA will base future annual incident targets on a rolling five-year average, thereby creating more ambitious targets for the safe movement of hazardous materials.

FY 2018 Progress Update

PHMSA's actual performance compared favorably to the targeted levels in FY 2018, reflecting safety improvements in the delivery of hazardous materials and the operation of pipeline facilities. For pipelines, the volume spilled was well below the target. For the total number of reportable hazardous materials incidents, PHMSA reported fewer incidents than the FY 2018 target.

Performance Goal: Increase Awareness of Calling 811 Prior to Excavation (PHMSA)

Metric: Percentage of Respondents Likely to Call 811 Prior to Excavation	2017	2018	2019	2020
Targets	N/A	59%	N/A	N/A
Actuals	59%	64% (p)	N/A	N/A

(p) preliminary. N/A not available

Description

A cornerstone prevention program for pipeline safety is *Call Before You Dig (811)*. Through this program, home and business owners tell an operator where they are planning to dig and affected local utility companies send locators to the dig site to mark the approximate location of buried pipelines and other utilities with flags or paint. This prevents the accidental break of gas and hazardous liquid pipelines. Since 811 was designated as the National call center number in 2007, this program has prevented millions of accidents that would have damaged gas and hazardous liquid pipelines. PHMSA provides funding to states through one-call and state damage prevention grants. PHMSA also promotes awareness of 811 through education and outreach as well as working in partnership with the Common Ground Alliance.

FY 2018 Progress Update

PHMSA met its target for increasing awareness of Call Before You Dig (811). The actuals were based on the reported percentage of respondents to an independent survey, the *Call Before You Dig/811 National Awareness Survey*, conducted annually by Povaddo, LLC. The baseline is the 2017 survey results, in which 59 percent of respondents (households, contractors, others preparing to excavate) stated they were likely to call 811 before digging near pipelines or other underground lines.

Performance Goal: Prevent Accidental Damage to Gas and Hazardous Liquid Pipelines

Metric: Damages per 1,000 One-Call Tickets for Gas Distribution Pipelines (National Average)	2017	2018	2019	2020
Targets	N/A	N/A	3.0	3.0
Actuals	N/A	2.8	N/A	N/A

N/A not available.

Description

Beginning in FY 2019, PHMSA began using a new performance measure—excavation damages per 1,000 one-call tickets—which replaces the metric on likelihood of calling 811 and is widely used as an indicator of the success of damage prevention efforts. PHMSA considers this to be an effective measure because the desired outcome focuses on reducing the number of excavation related incidents. This measure is influenced by 811 education and awareness, state enforcement of one-call laws, and technology improvements. The source of the data for damages per 1,000 tickets is PHMSA's gas distribution operator annual report submissions. By March 15 of every year, pipeline operators are required to submit annual reports to PHMSA and our state partners.[23]

FY 2018 Progress Update

This is a new performance measure for FY 2019. However, PHMSA has been tracking damages per 1,000 one-call tickets for gas distribution pipelines, and the National average for 2013 through 2017 ranges between 2.8 and 3.1.

[23] Aggregated information is available at https://opsweb.phmsa.dot.gov/primis_pdm/excavation_damage.asp.

APG: Reduce (Commercial) Aviation Fatalities

APG Goal Statement: *DOT will work to reduce commercial air carrier fatalities per 100 million persons on board to no more than 5.9 by September 30, 2019. Long term, DOT is committed to reducing fatalities by 50 percent over the next 18 years.*

Background

DOT distinguishes between U.S. Commercial Aviation and General Aviation. U.S. Commercial Aviation covers U.S.-owned carriers only, and includes both scheduled and nonscheduled flights of U.S. passenger and cargo air carriers (14 CFR Part 121) as well as scheduled passenger flights of commuter operators (14 CFR Part 135). It excludes on-demand (i.e., air taxi) service and general aviation. Accidents involving passengers, crew, ground personnel, and the uninvolved public are all included.

There are two parts of the FAA performance goal of reducing aviation fatalities: Commercial Aviation and General Aviation. They are measured in two different ways because the safety and validation requirements for training pilots and certifying commercial equipment for U.S. passenger and cargo air carriers are very different than those for private and personal use. Because of these requirement differences, the FAA uses separate metrics to measure the safety of U.S. passengers and cargo than the measures used for flights that are conducted for private personal use.

More information about this APG can be found on www.Performance.gov.

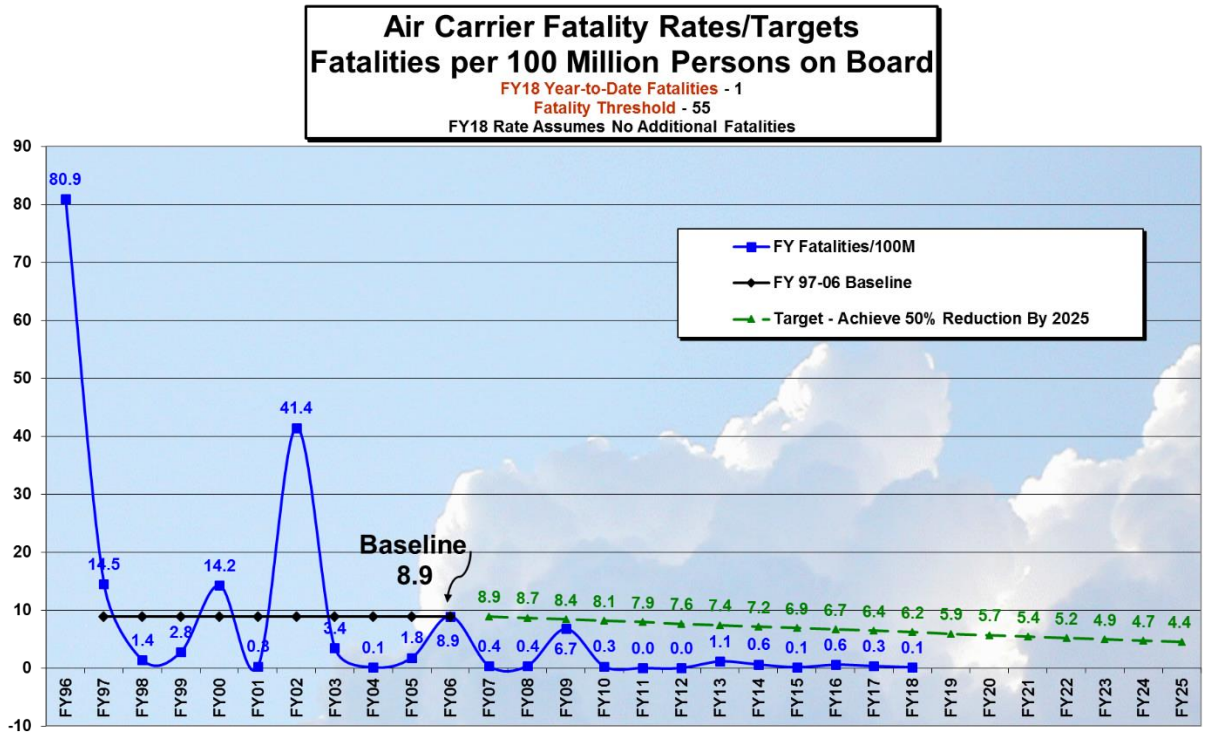
Baseline/Trends: U.S. Commercial Aviation Fatalities

Commercial aviation continues to be the safest form of transportation. While rare, however, commercial aviation accidents have the potential to result in large loss of life. Our commercial safety record indicates the agency has successfully addressed the majority of known system hazards contributing to accidents or incidents.

The FAA continues to work with aviation industry stakeholders to establish and implement safety management systems to address and reduce risk within their operations and the National Air Space (NAS). With these systems in place, the FAA and the aviation industry agree that partnership is critical to aviation safety and will work together to address risks.

New technologies, such as unmanned aircraft systems (drones) and increased air traffic in popular corridors are emerging areas of focus for FAA.

Figure U.S. Commercial Air Carrier Fatality Rates and Targets per 100 Million Persons on Board



Trends: U.S.-Owned Commercial Carrier Aviation Fatalities

	2012	2013	2014	2015	2016	2017	2018
Total U.S.-Owned Commercial Carrier Aviation Fatalities	0	9	5	1	5	3	1

APG: Reduce U.S.-Owned Commercial Carrier Aviation Fatalities Per 100 Million Persons On Board (FAA)

Metric: U.S.-Owned Commercial Carrier Fatalities Per 100 Million Persons On Board					
	2017	**2018**	**2019**	**2020**	**2021**
Targets	6.4	6.2	5.9	5.7	5.4
Actuals	0.3	0.1	N/A	N/A	N/A

N/A not available.

FAA's strategies to accomplish this priority goal include the following:

- Work with stakeholders to establish and implement safety management systems to address and reduce risk within their operations and the National Air Space.
- Collaborate with the aviation community to encourage voluntarily investing in safety enhancements that reduce the fatality risk.
- Ensure that safety risk is systematically included as part of the equation when decisions are made in the FAA.

FY 2018 Progress Update

In 2018 the FAA handled 15.8 million flights, with over 2.6 million passengers. While rare, commercial aviation accidents happen, with one fatality in 2018.

APG Leads

- FAA: Ali Bahrami, Associate Administrator, Aviation Safety
- FAA: John Duncan, Deputy Associate Administrator, Aviation Safety

APG: Reduce (General) Aviation Fatalities

***APG Goal Statement**: DOT will work to reduce general aviation fatal accidents to no more than 0.98 accidents per 100,000 flight hours by September 30, 2019. Long term, DOT seeks to reduce general aviation fatal accidents to no more than 0.89 fatal accidents per 100,000 flight hours by FY 2028.*

Background

General Aviation covers private aircraft, which includes U.S.-registered aircraft operating on-demand (non-scheduled Title 14 Code of Federal Regulations (14 CFR) Part 135) and general aviation flights. General aviation comprises a diverse range of aviation activities, with more than 220,000 active aircraft—from gliders, single-seat homebuilt aircraft, helicopters, balloons, single and multiple engine land and seaplanes, experimental ex-military fighter jets, to highly sophisticated, extended-range turbojets. Using data, the FAA and industry are working together to identify risks, pinpoint trends through root cause analysis, and develop safety strategies.

Baseline/Trends: U.S. General Aviation Fatalities

General aviation fatality rates are at historic lows. FAA recognizes the need to identify precursors to accidents to improve safety. The three most recent final general aviation rates, FY 2006 – FY 2008, were used as the baseline. FAA's performance target is to reduce fatalities by 10 percent in 10 years from this baseline. Each year's annual target is an approximate one percent reduction to achieve the overall goal.

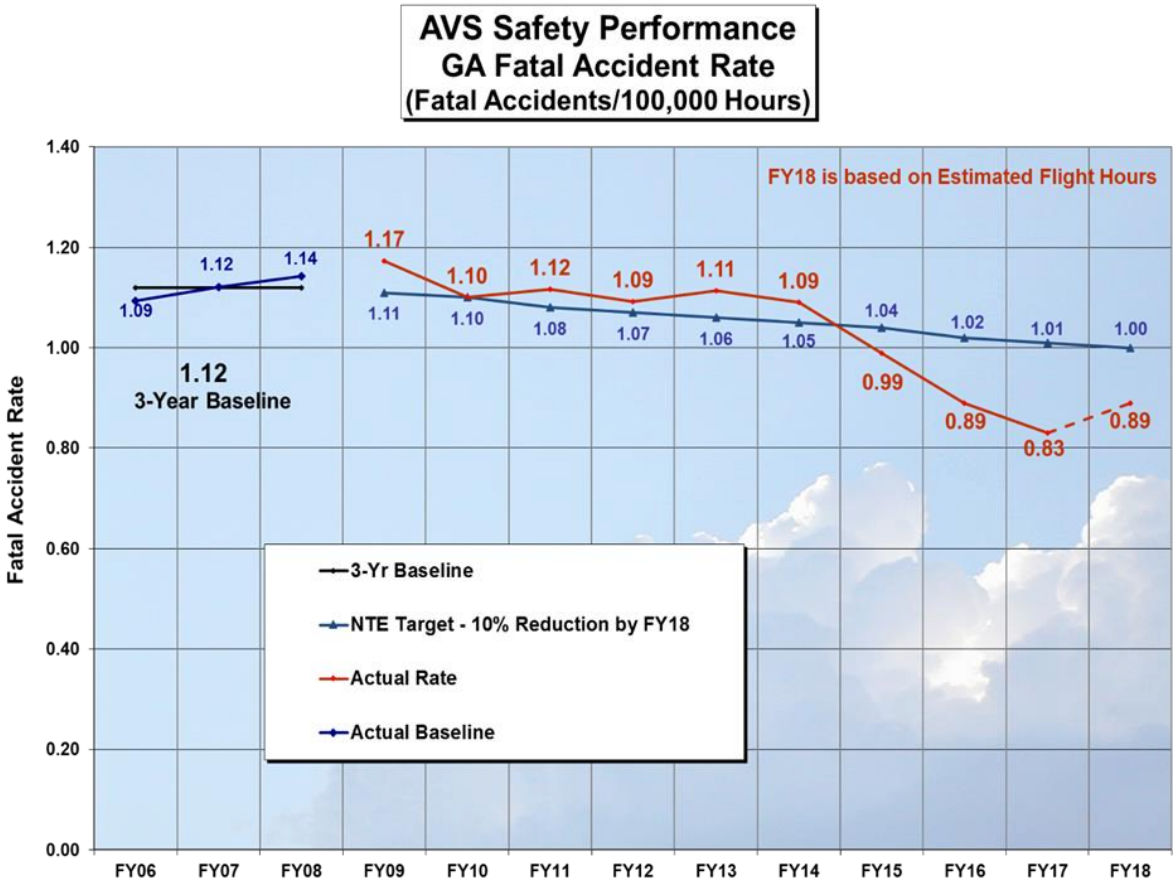
Although General aviation fatality rates in aviation are at historic lows and continue to decrease over time, the FAA must be smarter about how it assures safety, as the aviation industry introduces more complex new technologies, such as unmanned aircraft systems (UAS), electric vertical takeoff and landing (eVTOL) aircraft, and autonomous vehicles.

General aviation encompasses a wide variety of aircraft: gliders; single-seat home-built aircraft; helicopters; and balloons; as well as sophisticated, extended-range turbojets; and UAS that require new thinking with respect to pilot training and operations.

FAA resources must be sufficient enough to address oversight responsibilities consistent with the expected growth in large UAS-certified general aviation operations (e.g. agricultural operations and external load operations).

The FAA can leverage lessons learned in commercial aviation to continue to improve the level of general aviation safety by identifying precursors to accidents.

Figure 4. AVS Safety Performance – U.S. General Aviation Fatality Accident Rate



The above graph shows the reduction of fatal general aviation accidents against a 3-year baseline in comparison to the 10 percent reduction goal.

Trends: U.S. General Aviation Fatalities

	2012	2013	2014	2015	2016	2017	2018
Total General Aviation Fatalities	267	259	252	238	219	209	226

APG: Reduce General Aviation fatal accidents per 100,000 flight hours (FAA)

Metric: U.S. General Aviation Fatal Accidents per 100,000 Flight Hours	**2017**	**2018**	**2019**	**2020**	**2021**
Targets	1.01	1.00	0.98	0.97	0.96
Actuals	0.83	0.89	N/A	N/A	N/A

N/A not available.

FAA's strategies to accomplish this priority goal include the following:

- Support the installation of new safety-enhancing technology in general aviation aircraft by streamlining the certification and installation process and encouraging aircraft owners to install such equipment;
- Continue implementation of new Airman Testing and Training Standards to improve airman training and testing by establishing an integrated, holistic airman certification system that clearly aligns testing with certification standards, guidance, and reference materials;
- Work in partnership with industry on a data-driven approach to understand fatal accident causes and develop safety enhancements to mitigate the risk;
- Reduce pilot deviations, including Runway Incursions, caused by a lack of English language proficiency;
- Continue working with the general aviation community to educate pilots and other stakeholders on the benefits of sharing (in a protected, non-punitive manner) safety data and utilizing these data in their daily operations; and
- Leverage FAA Safety Team (FAASTeam) program products and product delivery outreach systems. National FAASTeam outreach initiatives include safety articles in the FAA Safety Briefing magazine; FAAST Blast emails; aviation safety courses through the FAASafety.gov website; runway safety educational posters; and live safety seminars on weather, ADS-B, UAS, Loss of Control, and aeronautical decision-making.

FY 2018 Progress Update

In FY 2018, the FAA continued to work with the General Aviation Joint Steering Committee (GAJSC) on improving general aviation safety. To date, GAJSC developed 40 safety enhancements aimed at addressing the top causes of fatal accidents: loss of control-inflight and engine failure. These enhancements include technological improvements to engine performance, improved education and training for both pilots and mechanics, and outreach on a range of topics aimed at preventing loss of control and power plant failure-related accidents.

Additionally, the U.S. Helicopter Safety Team (USHST) approved 21 Helicopter Safety Enhancements (H-SE), and as of June 1, 2018, all 21 H-SEs have been initiated. These cover fatal accidents during Unintended Flight in Instrument Meteorological Conditions, Loss of Control-Inflight, and Low Altitude Operations. The USHST Outreach Program will focus on the top industry sectors with the highest percentage of fatal accidents.

The GA fatal accident actual rate was 0.89 versus a not to exceed of 1.00. That equates to 226 fatal accidents versus a not to exceed of 254, prorated for the end of September 2018 (254 for the year). There were 383 fatalities through September 2018. There were 47 fatal experimental accidents through September, which was 20.8 percent of the total number of fatal GA accidents.

APG Leads

- FAA: Ali Bahrami, Associate Administrator, Aviation Safety
- FAA: John Duncan, Deputy Associate Administrator, Aviation Safety

Performance Goals and Metrics: Aviation Safety

Performance Goal: Reducing Runway Incursions (FAA)

Metric: Reduce Runway Incursions Per Total Procedures		2016	2017	2018	2019	2020
Category A and B Runway Incursions Per Total Number of Runway Operations	Targets	0.395	0.395	0.395	N/A	N/A
	Actuals	0.282	0.159	0.251	N/A	N/A
Commercial Surface Safety Risk Index: Maintain the Weighted Surface Safety Risk Index Per Million Operations for Commercial Aviation	Targets	N/A	N/A	N/A	0.35	0.35
	Actuals	N/A	N/A	N/A	N/A	N/A
Non Commercial Surface Safety Risk Index: Maintain the Weighted Surface Safety Risk Index Per Million Operations for Non-Commercial Aviation	Targets	N/A	N/A	N/A	0.60	0.60
	Actuals	N/A	N/A	N/A	N/A	N/A

N/A not available.

Description

For the Runway Incursion measure, air traffic controllers and pilots are the primary source of runway incursion reports. This partnership has provided insight into operations, previously unknown, enabling the gathering of data that adds granularity to the runway safety measure. The capture of this data allows the aviation community to incorporate several data sources that aid in predicting risk. Data for this measure are recorded in the Comprehensive Electronic Data Analysis Reporting (CEDAR) system and data used to calculate the runway incursion rate are provided via Operations Network (OPSNET).

For the Surface Safety Risk Index, the National Transportation Safety Board (NTSB) database is the primary source of runway accident data. Runway excursion data is supplemented by the Office of Accident Investigation and Prevention's Aviation System Analysis and Sharing (ASIAS) database, which aggregates runway excursion data from multiple sources. Preliminary incident reports are evaluated when received an evaluation can take up to 90 days. ASIAS data are then combined with CEDAR and OPSNET data to produce final results.

FY 2018 Progress Update

Through FY 2018, the final cumulative rate for category A and B runway incursions in the NAS is 0.251 per million operations. In FY 2019, the FAA has implemented the Commercial and Non-Commercial Surface Safety Risk Index, which is an improved risk-based approach to runway safety that monitors all types of relevant safety events that occur in the runway environment. These include events involving runway excursions, incursions, and surface incidents.

Performance Goal: Exert Global Leadership at International Civil Aviation Organization (ICAO)[24]

Metric: Exert Global Leadership at ICAO		2018	2019	2020
Advance U.S. Standards to Foster the Safety of U.S. Citizens Traveling Internationally and Reduce Regulatory Barriers to U.S. Aviation Firms Globally. Implement FAA's Strategy to Focus and Enhance International Engagement	Targets	This measure is under development		
	Actuals	This measure is under development		

N/A not available.

Description

The FAA engages internationally to increase global awareness and compliance with international standards and improve aviation safety and efficiency. We collaborate with other U.S. government agencies and U.S. industry, international organizations, as well as bilateral and regional international partners, to set international safety and efficiency standards and to develop bilateral agreements on the exchange of aviation products, services, and information. We work closely with the International Civil Aviation Organization (ICAO), as the United States is a Member State to this specialized agency of the United Nations based in Montreal, Canada.

As a leader in aviation since inception, the FAA faces global competition from other standard-setting organizations. For example, the European Aviation Safety Agency recently announced a multi-million-dollar effort to establish new training, recruiting, and safety arrangements in Central America and the Caribbean. This followed a sizable investment by the Chinese in Latin America during the past three years. These regions of the Western Hemisphere are of critical importance to the United States. Not only does the FAA provide air traffic services for a sizable portion of Caribbean airspace, the region is also a top destination of the U.S. traveling public. While foreign entities seek dominance in the areas nearest to the United States, they are also seeking to seize leadership roles in the growing Asia-Pacific and African markets. It is imperative for the United States to make a strong presence at ICAO to drive U.S. safety standards, practices, and policies, as well as to counter those that facilitate, protect, and enhance foreign aviation businesses.

FAA's responsibility, working with ICAO, is to achieve safety and efficiency within the global network, focused on the safety of U.S. traveling public and the interoperability of U.S. air carriers' equipment and standards. To remain the foremost authority on aviation standards, we must continue to maximize opportunities to engage and redouble our efforts with our international partners to improve safety and increase safety standards. FAA globally conducts certain functions for safety inside and outside of the United States, such as performing air traffic control handoffs and assessing whether a foreign civil aviation authority complies with

[24] *Exerting Leadership at ICAO* is a new goal for FY 2019.

international aviation standards. FAA also inspects repair stations, oversees navigation and infrastructure, sets safety standards, and provides oversight around the world for air traffic. The Nation strives to remain the aviation "gold standard' that will ensure U.S. aviation safety and security priorities are met around the world.

FY 2018 Progress Update

Working through ICAO, FAA promotes U.S. priorities, policies and positions with the goal of influencing the global direction on these key topics. Based on the outcomes of the ICAO 13th Air Navigation Conference in October 2018, the FAA identified priority issues and implemented an action plan, including regional and bilateral outreach, to promote, advance, and secure the FAA's top three objectives relating to safety, air navigation, and emerging issues for the ICAO 40th Assembly, which commences in September 2019.

Strategic Goal 2: Infrastructure

To stimulate growth and retain economic competitiveness, DOT must guide strategic investments that enable more efficient movement of people and goods. To achieve the Infrastructure goal, DOT will provide guidance, technical assistance, and research that leverages Federal funding, accelerates project delivery, reduces project lifecycle costs, optimizes the operation and performance of existing facilities, and provides multimodal travel options for people of all ages and abilities.

Infrastructure Objective 1: Project Delivery, Planning, Environment, Funding and Finance

This strategic objective speaks to facilitating expanded infrastructure development, modernization, and construction in both rural and urban communities by fostering more efficient and collaborative planning and construction techniques, accelerating project approval, leveraging all sources of funding, and promoting innovative financing while maintaining environmental stewardship. DOT is committed to accelerating environmental reviews, institutionalizing use of the Permitting Dashboard to improve accountability and transparency, and increasing opportunities for private sector investment, in order to upgrade our transportation infrastructure for the benefit of all communities, from rural to urban. DOT's Project Delivery, Planning, Environment, Funding and Finance objective is supported by the following goals:

Infrastructure Objective 1: Project Delivery, Planning, Environment, Funding and Finance	
Agency Priority Goal	Maintain Accountability for Permitting Projects (FHWA, FTA, FAA)
	Reduce the Time to Complete an EIS (FHWA, FTA, FAA, FRA)
	Reduce the Time to Complete a Major Infrastructure Project (FHWA, FTA, FAA, FRA)
Performance Goals	Increase the Number of States and Local Agencies using a Federal Innovative Finance Tool (FHWA)
	Improve Major Project Performance in FHWA Portfolio (FHWA)
	Improve Major Project Performance in FTA Portfolio (FTA)
	Increase Grants to Rural and Small Urban Areas (FTA)
Performance Goals	Decrease Grant Processing Time (FTA)
	Increase Percentage of Grants Identified as Inactive at the Beginning of the Fiscal Year that are either Closed or Returned to Active Status (FTA)

APG: Simplify and Enhance Environmental Review Process for Major Transportation Infrastructure Projects

APG Goal Statement: *DOT will maintain accountability by posting and tracking at least 90 percent of its funded projects for which environmental impact statements are required by the end of FY 2018. By the end of FY 2021, DOT will reduce the average time to complete those environmental reviews to 24 months.*

Background

In alignment with CAP Goal 12, Modernizing the Infrastructure Permitting Process, DOT is committed to reducing the average time to complete the environmental impact statement (EIS) process for transportation infrastructure projects. This APG applies to all modes that fund infrastructure projects that require an EIS.

On August 15, 2017, President Trump signed Executive Order 13807, *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure*. This order requires a lead Federal agency to navigate each major infrastructure project through the Federal environmental review and authorization process as One Federal Decision, with the goal of completing all Federal environmental reviews and authorizations decisions for major infrastructure projects in 24 months on average. As defined in E.O. 13807, a major infrastructure project requires (1) multiple authorizations by Federal agencies to proceed to construction, (2) the lead Federal agency has determined an EIS under the National Environmental Protection Act (NEPA) is needed; and (3) the project sponsor has identified funds sufficient to complete the project.

Baseline/Trends: Environmental Review Process

While major transportation infrastructure projects make up only a small portion of all projects for which full environmental reviews are required, they are likely to be high-profile, complex, and time-consuming. Traditionally, environmental reviews for major infrastructure projects take much longer than two years. The Council on Environmental Quality examined the timeline for 1,152 EISs for which a notice of availability of a final EIS was published between January 1, 2010, and December 31, 2017, and a final decision was issued by June 7, 2018. The average EIS completion time was 4.5 years and the median was 3.5 years for all agencies. DOT's average EIS completion time was 6.5 years.[25,26]

[25] https://ceq.doe.gov/nepa-practice/eis-timelines.html

[26] The latest data from the Federal Highway Administration (FHWA) on median time for EIS completion, measured from the date of the Notice of Intent to the date of the Record of Decision, show a slight increase over time from 41 months in 2012 to 47 months in 2018. See Federal Highway Administration. Environmental Review Toolkit-April 2018. Note that the FHWA analysis measured median time as it asserts it is a better measure by eliminating outliers. https://www.environment.fhwa.dot.gov/nepa/timeliness_of_nepa.aspx

APG Overview and Progress

Inefficiencies in current infrastructural project decisions, including the management of environmental reviews and permit decisions or authorizations, have delayed infrastructure investments, increased project costs, and prevented the American people from enjoying improved infrastructure that would benefit our economy, society, and environment. More efficient and effective Federal infrastructure decisions can transform our economy. An accelerated environmental review process (averaging 24 months) will shorten project delivery time, decrease overall project costs, and speed the delivery of project benefits to the public.

APG and Metrics: Environmental Review Process

APG: Maintain Accountability for Permitting Projects (FHWA, FTA, FAA, FRA)

		2018	2019	2020
Metric: Percentage of DOT Environmental Impact Statements Posted on Permitting Dashboard that are on Schedule	Targets	90%	90%	90%[27]
	Actuals	70%	N/A	N/A
Metric: Percentage of DOT Major Infrastructure Projects Posted on Permitting Dashboard that are On Schedule	Targets	90%	90%	90%[28]
	Actuals	100%	N/A	N/A

N/A not available.

Title XLI of the FAST Act created the Federal Permitting Improvement Steering Council, composed of deputy secretary-level agency members and chaired by an executive director appointed by the President. It also established new procedures that standardize interagency consultation and coordination practices, including the use of the Permitting Dashboard to track project timelines. The permitting Dashboard tracks DOT projects, FAST 41 projects, and also newly identified Major Infrastructure Projects. DOT has four Major Infrastructure Projects.

[27] DOT's Office of Policy sets this overall number. It is 100 percent for FHWA and FTA, but the FAA has a lower target of 65 percent.

[28] DOT's Office of Policy sets this overall number. It is 100 percent for FHWA and FTA, but the FAA has a lower target of 65 percent.

APG: Reduce the Time to Complete an EIS (FHWA, FTA, FAA, FRA)

Metric: Average Months to Complete an EIS	2020	2021	2022
Targets	24 Months	24 Months	24 Months
Actuals	N/A	N/A	N/A

N/A not available.

APG: Reduce the Time to Complete a Major Infrastructure Project (FHWA, FTA, FAA, FRA)

Metric: Average Months to Complete an Environmental Review for Major Infrastructure Projects for which DOT is the NEPA Lead	2020	2021	2022
Targets	24 Months	24 Months	24 Months
Actuals	N/A	N/A	N/A

N/A not available.

This goal aligns with Executive Order 13807.

DOT's strategies to accomplish this priority goal include the following:

- Use provisions in the two most recent surface transportation reauthorizations, MAP-21 and the FAST Act, to accelerate environmental review for major transportation projects. For example, the use of a combined EIS/Record of Decision eliminates the 30-day public notification period prior to issuance of a Record of Decision.
- Use One Federal Decision processes and policies outlined in Executive Order 13807 and the One Federal Decision Memorandum of Understanding to coordinate with agencies on major infrastructure projects to expedite environmental review and coordination timeframes.
- Use the DOT Federal Permitting Dashboard to track large or complex projects throughout each stage of environmental review and permitting. This enhanced transparency will encourage agencies to work concurrently, rather than sequentially. Sharing environmental documents and information will reduce duplicative environmental reviews and identify challenges early in the process, expediting resolutions and accelerating project delivery.
- Institutionalize best practices across the Department, including programmatic agreements, liaison positions, planning and environment linkages, and implementing quality environmental documents.
- Work closely with the Federal Permitting Improvement Steering Council and the Council on Environmental Quality to root out inefficiency, clarify lines of authority and streamline Federal, State, and local procedures so the review process can be as efficient as possible while still improving environmental and community outcomes.

- Explore ways to create more flexibility in the review process to ensure that transportation projects do not spend years languishing in a cumbersome and ineffective process.

FY 2018 Progress Update

FHWA developed an interagency working agreement with Federal resource and permitting agencies to accelerate and coordinate the planning, environmental review, permitting, and decision-making for major infrastructure projects. It provides for conducting concurrent environmental reviews with the processing of relevant environmental permit application materials. FHWA created a process chart that synchronizes NEPA and permitting towards One Federal Decision for major infrastructure projects that includes timetable for projects with and without planning and environmental linkages.

FHWA continued to promote a One Federal Decision working agreement to accelerate environmental permitting on transportation projects. Three new projects with requirements for an EIS were designated to comply with Executive Order 13807. FHWA encouraged States to review and update their list of active projects requiring an EIS and take proactive steps during the permitting process to reduce delay between the Notice of Intent to Record of Decision.

APG Leads

- OST: Barbara McCann, Director, Office of Policy Development, Strategic Planning, and Performance
- OST: Gerry Solomon, Deputy Director, Office of Policy Development, Strategic Planning, and Performance

Performance Goals and Metrics: Project Delivery

Performance Goal: Increase the Number of States and Local Agencies using Federal Innovative Finance Methods (OST)

Metric: Number of States and Local Agencies that have used Federal Innovative Finance Methods (in the current year)	2017	2018	2019	2020
Targets	N/A	18	20	23
Actuals	15	17	N/A	N/A

N/A not available.

Description

In FY 2020, DOT will support State and local transportation agencies that apply innovative revenue generation, procurement, and project finance strategies that enable major infrastructure projects.

The measure is a count of the number of states in which a public project sponsor has used one of the following finance tools to assist a Title 23 eligible project, regardless of whether the project receives regular Federal-aid highway funds: TIFIA credit assistance, Private Activity Bond (PAB) issuance, GARVEE bond issuance, Availability Payment reimbursement agreement, or State Infrastructure Bank credit assistance.

FY 2018 Progress Update

DOT facilitated the use of innovative financing tools in 17 State and local governments. The Department's Center of Innovative Finance Support also provided Public Private Partnership onsite technical assistance to the Alabama and Florida DOTs and delivered training to Alabama, Florida, Oklahoma, Minnesota, Illinois, Texas, District of Columbia, and Puerto Rico.

Performance Goal: Improve Major Project Performance in FHWA Portfolio

Metric: Percentage of FHWA-Funded Projects over $500 Million Within 2% of Schedule and Costs		2017	2018	2019	2020
Percentage of FHWA-funded projects over $500 million within 2% of Schedule	Targets	N/A	80%	80%	80%
	Actuals	70%	64%	N/A	N/A
Percentage of FHWA-funded projects over $500 million within 2% Percent of Cost	Targets	N/A	80%	80%	80%
	Actuals	84%	80%	N/A	N/A

N/A not available.

Description

DOT currently contributes Federal funds to more than 100 major projects that are near or in construction. Major projects cost $500 million or more. The development and delivery of these projects are often complex and challenging. Project sponsors submit a project management plan and an initial financial plan to the FHWA for each major project prior to authorization of Federal funds for construction. Updates to financial plans are submitted annually and updates for project management plans are submitted to FHWA as needed based on changes to the project.

To assess the performance of each project in the portfolio of major projects, FHWA monitors financial plans annually to determine the percentage that are within two percent of the prior year cost estimate and project completion date. The goal is for at least 80 percent of the financial plans approved each fiscal year to be within two percent of the prior year cost estimate and completion date.

To monitor and improve oversight and stewardship practices, FHWA will:

- Work with State and local partners to create more flexibility in the review process to ensure that transportation projects are completed in more timely manners; and
- Institutionalize best practices across the Department, including programmatic agreements, liaison positions, Planning and Environment Linkages, and Implementing Quality Environmental Documents.

FY 2018 Progress Update

Of the 83 annual updates to financial plans submitted to FHWA between October 2017 and October 2018, 67 (80.7 percent) reflected a two percent or less increase in costs. In 16 projects, the estimated costs increased by two percent or more due to scope changes (e.g., addition of interchanges) from the initial plan, increases in labor and materials, and other costs such as an increase in right-of-way costs.

Schedules for 56 (67 percent) of the projects met less than a two percent increase; while schedule increases exceeded two percent in 27 of the projects. Schedule delays resulted from changes in design criteria, poor in situ field conditions that were unanticipated, and errors of omission.

Performance Goal: Improve Major Project Performance in FTA Portfolio

Metric: Percentage of FTA-Funded Projects over $500 Million Within or Minus 10 Percent of Cost	2017	2018	2019	2020
Targets	N/A	85%	85%	85%
Actuals	93.3%	93.3%	N/A	N/A

**All data is from FY 2018.*

N/A not available.

Description

This measure is calculated based on the number of Capital Investment Grant (CIG) projects with full funding grant agreements and that have had cost increases of 10 percent or more over the latest baseline estimate. It should be noted that FTA's CIG program awards grants for fixed dollar amounts upon entering the engineering phase of the program. Local project sponsors are required by the terms of the grant agreement to cover all cost overruns and ultimately deliver the project specified in the grant agreement.

To monitor and improve oversight and stewardship practices, FTA will:

- Continue its robust project management oversight program.
- Continue to ensure that the Federal interest in FTA-funded projects is protected and that our grantees deliver the projects they committed to in their grant agreements.

FY 2018 Progress Update

In 2018, FTA began requiring new CIG projects meet a P65 standard for the probability of the project coming in on-time and on-budget before it can enter into the engineering phase of the program.

As of August 2018, FTA has 14 projects costing more than $500 million, one of which, Honolulu High Capacity Transit Corridor, is over the current baseline budget.

Performance Goal: Increase Grants to Rural and Small Urban Areas (FTA)

Metric: FTA Grant Dollars Allocated to Rural Areas and Small Urban Areas	2018*	2019	2020
Targets	$1.56 billion	$1.59 billion	$1.62 billion
Actuals	$1.79 billion	N/A	N/A

**As of October 2018, FTA allocated $1.79 billion to rural and small urban areas.*

N/A not available.

Description

This metric measures the extent to which FTA has successfully awarded grant funds to rural and small urban areas during the current fiscal year, including both discretionary and formula grant awards. For apportionment purposes, "small urban areas" are defined as urbanized areas with populations less than 200,000, while any area less than 50,000 is considered rural.

FTA also supports the Rural Transit Assistance Program which funds the design and implementation of training and technical assistance projects and other support services tailored to meet the needs of transit operators in nonurban areas.

FY 2018 Progress Update

A total of $1.79 billion was allocated for rural areas in FY 2018.

Rural area grant funds support bus and bus facilities that improve safety, rural transit accessibility, and efficiency. FTA awarded $536,000 to the State of Colorado to replace diesel buses in rural communities, $7,000,000 to the Iowa Department of Transportation to replace rural buses that have exceeded their useful life throughout the state, $7,000,000 to the Kentucky Transportation Cabinet to replace vehicles, expand fleets, construct and renovate bus facilities, and purchase bus equipment in rural areas. The Oklahoma Department of Transportation will receive $407,496 to rehabilitate bus facilities, and the Maine Department of Transportation $2,201,370 to replace rural buses to improve reliability, safety, and cost-effectiveness in rural areas.

Performance Goal: Decrease Grant Processing Time (FTA)

Metric: Average Number of Days from Grant Application Submission to Grant Award	2017	2018*	2019	2020
Targets	N/A	36	32	32
Actuals	N/A	22	N/A	N/A

**As of October 2018.*

N/A not available.

Description

This metric sets the standard for the number of days FTA staff takes to process public transportation grant applications. In FY 2016, average grant-processing days dipped to 19 days, rose in FY 2017 to 24 days, and dipped again in FY 2018 to 22 days. For FY 2019, FTA is determined to lower the grant-processing days target from 36 days to 32 days and will continue to monitor the average number of grant-processing days.

FY 2018 Progress Update

FY 2018 was the third-highest year ever for FTA funds awarded (FY 2014 was the highest, FY 2009 was the second highest). FTA announced funding availability of over $548 million for its competitive grant programs. Overall, the agency managed a portfolio of $87.8 billion.

Effective in FY 2018, FTA required reporting annually rather than quarterly for grants under $2 million, reflecting a risk-based approach. This change reduced the reporting burden by 37 percent, eliminating 4,300 reports each quarter of CY 2018.

Performance Goal: Increase Percentage of Grants Identified as Inactive at the Beginning of the Fiscal Year that are either Closed or Returned to Active Status (FTA)

Metric: Percentage of Grants Identified as Inactive at the Beginning of the Fiscal Year that are either Closed or Returned to Active Status	2017	2018*	2019	2020
Targets	90%	95%	95%	95%
Actuals	100%	99.5%	N/A	N/A

**As of October 2018.*

N/A not available.

Description

At the beginning of each fiscal year, FTA identifies grants that are potentially inactive. Over the course of the fiscal year, a grant can be removed from the cadre by one of the following actions:

- The grantee makes a draw-down against the grant;
- The grant is closed; or
- The grantee is able to provide an approved explanation for why the grant should remain *active*, despite the absence of any recent draw-downs of funds.

FTA's goal was to have at least 95 percent of the grants in the identified cadre addressed by one of those above resolutions.

FY 2018 Progress Update

Of the 444 inactive grants targeted for closeout in FY 2018, 188 were closed as of September 30, 2018, 131 became active, and 123 were excluded for reasons provided by the grantees. A total of 1,678 grants and cooperative agreements were closed, and $362 million in cooperative agreement funds were deobligated.

Infrastructure Objective 2: Life Cycle and Preventative Maintenance

DOT, in consultation with the Office of Management and Budget, has determined that performance toward this objective is a focus area for improvement.

DOT seeks to keep the Nation's transportation infrastructure secure and in a state of good repair by maintaining and upgrading existing transport systems in rural and urban communities.

DOT supports lifecycle management infrastructure preservation by providing Federal funding and targeted programmatic asset management guidance to support the preservation and rehabilitation of existing transportation infrastructure. DOT has increasingly emphasized a risk-based strategy of asset management to efficiently build and maintain infrastructure. DOT's Life Cycle and Preventative Maintenance objective is supported by the following goals:

Infrastructure Objective 2: Life Cycle and Preventative Maintenance	
Agency Priority Goal	**Improve Bridge Condition in the National Highway System (FHWA)**
	Improve Roadway Pavement Condition (FHWA)
	Maintain Good Runway Condition (FAA)
	Monitor Condition and Performance of Transit Systems (FTA)

APG: Improve Conditions of America's Transportation-Related Infrastructure

APG Goal Statement: *DOT will maintain good conditions of airport runway surfaces, National Highway System roads and bridge deck area and the Transit State of Good Repair maintenance funding backlog through FY 2020. DOT will develop improved ways of tracking infrastructure condition of key modes of transportation. In the near term, DOT will focus on data available for roadway, runway, and transit infrastructure.*

Background

Highway pavement and bridges in poor condition directly impact the lives of ordinary citizens by increasing wear and tear on vehicles, driving up repair costs, inflating travel times, and sometimes introducing new safety concerns. For freight users, poor conditions can increase the cost of doing business and delay the delivery of millions of tons of goods and agricultural products across the country. Since trucks transport most U.S. freight, keeping our roads and bridges in good condition is critical to our country's competitiveness. Likewise, maintaining runway pavement in the National Plan of Integrated Airport Systems at a minimum of fair condition ensures our Nation will continue to enjoy a safe and efficient runway system.

APG Overview

DOT advances strategies and initiatives to improve the condition and performance of the Nation's roadways. The National Highway System (NHS) includes the Interstate system, principal arterial routes, the Strategic Highway Network and connectors, and intermodal connectors. It comprises most major routes with the largest bridges, greatest amounts of traffic, and most important linkages between ports and cities. While the NHS represents five percent of highway mileage and nine percent of lane mileage, it handles approximately 55 percent of the Nation's vehicle miles traveled (VMT) and about 83 percent of truck travel, including most of the heavy truck movement across multiple state lines. While representing about 24 percent of the more than 614,000 bridges in the Nation, NHS bridges comprise about 58 percent of the total bridge deck area and carry 79 percent of annual daily traffic.

A DOT final rule effective May 2017 established a new framework of National performance measures for pavement and bridge conditions. States are required to make significant progress towards achieving targets for performance measures, with the state-by-state results reported nationally.

The new measure (shown here) assesses bridge condition with a classification system of good, fair, and poor, and the metric is the percent of NHS bridges classified as in poor condition. The condition measures reflect the lowest National Bridge Inspection component (i.e., deck, superstructure, substructure, and culvert) condition rating for a bridge, weighted by the deck area.

The new measure to assess pavement condition does so by calculating the percent of pavements on the Interstate and non-Interstate NHS, respectively, in good and poor condition. Data are being collected for this measure beginning in 2019. Until these data are available, the current measure of the percent of vehicle miles traveled in Good condition (shown here) will be reported.

APGs and Metrics: Infrastructure

APG: Improve Bridge Condition in the National Highway System (FHWA)

Metric: Percentage of NHS Bridges in Poor Condition	2017	2018	2019	2020
Targets	5.0%	5.0%	5.0%	5.0%
Actuals	5.0%	4.5%	N/A	N/A

N/A not available.

APG: Improve Roadway Pavement Condition (FHWA)

Metric: Percentage of VMT on the NHS in Good Condition	2017	2018	2019	2020
Targets	N/A	61.0%	61.6%%	62.3%

Actuals	60.9%	N/A	N/A	N/A

N/A not available.

DOT's strategies to accomplish this priority goal include the following:

FHWA will encourage and help State DOTs and metropolitan planning organizations (MPOs) implement the Transportation Performance Management (TPM) and Asset Management approach to strengthen their investment decision-making, while enhancing program accountability to Congress and the public for the expenditure of tax dollars. Through the National Highway Performance Program, FHWA will:

- Help raise State DOT proficiency levels in the core competencies of performance management;
- Work on-site with partner agencies to facilitate and assist in implementing new regulatory requirements;
- Develop new capabilities to support improvements in data quality, data analysis, and investment planning; and
- Communicate progress, outcomes, and National stories to the public on transportation performance.

FHWA will continue to raise awareness of proven strategies, such as performance-based practical design, and the use of preservation techniques to cost-effectively extend the service life of transportation assets that could further improve investment decision-making.

FY 2018 Progress Update

The percentage of travel on NHS pavement rated good or very good increased from 59.6 percent in 2016 to 60.9 percent in 2017. FHWA developed and delivered a training course through the National Highway Institute on the requirements for the new pavement condition measures. FHWA delivered webinars and workshops with State DOTs throughout the year to showcase best practices and to discuss the new requirements.

In FY 2018, FHWA set aside funds in five states that exceeded the 10 percent threshold for of NHS bridge deck area in poor condition. The Agency held four regional bridge management peer exchanges with State DOTs. The percentage of States with National Bridge Inspection System (NBIS) bridge load rating compliance metric assessed as satisfactory is a supporting measure that indicates progress in maintaining an appropriate level of safety for the traveling public. At the end of June 2018, 58 percent of the States were in satisfactory compliance, which is the highest percentage during the past three years. While the percentage of NHS bridges in poor condition declined from 8.3 percent in 2010 to 4.5 percent in 2018, 4,780 bridges on the NHS are still classified as in poor condition.

APG: Maintain Good Runway Condition (FAA)

Metric: Percentage of Runways in FAA's National Plan of Integrated Airport Systems in Excellent, Good, or Fair Condition	2017	2018	2019	2020
Targets	93%	93%	93%	93%
Actuals	97.7%	97.9%	N/A	N/A

N/A not available.

Description

Assessing runway pavement condition is accomplished through both scheduled and surveillance safety inspections at airports. FAA's strategies to accomplish this priority goal include the following:

- Collect safety and pavement condition data under a contract program to inspect non-certificated public use airports every three years.
- Maintain a five-year, forward-looking analysis of airport capital requirements that includes runway rehabilitation requirements, published in the biennial National Plan of Integrated Airport Systems report.
- Enforce requirements to have pavement preventive maintenance programs at Federally obligated airports.

FY 2018 Progress Update

FAA reviewed airport capital requirements and ensured that adequate funds were allocated toward maintaining runways in National Plan of Integrated Airport Systems in excellent, good or fair condition. The actual percentage of runways maintained in such condition was 97.9 percent, as noted above.

APG: Monitor Condition and Performance of Transit Systems (FTA)

Metric: State of Good Repair Backlog (current-year dollars)	2016	2017	2018	2019	2020
Targets	$94 billion	$105 billion	$109 billion	N/A	N/A
Actuals	$85.9 billion*	N/A	N/A	N/A	N/A

** Latest data from FY 2015 Conditions and Performance Report.*

N/A not available.

Description

FTA monitors and reports on the transit State of Good Repair backlog. FTA's State of Good Repair goals are to maintain reliable, efficient, and safe service. To mitigate funding gaps, maintain service levels, and ensure safety, FTA has employed several strategies to manage transit funding needs. FTA's strategies to accomplish this priority goal include the following:

- Implement the National Transit Asset Management (TAM)[29] system, including agency asset management plans and state of good repair performance targets.
- Provide TAM technical assistance for grantees.
- Transmit the Conditions & Performance Report to Congress, with new State of Good Repair backlog funding estimates.
- Implement the State of Good Repair Formula Grant Program.

FY 2018 Progress Update

In FY 2018, FTA continued managing its portfolio of grants and obligating remaining available funds from its backlog to support state of good repair investments. This grant portfolio management includes providing technical assistance to grantees that were establishing performance targets and finalizing transit asset management plans prior to the October 1, 2018 deadline.

FTA published its TAM rule on July 1, 2016. In September 2017, FTA opened the expanded asset inventory module for the National Transit Database online reporting system and is currently expanding the State of Good Repair data collection, which will be available in September 2019. At that time, FTA will establish new targets for this measure based on more timely available data.

APG Leads

- FAA: Kirk Shaffer, Associate Administrator for Airports
- FAA: Winsome Lenfert, Deputy Associate Administrator for Airports
- FHWA: Brandye L. Hendrickson, Deputy Administrator
- FTA: Robert J. Tuccillo, Associate Administrator for Budget and Policy

[29] TAM is a model that prioritizes funding based on the condition and maintenance of transit assets, such as vehicles, equipment, and facilities. Under the TAM plan, a transit agency should consider the results of its condition assessments while performing safety risk management and safety assurance activities. TAM plans must include at a minimum an asset inventory, condition assessments of inventoried assets, and a prioritized list of investments to improve the State of Good Repair of their capital assets.

Infrastructure Objective 3: System Operations and Performance

This strategic objective is about enhancing reliable and efficient movement of people and goods by promoting effective management and ensuring leadership in securing data and in sharing information across the transportation system.

Infrastructure Objective 3: System Operations and Performance	
Performance Goals	Decrease Average Wait Time (FAA)
	Maintain Airport Capacity (FAA)
	Increase the Integration of Drones into the Airspace without Sacrificing Safety (FAA)
	Advance the Operation of Drones through the UAS Integration Pilot Program (IPP) (FAA)
	Alleviate Urban Congestion (FHWA)
	Improve Passenger Rail (On-Time) Performance (FRA)
	Provide Sustainment Sealift Capacity to the U.S. Armed Forces (MARAD)

Performance Goals and Metrics: System Operations and Performance

Performance Goal: Decrease Average Wait Time (FAA)

Metric: NAS On-Time Arrival at Core Airports	2017	2018	2019	2020
Targets	88%	88%	88%	88%
Actuals	91.25%	89.80%	N/A	N/A

N/A not available.

Description

National Airspace (NAS) commercial flight on-time arrival performance is measured using the ratio of A) the number of flights arriving on or before 15 minutes of flight plan arrival time divided and B) the total number of completed flights for the core airports. This calculation uses the latest carrier flight plan filed with the FAA and excludes minutes of delay attributed by air carriers to extreme weather, carrier action, security delay, and prorated minutes for late arriving flights at the departure airport as defined by DOT Airline Service Quality Performance. (Core airports are the Nation's 30 busiest airports. Each airport has one percent or more of total U.S. passenger enplanements or handles 0.75 percent or more of total U.S. non-military flights.)

FY 2018 Progress Update

The NAS on-time arrival rate in FY 2018 was 89.80 percent, which is better than the FY 2018 target of 88 percent. The agency continues to improve the processes of planning and tactically managing traffic, which results in more accurate arrival time estimates. This has enabled NAS on-time arrival goals to be achieved for the past four fiscal years.

Performance Goal: Maintain Airport Capacity (FAA)

Metric: Average Daily Capacity of Arrivals and Departures at Core Airports	2017	2018	2019	2020
Targets	N/A	59,136	59,303	Maintain
Actuals	60,492	60,448	N/A	N/A

N/A not available.

Description

Average daily capacity (ADC) is the sum of core airports' called arrivals and departure rates during reportable hours for each month divided by the number of days in the month. Called rates are determined by each airport facility and represent the number of arrivals and departures the facility can handle for each hour of each day. Reportable hours capture periods when at least 90 percent of an airport's operations take place. The overall ADC for the fiscal year is computed as the weighted sum of the monthly ADC values. Annual targets are set using historical trend data for the previous three years, information on upcoming construction impacts, and inputs from individual air traffic control facilities.

FY 2018 Progress Update

ADC in FY 2018 was 60,448, which is above the FY 2018 target of 59,136. To improve the accuracy of the capacity target, FAA has been identifying and strategically mitigating the impacts of capacity loss events earlier. The ADC goal has been met for the past six fiscal years.

Performance Goal: Increase the Integration of Drones into the Airspace without Sacrificing Safety (FAA)

Metric: Increase the Integration of Drones into the Airspace without Sacrificing Safety		2017	2018	2019	2020
Average Time for Processing Part 107 UAS Airspace authorizations	Targets	N/A	72 days	N/A	N/A
	Actuals	85 days	50 days	N/A	N/A
Reduce the Time for Processing Both Manual and Automated Part 107 Authorizations	Targets	N/A	N/A	45 days	25 days
	Actuals	N/A	N/A	N/A	N/A
Reduce the Time for Processing Manual Part 107 Airspace Authorizations	Targets	N/A	N/A	86 days	50 days
	Actuals	N/A	N/A	N/A	N/A
Average Time for Processing UAS Part 107 Operational Waivers	Targets	N/A	50 days	45 days	40 days
	Actuals	50 days	21 days	N/A	N/A

N/A not available.

Description

Part 107 unmanned aircraft systems (UAS) airspace authorization processing time equals the average of the total number of processing days for Part 107.41 authorizations completed since the beginning of the fiscal year. Processing days are calculated as the number of days from when a Part 107.41 authorization is received to when it is responded to through either Low Altitude Airspace and Notification Capability (LAANC) or DroneZone. The response can be either an approval or a denial.

Part 107 UAS operational waiver processing time is the number of days between receipt of request and delivery of a response. The response can be either an approval or a denial.

FY 2018 Progress Update

The FAA set a goal of 72 days for the average time to process a Part 107 UAS Airspace Authorization by the end the Fiscal Year. The FAA exceeded that goal, and the average time to process a Part 107 UAS Airspace Authorization dropped to 50 days by the end of the Fiscal Year. This drop is largely credited to the deployment of LAANC.

With LAANC deployed to more facilities, there was a rapid drop in the average number of days to process an authorization. With LAANC, an operator can receive an authorization within seconds if requested, within the parameters of the Unmanned Aircraft System Facility Maps (UASFM), in contrast to the longer manual process. As FAA continues to encourage applicants to use LAANC where available, the FAA's resources were devoted to clearing the backlog of manual authorization requests, as LAANC can respond to short-term authorization requests more quickly.

The FY 2018 average time to process (approve or deny) Part 107 waivers was 21 days. As of September 30, 2018, the total number of waivers processed was 6,446 (121.5% of the prior year total). Processing time improvements were achieved though process improvement efforts at multiple levels. FAA created an Executive Review Board (ERB) to provide direction and guidance on risk tolerance regarding UAS operations and to approve complex waivers. To improve the quality of the applications received (reducing the number of requests for further information to process waivers that can lengthen processing times) the FAA is developing educational application assistance products, in coordination with industry, and placing them on the waiver application portal.

Performance Goal: Advance the Operation of Drones through the UAS Integration Pilot Program (IPP) (FAA)

Advance Drone Operations through the UAS IPP		2017	2018	2019	2020
Target 1: Issue Approval for a Part 135 Certificate **Due March 31, 2019**	Targets	N/A	N/A	1 Part 135 Certificate	N/A
	Actuals	N/A	N/A	N/A	N/A
Target 2: Demonstrate capability for advanced UAS operations by enabling 5 distinct Beyond Visual Line of Sight operations and 3 distinct Operations Over People operations **Due September 30, 2019**	Targets	N/A	N/A	5 BVLOS and 3 OOP Operations	N/A
	Actuals	N/A	N/A	N/A	N/A
Issue approval for an additional Part 135 certificate (two total for FY 2019) **September 30, 2019**	Targets	N/A	N/A	2 total Part 135 certificates	N/A
	Actuals	N/A	N/A	N/A	N/A

N/A not available.

Description

To launch the Unmanned Aircraft System Integration Pilot Program (UAS IPP), DOT and the FAA invited State, local, and tribal governments to submit applications to safely conduct advanced drone operations. The top 10 State, local, and tribal applicants were selected to be lead participants from a list of 149 applicants. With the help of many industry partners, these participants will enable innovation and engage with communities to help provide the FAA with important information that will drive policy decisions to help enable even more advanced operations. Through the 10 lead participants, the UAS IPP will further innovation in areas such as package delivery, infrastructure inspection, media, and disaster recovery efforts.

As part of the UAS IPPs FY 2019 efforts, the first UAS operator will undergo the process to operate under Title 14 of the Code of Federal Regulations (14 CFR) part 135 certificates. This critical step represents a major "first" in the path to full integration for unmanned aircraft. Simultaneously, other partners will demonstrate various capabilities for advanced UAS operations. Examples of these capabilities include pipeline inspections by unmanned aircraft and operations over people in support of disaster recovery. These demonstrations will inform future rules and procedures, and serve to inform future operators seeking to conduct these same types of operations.

FY 2018 Progress Update

On May 9, 2018, DOT selected 10 State, local and tribal governments to participate in the UAS IPP. DOT initiated the UAS IPP in response to a Presidential Memorandum issued on October 25, 2017.

Performance Goal: Alleviate Urban Congestion (FHWA)

Metric: Interstate Travel Time Reliability, as Percentage of Person-Miles Traveled that are Reliable	2018	2019	2020
Targets	83.7%	83.7%	83.7%
Actuals	83.5%*	N/A	N/A

**Preliminary data.*

N/A not available.

Description

FHWA Travel time reliability is a key indicator of transportation system performance. A DOT Final Rule effective January 2017 established a new measure—the percentage of person-miles traveled that are reliable—to monitor system performance on the Interstate system. The measure is based on travel time data from the National Performance Management Research Data Set. The first step in determining the measure is to calculate the level of travel time reliability, which is the ratio of longer travel times (i.e., the 80th percentile of the travel time distribution) to the normal travel time (i.e., 50th percentile) over the course of a year. The 80th percentile is roughly equivalent to the worst travel times for one day during a week of commuting times.

The next step is to determine if a segment, or length, of Interstate roadway is reliable or not based upon comparison of travel times for four different time periods (i.e., 6 a.m. to 10 a.m., 10 a.m. to 4 p.m., and 4 p.m. to 8 p.m. on weekdays, and 6 a.m. to 10 p.m. on weekends). If the level of travel time reliability is 1.50 or greater during any of the time periods, then the segment is deemed unreliable. This 1.5 threshold means that travel times are 50% longer than normal (e.g., 15 minutes instead of a 10-minute trip).

The final step is to calculate the percentage of person-miles traveled on the Interstate portion of the NHS that are reliable based on observed travel and estimates of vehicle occupancies. A higher percentage means that travel is more reliable.

State DOTs and MPOs will set targets for these measures. States targets are reviewed for significant progress towards target achievement biennially. The baseline measure for 2017 was calculated based on data submitted by State DOTs in June 2018. The percentage of person miles traveled on the Interstate system that was reliable was calculated to be 83.7 percent. The next update will be based on data to be submitted for 2018 by State DOTs in June 2019.

To achieve the goal of alleviating urban congestion, FHWA will:

- Demonstrate innovative practices that speed construction, thereby reducing traffic delays;
- Work with State and local partners to strengthen routine traffic operations and control practices, and proactively manage the transportation system during disruptions such as traffic incidents, work zones, adverse weather, special events, and emergency situations; and
- Help State and local partners investigate and implement ridesharing, parking demand management, and congestion pricing.

FY 2018 Progress Update

States continue to work on improving mobility performance measurement in work zones. Ohio DOT has put in place a systematic approach to work zone performance measurement that includes setting mobility thresholds (i.e., speed and queue length), work zone capacity standards, lane closure maps, use of probe data to monitor performance before/during construction, and bottleneck analysis. This approach helps with planning and designing work zones with reduced impacts as well as ensuring the desired performance during construction.

Twenty-one State DOTs are actively working with the National Weather Service to disseminate consistent weather-related hazards to travelers. Utah DOT has documented both a shift and reduction in traffic volumes in Salt Lake City under such circumstances to ease flow during evening peak periods.

Seventeen States now collect one or more Traffic Incident Management (TIM) performance measures on crash reports; and 55 public safety academies and technical colleges have incorporated the TIM 4-Hour responder curriculum in their instructional materials.

Performance Goal: Improve Passenger Rail (On-Time) Performance (FRA)

Metric: On-Time Performance for Shorter Distance Intercity Passenger Rail Corridors (FRA)		2017	2018	2019	2020
Northeast Corridor	Targets	N/A	84%	85%	86%
	Actuals	76.1%	79.0%	N/A	N/A
State Supported Routes	Targets	N/A	84%	85%	86%
	Actuals	80.7%	79.9%	N/A	N/A

N/A not available.

Description

On-time arrivals is one indicator of rail infrastructure performance. In FY 2019, Amtrak began reporting *customer on-time performance* (OTP)—the percentage of customers who arrive at their detraining stations on time—by merging ridership and train performance data. An Acela train is late when it arrives at a station more than 10 minutes after its scheduled time; a Northeast regional or state-supported train is late when it arrives more than 15 minutes after its scheduled time. For FY 2018 and earlier years, OTP is the percentage of total train arrivals on-time at each station, with every arrival weighted equally.

Improved delivery of capital projects to maintain and improve infrastructure, equipment, stations, and systems are essential for Amtrak to improve performance and reduce its reliance on future Federal funding. FRA will support improved passenger rail performance by continuing to oversee the delivery of Amtrak's capital program and operating initiatives.

FY 2018 Progress Update

On-time arrival performance of Amtrak trains on shorter distance corridors did not meet the FY 2018 targets. Performance improved on the Northeast Corridor (NEC) compared to FY 2017, when the New York Penn Station track reconstruction project at caused frequent delays and cancellations. However, additional Penn Station repair and maintenance work between January 2018 and May 2018 required cancellations and service changes. Nine of the 28 state-supported services exceeded 84 percent on-time performance, including several high-frequency trains (Capitol Corridor, Downeaster, NYC-Albany, Hiawatha, Keystone). Freight train interference delayed some state-supported trains, with host railroads citing higher traffic volumes as a cause.

FRA is implementing a range of activities to strengthen Amtrak's long-term operational capacity, reliability, and on-time performance. Federal grants to States and Amtrak have funded projects to improve operational performance. FRA also meets individually with Amtrak service line leadership and representatives of host freight railroads to identify service quality and delay issues and potential remedies. Implementation of enforceable metrics and standards, including host railroad on-time performance and delay minute measures, would also assist in improving on-time performance.

Performance Goal: Provide Sustainment Sealift Capacity to the U.S. Armed Forces (MARAD)

Metric: Increase the Number of U.S. Flag Vessels	2017	2018	2019	2020
Targets	N/A	81 vessels	82 vessels	83 vessels
Actuals	81 vessels	83 vessels	N/A	N/A

N/A not available.

Description

MARAD tracks the number of large, internationally trading, oceangoing commercial vessels operating under U.S. flag. U.S.-flagged vessels are crewed by skilled, qualified U.S. merchant mariners and are available and capable of meeting Department of Defense (DoD) requirements for sealift support during National contingency operations.

MARAD estimates that at least 125 large, internationally trading, U.S. flag commercial ships of 1,600 gross tons or higher are required to maintain a sufficient force of unlimited credentialed mariners to meet the Nation's sealift needs in a major contingency situation. This is 44 more internationally sailing ships than the 81 that were available in FY 2017. Moreover, the estimate of 125 required vessels does not take into consideration the loss of ships likely to occur in any major conflict of more than six months in duration.

Surge sealift[30] is provided by Federally owned and operated vessels, which includes MARAD's Ready Reserve Force and vessels operated by the Military Sealift Command. Sustainment sealift[31] is provided by large, oceangoing ships of the U.S. flag, international commercial fleet. These commercial vessels participate in MARAD's Voluntary Intermodal Sealift Agreement (VISA) program, which is a partnership between the U.S. Government and the maritime industry to provide commercial sealift and intermodal capacity (dry cargo ships, equipment, terminal facilities, and intermodal management services) to support emergency deployment and sustainment of U.S. military forces. Additionally, commercial ships in MARAD's Maritime Security Program (MSP) are required to participate in the VISA program. For MSP, MARAD is authorized to maintain a fleet of 60 U.S. flag, U.S.-crewed, internationally trading vessels available to meet contingency requirements. In addition to ships made available by participating carriers, MSP provides DoD assured access to the global intermodal facilities, services, and transport systems maintained by those carriers.

[30] Surge sealift is the initial movement of troops, equipment, and supplies to a designated location to satisfy time-critical war fighting requirements. Surge sealift is also provided by government-owned vessels to support for routine operations when commercial assets are not available or suitable.

[31] Sustainment sealift is needed to sustain troops, equipment and supplies during a potentially long-lasting conflict, while continuing operations elsewhere. This is almost exclusively obtained from the commercial market.

FY 2018 Progress Update

For FY 2018, MARAD reported 83 U.S. flag, internationally sailing vessels, exceeding the target of 81 ships. Of these 83 ships, all are enrolled in the VISA program, and 60 also participate in MSP. Adding two new vessels to the U.S. flag fleet in FY 2018 generated more than 80 additional jobs for U.S. merchant mariners and increased the sealift available to meet DoD contingency requirements by more than 130,000 square feet of militarily useful cargo space.

During FY 2018, MARAD engaged with senior U.S. flag carrier executives and the U.S. Transportation Command to discuss ways to increase the U.S. flag commercial fleet in international trade. MARAD is researching concepts aimed at achieving this. The agency is also working with the U.S. Coast Guard and U.S. flag carriers to identify ways to reduce the costs of registering and operating ships under U.S. versus foreign registry.

Infrastructure Objective 4: Economic Competitiveness and Workforce

This strategic objective is about promoting transportation policies and investments that bring lasting economic benefits to the Nation by:

- Ensuring multimodal infrastructure connectivity to foster efficient movement of people and goods at home and abroad;
- Increasing foreign market access and opportunities for American businesses and services; and
- Meeting the Nation's transportation workforce needs.

Infrastructure Objective 4: Economic Competitiveness and Workforce	
Performance Goals	Alleviate Freight Congestion (FHWA)
	Reduce Time to Issue Hazardous Materials Transportation Permits (PHMSA)
	Provide a Safe, Secure, Reliable, and Efficient U.S. Portion of the St. Lawrence Seaway to its Commercial Users (SLSDC)

Performance Goals and Metrics: Economic Competitiveness and Workforce

Performance Goal: Alleviate Freight Congestion (FHWA)

Metric: Interstate Truck Travel Time Reliability Index	2018	2019	2020
Targets	1.36	1.36	1.36
Actuals	1.36	N/A	N/A

N/A not available.

Description

The Truck Travel Time Reliability (TTTR) Index is a measure of average reliability for truck movement over the full extent of the Interstate system. The TTTR Index is calculated as the ratio of longer truck travel times (i.e., the 95th percentile) and normal truck travel times (i.e., 50th percentile) using truck GPS probe data from the National Performance Measurement Research Data Set. The TTTR Index is measured for five different time periods during the day (i.e., AM peak, mid-day, PM peak, overnight, and weekends). The TTTR is averaged over the full extent of the Interstate system to determine a national TTTR Index.

A higher TTTR Index, such as 1.8, indicates there is large variation in travel times from day-to-day, making the system unreliable. A lower TTTR Index, such as 1.05, indicates travel times are more consistent or predictable from day-to-day, making the system reliable. This measure gives an indication of freight reliability, which is critical to industry for ensuring on-time deliveries. State DOTs and MPOs will set targets for these measures. States targets are reviewed for significant progress towards target achievement biennially. The baseline measure for 2017 was calculated based on data submitted by State DOTs in June 2018. The national TTRI Index was calculated to be 1.36. The next update will be based on data to be submitted for 2018 by State DOTs in June 2019.

In many cases, the value of reliability is more important to freight than the value of time. Manufacturers rely on just in time[32] and lean manufacturing practices[33] to maximize efficiency. However, this requires time-certain delivery targets to provide the right material, at the right time, at the right place, and in the exact amount needed in the production cycle. If a truck can't make a delivery to a manufacturer or supplier due to unexpected traffic delays, this can have a costly ripple effect on production. Other common shipments that require a high degree of on-

[32] Just in time (JIT) manufacturing is a workflow methodology aimed at reducing flow times within production systems, as well as response times from suppliers and to customers. JIT manufacturing helps organizations control variability in their processes, allowing them to increase productivity while lowering costs.

[33] Lean manufacturing practices refers to the application of Lean practices, principles, and tools to eliminate waste, optimize processes, cut costs, and boost innovation in a volatile market.

time performance include expedited or high-value shipments, perishable products, and cargo that needs to be transferred to another mode.

To achieve the goal of alleviating freight congestion, FHWA will:

- Seek to improve the institutional capability and business processes of public agency partners so they can more effective manage their systems. Enhancing operational roles and responsibilities ensures greater ability to effectively use resources to address both recurring traffic problems as well as system disruptions due to incidents, work zones, or adverse weather over the long-term.
- Work with States to complete statewide freight plans before they can obligate funding on the National Highway Freight Network (NHFN) as well as designate critical urban and rural freight corridors. Many State DOTs, in coordination with FHWA, industry, and other stakeholders have established state freight advisory committees to discuss these important issues, coordinate, and identify freight infrastructure needs and investments.

FY 2018 Progress Update

The measure of reliability in 2018, which was the Freight Buffer Index along the top 25 domestic freight corridors, increased by five percent when compared to the same quarter in 2017 due to factors such as construction, weather, and passenger volumes.

The number of States that manage a Freight Advisory Committee, encouraged under the FAST Act, increased from 35 in FY 2017 to 37 in FY 2018.

FHWA published a Truck Freight Bottleneck Reporting Guidebook to assist States with reporting required as part of Transportation Performance Management (TPM), State freight plans, and identification of critical freight transportation improvements. In addition, the Agency updated the course titled Integrating Freight into the Transportation Decision-Making Process that included recommended steps for engaging the private sector in the freight-planning process.

Performance Goal: Reduce Time to Issue Hazardous Materials Transportation Permits (PHMSA)

Metric: Hazardous Materials Special Permit Applications Average Number of Days to Resolution	2017	2018	2019	2020
Targets	N/A	120	115	110
Actuals	120	92 (p)	N/A	N/A

(p) preliminary.

N/A not available.

Description

PHMSA is committed to facilitating the use of innovative safety products and methods and responding quickly to assistance requests by approving special permit applications from hazardous materials shippers and packagers. PHMSA has the primary responsibility for issuing DOT special permits and approvals for the Hazardous Materials Regulations (HMR). Special permits authorize a person to perform a function outside of PHMSA regulations or to not perform a function currently required under the PHMSA regulations. Federal hazardous materials transportation law authorizes PHMSA to issue such variances in a way that achieves a safety level that is at least equal to the safety level required under the law or is consistent with the public interest if a required safety level does not exist.

Each year, PHMSA processes thousands of special permit applications, ranging widely in scope and complexity. For example, in FY 2018, PHMSA issued a special permit to the National Aeronautics and Space Administration (NASA) for transportation of a titanium, non-DOT specification cylinder that contained pressurized nitrogen for installation in the Seeker spacecraft. The spacecraft is important for the International Space Station program. In another example, PHMSA coordinated with representatives of the Special Olympics, Etihad Airways, and the Federal Aviation Administration to ensure the approval of a special permit application to transport the Special Olympics flame from Dulles to Dubai.

PHMSA measures its success by reducing the number of days to render a decision that ultimately brings products to market safely and efficiently.

FY 2018 Progress Update

In FY 2018, PHMSA met its annual target for average number of days to resolve a new hazardous materials special permit application. PHMSA continues to improve the online application tool for special permits and works closely with each of its modal partners so that special permit processing is efficient and supports safety. PHMSA also initiated a rulemaking to incorporate long-standing special permits into the regulations; this action will further reduce the administrative burden on industry and the government.

Performance Goal: Provide a Safe, Reliable, and Efficient U.S. Portion of the St. Lawrence Seaway to its Commercial Users (SLSDC)

Metric: Percentage of Time the U.S. Portion of the St. Lawrence Seaway is Available to Commercial Users	2016	2017	2018	2019	2020
Targets	99%	99%	99%	99%	99%
Actuals	99.7%	98.7%	96.2%	N/A	N/A

N/A not available.

Description

The St. Lawrence Seaway Development Corporation (SLSDC) operates and maintains the U.S. infrastructure and waters of the St. Lawrence Seaway, while performing trade development focused on driving economic activity for the Great Lakes St. Lawrence Seaway System. SLSDC improves its system reliability by providing safer and more efficient vessel traffic control and passage through the U.S. locks and waters. SLSDC works to ensure the U.S. portion of the St. Lawrence Seaway remains safe, reliable, and efficient for its commercial users by engaging in the following activities:

- Maintaining, rehabilitating, and modernizing U.S. Seaway infrastructure;
- Performing safety inspections and ballast water examination of all foreign-flag vessels;
- Continuing close coordination and involvement with the Canadian St. Lawrence Seaway Management Corporation in all aspects of Seaway operations; and
- Utilizing and enhancing technology to more efficiently manage vessel traffic control and lock transits.

FY 2018 Progress Update

The system reliability rate for the U.S. portion of the St. Lawrence Seaway in FY 2018 was 96.2 percent, missing the annual goal by 3.8 percent. Obstacles include weather, vessel, and lock-related delays. Total delays in FY 2018 were 258 hours, 23 minutes.

Weather accounted for 87 percent (224 hours) of total system delays. More than 166 hours of these weather delays were in early January 2018 when a bulk carrier, while transiting outbound into the SLSDC's Snell Lock, became immobilized in ice while partially in the lock chamber. SLSDC operations, maintenance, and marine crews worked around-the-clock for several days in severe winter weather conditions, ultimately using pressurized steam to successfully dislodge the ship from the ice on January 6, 2018. This incident adversely impacted the system reliability rate by 2.5 percent.

The SLSDC has the most control over the proper functioning of its two locks in Massena, N.Y. The SLSDC's lock availability rate, a subset of the system reliability rate, was 99.93 percent (7 hours, 20 minutes) in FY 2018, or three percent of total system delays.

Strategic Goal 3: Innovation

Innovative technologies and practices are key drivers for improving the safety and performance of the Nation's transportation system. To achieve the Innovation goal, DOT will:

- Support the development and deployment of innovative technologies by investing in targeted research, facilitating coordination and information sharing, and partnering with industry and other stakeholders (academia, State, local, and tribal governments);
- Assess existing regulatory approaches to address potential barriers; and
- Provide opportunities to expedite the testing and adoption of these beneficial technologies.

DOT is committed to improving areas within its R&D operations and accomplish more with less.

This goal aligns with the President's Management Agenda CAP Goal 14, Improve Transfer of Federally-Funded Technologies from Lab-to-Market. According to this CAP Goal, agencies should, "develop and implement stakeholder-informed action plans, which may include improved Federal practices and policies, regulatory reform, and legislative proposals; increase interactions with private-sector experts; identify, share, and adopt best practices for technology transfer; and increase the transfer of Federally funded innovations from lab to market."

DOT's innovation metrics support a continuous improvement model for Research & Development (R&D) and Technology Transfer (T2), develop more synergistic and effective processes for interaction within DOT programs and leadership, and help increase the opportunities for quantifying the impact of DOT R&D investment.

DOT has established a cross-agency working group to support the Department's strategic goal to quickly and effectively deploy innovative transportation technologies. The group focuses on creating guidance materials and developing processes to track and evaluate research-related performance metrics. The working group will also support technology research and deployment evaluations that align with the Foundations for Evidence-Based Policy Making Act of 2018 requirements. These evaluation activities are intended to help identify both areas for improvement and the societal benefits related to deploying innovative technologies. These benefits will be tracked through the publication of relevant success stories.

DOT's innovative technology research and deployment guidance activities focus on maximizing return on investment (public value). Such guidance applies to all modal R&D programs.

Innovation Objective 1: Development of Innovation

This strategic objective is to encourage, coordinate, facilitate, and foster world class research and development to enhance the safety, security, and performance of the Nation's transportation system.

DOT will bolster its commitment to fostering world class, innovative research during the development of its research-related products by encouraging collaboration with external stakeholders, including the private sector and academia. Through such stakeholder engagement, DOT will remain at the forefront of anticipating emerging trends, executing projects with strong potential impacts, and cultivating an innovation-centered research culture.

Innovation Objective 1: Development of Innovation	
Performance Goals	Increase the Development of Innovations in Transportation (DOT)

Performance Goals and Metrics: Development of Innovation

Performance Goal: Increase the Development of Innovations in Transportation

Metric: Increase the Development of Innovations in Transportation		2018	2019	2020
Research Laboratory Utilization Rates	Targets	Increase	Increase	Increase
	Actuals	85%	N/A	N/A
Research Outcomes Made Publicly Available in Research Hub	Targets	N/A	Baseline	Increase
	Actuals	N/A	N/A	N/A
Technical Reports Made Publicly Available In The National Transportation Library	Targets	N/A	Baseline	Increase
	Actuals	N/A	N/A	N/A

N/A not available.

Description

DOT features an array of laboratories that engage in advanced transportation research[34]:

- FAA's William J. Hughes Technical Center;
- FHWA's Turner-Fairbank Highway Research Center;
- Office of the Assistant Secretary for Research and Technology's (OST-R) John A. Volpe National Transportation Systems Center; and
- FRA's Transportation Technology Center.

In addition, DOT provides funding to research facilities at a variety of University Transportation Centers. To cultivate innovative transportation technologies, DOT will assess usage of its research facilities, identify barriers that hinder such utilization, and implement measures to increase usage of these facilities.

DOT is committed to increasing the efficiency and influence of its research investments by collaborating with external stakeholders early in the R&D process. DOT plans to increase the utility and overall pace of transportation innovation by making R&D activities and results easy to locate. Increasing accessibility and utilization rates may increase the impact of societal benefits attributed to DOT's R&D investments. DOT plans to increase the visibility of its research results

[34] DOT also conducts research at the Vehicle Research and Test Center, where it rents space.

with stakeholders by connecting them to the National Transportation Library[35] and the DOT Research Hub[36].

This will enhance cross-modal collaboration between DOT and external stakeholders and provide a full view of the Department's research portfolio to transportation researchers around the world. DOT has just begun working on these metrics (FY 2018, baseline).

FY 2018 Progress Update

DOT senior leadership has established and implemented R&D review processes. The processes require all OAs to assess research laboratory utilization and to centralize past and current R&D activities in one location that is accessible to the public. OST-R is monitoring progress through quarterly review briefings between leadership officials across DOT.

The utilization rate for the DOT laboratories was approximately 85 percent in FY 2018[37]. DOT will continue to analyze factors that influence lab use rates and identify opportunities for increased collaboration between DOT and its stakeholders. For example, DOT labs will continue to establish user-facility agreements for the public and private sectors to leverage and use (subject to DOT approval). Starting in FY 2019, DOT R&D leadership began visiting its labs to identify opportunities for more cross-modal collaboration.

DOT's National Transportation Library (a part of the Bureau of Transportation Statistics) is almost finished with its migration to a new platform and has begun to transition over 55,000 transportation-related publications. Since the transition is still in process, NTL continues to add documents and new material that will be made available for all to access and use. FY 2019 will serve as the baseline year. An upgrade to DOT's Research Hub was under development during FY 2018 and will use FY 2019 as the baseline year.

Changing cataloging requirements caused the number of FHWA-produced publications uploaded to the National Transportation Library to decrease by 73 percent, from 286 in FY 2017 to 78 in FY 2018. However, there were 265,892 document downloads from the FHWA collection between January and September 2018 in the Repository and Open Science Access Portal.

[35] The National Transportation Library: (1) provides National and international access to transportation information; (2) coordinates information creation and dissemination; and (3) offers reference services for the transportation community.

[36] The DOT Research Hub is a web-based, searchable database of DOT-sponsored research, development, and technology project records. The database acts as a central repository for information on active and recently completed projects from DOT's OAs, providing a comprehensive account of the Department's research portfolio at the project level.

[37] The utilization rate is defined as the average of all labs' utility rates, which was assessed from data collected through self-assessments which were completed by all labs.

Innovation Objective 2: Deployment of Innovation

This strategic objective is about seeking to accelerate and expand the deployment of new technologies and innovative practices by reducing barriers and actively promoting transportation innovations that enhance the safety and performance of the Nation's transportation system.

To accelerate and expand the deployment of DOT-sponsored innovative technologies, the Department will focus on ease-of-use of the National Transportation Library to foster the dissemination of DOT research reports. In addition, DOT will encourage technology transfer by developing new stipulations for agency partners that carry out DOT funded R&D activities.

Innovation Objective 2: Deployment of Innovation	
Performance Goals	Increase Effectiveness of Technology Transfer (DOT)
	Improve NextGen Rollout/Northeast Corridor Returning Benefits (FAA)
	Major System Investment (FAA)
	Monitor Adoption of Self Driving Vehicles (NHTSA)

Performance Goals and Metrics: Deployment of Innovation Performance

Performance Goal: Increase Effectiveness of Technology Transfer (OST)

Metric: Increase Effectiveness of Technology Transfer		2018	2019	2020
Technologies Toward Implementation (Pilots and Demonstrations)	Targets	N/A	N/A	N/A
	Actuals	N/A	Baseline	Increase
Success Stories (Evidence of Societal Benefits)	Targets	10	13	15
	Actuals	12	N/A	N/A

N/A not available.

Description

In accordance with CAP Goal 14, Improve Transfer of Federally-Funded Technologies from Lab-to-Market, the Department's internal working group will develop guidance documents to help agencies, "develop and implement stakeholder-informed action plans, which may include improved Federal practices and policies, regulatory reform, and legislative proposals; increase interactions with private sector experts; identify, share, and adopt best practices for technology transfer; and increase the transfer of Federally funded innovations from lab to market."

DOT will leverage resources as well as coordinate and partner with technology deployment experts within the OAs and outside the Department. Additionally, DOT will condition the awarding of funds for relevant R&D-funded agreements and deployment partnerships on steps that transfer technology. DOT's T2 activities will focus on establishing a collaborative platform

between internal and external stakeholders. The Department will also research how to develop T2 practices that are useful for stakeholders as well as how to best facilitate the adoption and implementation of innovative technology.

DOT will also increase T2 awareness through Departmental representation with stakeholders. This will foster research through stakeholder coordination, knowledge transfer, and information dissemination, which will in turn lead to the practical application of research through pilots, demonstrations, and related activities. Tracking these activities will yield data and stories describing societal benefits realized throughout the transportation community.

FY 2018 Progress Update

In FY 2018, DOT established a technology transfer working group. The group will scan the Department's current T2 activities and identify ways to align them with R&D activities. For example, DOT is researching how it may require deliverables within R&D-funded agreements that address the transfer of their research results. DOT would require the funding recipients to deliver information on identified and engaged stakeholders along with anticipated outcomes. These activities align R&D and T2 to work in parallel instead of in series as is traditionally the case and facilitate T2 discussions at the beginning of R&D operations. T2 discussions support all types of results, not only those protected by patents. OST-R is monitoring progress through quarterly review briefings between leadership officials across DOT.

During FY 2018, the Department also worked with its internal stakeholders to identify how to track success stories, and it is currently reviewing and analyzing the information. The number of success stories for FY 2018 will be reported in FY 2019. DOT has implemented a process to track its T2 activities on a quarterly basis to streamline the data collection that will help DOT describe the impact its R&D investments are making. FY 2019 will serve as the baseline year.

Performance Goal: Complete Annual NextGen Advisory Committee Recommendations for Northeast Corridor (FAA)

Metric: Percentage of NextGen Projects Completed On-Time and On Budget *	2017	2018	2019	2020
Targets	90%	90%	90%	90%
Actuals	92%	91.3	N/A	N/A

** On-time and on budget for each project means completing the schedule within 10 percent of the baseline completion date and completing the program within 10 percent of the total cost baseline established for the program in the acquisition program baseline.*

N/A not available.

Description

The Next Generation Air Transportation System (NextGen) is an ongoing modernization project of the United States' National Airspace System (NAS). Its performance milestones are based on the overall series of related programs and activities the FAA is executing, which are designed to focus on implementing improvements that industry indicates are high priorities. The FAA and industry monitor progress against these commitments through the NextGen Advisory Committee (NAC). For example, the Northeast Corridor (NEC) was added in 2017 as a focus area for the region from Washington, D.C., to Boston, Massachusetts, including Philadelphia, Pennsylvania. The NEC is focused on returning benefits in the areas of efficiency, capacity, deconfliction, increased access, and reduced separation.

FY 2018 Progress Update

FAA exceeded its FY 2018 goal by completing 91.3 percent of NAC recommendations for the Northeast Corridor. Specifically, FAA made major progress on the following NextGen projects:

- The FAA completed deployment of DataComm services at 62 airports. In addition, the FAA began the roll out of DataComm services in high-altitude airspace, starting functional testing at Indianapolis, Kansas City, and Memphis air route traffic control centers. This functional testing is proceeding as planned.
- Time-Based Flow Management[38] completed the most recent Integrated Departure and Arrival Capability implementation at Oakland Center and associated towers.
- In FY 2018, the FAA completed delivery and installation of five test and support systems at the FAA's William J. Hughes Technical Center and one operational system in Phoenix to prepare for operational testing of Terminal Flight Data Manager.

[38] Time-Based Flow Management, predicts what time all the flights will get to the point in the air where they start to make their descent to the airport about an hour before they get there. Click on link above for more information.

Performance Goal: Major System Investment (FAA)

Metric: Percentage of Major System Investments Completed On-Time and On Budget *	2017	2018	2019	2020
Targets	90%	90%	90%	90%
Actuals	95.2%	90.5%	N/A	N/A

**On-time and on budget for each project means completing the schedule within 10 percent of the baseline completion date and completing the program within 10 percent of the total cost baseline established for the program in the acquisition program baseline.*

N/A not available.

Description

FAA's goal is 90 percent of major baselined acquisition programs must be maintained within 10 percent of their current acquisition cost, schedule, and performance baseline as of the end of FY 2019. Programs classified as acquisition categories 1, 2, or 3, considered strategic, or part of NextGen are considered "major" programs and included in this measure. For FY 2019, 20 major acquisition programs will be tracked and monitored. By law, FAA must consider termination of a program when it is breaching its cost, schedule, or performance goals by more than 10 percent.

FY 2018 Progress Update

In FY 2018, the FAA completed the year with 19 of 21 programs (90.5 percent) within 10 percent of their cost, schedule, and performance baselines.

Performance Goal: Monitor Adoption of Self Driving Vehicles (NHTSA)

Metric: Deployment of Automated Driving Systems	2017	2018	2019	2020
Targets	N/A	This measure will be monitored from 2018-2019		
Actuals	N/A	Data will be reported as it becomes available		

N/A not available.

Description

Automated Driving Systems (ADS) offer tremendous potential to reduce vehicle crashes, injuries, and fatalities. However, the pace and nature of the technological change required to reach the highest levels of automation will require a new oversight paradigm compared to the more traditional methods used for introducing new safety technology in vehicles. Part of that change process will include being more nimble and flexible in developing new policies and procedures for automakers to help facilitate the safe deployment of ADS. Vehicle technology in this era is developing at a faster pace than any time in history. NHTSA has been at the forefront of National efforts to promote the safe introduction of ADS through research, stakeholder engagement, and industry guidance.

NHTSA continues to implement an ambitious vehicle research plan to accelerate the potential benefits of ADS. This includes in-vehicle technologies, such as automatic emergency braking, the use of radar, cameras and navigation, as well as communications between vehicles. At the same time, NHTSA works to ensure that automakers and other entities developing ADS maintain the highest safety levels of cybersecurity and other safety-critical systems. Ongoing vehicle research efforts focus on human factors and human-machine interface, functional safety of safety-critical automotive systems, including cybersecurity, occupant protection in non-standard seating configurations, and system performance requirements. Maintaining an active dialogue with stakeholders (both traditional industry organizations as well as non-traditional ones) such as disability rights advocacy groups, is an essential and ongoing part of this research and development process.

FY 2018 Progress Update

NHTSA held a public listening session in March 2018 to identify regulatory barriers in the Federal Motor Vehicle Safety Standards to the testing, compliance certification, and verification of motor vehicles with ADS. This effort, along with other meetings and events with the auto industry and other entities, supported the development of a new guidance document, Automated Vehicles 3.0: Preparing for the Future of Transportation, released in October 2018. Additionally, NHTSA announced the ADS pilot, a preliminary step that seeks public comment on a National pilot research program to help safely test and deploy ADS-equipped vehicles.[39]

[39] Docket No. NHTSA-2018-0092.

FHWA supported development of the concept of operations for the Cooperative Automation Research Mobility Applications (CARMA) platform to incorporate and address four sets of use cases – basic travel, traffic incident management, weather management, and work zone management – that will serve as a basis for roadway automation integration. CARMA enables Automated Driving Systems (ADS) to facilitate cooperative tactical maneuvers with other vehicles and roadway infrastructure though communication.

FHWA also completed six national workshops to commence a national dialogue on highway automation to understand stakeholder and industry perspectives and issues associated with the readiness of the nation's roadway network for safe and sustainable integration of ADS and automated vehicles.

Strategic Goal 4: Accountability

In accordance with CAP Goal 6, Shifting from Low-Value to High-Value Work, DOT seeks to improve the efficiency, effectiveness, and accountability of the Department by reducing low-value, obsolete, or duplicative regulations and other requirements, thus streamlining and improving coordination of business processes. DOT will be open and transparent, demonstrating to the public how the Department is furthering its strategic goals and objectives and effectively using its statutory and administrative authorities.

Accountability Objective 1: Regulatory Reform

This strategic objective is about reducing current regulatory burdens and bureaucracy to ensure a safe, efficient, accessible, and convenient transportation system for people and commerce.

Accountability Objective 1: Regulatory Reform	
APG	Reduce the Regulatory Burden on the Transportation Industry and Public While Still Achieving Safety Standards (Department-wide)

APG: Control Regulatory Burden by Complying with Executive Orders to Reduce Number and Economic Impact of Regulations

***APG Goal Statement**: DOT will implement regulatory reform initiatives by evaluating existing regulations in order to lower regulatory burdens on industry and the public. In conjunction with the release of the agency's Fall Unified Agenda of Federal Regulatory and Deregulatory Actions, the Department will implement a regulatory reform agenda through the end of FY 2019, focusing specifically on providing for two deregulatory actions for every new regulatory action proposed and achieving a total incremental cost of all deregulatory and significant regulatory actions of less than -$35 million per year for FY 2018.*

Background

Regulatory improvement is a continuous focus for the Department. There should be no more regulations than necessary, and those regulations should be straightforward, clear, and designed to minimize burdens. Our regulations should be designed to achieve the regulatory goal (e.g., safety) and that goal should be achieved with the least amount of burden. Generally, economic burden of a regulation refers to the resources needed to comply with the regulation and is measured by calculating compliance costs (i.e., the resources regulated entities must expend as a result of the regulation). Once issued, regulations and other agency actions should be reviewed periodically and revised to ensure they remain both cost-effective and cost-justified, and continue to meet the needs for which they originally were designed. Among other actions to achieve these goals, the President issued Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs.

The Office of Management and Budget (OMB) issued guidance on implementing this executive order, and DOT has established the Regulatory Reform Task Force to evaluate existing regulations and make recommendations to the Secretary regarding their repeal, replacement, or modification. Other activities to reduce regulatory burdens also fit into this area, such as the review required by Executive Order 13783, *Promoting Energy Independence and Economic Growth*, and the subsequent burden-reducing efforts that will result from the review.

Baseline/Trends: Regulations and Rulemaking

The Department will implement a regulatory reform agenda through the end of FY 2019, focusing specifically on providing two deregulatory actions for every new regulatory action proposed and achieving a total incremental cost for all deregulatory and significant regulatory actions of less than -$140 million per year for FY 2019.

APG and Metrics: Regulatory Reform

APG: Reduce the Regulatory Burden on the Transportation Industry and Public While Still Achieving Safety Standards (Department-wide)

		2018	2019	2020
Metric: Compliance with Executive Order to Reduce Two Regulations for Each New Regulation (Ratio)	Targets	2:1	2:1	2:1
	Actuals	23:1	N/A	N/A
Metric: Reduce the Economic Impact of Regulations *	Targets	-$35 million	-$140 million	N/A
	Actuals	-$86.2 million	N/A	N/A

N/A not available.

**Expressed in terms of total cost savings (annualized, adjusted at a 7 percent discount rate).*

Description

To accomplish this priority goal, the Department sought input from the public on existing regulations and other agency actions that are good candidates for repeal, replacement, or modification. Recognizing that safety is the Department's highest priority, the Department sought comments on those existing regulations and other agency actions that may be repealed, replaced, or modified without compromising safety. The public was encouraged to identify regulations that (a) eliminate jobs or inhibit job creation; (b) are outdated, unnecessary, or ineffective; (c) impose costs that exceed benefits; (d) create a serious inconsistency or otherwise interfere with regulatory reform initiatives and policies; (e) could be revised to use performance standards in lieu of design standards; or (f) potentially burden the development or use of domestically produced energy resources.

FY 2018 Progress Update

The Department met its FY 2018 goal by issuing 23 deregulatory rules and 1 significant regulatory rule in FY 2018. These actions resulted in net annualized cost savings of $86.2 million. Final numbers on the Department's deregulatory rulemakings and cost-saving actions for FY 2018 are published in the Fall Unified Agenda found on www.reginfo.gov**.**

APG Lead

- OST: James Owens, Deputy General Counsel

Accountability Objective 2: Mission Efficiency and Support

The following metrics track the Department's progress in executing changes to improve the effectiveness of our programs and the cyber posture of the Department.

Accountability Objective 2: Mission Efficiency and Support	
Performance Goals	Improve IT Project Performance (OST)
	Consolidate Data Centers (OST)
	Improve DOT's Cyber Security (OST)
	Decrease Improper Payments (OST)
	Improve Effectiveness and Efficiency of Support Services (OST)
	Increase Use of Best in Class Contracts (OST)
	Increase Facility Consolidation (OST)
	Reduce the Number of Unessential Federal Advisory Committees (OST)

Performance Goals and Metrics: Mission Efficiency and Support

Performance Goal: Improve IT Project Performance (OST)

Metric: Percentage of Major IT Projects Within 10 Percent of Projected Costs and Meeting Incremental Development Targets	2018	2019	2020
Targets	25%	50%	75%
Actuals	83%	77%	N/A

N/A not available.

Description

Capital Planning and Investment Control (CPIC) is a systematic approach to selecting, managing, and evaluating information technology investments. DOT's CPIC teams across the OAs submit incremental development data as part of the monthly submission to the Federal Information Technology (IT) Dashboard[40]. Progress is captured quarterly as part of the OMB's Integrated Data Call, and the Office of the Chief Information Officer (OCIO) works with the teams to support reporting and assess whether major IT investments in the modes are hitting these targets.

[40] Through the IT Dashboard, Federal agencies and the public have the ability to view details of Federal information technology (IT) investments online and to track their progress over time.

FY 2018 Progress Update

DOT's efforts to improve cost and schedule performance for major IT investments that use an incremental development approach is ahead of schedule, at 83% for FY 2018. Increased adoption of agile methodologies that yield value in six month increments is helping to improve adherence to cost and schedule for DOT's selected major IT investments.

Performance Goal: Consolidate Data Centers (OST)

Metric: Percentage of Data Centers Consolidated by Operating Administration (OA)		2017	2018	2019
FAA	Targets	N/A	35%	48%
	Actuals	35%	35%	N/A
FHWA	Targets	N/A	0%	0%
	Actuals	0%	0%	N/A
FMCSA	Targets	N/A	0%	0%
	Actuals	0%	0%	N/A
FRA	Targets	N/A	100%	100%
	Actuals	100%	100%	N/A
FTA	Targets	N/A	100%	100%
	Actuals	100%	100%	N/A
MARAD	Targets	N/A	0%	0%
	Actuals	0%	0%	N/A
NHTSA	Targets	N/A	64%	93%
	Actuals	64%	64%	N/A
OIG	Targets	N/A	14%	14%
	Actuals	14%	14%	N/A
OST	Targets	N/A	25%	50%
	Actuals	25%	50%	N/A
PHMSA	Targets	N/A	23%	23%
	Actuals	23%	23%	N/A
SLSDC	Targets	N/A	0%	0%
	Actuals	0%	0%	N/A

N/A not available.

Description

FY 2017 is the baseline year for this metric. OMB is updating Data Center Optimization Initiative (DCOI) guidance which will supersede the current guidance. This new guidance will substantially change the way data centers consolidation progress is measured in the future. OMB's new DCOI guidance will fundamentally alter the way data centers are classified, which will then significantly change the amount of data centers subject to consolidation.

FY 2018 Progress Update

In FY 2018, the Department:

- Continued to decommission data centers under its digital transformation program, DestinationsDIGITAL. The Department closed one-tiered data centers, thus surpassing the FY 2018 data center consolidation target. DOT has reconciled its data center inventory numbers and continues work to identify cost savings from data center closures and planned closure.
- Completed migration to O365 Office Pro Plus has been completed and additional features are being implemented to continue to improve local storage usage.
- Continued migration to the cloud. The Department has created a new initiative, Enterprise Cloud Services, to institute guidelines, standards, and necessary contracts for establishing, managing, and overseeing DOT's cloud environments. The team will implement a DOT-managed cloud environment wherein modal applications will be hosted, and new applications will be developed. The team will design the environments such that each application will inherit Department-defined and FEDRAMP[41]-approved security controls, monitoring capabilities, development toolsets and other support services.

[41] Federal Risk and Authorization Management Program (FedRAMP) is a government-wide program that provides a standardized approach to security assessment, authorization, and continuous monitoring for cloud products and services.

Performance Goal: Improve DOT's Cybersecurity (Department-Wide)

Metric: Improve DOT's Cyber Security		2018	2019	2020
Percentage of Systems with Proper Security Authorizations	Targets	99%	99%	200%
	Actuals	99%	N/A	N/A
Percentage of Systems Converted to an Ongoing Authorization Process	Targets	25%	50%	75%
	Actuals	17%	N/A	N/A

N/A not available.

Description

The OCIO will continue to work with the OAs to prioritize system authorization to improve DOT's cybersecurity. OCIO will leverage the IT spend plan review to identify the level of resources being directed to these efforts. In line with Department of Homeland Security and OMB metrics, OAs will be scored on progress towards authorizing all DOT systems in accordance with Federal requirements.

OMB and the Department of Homeland Security are in the process of developing additional agency guidance on implementing ongoing authorization. Once guidance is issued, DOT will execute an enterprise security contract to consolidate and standardize cybersecurity contractual support. DOT will also improve its security authorization performance and accelerate its implementation of ongoing authorization by continuing to reduce its inventory through modernization and consolidation, as well as by immigrating smaller systems and apps to shared service and cloud providers.

FY 2018 Progress Update

The Department increased the number of information systems properly authorized from 95 percent in FY 2017 to 99.6 percent in FY 2018, by reducing the inventory from 473 to 459 systems and through additional planning and oversight of security assessment and authorization activities.

Performance Goal: Decrease Improper Payments (OST)

Metric: Improper Payment Percentage for Activities Identified as Susceptible	2017	2018	2019	2020[42]
Targets	0.62%	0.49%	1.51%	N/A
Actuals	0.30%	2.21%	N/A	N/A

N/A not available.

Description

Legislation defines a program or activity as susceptible to significant improper payments when the annual payment error rate exceeds 1.5 percent and $10 million of outlays, or $100 million of outlays regardless of the error rate. In addition, a risk assessment, statutory law, OMB, or DOT management may identify a program or activity as susceptible to significant improper payments and require it to report annual estimates. Three DOT activities were identified as susceptible to significant improper payments and subject to the FY 2018 reporting requirements:

- FHWA Highway Planning and Construction
- FTA Emergency Relief Program – Disaster Relief Act
- OIG Disaster Relief Appropriations Act

The Department's targets and actual results for decreasing improper payments are the cumulative results of the three activities, not all Department programs and activities.

The goal of decreasing improper payments aligns with the President's Management Agenda CAP Goal 9, Getting Payments Right. Success in attaining this goal will be achieved when agencies "reduce the annual amount of cash lost to the taxpayer; reduce burden on agencies to help focus their efforts strategically; and increase collaboration with states to further reduce cash lost."

FY 2018 Progress Update

The Department is monitoring FHWA's corrective actions to evaluate State DOT billing practices, advising State DOTs of the root causes for their identified improper payments, and assessing potential risk areas in State-administered processes by conducting additional transaction testing in FY 2019.

[42] OMB A-123 and A-136 requires DOT to publish the next year's target annually and no longer requires targets beyond the next fiscal year.

Performance Goal: Improve Effectiveness and Efficiency of Support Services (OST)

Metric: Percentage Accomplished Against Shared Services (HR, IT, and Acquisition) Implementation Plan	2017	2018	2019	2020
Targets	N/A	33%	66%	N/A
Actuals	N/A	35%	N/A	N/A

N/A not available.

Description

For decades, DOT has employed shared services[43] effectively for functions such as payroll and financial management. The Department made the strategic decision to expand shared services enterprise-wide to drive efficiency and better support evolving customer and organizational needs. The Department has begun evaluating which operations can be switched to a shared services enterprise to take advantage of multi-year savings. The Department's shared services model will establish centers of excellence throughout the Department in the areas of acquisition, human resources, and information technology.

FY 2018 Progress Update

For FY 2018, DOT reported a preliminary estimate of approximately 35 percent. To date, a pilot for IT acquisition is ongoing. HR continued consolidating executive and political resources as well as standardizing processes for HR operations. IT consolidation efforts, including the reduction of duplicative contracts, continues across the Department. The Department is currently piloting an Acquisition Center of Excellence for IT.

[43] Shared services, generally defined, involves centralizing administrative functions that were once performed in separate divisions or locations in order to improve efficiency and/or reduce costs.

Performance Goal: Increase Use of Best in Class (BIC) Contracts (OST)

Metric: Percentage of all DOT Contracts Qualified for a BIC Contract *	2016	2017	2018	2019	2020
Targets	N/A	N/A	35%	40%	N/A
Actuals	3.5%	5.0%	6.6%	N/A	N/A

**As defined by OMB/General Services Administration.*

N/A not available.

Description

DOT continuously analyzes all new and existing contracts to ensure the products and services it acquires are planned in a strategic manner, consistent with the Federal category management initiative. DOT has established an implementation group comprised of representatives from each OA to help educate individuals across the Department regarding the initiative and advocate use of Best in Class (BIC) as well as other well-managed, government-wide vehicles. Finally, acquisition policies requiring mandatory consideration of BIC vehicles will be issued in FY 2019.

FY 2018 Progress Update

The Department increased its use of BIC contract vehicles, although it did not reach OMB's target. However, DOT recently held a half-day training session and plans to hold individual discussions with each contracting office across the Department to ensure appropriate considerations are provided for BIC vehicles.

Performance Goal: Increase Facility Consolidation (OST)

Metric: Net Change in Office and Warehouse Square Footage	2018	2019	2020
Targets	(59,624)	(47,471)	N/A
Actuals	(88,806)	N/A	N/A

N/A not available.

Description

Each of DOT's 9 OAs, OIG, and OST have distinct mission foci that require specific sets of real property assets. While all groups have office and related support spaces, mission-specific functions require unique facilities, such as research laboratories, training centers, inspection stations, and air traffic control facilities. Many facilities must be located in defined geographic areas, such as National borders or near transportation facilities, to support mission operations.

As part of the Administration's *Freeze the Footprint* and *Reduce the Footprint* efforts, DOT will reduce its office and warehouse footprint, which is currently 12,183,327 square feet. OAs will reduce their office and warehouse footprints by 200,000 square feet by FY 2022, or approximately 11,983,327 square feet.

FY 2018 Progress Update

In FY 2018, the Department reduced its facility square footage by 88,806 square feet. DOT exceeded its target because the FAA advanced a project planned for FY 2019.

Performance Goal: Reduce the Number of Unessential Federal Advisory Committees (OST)

Metric: Federal Advisory Committees Reduced	2018	2019	2020
Targets	12	19	N/A
Actuals	11	N/A	N/A

N/A not available.

Description

The Federal Advisory Committee Act (FACA) requires that discretionary committees be terminated when they have accomplished their objectives, become obsolete, or determined to be too costly. Statutory committees must be sunset in the time explicitly specified in statute, or implied by when the operation of the statute expires. Our goal is to fulfill this requirement through our continued efforts.

FY 2018 Progress Update

OST evaluated the Department's Federal advisory committees and took steps to reduce outdated and ineffective committees. Through this analysis, committees that should be sunset immediately or have logical sunset dates in the near future were flagged. Any committees that were appropriate for sunset, were terminated. OST worked closely with the OAs and GSA[44] throughout this process. For more information please visit the FACA database.

[44] GSA is responsible for issuing administrative guidelines and management controls for advisory committees and assisting agencies in implementing and interpreting the Act.

Evidence Building

The Department is committed to leveraging data and data systems to support transportation and infrastructure decision-making. Through established processes – including quarterly performance management reviews for each operating administration (OA), capital planning and investment control reporting, annual program evaluation, and internal budget development efforts – the Department continues to refine and increase the use of evidence and evaluation to drive budget and programmatic decision-making. Accordingly, the FY 2020 DOT budget submission highlights opportunities to improve data collection efforts, while refining existing data collection and analysis practices.

Although the Department's primary efforts have historically supported the Safety Strategic Goal, DOT has now tailored its evidence and evaluation approaches to the variety of programs geared at improving inspections, enforcement, standards, regulation, and performance measurement across its program portfolio. Furthermore, recent initiatives in performance measurement, evaluation, and shared service implementation have led to increased sharing and collaboration between program offices.

Across all four of DOT's strategic goals, OAs actively use data, evidence, and evaluation concepts to support a safe and effective transportation system. DOT is also leveraging merging and innovative concepts – such as artificial intelligence – to support safety data initiatives and increase accountability for grant and loan recipients.

Through DOT's internal budget review process, OST evaluated the linkages between prior investment and actual performance results and invested only in programs that deliver the greatest results. As OAs develop budget requests that support defined goals and objectives, OST analyzes the strength of such alignments during annual programmatic and budgetary decision-making.

The Office of the Assistant Secretary for Transportation Policy manages the Department's Safety Data Initiative. The Safety Data Initiative seeks to integrate data sources with each other and with new *big data* sources to enhance understanding of crash risk and opportunities to mitigate the risk. The Initiative seeks to build the Department's capacity to translate the successes of predictive data analytics tools used by private industry and universities to identify systemic factors contributing to serious crashes. It comprises three core components: data visualization, data integration, and predictive insights. Several pilot projects and innovation challenges are underway or have been completed by the Bureau of Transportation Statistics, Volpe Center, FHWA, and NHTSA.

Finally, over the past year, the Office of the Secretary of Transportation (OST) led the first Department-wide program evaluation since 2009, inventorying the activities and performance of 127 programs across nine OAs and OST. This initiative established the performance baseline for each program, inventoried goals, objectives, authorities, and performance measures for each program, and identified programs for deep dive analysis and remediation planning. This recurring effort will drive annual planning and budgeting, as well as performance improvement initiatives across the Department.

Lower-Priority Program Activities

The President's Budget identifies the lower-priority program activities, where applicable, as required under the GPRAMA, 31 U.S.C. 1115(b)(10). The public can access the volume at: http://www.whitehouse.gov/omb/budget.

Major Management and Performance Challenges

Major management challenges are programmatic or management functions, within or across the Department, that have greater vulnerability to waste, fraud, abuse, and mismanagement or where failure to perform well could seriously impair the ability of DOT to achieve its mission or goals. The Department considers such challenges when developing performance goals, measures, and milestones.

The Office of Inspector General (OIG) identified eight Fiscal Year (FY) 2019 top management challenges[45] facing the Department as it strives to fulfill its mission. OIG notes that while DOT continues to demonstrate a strong commitment to improving the safety of our Nation's airspace, roads, pipelines, railways, and transit, key challenges remain. What follows is a description of the OIG-identified challenges and summary descriptions of how the Department is working to address such challenges.

[45] The FY 2019 OIG report is available at https://www.oig.dot.gov/library-item/36914. The DOT response to these OIG-identified challenges can be found on page 47 of the report.

Effectively Implementing FAA's New Safety Oversight Strategy

OIG Challenge Summary

The Federal Aviation Administration (FAA) is charged with overseeing one of the world's largest and most complex aviation systems, which carries more than 2.5 million people on approximately 45,000 flights every day. In recent years, FAA has worked to revamp its strategy for overseeing the safety of the aviation industry. For example, in 2015, FAA established requirements for all commercial passenger air carriers to implement a formal, top-down approach to managing safety risks, known as a safety management system (SMS). In addition, FAA developed and began using a new risk-based oversight system, the Safety Assurance System. However, recent events—such as the Southwest Airlines accident in April 2018, resulting in the first U.S. commercial passenger fatality in nine years—have raised concerns about FAA's safety oversight. Proactively identifying and mitigating operational and maintenance safety risks—as well as effectively balancing industry collaboration and enforcement—remain key challenges for FAA as it works to implement its new oversight strategy and ensure the safety of the traveling public.

The effectiveness of FAA's new risk-based oversight system depends on safety data that can enable the agency to identify and target its oversight to areas of greatest risk. FAA's safety oversight strategy relies on a strong safety culture within both the agency and industry. To supplement industry's wide array of safety reporting systems, FAA established a consolidated hotline in 2014 for stakeholders to submit safety concerns, in addition to allowing various FAA offices to receive complaints. However, FAA recognizes the impact a single inspector can have on the safety culture and thus established standards that require inspectors to act impartially and avoid the appearance of preferential treatment when they perform their official duties. Ensuring that FAA's inspector workforce meets standards of impartiality remains a key oversight challenge for the agency to protect its safety culture and effectively identify and mitigate risks.

Key Challenge Components

- Implementing effective air carrier oversight by proactively identifying and mitigating significant operational and maintenance safety risks
- Balancing collaboration and enforcement in air carrier safety oversight

DOT Progress Update for FY 2019

Commercial aviation continues to be the safest form of transportation. However, while rare, commercial aviation accidents have the potential to result in large loss of life. The FAA's commercial safety record indicates the agency has successfully addressed most known system hazards contributing to accidents or incidents. FAA continues to work with aviation industry stakeholders to establish and implement safety management systems to address and reduce risk within their operations

And while general aviation fatality rates are at historic lows, FAA recognizes the need to identify precursors to accidents to improve safety.

In FY 2018, the FAA completed an independent assessment of the American Airlines Flight Test Operations Program. That assessment identified several compliance issues and other hazards.

The Allied Pilots Association, along with American Airlines personnel and the American Airlines Certificate Management Office (CMO), convened a Safety Analysis Team (SAT), designed to evaluate and mitigate the issues identified.

The FAA has performed a root cause analysis to determine the contributing factors that caused the complaint of American Airlines Flight Test Operations Program to be mishandled. Associated corrective actions were implemented.

DOT Planned Actions to Address this Challenge

FAA's strategies to address this challenge include:

- Working with stakeholders to establish and implement safety management systems to address and reduce risk within their operations.
- Collaborating with the aviation community to encourage voluntarily investing in safety enhancements that reduce the fatality risk.
- Ensuring that safety risk is systematically included as part of the equation when decisions are made in the FAA.
- Continuing to work with the general aviation community to educate pilots and other stakeholders on the benefits of sharing (in a protected, non-punitive manner) safety data and utilizing these data in their daily operations.
- Leveraging FAA Safety Team (FAASTeam) program products and product delivery outreach systems. National FAASTeam outreach initiatives include safety articles in the FAA Safety Briefing magazine, FAAST Blast emails, aviation safety courses through the FAASafety.gov website, runway safety educational posters, and live safety seminars on weather, Automatic Dependent Surveillance-Broadcast (ADS-B), Unmanned Aircraft Systems (UAS), Loss of Control, and aeronautical decision making.
- Conducting an independent assessment of the SAT and its associated corrective actions to validate that safety performance is maintained. In addition, the FAA will evaluate the CMO's oversight posture to ensure single points of failure have been mitigated.
- Conducting an independent assessment of the CMO's corrective actions with regard to the American Airlines Flight Test Operations Program. The FAA is also documenting the control processes.
- Initiating a review and independent assessment of the policies and procedures for its Certificate Management Data Evaluation Program. The FAA is updating and implementing appropriate mechanisms to ensure and evaluate the objectivity of inspectors to incorporate risk factors such as non-routine operations and the lengths of time inspectors oversee the same air carriers.
- Completing a comprehensive review of FAA and Flight Standards (FS) complaint and investigation guidance documents and reconfirming with the FAA's Office of Audit and Evaluation (AAE) their jurisdiction for safety complaints and investigations.
- Planning to reinforce established criteria to ensure certain safety-related complaints are documented and routed to AAE for processing under the safety-reporting programs. The FAA will also consolidate associated complaint investigation policies and procedures to one organization, thereby making the complaints investigation process consistent and efficient.

- Completing the development of inspector guidance on oversight requirements for flight test operations.

DOT Associated Performance Goals/Measures/Milestones

By setting safety goals and tracking fatalities for both commercial and general aviation, the FAA can measure how effectively it is implementing its new safety oversight strategies. As detailed in the following text[46], the FAA has developed both short- and long-term safety goals for commercial and general aviation fatalities.

Agency Priority Goal (APG) Statement: FAA will work to reduce commercial air carrier fatalities per 100 million persons on board to no more than 5.9 by September 30, 2019. Long term, FAA is committed to reducing fatalities by 50 percent over the next 18 years.

APG Statement: FAA will work to reduce general aviation fatal accidents to no more than 0.98 accidents per 100,000 flight hours by September 30, 2019. Long term, FAA seeks to reduce general aviation fatal accidents to no more than 0.89 fatal accidents per 100,000 flight hours by FY 2028.

Responsible Agency Official(s)

FAA: Ali Bahrami, Associate Administrator, Aviation Safety

[46] Related performance metric tables may be found in DOT's FY 2020 Annual Performance Plan/FY 2018 Annual Performance Report.

Protecting Against a Wide Range of Threats to Aviation Safety and Security

OIG Challenge Summary

The Federal Aviation Administration (FAA) is responsible for maintaining the safety of a diverse, complex, and rapidly evolving aviation industry. Recent events have highlighted challenges for FAA in several wide-ranging areas that have garnered significant public and congressional interest. These challenges include addressing runway safety risks, ensuring safe emergency evacuations, strengthening oversight of Unmanned Aircraft System (UAS), improving cockpit safety and security, and enhancing oversight of aviation drug and alcohol testing.

Surface safety remains one of the FAA's highest priorities. Although in recent years accidents related to surface safety have resulted in relatively low numbers of fatalities, with the ever changing and complex nature of air travel, it is crucial to reduce the risk of surface events, (i.e., runway incursions, runway excursions and surface incidents) to as low as possible.

The growing number of UAS operators presents significant oversight and risk mitigation challenges for FAA. The FAA is working to determine the risk posed by current UAS operations and develop appropriate oversight plans to address these risks.

Incidents in 2012 and 2015 in the United States and abroad drew attention to flight deck safety and security, including securing cockpit doors. Although the FAA has taken dramatic steps to secure the flight deck and prevent any breaches, it continues to look for collaboration opportunities that could enhance cockpit safety and security.

Recent OIG investigations have reinforced the importance of maintaining strong substance abuse inspection programs. FAA's Drug Abatement Division oversees the aviation industry's compliance with drug and alcohol testing laws and regulations, covering pilots, mechanics, and flight dispatchers at approximately 7,000 regulated aviation companies. Given the changing landscape of drug use in the United States, developing a risk-based inspection schedule to maximize the agency's resources will remain key to mitigating the safety risks presented by impaired pilots, mechanics, and other safety-sensitive staff.

Key Challenge Components

- Addressing runway safety risks
- Safely evacuating airline passengers in the event of an aircraft incident
- Strengthening oversight of Unmanned Aircraft Systems (UAS) in the National Airspace System (NAS)
- Enhancing interagency coordination to improve cockpit security
- Ensuring effective oversight of FAA's drug and alcohol testing program

DOT Progress Update for FY 2019

To address the current reality of increasingly congested airspace, real-time news reporting, and public perception, the FAA is focused on implementing mitigations to reduce the risk of a

ground collision with an aircraft, resulting in injury, death, and/or loss of property. These efforts are being driven by information analysis and a multidisciplinary, collaborative approach. The result is a data-driven, risk management-based methodology which relies on the FAA, pilots, air traffic controllers, and airport staff working together, along with regulators, training organizations, and international trade associations, to collaborate on risk mitigation measures and procedures.

To strengthen oversight of UAS in the NAS, the FAA has developed a UAS-specific oversight plan that takes a risk-based approach to enhancing the surveillance of UAS activities.

To ensure cockpit security, the FAA is continuing all of the policies and procedures that have resulted in no breach of a flight deck door since 9/11. The FAA is continuing to implement a 2018 Order that requires Principal Inspectors (PIs) to meet with TSA PSIs at least once a year to ensure enhanced interagency communication and coordination. The FAA is meeting with other stakeholders (A4A, Regional Airlines Association) to discuss DOT OIG Flight Deck Security recommendations. The agency will continue to work with stakeholders to improve cockpit safety and security, for example building on an October 2017 meeting with a flight attendants union to discuss concerns with flight deck security.

DOT Planned Actions to Address this Challenge

Addressing runway safety risks

- Continue to improve the surface safety metric.
- Continue the analysis of surface events to determine causal factors and aid in the development of mitigations.
- Enable ASDE-X Taxiway Arrival Prediction enhancement at 14 additional airports.
- Publish FAA Order 7050.1B Change 1.
- Conduct shadow operations evaluation of Real Time Speech Recognition Technology to mitigate wrong surface approaches.
- Begin planning, designing, or implementing mitigations at 15 Runway Incursion Mitigation (RIM) locations.
- Develop Standard Terminal Automation Replacement System (STARS) Approach Runway Verification modification.
- Achieve Initial Operating Capability of the Airport Surface Surveillance Capability (ASSC) at Pittsburgh and New Orleans that will result in a risk reduction at these locations that have not had this technology.

Safely evacuating airline passengers in the event of an aircraft incident

- The FAA's standards for evacuating passenger aircraft require that the aircraft can be fully evacuated in 90 seconds or less. To obtain FAA certification for a specific aircraft type, manufacturers must conduct an actual demonstration of an emergency evacuation or a combination of tests and analyses, including computer simulations that yield equivalent results.
- The OIG is currently auditing the FAA on this subject (refer to Audit #18A3006A000, "FAA's Oversight of Aircraft Evacuation Procedures") and has not issued any report.

The FAA is awaiting the completion of the audit and will produce action plans to respond to the recommendations in the report.

Strengthening oversight of unmanned aircraft systems in the National Airspace System

- New surveillance items developed as part of the UAS-specific oversight plan will be implemented in FY 2019 via an FAA Notice to Flight Standards District Offices.
- The FAA will continuously monitor the results of new surveillance conducted under the oversight plan, and adjust the tactics as needed.

Enhancing interagency coordination to improve cockpit security

- The FAA will increase emphasis on observing flight deck door transition procedures while conducting enroute inspections.
- The FAA added two questions to its Safety Assurance System (SAS) Enroute Inspection Data Collection Tool (DCT) regarding this topic. These added DCT questions will prompt FAA inspectors to document observations regarding the flight deck door procedures while in flight.

Ensuring effective oversight of FAA's drug and alcohol testing program

- The Office of the Inspector General (OIG) is currently auditing the FAA on this subject (refer to Audit #17A3005A000, "Review of FAA's Drug Abatement Program") and has not issued its final recommendations. Therefore, the FAA will address specific actions to respond to this subject upon completion of the audit.

DOT Associated Performance Goals/Measures/Milestones

The FAA currently captures its progress in reducing runway incursions per total procedures through three different metrics:

- **Category A and B Runway Incursions Per Total Number of Runway Operations**: For this measure, air traffic controllers and pilots are the primary source of runway incursion reports. This partnership has provided insight into operations, previously unknown, enabling the gathering of data that adds granularity to the runway safety measure. The capture of this data allows the aviation community to incorporate several data sources that aid in predicting risk. Data for this measure are recorded in the Comprehensive Electronic Data Analysis Reporting (CEDAR) system and data used to calculate the runway incursion rate are provided via Operations Network (OPSNET).

- **Commercial Surface Safety Risk Index: Maintain the Weighted Surface Safety Risk Index Per Million Operations for Commercial Aviation**: For the Surface Safety Risk Index, the National Transportation Safety Board (NTSB) database is the primary source of runway accident data. Runway excursion data is supplemented by the Office of Accident Investigation and Prevention's Aviation System Analysis and Sharing (ASIAS) database, which aggregates runway excursion data from multiple sources. Preliminary incident reports are evaluated when received an evaluation can take up to 90 days. ASIAS data are then combined with CEDAR and OPSNET data to produce final results.

- **Non-Commercial Surface Safety Risk Index: Maintain the Weighted Surface Safety Risk Index Per Million Operations for Non-Commercial Aviation**: This metric used the same data sources and collection methods as the commercial surface safety risk index.

Responsible Agency Official(s)

James Fee, FAA Runway Safety Group Manager

Michael Romanowski, FAA Director of Policy and Innovation

Ryan Steinbach, FAA Management and Program Analyst

Bill Petrak, FAA Aviation Safety Inspector

Rafael Ramos, FAA Drug Abatement Division Manager

Maintaining Focus on the Railroad Industry's Implementation of Positive Train Control

OIG Challenge Summary

Over the last decade, several fatal rail accidents have led Congress to require and the U.S. rail industry to commit to implementing positive train control (PTC) systems on certain rail main lines. PTC systems use communication-based/processor-based train control technology to prevent train-to-train collisions, overspeed derailments, incursions into established work zone limits, and movement of a train through a switch in the improper position. The importance of PTC was evident in December 2017 when an Amtrak train derailed in Dupont, WA, after entering a curve with a 30-mile per hour limit at nearly 80 miles per hour. The crash resulted in three fatalities and 62 injuries and, according to the National Transportation Safety Board, could have been prevented with the use of PTC. With a statutory deadline for PTC implementation rapidly approaching and billions of dollars in Federal funding and loans dedicated to PTC, it is critical that the Department maintain focus on this complex safety initiative.

Key Challenge Components

- Keeping railroads on track with meeting statutory deadlines
- Increasing attention to oversight of Federal funding support and identifying shortfalls

DOT Progress Update for FY 2019

Every required railroad met the December 31, 2018, deadline for either implementing PTC or demonstrating to FRA the railroad qualified for up to two more years to complete implementation. By the end of calendar year 2018, railroads had fully installed hardware, acquired radio spectrum, trained employees, and initiated testing. Remaining steps to complete implementation include finishing advanced tests on the general rail system, submitting a safety plan to FRA, obtaining system certification from FRA, achieving interoperability between host railroads and tenant railroads, and activating the systems to govern all required main line operations.

As of December 31, 2018, PTC systems were in operation on almost 46,000 route miles of the nearly 58,000 route miles where the systems must be deployed. A PTC system governed host railroad operation on 83 percent of the required freight route miles and 30 percent of the required passenger route miles. Four railroads had fully implemented PTC systems on their required main lines, as of December 31, 2018.

Between August and December 2018, FRA announced $250 million in grant awards for 39 PTC deployment projects in 18 States.

DOT Planned Actions to Address this Challenge

FRA will continue its comprehensive stakeholder outreach, technical assistance, and competitive grant strategies. To discuss tenant railroad issues, FRA leaders will meet in June, July, and August 2019, with representatives of 35 independent short line carriers and the six parent companies of 41 short line railroads. FRA will also convene six collaboration sessions with railroads and major industry associations.[47] These sessions will consist of candid discussions about implementation progress, interoperability, safety plans, and related issues. Participants will include railroads subject to the statutory mandate, suppliers, industry groups, and FRA subject matter experts. As FRA executes its competitive grant programs, the agency will continue to consider eligible applications for high-quality projects that support PTC implementation.

DOT Associated Performance Goals/Measures/Milestones

By setting safety goals and tracking accidents, the FRA can measure how effectively it is maintaining focus on the railroad industry's implementation of PTC. The train accident rate per million train miles is a new performance measure, and the accident rate exceeded the agency target in 2018. FRA is increasing its analytical capabilities and working with participating railroads through the Confidential Close Call Reporting System[48] to understand and mitigate root causes. As railroads implement positive train control systems and adopt risk reduction programs, FRA expects to see improvement in this measure.[49]

Responsible Agency Official(s)

Karl Alexy, Deputy Associate Administrator for Railroad Safety, Federal Railroad Administration

[47] The first session occurred on February 6, 2019.

[48] The Confidential Close Call Reporting System (C^3RS) is a partnership among the National Aeronautics and Space Administration, FRA, and participating railroad carriers and labor organizations. The program is designed to improve railroad safety by collecting and analyzing reports which describe unsafe conditions and events in the railroad industry. Employees may report safety issues or "close calls" voluntarily and confidentially.

[49] A related performance metric table may be found in DOT's FY 2020 Annual Performance Plan/FY 2018 Annual Performance Report.

Improving NHTSA's Data Use, Processes, and Oversight of Vehicle Safety Defects

OIG Challenge Summary

In 2016 and 2017, more than 37,000 people a year lost their lives in motor vehicle crashes. Another 4.57 million people sustained serious injuries in 2017 alone. While most fatalities caused by motor vehicle crashes involve impaired driving, speeding, or a lack of seatbelts, some involve a vehicle defect. For example, 15 fatalities and 220 injuries have been linked to the high-profile defect that caused Takata airbags to deploy improperly during crashes and severely injure vehicle occupants with metal shrapnel. The National Highway Traffic Safety Administration's (NHTSA) Office of Defects Investigation (ODI) is responsible for investigating possible safety defects and overseeing safety recall campaigns to assess recall effectiveness. Since 2011, the agency has reported on a number of opportunities for ODI to strengthen its defect investigations and recall management.

Key Challenge Components

- Strengthening processes for identifying, investigating, and mitigating safety defects
- Enhancing controls for effectively managing vehicle recalls

DOT Progress Update for FY 2019

- In 2018, there were 914 recalls affecting over 29 million vehicles in the United States.
- NHTSA Deputy Administrator Heidi R. King led a roundtable discussion with industry leaders on November 8, 2018, to identify and promote ways to boost recall repair rates for vehicles and safety equipment and to encourage more collaboration within and across sectors to achieve better results.
- This past year has been marked by more vehicle manufacturers adopting sophisticated outreach techniques, the entire industry engaging in unprecedented collaboration to identify best practices to maximize repair rates with cost efficiency and drastic improvements in repair rates for the highest-risk vehicles, according to the Independent Monitor of Takata and the Coordinated Remedy Program.
- NHTSA continues to oversee the Takata airbag recall – the largest and most complex recall in U.S. history involving 19 vehicle manufacturers, 37 million U.S. vehicles, and approximately 50 million air bags. Average recall repair rates across all manufacturers increased by 30% in 2018. The number of unrepaired vehicles in Priority Groups 1–3 (the oldest vehicles in the highest-risk areas) has been cut in half in one year. https://www.nhtsa.gov/press-releases/nhtsa-releases-end-year-update-takata-air-bag-recalls.
- NHTSA's ODI continues efforts to review all operating procedures, make necessary updates, and ensure procedures are formally documented and shared with all ODI personnel. These efforts ensure all ODI staff are well-versed in procedures that span different divisions and that processes which identify and investigate potential defects are standardized throughout ODI.
- In FY 2018, NHTSA's ODI hired a dedicated training specialist to identify and coordinate training for the office. This specialist sources new training opportunities (e.g.

vehicle fire investigation and drivetrain courses) to ensure investigative staff can effectively identify potential safety-related defects. ODI's Recall Management Division has also received group training on improved processes to better monitor safety recalls. To date in FY 2019, 31 courses have been taken by ODI personnel and another estimated 65 are planned for the remainder of the fiscal year.

- NHTSA continually communicates with the public about recalls – whether through social media, electronic outreach through text and email, radio interview segments, or other media. For example, as part of NHTSA's Safe Cars Save Lives campaign, consumers are urged to check for recalls every November and March when resetting their clocks. Over the most recent time changes (November 2018 and March 2019), NHTSA's VIN tool saw roughly 100,000 additional VIN requests.
- Communicating the urgency for recall repairs with the help of stakeholders and DMVs has also proven effective to protecting lives on the Nation's roadways. Maryland launched a NHTSA-funded pilot project to notify vehicle owners of outstanding recalls in registration renewal notices in 2018, and by February 2019, more than 150,171 recalls were reported as remedied after registration renewal notices were mailed to alert owners to potential safety issues.

DOT Planned Actions to Address this Challenge

- In April 2019, NHTSA's Recall Management Division is launching a new case management system, called the Recall Case Manager, to ensure a higher-level review is conducted on certain recalls. This system ensures recall remedies are reviewed by the appropriate technical staff, and an appropriate number of vehicles are remedied by the manufacturer, in addition to other checks it performs.
- NHTSA's ODI continues its efforts to modernize the Artemis database that manages all complaint, recall, and investigative data. The first production release is scheduled for summer 2019 and will include a streamlined system to manage and review early warning (EWR) submissions from manufacturers as well as a portal for manufacturers to control their submissions. Design work is currently underway for the modernization of complaint screening, which is scheduled to launch in March 2020.

DOT Associated Performance Goals/Measures/Milestones

- In accordance with NHTSA's 2017 Report to Congress regarding vehicle recall completion rates, NHTSA's ODI is now implementing its predictive benchmarking model to better monitor recall completion rates. This model will help verify manufacturers are remedying a reasonable number of affected vehicles and, when under-performing recalls are identified, engage with those manufacturers to ensure more vehicles receive their free remedy.

Responsible Agency Official(s)

- Jeff Giuseppe, Associate Administrator for Enforcement
- Stephen Ridella, Director for the Office of Defects Investigation

Providing Effective Stewardship Over Surface Infrastructure Safety and Investments

OIG Challenge Summary

The Department provides more than $50 billion each year to build, maintain, and oversee our Nation's surface infrastructure, including millions of miles of roads, bridges, tunnels, tracks, and oil and gas pipelines. However, infrastructure needs have outpaced the Department's financial resources. To effectively address these needs while ensuring safety, the Department must make sure that its oversight and enforcement actions target areas of greatest risk. At the same time, DOT will be challenged to maximize all available funding sources, improve its process for delivering projects, and enhance its oversight of infrastructure investments.

Key Challenge Components

- Mitigating safety risks in surface transportation
- Improving the efficient and effective use of limited infrastructure dollars
- Ensuring effective oversight of surface infrastructure investments

DOT Progress Update for FY 2019

FTA

Improved safety and confidence in the Nation's transit system is one of Federal Transit Administration (FTA)'s primary goals. In April 15, 2016, FTA issued a final rule for State safety oversight of rail fixed guideway public transportation systems not regulated by the Federal Railroad Administration (FRA). The rule strengthens a State Safety Oversight Agency (SSOA)'s authority to conduct inspections and investigate accidents, approve corrective action plans, and oversee an FTA's implementation of its safety plan. The rule also gives FTA the authority to take enforcement actions against those States with non-existent or non-compliant safety oversight programs. Each State is required to submit an application to initiate the certification process.

The rule applies to federally funded rail fixed guideway public transportation systems such as heavy rail, light rail, monorail, and streetcar systems. By law, the deadline for these certifications is April 15, 2019, and FTA has no authority to grant extension for this requirement.

PHMSA

PHMSA's Office of Pipeline Safety (OPS) is currently evaluating the workload for ongoing Liquefied Natural Gas (LNG) initiatives and efforts. These initiatives and efforts include performing 49 CFR Part 193, Subpart B, Siting reviews, conducting LNG facility construction inspections, and improving and streamlining Federal agency jurisdictional coordination. OPS will also consider resource needs for the expected increase in the number of proposed LNG projects and drive the effort to update relevant Part 193 regulations governing the site location, design, construction, operation, and maintenance of LNG facilities, with the aim to develop a sensible regulatory framework incorporating the latest technologies and safe industry practices.

To date, OPS staff has completed the following initiatives as described below.

1. **Letters of Determination**
   PHMSA serves as a cooperating agency to the Federal Energy Regulatory Commission (FERC), which is the lead Federal agency responsible for authorizing onshore LNG facilities.[50] PHMSA is responsible for determining whether an LNG facility complies with the safety standards prescribed in 49 CFR Part 193. Under the terms of the August 31, 2018, Memorandum of Understanding (2018 MOU) between FERC and PHMSA, PHMSA issues a Letter of Determination (LOD) to FERC providing a determination on whether the proposed LNG facility's location criteria and design standards comply with the requirements of Part 193, Subpart B. As of April 2019, PHMSA has issued ten LODs to FERC.

2. **Part 193 Regulatory Update**
   The Part 193 Update Rulemaking Team is an internal PHMSA Team. It was established to support and develop regulatory revisions to Part 193 for the safe operation and integrity of the Nation's LNG pipeline facilities and to implement the actions directed in the April 10, 2019, Presidential Executive Order on Promoting Energy Infrastructure and Economic Growth.[51] The Team is considering including provisions in the rulemaking update to address new LNG technologies, small-scale facility Siting requirements, and incorporation of appropriate current practices and industry standards. The Team's output will be a notice of proposed rulemaking (NPRM) that will propose updates to the regulatory requirements of Part 193, as well as potentially a new structure to Part 193. Additionally, the NPRM will have accompanying supporting materials, such as a Regulatory Impact Statement (RIA).

3. **LNG Facility Construction Inspections**
   PHMSA's OPS, through its inspection and enforcement programs, ensures compliance with the requirements in 49 CFR 193. Historically, OPS's Field Operations' Regional Offices were responsible for performing inspections of LNG facilities to determine compliance with the regulations. Recently, OPS's Policy and Programs' Engineering Division and Field Operations' Regional Offices developed a new standard operating procedure that delineates responsibilities and ensures an efficient and comprehensive inspection of the Siting, design, construction, operation, and maintenance of LNG facilities.

   OPS is also developing inspection guidance for conducting LNG facility construction inspections and updating PHMSA's LNG Inspector Training Course content to provide additional training to inspectors on construction inspections of LNG facilities.

[50] Under Section 3 of the Natural Gas Act.

[51] https://www.whitehouse.gov/presidential-actions/executive-order-promoting-energy-infrastructure-economic-growth/?utm_source=link

FHWA

The cornerstone of MAP-21's Federal highway program transformation is increased accountability and transparency through the implementation of a performance driven, outcome-based program. To meet the needs of the Nation's aging highway and bridge infrastructure amidst fiscal challenges, MAP-21 focused on national transportation goals through State DOT and MPO investment decision-making. In accordance with MAP-21 and the performance-based approach continued in the Fixing America's Surface Transportation Act, FHWA took proactive steps to prepare the agency and its State and local partners to move toward a more performance-based Federal highway program. Absent future changes in legislation, monitoring program performance through the tracking of specific performance targets and measures is the way in which FHWA will implement and monitor the Federal-Aid Highway Program (FAHP).

Further, Safety is the top priority of the U.S. Department of Transportation. To fully support the vision of zero deaths and serious injuries on the Nation's highways, FHWA will continue to advance performance-driven highway safety management practices and further advocate for the deployment of innovative safety countermeasures. Additionally, by enhancing collaboration with its partners, FHWA will continue a multi-pronged approach to reducing fatalities and serious injuries for all road users.

In FY 2019, FHWA has addressed mitigating safety risks in surface transportation by accomplishing the following:

- Providing technical assistance to external partners on road safety audits, local road safety plans, and data analysis;
- Promoting Proven Safety Countermeasure Initiative (PSCI) to Tribes at national and regional events, and disseminated via email to tribal contacts;
- Providing technical assistance to States for updating their Strategic Highway Safety Plans;
- Initiating an Intersection Pooled Fund study to address driver behavior at multilane roundabouts;
- Updating the Crash Modification Factors Clearinghouse by including new Crash Modifications Factors; and
- Providing technical assistance to roadway safety professionals in States and local agencies by hosting several Data-Driven Safety Analysis (DDSA) peer exchanges across multiple States.

In FY 2019, FHWA has improved the efficient and effective use of limited infrastructure dollars and ensured effective oversight of surface infrastructure investments through the following:

- Completing a list of FHWA data elements for employees, partners, and the public to increase the adoption of data standards;
- Evaluating methods to disaggregate national Freight Analysis Framework freight flow data to smaller areas for use by State and local transportation agency freight programs and developing a draft national highway network and modeling methods to estimate freight truck traffic on the network;

- Publishing interactive data dashboards for NHS Pavements; Federal-Aid and Federally Owned Roads; Licensed Drivers; and Summary Highway Statistics;
- Updating the Roadway Safety Data and Analysis Toolbox;
- Implementing recommendations from the utility risk assessment, meeting with States to update guidance and manuals and working with HQ on other aspects of their utility programs;
- Approving Major Project Annual Financial Plans and Project Management Plans and conducting cost estimate review workshops; and
- Providing technical assistance to States on Quality Assurance of Materials plans.

FMSCA

Ensuring the safety of our Nation's roads also requires addressing the increase in fatalities involving large trucks and buses. During 2017, an estimated 37,133 people died in crashes on the Nation's roadways, resulting in a fatality rate of 1.16 fatalities per 100 million vehicle miles traveled. There were an estimated 5,005 fatalities (13.47% of total fatalities) in crashes involving a large truck or bus, resulting in a fatality rate of 0.156. In 2016, 37,461 people died in overall crashes, and 4,564 fatalities occurred in crashes involving a large truck or bus (0.144 fatality rate). From 2007 to 2017, highway fatalities have decreased by 10 percent. Large truck and bus fatalities have decreased 2.17% over the same time period.

High-risk carriers are FMCSA's top investigative priority. This population demonstrates an average crash rate that is four times the national average. FMCSA policy is to investigate carriers designated as "high-risk" within 90 days. FMCSA conducted 2,514 high-risk carrier investigations in FY 2018, and 2,376 high-risk carrier investigations in FY 2017. The agency was able to investigate high-risk carriers within 49.6 days (average) in FY 2018.

FAA

Community concerns related to implementing airspace changes in the NAS are increasing. The FAA is conducting community outreach to educate the public on what these specific changes mean to local communities, collecting local community input, and attempting to harmonize airspace designs with community input where possible. Accurate and effective public engagement is crucial to the success of airspace projects and supports FAA priorities. A barrier to the implementation of new flight routes is inconsistent, non-repeatable community engagement practices.

Working with the airlines, FAA is implementing Data Comm for controllers and pilots at high-altitude facilities, beginning in 2019 through 2021, at a cost of over $691 million. Deploying Data Comm at the 20 facilities with ERAM while replacing system hardware (and implementing other enhancements) represents a significant system integration challenge.

The FAA is performing due diligence to assess the relocation of surveillance capabilities to a different portion of the electromagnetic spectrum, while ensuring that the existing surveillance capabilities are maintained. The agency is also incorporating inherent and incidental improvements over existing legacy surveillance capability that modern technical solutions may provide. It is determining program feasibility within the parameters of cost, technical boundaries,

and schedule requirements for a 2024 auction. In FY 2019, the FAA has already submitted an acquisition strategy for approval to the Joint Resources Council. The FAA has also drafted a cross estimating plan. This has been submitted to Investment Planning and Analysis for review. In addition, the FAA has held one-on-one meetings with vendors about Request for Information 2.1.

The FAA modified the Program Management Assessment (PMA) Funding Request Standard Operating Procedure in October 2018. This modification includes language that requires the Office of NAS Lifecycle Planning to provide a close-out memorandum as verification for completion of work. This will ensure project requirements are met before transferring expiring funds into the project level agreement (PLA) account.

DOT Planned Actions to Address this Challenge

FTA

The FTA's final rule replaced the prior State Safety Oversight (SSO) rule and requires States to attain certification of their SSO programs. To help States meet the requirements, FTA developed a SSO Certification Toolkit that provides guidance for program requirements and offers technical assistance to SSO agencies. FTA's tool kit is a guide for activities and requirements that clearly address FTA's SSO program requirements.

PHMSA

PHMSA's goal remains focused on optimizing available resources to efficiently enhance safety, while anticipating emerging LNG technologies and industry developments. PHMSA is developing a near-term and long-term fiscal and personnel strategy for the incremental workload associated with the ramp-up of LNG responsibilities. The following actions will address workforce planning challenges:

1. **Workforce Planning**
   OPS's increased responsibilities on FERC LNG projects, specifically the Part 193, Subpart B, Siting reviews, has had a significant impact on staff workload. PHMSA anticipates this increased workload to continue throughout each LNG project's lifecycle, from permitting through construction and into operation. As a near-term action, OPS plans to utilize existing OPS staff and contractor resources to address the current number of new LNG projects, including new LNG applications at FERC, new certificated projects at FERC, and new non-FERC Part 193 LNG facility (small-scale) projects, as well as the 49 CFR Part 193 rulemaking. Additionally, OPS is in the process of hiring for one full-time LNG engineer position, which will be filled shortly.

   OPS's long-term fiscal and personnel workforce planning initiatives are highly dependent on whether LNG export applications submitted to the FERC not only receive Authorization Certificates, but subsequently reach Final Investment Decision. Furthermore, the number of new small-scale LNG projects is market driven. OPS plans to closely monitor the overall LNG market and communicate with LNG industry stakeholders to determine long-term workforce initiatives on future LNG projects.

As the LNG workload increases, PHMSA OPS also plans to complete the following actions:

1. **Establish Partnerships**
   To strengthen collaboration with other Federal, State, and local agencies, PHMSA will: (1) update existing Memoranda of Understanding and Interagency Agreements with Federal agencies involved in the review of the design, construction, operation, maintenance, and inspection of LNG facilities; (2) enhance internal and external communication by developing and maintaining an internet-based information tool; (3) participate in multi-agency meetings regarding updates in each agency's LNG programs and regulations; and (4) assist as needed with the Maritime Administration's Deepwater Port Licensing Program for natural gas import and export projects.

2. **Build Coalitions**
   To build coalitions with industry and other stakeholders, PHMSA will: (1) participate on industry standards committees and, where appropriate, incorporate changes to those standards into its regulations to address discrepancies or enhancements in industry practices and/or technology; (2) attend and participate in LNG focused technical meetings, conferences, and forums to educate industry, the public, and stakeholders about PHMSA's mission and regulations; (3) continue improved coordination with all Federal agencies that oversee and regulate LNG facilities, including participation at LNG Roundtable meetings and development of an LNG working group comprised of LNG subject matter experts; and (4) manage and coordinate industry research and development to support the regulatory agenda and provide innovative technology solutions to LNG safety challenges.

3. **Expand Public Education**
   To promote and educate the public on its LNG role, PHMSA will: (1) develop and maintain a website for the public; (2) routinely update community liaisons about new regulations and policies; (3) sponsor public meetings when significant changes to the regulations are being proposed and/or implemented; and (4) attend FERC scoping meetings to emphasize PHMSA's role in the evaluation of LNG facility applications, LNG facility construction, and operation.

FHWA

To mitigate safety risks in surface transportation, the FHWA will:

- Continue to implement the Highway Safety Improvement Program (HSIP), which includes developing State Strategic Highway Safety Plans (SHSP); supporting State HSIP or program of highway safety improvement projects; continuing the Railway-Highway Crossings Program; and emphasizing a High Risk Rural Roads program in States with an increasing fatality rate on rural roads;

- Encourage States and other partners to use Data-Driven Safety Analysis methods and tools for decision-making and planning, including cost-benefit analysis and data management and governance structures;
- Promote further adoption of Proven Safety Countermeasures that practitioners can implement to successfully address roadway departure, intersection, and pedestrian and bicycle crashes;
- Take a Focused Approach to Safety to provide additional program resources to eligible high-priority States to increase awareness on critical severe crash types that lead to identifying safety infrastructure improvements, assist in prioritizing limited resources, and create positive organizational changes in safety culture, policies and procedures; and
- Provide technical assistance to individual agencies to demonstrate how to use multidisciplinary approaches and well-vetted models to significantly improve safety outcomes through the Roadway Data Technical Assistance Program.

To improve the efficient and effective use of limited infrastructure dollars and to ensure effective oversight of surface infrastructure investments, FHWA will continue to support State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) implementing the *Transportation Performance and Asset Management* approach to strengthen their investment decision-making, which will enhance program accountability to Congress and the public for the expenditure of tax dollars. Through this program, FHWA will:

- Help raise transportation agency proficiency levels in the core competencies of performance management;
- Work with partner agencies on-site to implement new requirements;
- Develop new capabilities to support improvements in data quality, data analysis, and investment planning; and
- Communicate progress, outcomes, and national stories to the public on transportation performance.

FMCSA

FMCSA's ***Our Roads, Our Safety*** program helps raise awareness among the general driving public about operating safely around and sharing the road with the more than 12 million commercial motor vehicles on the road.

FMCSA will continue to make high-risk carrier investigations a top investigative priority. Passenger carriers are identified as "high risk" if they have not received an onsite investigation in the previous 12 months AND two or more of the following Behavior Analysis and Safety Improvement Categories (BASICs) rank at or above the 90th percentile for one month: Unsafe Driving, Crash Indicator, Hours-of-Service (HOS) Compliance, and Vehicle Maintenance. These are the BASICs most closely correlated with crash risk.

The agency will continue to focus on new entrant safety audits. During their initial 18 months of operation, new entrants will continue to be monitored and new entry safety audits will be conducted. A new entrant may be a motor carrier that applies for a U.S. DOT number to initiate interstate commerce operations or to transport hazardous materials within the State boundaries. Carriers remain in the new entrant safety assurance program until they pass the safety audit and have been in business for 18 months.

FMCSA will partner with NHTSA and FHWA to conduct a systematic review of crash factors and develop potential crash countermeasures. FMCSA and its partners will develop a multi-phased research project to examine existing crash data and augment these data by linking to other USDOT, State, or commercially available data sources. In the final phase, researchers will examine naturalistic driving data to better understand the driver behaviors that precipitate a crash, many of which are underreported. At each phase of the project, FMCSA and its partners will hold joint workshops to review findings and develop and refine priorities, crash countermeasures, and a strategic plan for testing and deploying crash countermeasures.

FMCSA is also implementing phase 2 of the Electronic Logging Device (ELD) final rule. The ELD rule is intended to help create a safer work environment for drivers, and make it easier to accurately track, manage, and share records of duty status data. The ELD Final Rule is estimated to save 26 lives and prevent 562 injuries, resulting from crashes involving large commercial motor vehicles, annually. Phase 2, the Full Compliance Phase, is from December 18, 2017 to December 16, 2019.

FMCSA is implementing the Drug and Alcohol Clearinghouse final rule, which established requirements for a central database for verified positive controlled substances and alcohol test results for CDL holders and refusals by such drivers to submit to testing. This rule ensures that CDL holders, who have tested positive or have refused to submit to testing, complete the return-to-duty process before driving a truck. The compliance date is January 6, 2020.

FAA

FAA will address barriers to implementation of new flight routes by:

- Collaborating with aviation stakeholders to improve regional traffic movement by optimizing airspace and procedures based on precise satellite-based navigation;
- Standardizing the use of the AEDT Environmental Screening Tool across the Service Centers;
- Tracking and sharing noise complaint data received by the Regional Administrator's staff so to inform procedure development; and
- Completing a review of the FAA's Community Engagement plans for all airspace projects. The review will encompass existing guidance on community involvement for Metroplex projects, including how and when to engage airports and communities. It will also cover associated best practices and lessons learned, and an inventory of community involvement activities conducted at each site.

FAA will provide new capabilities to airspace users while modernizing systems:

Enabling Data Comm deployment while ensuring the success of ERAM sustainment remains a key priority for the FAA. The agency has prioritized the following strategic integration activities in 2019:

- The FAA will continue to integrate new capabilities and external programs such as Data Comm into the ERAM platform using the New Program Integration (NPI) process. NPI provides the foundation and approach for this structured integration. The scope of the NPI process encompasses all activities from receipt of request for integration (e.g., a new program requesting a change in ERAM hardware, interface and/or software requirements) to establishing ERAM commitment for the schedule and lifecycle cost estimates of the requesting program.

- The FAA will apply the ERAM Strategic Release Planning process and multi-year integrated schedule to support pre-planned software releases to ensure that both ERAM sustainment and Data Comm deployment schedules remain deconflicted.
- The FAA will prepare supporting software releases to enable its planned Data Comm deployment at two Air Route Traffic Control Center (ARTCC) sites.
- The FAA will deploy Data Comm at these ARTCC sites, achieving Initial Operating Capability at both sites by the end of May 2019, followed by an Independent Operational Assessment and the In-Service Decision.

ERAM sustainment actions include the following:

- Continue to replace obsolete ERAM system equipment, which enables the system to meet its operational availability and performance requirements by replacing obsolete hardware with modern, sustainable hardware platforms.
- Complete the Early D portion of ERAM Sustainment 2 equipment refresh at the remaining 5 of 20 ARTCCs. Early D deploys new processors in the ERAM Radar Assistance Controller D Position consoles.
- Begin full deployment of the ERAM Sustainment 2 at three key sites.
- The ERAM Enhancements Program is structured in segments to allow the introduction of new controller functionality in cost efficient intervals that do not overload current software/test capabilities or conflict with other airspace programs. In 2019, the FAA will deploy adaptation enhancements software for ERAM Enhancements 2.

Replacing existing radar with a new system financed by the auction of electromagnetic spectrum:

- Submit updated SENSR Pipeline Plan to Tech Panel
- Complete RFI 2.1 Synopsis Report
- Reach an initial Investment Decision by the end of calendar year 2019
- Release the draft Request for Proposal by the end of calendar year 2019.
- Conduct additional vendor engagement events throughout the year.

Strengthening management oversight of developmental funding for air traffic management:

The FAA will update the FAA Financial Manual, defining projects that are considered pre-implementation. This will enhance its framework by clearly defining the scope of investments and ensure that budget submissions are properly aligned with the appropriate activity.

The FAA will continue to follow the formal process for reviewing Facilities & Equipment budget requests at the individual Capital Investment Plan level via the annual Capital Investment Team (CIT) reviews and Joint Resources Council (JRC) approval. The F&E budget process aligns the FAA's strategic vision on the Enterprise Architecture with the agency's F&E budget request. The JRC produces a formal record of its final determination on the F&E budget request. Continuing the follow the formal process will enhance management control of allocated funds. This effort is ongoing.

DOT Associated Performance Goals/Measures/Milestones

FTA

FTA posted a "Status of State Safety Oversight Program Certification" table to track SSO application and certification status.

As of March 18, 2019, all 31 SSO Programs across the nation achieved certification before the statutory deadline of April 15, 2019.

PHMSA

1. **Workforce Goals**
   PHMSA is currently working on a workforce plan that specifically addresses workload projections for PHMSA's OPS LNG program and related activities. The agency expect to have the workforce plan completed in Summer 2019.

2. **Letters of Determination (LODs)**
   Under the 2018 MOU, PHMSA OPS must complete its LOD 30 days prior to the issuance of FERC's final NEPA document. PHMSA OPS will measure success based on continued timely submission of the LODs.

3. **Data Collection, Monitoring, and Reporting**
   PHMSA will continue to maintain and monitor data collected through its annual and incident reporting requirements to drive future policy actions.

4. **Inspection and Enforcement Program**
   PHMSA will monitor and track new LNG facilities' safety performance through its current inspection and enforcement program.

FHWA

Infrastructure:

Goal: Invest in infrastructure to ensure mobility and accessibility and to stimulate economic growth, productivity, and competitiveness for American workers and businesses.

Strategic Objective #2: Improve program and project decision-making by using a data-driven approach, asset management principles, and a performance-based program that will lead to better conditions and more efficient operations.

Performance Measures: The USDOT APG measures are the percentage of NHS bridges in Poor Condition and the percentage of VMT on the NHS in Good Condition.

Leading measures or indicators include:

- Number of States with FHWA-certified processes to develop and use State Asset Management plans for the NHS; and
- Number of States that have incorporated asset management into their planning documents and have transitioned to a performance-based planning process.

Strategic Objective #3: Increase freight and people mobility and reliability by building effective partnerships and encouraging targeted investments.

Performance Measures: There are no USDOT APG measures for this strategic objective; however, FHWA will measure Travel Time Index (TTI) in urban areas and/or on the interstate and non-interstate portions of the NHS and Truck Travel Time Reliability (TTTR) Index on the interstate portion of the NHS.

Leading measures or indicators include:

- Percentage of authorized NHFP funding obligated for projects identified in State freight plans; and
- Number of States and MPOs that have a plan and/or process in place to strategically guide investments for Transportation Systems Management and Operations (TSMO).

Safety:

Goal: Reduce transportation-related fatalities and serious injuries across the transportation system.

Strategic Objective #1: Save lives by expanding the use of data-driven, systemic safety management approaches and by increasing the adoption of proven safety solutions by all road owners.

Performance Measures: The USDOT APG measure is the highway fatality rate, or number of fatalities per 100 million VMT.

Leading measures or indicators include:

- Number of State DOTs collecting all Fundamental Data Elements, which are a subset of the Model Inventory of Roadway Elements (MIRE); and
- Number of State DOTs implementing proven safety countermeasures at the post-demonstration level on the Every Day Counts (EDC) scale.

Safety:

Goal: Reduce transportation-related fatalities and serious injuries across the transportation system.

Strategic Objective #1: Save lives by expanding the use of data-driven, systemic safety management approaches and by increasing the adoption of proven safety solutions by all road owners.

Performance Measures: The USDOT APG measure is the highway fatality rate, or number of fatalities per 100 million VMT.

Leading measures or indicators include:

- Large truck and bus fatalities per 100 million vehicle miles of travel (VMT);
- Average days to investigate "high-risk" designated carriers; and
- Number of motor carrier incidents.

FAA

FAA exceeded its FY 2018 goal by completing 91.3 percent of NAC recommendations for the Northeast Corridor. Specifically, FAA made major progress on the following NextGen projects:

- The FAA completed deployment of DataComm services at 62 airports. In addition, the FAA began the roll out of DataComm services in high-altitude airspace, starting

functional testing at Indianapolis, Kansas City, and Memphis air route traffic control centers. This functional testing is proceeding as planned.

- Time-Based Flow Management[52] completed the most recent Integrated Departure and Arrival Capability implementation at Oakland Center and associated towers.
- In FY 2018, the FAA completed delivery and installation of five test and support systems at the FAA's William J. Hughes Technical Center and one operational system in Phoenix to prepare for operational testing of Terminal Flight Data Manager.

In FY 2018, the FAA completed the year with 19 of 21 programs (90.5 percent) within 10 percent of their cost, schedule, and performance baselines.

Responsible Agency Official(s)

Henrika Buchanan, FTA, Acting Associate Administrator

Alan Mayberry, PHMSA, Associate Administrator, Office of Pipeline Safety

Derrell Turner, FHWA, Acting Associate Administrator for Infrastructure

Beth Alicandri, FHWA, Associate Administrator for Safety

Martin Knopp, FHWA, Associate Administrator for Operations

Raymond P. Martinez, FMCSA, Administrator

Jeffrey Vincent, FAA, Director, Air Traffic Services

Jim Benjamin, FAA, ERAM Program Manager

Michael Freie, FAA, Acting SENSR Program Manager

Pamela Whitley, FAA, Acting Director NextGen Organization

[52] Time-Based Flow Management, predicts what time all the flights will get to the point in the air where they start to make their descent to the airport about an hour before they get there. Click on link above for more information.

Systematizing Cybersecurity Strategies to Deter Surging Cyber Threats

OIG Challenge Summary

To accomplish its mission, DOT relies on over 450 information technology systems. The Department's cybersecurity program is critical to protect these systems from malicious attacks or other compromises that may inhibit DOT's ability to carry out its missions. As cyber threats continually evolve and expand, the Department faces significant challenges in strengthening its systems while adapting to new and rising threats. To address cybersecurity concerns, the Department needs to standardize its processes, increase network visibility, resolve longstanding weaknesses, and implement congressionally mandated aviation cybersecurity initiatives.

Key Challenge Components

- Standardizing cybersecurity processes to manage enterprise-wide cybersecurity risks
- Increasing network visibility to proactively prevent and respond to security incidents
- Resolving longstanding security weaknesses to strengthen information technology infrastructure
- Implementing congressionally mandated aviation cybersecurity initiatives

DOT Progress Update for FY 2019

FAA and DOT reported that neither Federal nor DOT/FAA policies require the creation of technical vulnerabilities as individual Plan of Action and Milestones (POAM) because doing so would be highly inefficient and burdensome. Instead, DOT proposed to address the OIG's findings by focusing on the effectiveness of Operating Administrations' vulnerability management programs and any associated control-level weaknesses. The FAA Cybersecurity Steering Committee (CSC) is continuously monitoring and reporting progress on the status of remediations that address the 2015 GAO audit recommendations. The FAA has implemented the additional technical recommendations received from GAO in February 2019.

In FY 2019, the DOT Office of Chief Information Officer (OCIO) continued to work with FAA and an integration partner on implementing the agency Continuous Diagnostics and Mitigation (CDM) dashboard, which is a requirement in Federal policy for CFO Act agencies, and which serves to collect the detail-level vulnerability and weakness information, prioritize vulnerabilities for mitigation, and to provide operators and management with actionable information to mitigate the vulnerabilities. As part of the FY 2019 CDM efforts, a subordinate FAA CDM dashboard was connected to the DOT departmental dashboard and is providing FAA aggregated-data for enterprise visibility. Additionally, the DOT departmental dashboard was connected to the Federal dashboard operated by DHS to provide Federal enterprise-level visibility. The Department has also begun applying attributes to the data that are automatically collected to attribute assessed assets and their vulnerabilities to DOT systems, and subsequently to DOT investments in order to support an integrated approach to assessment of risk, prioritization, and allocation of resources via the DOT IT Spend Review process.

DOT Planned Actions to Address this Challenge

OCIO will continue working with the OAs to prioritize system authorization to improve DOT's cybersecurity. OCIO will leverage the IT spend plan review to identify the level of resourcing

being directed to these efforts. In line with Department of Homeland Security and OMB metrics, OAs will be scored on progress towards authorizing all DOT systems in accordance with Federal requirements.

OMB and the Department of Homeland Security are in the process of developing additional agency guidance on implementation of ongoing authorization. With the issuance of that guidance, execution of an enterprise cybersecurity contract to consolidate and standardize cybersecurity contractual support, and continuation of efforts to reduce the agency inventory through modernization and consolidation efforts, and migration of smaller systems and applications to shared services and cloud providers, DOT will both improve its security authorization performance further, and accelerate its implementation of ongoing authorization.

Resolving Longstanding Security Weaknesses to Strengthen Information Technology Infrastructure

- The FAA will implement additional GAO technical recommendations in updates scheduled for May and September of 2019.

Implementing Congressionally Mandated Aviation Cybersecurity Initiatives

- The FAA's Aviation Safety Office (AVS) has initiated efforts to address the four deferred recommendations made by the Aviation Rulemaking Advisory Committee (ARAC) Aircraft Systems Information Security Protection (ASISP) Working Group. AVS plans to update the Aircraft Systems Information Security Protection (ASISP) Plan to reflect new target dates for the four deferred ASISP recommendations.
- The FAA has established target dates for risk assessments, mitigation strategies and prioritization based on available resources. The FAA has started the process for integrating the model and mitigations into the FAA's overall cybersecurity efforts. The CyRM strategy and plan will be updated to include target dates for the full implementation of CyRM.
- The FAA's Cyber Research & Development (R&D) Plan will be updated to reflect agency priorities. To prevent duplicate efforts, agency priorities will be coordinated with other agency cybersecurity plans and activities.

Standardizing Cybersecurity Processes to Manage Enterprise-wide Cybersecurity Risks

- The DOT OCIO will: reorganize commodity IT to provide greater consistency in implementing common controls and services; award several enterprise contracts—including one for cybersecurity—to standardize contractual language, oversight, and execution for improved outcomes and reduced risks; and will update its policies and implementation guidance to more effectively execute the authorities and responsibilities established through FITARA and FISMA 2014.

Increasing Network Visibility to Proactively Prevent and Respond to Security Incidents

- The DOT OCIO will continue, and complete, the network modernization for the HQ and field networks that service the non-FAA OAs and OST offices. The modernized network, combined with the Department's Continuous Diagnostic and Mitigation (CDM) capability, provides detailed visibility into network infrastructure and endpoints operating

on the DOT network, configurations, deviations, and vulnerabilities. That information is shared between the IT Shared Services operational staff, and the DOT CISOs cybersecurity team for the identification of vulnerabilities for mitigation, and for anomalous or malicious activity that requires agency response.

Resolving Longstanding Security Weaknesses to Strengthen Information Technology Infrastructure

- As a result of the transformational changes to be undertaken by the DOT OCIO in FY 2019 and FY 2020, a number of longstanding weaknesses will be directly addressed, especially in the consistency of policy, guidance, and the implementation of controls. Additional efficiencies that are achieved will be applied to address many of the other weaknesses in implementation.

DOT Associated Performance Goals/Measures/Milestones

The Department set a target for 99 percent of information systems to be properly authorized in FY 2019. In FY 2018, it achieved its 99 percent goal by reducing the inventory from 473 to 459 systems and through additional planning and oversight of security assessment and authorization activities.

Additionally, the Department has set a goal of achieving 50 percent of its information systems converted to an ongoing authorization process in FY 2019. In FY 2018, 17 percent of systems were converted to ongoing authorization processes, which was eight percent below its target of 25 percent.

Responsible Agency Official(s)

Sean Torpey, Director, FAA Information and Technology

Michael Romanowski, Director, FAA Policy and Innovation

Joseph Post, Deputy Director, FAA NAS Systems Engineering & Integration Shelley Yak, Director, Director of the FAA's William J. Hughes Technical Center

Ryan Cote, Chief Information Officer, U.S. Department of Transportation

Andrew R. Orndorff, Chief Information Security Officer, U.S. Department of Transportation

Harnessing Innovative Procurement and Financing Practices While Maintaining Oversight of Acquisitions, Grants, and Assets

OIG Challenge Summary

DOT annually obligates more than $70 billion for contracts and grants. To award contracts and grants in a timely manner and achieve effective outcomes for its projects, the Department increasingly relies on innovative acquisition approaches; time-saving multiple-award vehicles; and partnerships with industry, State and local governments, and other stakeholders. While innovation in acquisitions and grant awards can deliver important benefits, strong oversight remains essential to achieve desired program outcomes; safeguard Federal assets and investments from fraud, waste, and abuse; and mitigate risks to the Department's mission.

Key Challenge Components

- Implementing innovative and streamlined acquisition practices while managing risk
- Strengthening agency oversight of DOT assets, contracts, and grants
- Defining new roles and responsibilities as use of public-private partnerships increases

DOT Progress Update for FY 2019

On the Departmental level, the budget and administration components of the Office of the Secretary (OST-B) and (OST-M) are collaborating to implement the Program Management Improvement and Accountability Act (PMIAA) of 2016, pursuant to the Office of Management and Budget (OMB) Memo M-18-19 dated June 25, 2018. Over time, implementation of PMIAA aims to improve program and project management practices, thus strengthening the effectiveness of program oversight and execution. The Department has appointed co-Program Management Improvement Officers (PMIOs) as the senior leadership in the Office of the Chief Financial Officer and Assistant Secretary for Budget and Programs (OST-B) and the Office of the Assistant Secretary for Administration (OST-M). The PMIOs submitted a draft PMIAA plan to OMB on November 30, 2018. OMB has not yet provided comments on the draft plan.

The FAA uses multiple-award vehicles to support major initiatives such as the Next Generation Air Transportation System (NextGen) and meet DOT procurement targets for small and disadvantaged businesses. While multiple-award vehicles can streamline the process for meeting acquisition goals, the agency's work has identified oversight vulnerabilities that increase risk. With regard to property assets, the FAA has revised its guidance to document when Real Estate Management System (REMS) data should be submitted, updated, and reviewed. The FAA has revised REMS training and guidance on submitting lease documentation in REMS.

FHWA supports the transportation community in exploring and implementing innovative strategies to deliver major highway investment projects. Public-Private Partnerships (P3s), specifically those that combine the five major phases of Design-Build-Finance-Operate-Maintain, allow the private sector to bring their innovation, efficiency, and capital to address complex transportation challenges. Federal support for these projects includes FHWA Federal-aid formula funds and loans provided through the Build America Bureau's Transportation Infrastructure Finance and Innovation Act (TIFIA) credit program. Since 1999, the Department

of Transportation has loaned State highway projects more than $19 billion in TIFIA credit assistance, almost half of which has assisted P3-delivered projects.

On March 6, 2019, the Office of the Inspector General released Report No. ST2019019, "FHWA Needs To Clarify Roles and Processes for Approving and Monitoring Public-Private Partnerships," identifying concerns with the clarity and implementation of current agency guidance for oversight of P3s.

DOT Planned Actions to Address this Challenge

Phase I of DOT's PMIAA implementation focuses on acquisition management. OST-M is working with the FHWA and MARAD to pilot the first Major Acquisition Portfolio Reviews. In addition to piloting portfolio reviews, the draft implementation plan reflects that the Department should convene a working group of P/PM representatives from the OAs and OST and hire a dedicated official for leading program and project management across the Department. This team will identify next steps for institutionalizing the PMIAA and determine a more detailed implementation schedule. Critical deliverables will include drafting policies and transmitting information internally.

Implementing Innovative and Streamlined Acquisition Practices While Managing Risk

The FAA will develop and implement a process to require contracting officers to verify and document a firm's small/disadvantaged status prior to establishing or exercising an option issued under an eFAST master ordering agreement.

The OA will also revise the Acquisition Management System (AMS) to require FAA's acquisition program office that manages multiple-award contract vehicles to develop and maintain comprehensive program management and governance plans.

The FAA will revise AMS to strengthen multiple-award contract oversight and management framework to ensure such multiple-award contracts follow sound business practices and AMS policies and procedures.

Strengthening Agency Oversight of DOT Assets, Contracts and Grants

The FAA will survey Service Areas for inputs on how to add a vetting step to validate REMS data entry. The FAA will conduct a deep-dive analysis to determine if there are Commercial Off-The-Shelf (COTS) tool solutions to replace REMS and AITS, with a focus on improved functionality, data accuracy, and cost savings.

The OA is also developing a plan to enhance the real property data validation process to ensure data consistency and accuracy. Additionally, the FAA is developing a method to track and monitor data quality at the headquarters level every quarter.

The FHWA will use the OIG report to improve the documentation of its current stewardship practices; enhance their dissemination; strengthen communication between FHWA headquarters and field offices; and clarify the agency's working relationship with the Build America Bureau. The FHWA expects to complete most of this work by December 31, 2019.

DOT Associated Performance Goals/Measures/Milestones

The PMIAA implementation is in early planning stages. Performance goals and measures will be developed as the program implementation matures.

The FAA has set a goal that 90 percent of major baselined acquisition programs must be maintained within 10 percent of their current acquisition cost, schedule, and performance baseline as of the end of FY 2019. Programs classified as acquisition categories 1, 2, or 3, considered strategic, or part of NextGen are considered "major" programs and included in this measure. For FY 2019, 20 major acquisition programs will be tracked and monitored. By law, FAA must consider termination of a program when it is breaching its cost, schedule, or performance goals by more than 10 percent.

DOT has set a goal that 20 State and/or local agencies will have used Federal innovative finance methods within that year. DOT facilitated the use of innovative financing tools in 17 State and local governments in FY 2018, falling one short of its goal of 18.

The measure is a count of the number of states in which a public project sponsor has used one of the following finance tools to assist a Title 23 eligible project, regardless of whether the project receives regular Federal-aid highway funds: TIFIA credit assistance, Private Activity Bond (PAB) issuance, GARVEE bond issuance, Availability Payment reimbursement agreement, or State Infrastructure Bank credit assistance.

Responsible Agency Official(s)

John Kramer, Chief Financial Officer and Assistant Secretary for Budget and Programs, U.S. Department of Transportation

Willis Morris, Director, Office of Small and Disadvantaged Business Utilization, U.S. Department of Transportation

Nathan Tash, Deputy Assistant Administrator for the FAA Office of Acquisitions and Business Services and Chief Acquisitions Officer

Roger Lilley, Manager of the FAA Property Support Division

Performance Data Completeness and Reliability

The following information titled, "**REVIEW OF THE U.S. DEPARTMENT OF TRANSPORTATION'S FISCAL YEAR 2018 PERFORMANCE REPORT AND FISCAL YEAR 2020 PERFORMANCE PLAN BY THE BUREAU OF TRANSPORTATION STATISTICS**," gives readers the steps DOT has in place to support the general accuracy and reliability of performance information, reduce the risk of inaccurate performance data, and provide a sufficient level of confidence to the Congress and the public that the information presented is credible as appropriate to its intended use (OMB Circular A-11, section 260.9: Assessing the completeness, reliability and quality of performance data). Please note that measures not provided to the Bureau of Transportation Statistics (BTS) for verification and validation prior to the submission deadline for the FY 2018 Annual Performance Plan are not included in this year's Performance Data Completeness and Reliability appendix.

Each entry includes a description of a performance measure and associated data provided by the agencies in charge of the measure. The *Scope* statement provides an overview of the data collection strategy for the underlying data behind the performance measure. The *Sources* statement identifies the data system(s) from which the data for each measure was taken. The *Statistical Issues* statement has comments, provided by the Bureau of Transportation Statistics (BTS) and the agency in charge of the measure, which discuss variability of the measure and other points. The *Completeness* statement indicates limitations due to missing data or availability of current measures, and methods used to develop projections are also provided, as appropriate. The *Reliability* statement gives the reader a feel for how the performance data are used in program management decision making within DOT. The *Verification and Validation* (V&V) statement gives readers the steps agencies have in place to support the general accuracy and reliability of performance information, reduce the risk of inaccurate performance data, and provide a sufficient level of confidence to the Congress and the public that the information presented is credible as appropriate to its intended use (OMB Circular A-11, section 260.9: Assessing the completeness, reliability and quality of performance data).

April 5, 2019

INFORMATION MEMORANDUM TO THE SECRETARY

From: Patricia Hu
Director, Bureau of Transportation Statistics

Prepared by: Stephanie Lawrence
Director, Office of Statistical and Economic Analysis

Subject: Assessing the Completeness, Reliability and Quality of Performance Data

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SUMMARY: Subsection 6302(b)(3)(B)(ix) tasks the Director of the Bureau of Transportation Statistics (BTS) to review and report to the Secretary of Transportation on the sources and reliability of the statistics produced to measure outputs and outcomes as required by the Government Performance and Results Act of 1993 (GPRA).

To complete this task, BTS assessed the completeness, reliability and quality of the performance measurements that feed into the U.S. Department of Transportation (DOT) Annual Performance Report (APR) and the Annual Performance Plan (APP). BTS completed the assessment in conjunction with the development of the 2018 APR and 2020 APP as an appendix to the package. The review included all measures that DOT actively collects.

BTS hopes this review will assist you and DOT's operating administrations adapt the Department's performance measures to reflect new transportation technologies and to support the learning agenda required by the Fundamentals of Evidence-based Policymaking Act of 2018.

The Secretary

REVIEWED: _____

COMMENTS: _____

DATE: _____

REVIEW OF THE U.S. DEPARTMENT OF TRANSPORTATION'S FISCAL YEAR 2018 PERFORMANCE REPORT AND FISCAL YEAR 2020 PERFORMANCE PLAN BY THE BUREAU OF TRANSPORTATION STATISTICS

Subsection 6302(b)(3)(B)(ix) tasks the Director of the Bureau of Transportation Statistics (BTS) to review and report to the Secretary of Transportation on the sources and reliability of the statistics produced to measure outputs and outcomes as required by the Government Performance and Results Act of 1993 (GPRA). To complete this task, BTS assessed the completeness, reliability and quality of the performance measurements that feeds into the U.S. Department of Transportation (DOT) Annual Performance Report (APR) and the Annual Performance Plan (APP). The review included all measures that DOT actively collects. Per Subsection 6302(b)(3)(B)(ix), BTS judges the reliability and other statistical properties of the measures; not whether the measures are the most appropriate reflection of performance for the particular goal or program. BTS' review supports the learning agenda required by the Fundamentals of Evidence-based Policymaking Act of 2018.

Each section includes a description of a performance measure and associated data provided by the agencies in charge of the measure. The Scope statement provides an overview of the data collection strategy for the underlying data behind the performance measure. The Sources statement identifies the data system(s) from which the data for each measure were taken. The Statistical Issues statement has comments, provided by the BTS and the agency in charge of the measure, which discuss variability of the measure and other points. The Completeness statement indicates limitations due to missing data or availability of current measures, and methods used to develop projections also are provided, as appropriate. The Reliability statement gives the reader a feel for how the performance data are used in program management decision making within the DOT. The Verification and Validation (V&V) statement gives readers the steps agencies have in place to support the general accuracy and reliability of performance information, reduce the risk of inaccurate performance data, and provide a sufficient level of confidence to the Congress and the public that the information presented is credible, as appropriate, for its intended use (OMB Circular A-11, section 260.9: Assessing the completeness, reliability and quality of performance data).

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ACRONYMS AND INITIALISMS

Acronym or Initialism	Term
AADT	Annual Average Daily Traffic
AAR	Association of American Railroads
ACQ	Acquisition
AEE	Office of Environment and Energy
AJR-G	Office of Performance Analysis
ANG	Office of NextGen
AP	Availability Payment
APL	Office of Aviation Policy, Planning, and Environment
ASPM	Aviation System Performance Metrics
ASQP	Airline Service Quality Performance
ATO	Air Traffic Organization
ATQA	Air Traffic Quality Assurance
ATRF	Automated Traffic Recorders
AVP	Accident Investigation and Prevention
AVS	Aviation Safety
BASICs	Behavior Analysis and Safety Improvement Categories
BIC	Best In Class
BTS	Bureau of Transportation Statistics
BUILD	Better Utilizing Investments to Leverage Development
CAPRI	Compliance Analysis and Performance Review Information
CASTLE	Consolidated Automated System for Time and Labor Entry
CEDAR	Comprehensive Electronic Data Analysis Reporting
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CGA	Common Ground Alliance
CO_2	Carbon Dioxide
CRSS	Crash Report Sampling System
CSAM	Cyber Security Assessment and Management
CY	Calendar Year
DataComm	Data Communications
DIRT	Damage Prevention Reporting Tool
DoD	Department of Defense
DOT	Department of Transportation
D2D	Data to Decisions
EA	Environmental Assessment
ECAC	Estimated Cost at Completion
EIS	Environmental Impact Statements
EMS	Emergency Medical Services

Acronym or Initialism	Term
ESAC	Estimated Schedule at Completion
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FPDS	Federal Procurement Data System
FPPS	Federal Personnel/Payroll System
FRA	Federal Railroad Administration
FRPP	Federal Real Property Program
FTA	Federal Transit Administration
FY	Fiscal Year
GA	General Aviation
GAJSC	General Aviation Joint Steering Committee
GAMA	General Aviation Manufacturers Association
GARVEE	Grant Anticipation Revenue Vehicle
GES	General Estimating System
GPS	Global Positioning System
GSA	General Services Administration
GVWR	Gross Vehicle Weight Rating
HM	Hazardous Materials
HMIS	Hazardous Materials Information System
HOS	Hours-of-Service
HPMS	Highway Performance Monitoring System
HQ	Headquarters
HR	Human Resources
IBC	Department of Interior Business Center
IRI	International Roughness Index
IT	Information Technology
KPI	Key Performance Indicators
KSN	Knowledge Services Network
LAANC	Low Altitude Airspace and Notification Capability
LOB	Line of business
MAP-21	Moving Ahead for Progress in the 21st Century Act
MARAD	Maritime Administration
MCMIS	Motor Carrier Management Information System
MGS	Monster Government Solutions
MMUCC	Model Minimum Uniform Crash Criteria
MRO	Multiple Runway Operations

Acronym or Initialism	Term
MSP	Maritime Security Program
NAC	NextGen Advisory Committee
NAR	Non-Accident Releases
NAS	National Aviation System
NBI	National Bridge Inventory
NBIS	National Bridge Inspection Standards
NEC	Northeast Corridor
NEMSIS	National Emergency Medical Services Information System
NEPA	National Environmental Policy Act
NextGen	Next Generation Air Transportation System
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NOI	Notice of Intent
NPIAS	National Plan of Integrated Airport Systems
NPMRDS	National Performance Management Research Data Set
NRC	National Response Center
NTD	National Transit Database
NTL	National Transportation Library
NTML	National Traffic Management Log
NTSB	National Transportation Safety Board
OA	Operating Administration
OA (in OST-M)	Occupancy Agreements
OAG	Official Airline Guide
OCIO	Office of the Chief Information Officer
OIG	Office of Inspector General
OIRA	Office of Information and Regulatory Affairs (OMB)
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OPSNET	Operational Network
OSPE	Office of the Senior Procurement Executive
OST-P	Office of the Secretary of Transportation - Policy
OST-R	Office of the Secretary of Transportation - Research
OTP	On-Time Performance
PAB	Private Activity Bond
PAPAI	Project and Program Action Information
PAR	Police Accident Report
PBN	Performance-Based Navigation
PHMSA	Pipeline and Hazardous Materials Safety Administration
PRISM	Performance and Registration Information Systems Management

Acronym or Initialism	Term
PVVMT	Private Vehicle - Vehicle Miles Traveled
PSC	Product or Service Code
QA/QC	Quality Assurance/Quality Control
REMS	Real Estate Management System
R&D	Research and Development
ROD	Record of Decision
RTF	Reduce the Footprint
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SF	Square Feet
SIB	State Infrastructure Bank
SLSDC	Saint Lawrence Seaway Development Corporation
SME	Subject Matter Experts
SPIRE	Simplified Program Information Reporting and Evaluation
SSO	System Safety Oversite
STB	Surface Transportation Board
TAC	Technical Assistance Center
TAM	Transportation Acquisition Manual
TAR	Transportation Acquisition Regulation
TERM	Transit Economic Requirements Model
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TMAS	Traffic Monitoring and Analysis System
TrAMS	Transit Award Management System
TRANSCOM	Transportation Command
TTTR	Truck Travel Time Reliability
TVT	Travel Volume Trends
UAS	Unmanned Aircraft Systems
VISA	Voluntary Intermodal Sealift Agreement
VMT	Vehicle Miles Traveled
WTTS	Workforce Transformation and Tracking System

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Motor Vehicle-Related Fatalities (Overall) (FHWA, NHTSA, FMCSA)

Measure

Motor vehicle-related roadway fatalities per 100 million vehicle miles traveled (VMT).

Scope

Roadway fatalities per 100 million VMT are calculated for each calendar year (CY).

The number of fatalities included in national reports is a count of deaths of a motorist or a non-motorist occurring within 30 days of a crash involving a motor vehicle traveling on a traffic-way customarily open to the public within the 50 states, the District of Columbia, and Puerto Rico.

A roadway fatality is the death of any vehicle occupant (any driver, passenger, or person riding on the exterior of a motor vehicle), including motorcycle (two- or three-wheeled motor vehicle) riders or passengers, and any non-occupants (any person not an occupant of a motor vehicle in transport, such as a pedestrian or cyclist) in a motor vehicle crash.

VMT include all vehicle miles traveled by all types of vehicles including:

- passenger cars,
- motorcycles,
- buses,
- all two-axle four tire vehicles (including vans, pickup trucks, and sport/utility vehicles),
- single unit two-axle six tires or more trucks, and
- combination trucks.

Sources

Roadway fatality data are obtained from the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS). The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico and is based on Police Accident Reports (PARs).

Annual VMT are estimated using data from the Federal Highway Administration's (FHWA's) Highway Performance Monitoring System (HPMS). The HPMS compiles data from the states annually concerning the condition and performance of all roads in the United States. HPMS includes the annual average daily traffic (AADT) by road segment. States provide AADT on all federal-aid highway sections. These data are based on traffic counts taken at least once every three years on the National Highway System (NHS), interstate, and principal arterials and at least once every six years on minor arterials and collectors. Traffic counts are adjusted by states to reflect day-of- week and seasonal variations, current year conditions, and axle corrections, as necessary. When these AADTs are multiplied by the length of each road segment and summed for all road segments and days of the year, they yield the annual VMT.

Monthly VMT are calculated using the annual VMT from HPMS and the monthly traffic counts states submit to FHWA from their automated traffic recorders (ATRs). These ATRs are permanent traffic counting devices such as inductive loops in the roadway. There are about 4000 ATRs that are reported to FHWA each month. ATR data are submitted and processed using the Travel Monitoring Analysis System (TMAS). Monthly average daily

traffic (MADT) is computed from the ATR traffic counts. Each MADT is compared with the MADT for the same month the previous year to yield a change rate. The change rates are averaged by functional class of road. If a state does not provide traffic data in time, their change rates are estimated from the surrounding states. Monthly VMT are estimated and reported in FHWA's Traffic Volume Trends (TVT) by combining the change rates for each month with the most recent annual VMT from HPMS. The TVT report is available to the public within 60 days after the close of the month. Data that covers a minimum of 30 states and 70% of the VMT is required for publication.

Roadway fatality counts rates for 2016 were taken from the 2017 FARS annual report file and rates derived using VMT Traffic Volume Trends (TVT), June 2018.

Statistical Issues

Both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

VMT are complete through 2016. The final 2017 VMT estimate will be available in December 2018 or early 2019.

Reliability

There is concern about consistency in vehicle counts across states. Further research is needed to address this concern.

To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

FARS counts of motor vehicle fatalities are known to be different from fatality statistics by cause reported by the National Center for Health Statistics, because FARS captures fatalities from vehicle crashes only on public roadways.

NHTSA is careful to ensure consistency in FARS data by establishing numerous quality control measures and standard data coding guidelines, thereby assuring adequate national data to facilitate accurate analyses. For example, to complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system

are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Training for the field personnel includes a new analyst training program that provides a self-directed preparatory training followed by a five-day classroom session. Training issues identified throughout the year and changes to the system are addressed at system-wide training. Ongoing coding assistance and guidance to FARS analysts are available through a FARS hotline. The data itself are controlled upon entry with the FARS data entry system edit checks. These edit checks are updated annually along with a Coding and Validation Manual that provides definitions, rules, and guidance for each data element. The quality of a FARS case also is monitored for completeness, unknown values, and violations of edit check rules. Once in the database, the FARS data are also monitored through statistical control charts which identify deviations from expected trends in the data and indicate when an inconsistency in the data occurs.

While these activities help to ensure consistency in data acquisition, additional factors such as changes in the collection of the data in states and corresponding changes in FARS make monitoring data quality more complex. When these changes occur, it can limit the effectiveness of monitoring data using trend analysis to identify potential problems. To help address these issues, steps have been taken to develop additional means to support data quality that involves manual reviews of the case work coded by the FARS analysts—the FARS case re-coding process.

The FARS case re-coding process was developed to conduct annual case sampling and re-coding for data quality monitoring, analyst performance assessment, and training. The design combines the concepts of selected case re-coding with state-specific training. This quality assurance process uses samples from the current file year so that corrective actions to improve the quality of the data can be performed throughout the file year when inconsistencies are identified. The aim is to provide more immediate benefit from a case re-coding effort in the form of analyst training and have more tangible effects on data quality.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Motor Vehicle-Related Fatalities (by Type) - Passenger Fatalities (FHWA, NHTSA, FMCSA)

Measure

Passenger fatalities per 100 million VMT.

Scope

Passenger vehicle occupant fatalities per 100 million vehicle VMT are calculated for each calendar year.

The number of fatalities included in national reports is a count of passenger vehicle occupant deaths occurring within 30 days of a crash involving a motor vehicle traveling on a traffic-way customarily open to the public within the 50 states, the District of Columbia, and Puerto Rico.

An occupant is any person inside (drivers and passengers) or on the exterior of a passenger vehicle in transport.

VMT include vehicle miles traveled by all types of passenger vehicles including:

- passenger cars,
- vans,
- pickup trucks, and
- sport/utility vehicles.

Sources

Roadway fatality data are obtained from the NHTSA FARS. The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico, and is based on PARs.

See Reduce Motor Vehicle-Related Fatalities (Overall) for VMT source information.

Roadway fatality counts for 2016 were taken from the 2016 FARS Annual Report File and rates derived using VMT TVT, August 2016. For information on the TVT see Reduce Motor Vehicle-Related Fatalities (Overall).

Statistical Issues

Both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

VMT are complete through 2016. The final 2017 VMT estimate will be available by December 2018 or early 2019.

Reliability

There is concern about consistency in vehicle counts across states. Further research is needed to address this concern.
To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

See verification and validation for Reduce Motor Vehicle-Related Fatalities (Overall).

Details on Safety Measures Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Motor Vehicle-Related Fatalities (by Type) - Large Truck and Bus (FHWA, NHTSA, FMCSA)

Measure

Large truck and bus fatalities per 100 million VMT (all vehicle types).

Scope

The number of fatalities included in national reports is a count of deaths occurring within 30 days of a crash involving large trucks or buses traveling on a traffic-way customarily open to the public within the 50 states, the District of Columbia, and Puerto Rico.

VMT include all vehicle miles traveled by all types of vehicles including:

- passenger cars,
- motorcycles,
- buses,
- all 2-axle four tire vehicles (including vans, pickup trucks, and sport/utility vehicles),
- single unit 2-axle six tire or more trucks, and
- combination trucks.

Sources

Roadway fatality data are obtained from the NHTSA FARS. The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico, and is based PARs. A large truck is defined in FARS as a truck with a gross vehicle weight rating (GVWR) greater than 10,000 pounds. A bus is defined in FARS as any motor vehicle designed primarily to transport nine or more persons, including the driver.

See Reduce Motor Vehicle-Related Fatalities (Overall) for VMT source information.

Statistical Issues

Both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Projections depend on the continuation of individual and market behavior regarding highway safety policies, vehicle miles traveled, seat belt use, and alcohol related fatalities for large trucks and buses. The assumptions inherent in these projections, together with the normal levels of uncertainty inherent in statistical evaluations, may influence the accuracy of the projection.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

VMT are complete through 2016. The final 2017 VMT estimate will be available by December 2018 or early 2019.

Reliability

There is concern about consistency in vehicle counts across states. Further research is needed to address this concern.

To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

See verification and validation for Reduce Motor Vehicle-Related Fatalities (Overall).

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Motor Vehicle-Related Fatalities (by Type) – Non-Occupant (FHWA, NHTSA, FMCSA)

Measure

Non-occupant fatalities (pedestrian, bicycle) per 100,000 population.

Starting in CY 2016, this measure changed to fatalities per 100,000 population to better align with the DOT strategic plan.

Scope

The number of fatalities included in national reports is a count of non-occupant deaths occurring within 30 days of a crash involving a motor vehicle traveling on a traffic-way customarily open to the public within the 50 states, the District of Columbia, and Puerto Rico.

A non-occupant is any person involved in a traffic crash who is not an occupant of a motor vehicle in transport and includes:

- pedestrians,
- bicyclists and other pedal cyclists,
- occupants of parked motor vehicles,
- joggers and skateboard riders, and
- people riding on animals and in animal-drawn conveyances.

VMT include all vehicle miles traveled by all types of vehicles including:

- passenger cars,
- motorcycles,
- buses,
- all 2-axle four tire vehicles (including vans, pickup trucks, and sport/utility vehicles),
- single unit 2-axle six tire or more trucks, and
- combination trucks.

Sources

Roadway fatality data are obtained from NHTSA FARS. The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico, and is based on PARs.

See Reduce Motor Vehicle-Related Fatalities (Overall) for VMT source information.

Roadway fatality counts for 2016 were taken from the 2016 FARS Annual Report File and rates derived using VMT TVT, August 2016. For information on the TVT see Reduce Motor Vehicle-Related Fatalities (Overall).

Statistical Issues

Both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Non-occupant fatalities (pedestrian, bicycle) occur in places not covered by FARS, which is limited to public roads.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

VMT are complete through 2016. The final 2017 VMT estimate will be available by December 2018 or early 2019.

Reliability

There is concern about consistency in vehicle counts across states. Further research is needed to address this concern.

To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

See verification and validation for Reduce Motor Vehicle-Related Fatalities (Overall).

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Motor Vehicle-Related Fatalities (by Type) – Motorcyclist (FHWA, NHTSA, FMCSA)

Measure

Motorcyclist fatalities per 100,000 motorcycle registrations.

Scope

Motorcyclist fatalities per 100,000 motorcycle registrations are calculated for each calendar year.

The number of motorcyclist fatalities included in national reports is a count of motorcyclist (rider (operator) and passenger) deaths occurring within 30 days of a crash involving a motorcycle traveling on a traffic-way customarily open to the public within the 50 states, the District of Columbia, and Puerto Rico.

A motorcycle is a two- or three-wheeled motor vehicle designed to transport one or two people, including motor scooters, minibikes, and mopeds.

Sources

Roadway fatality data are obtained from NHTSA FARS. The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico, and is based on PARs.

States collect motorcycle registration data and provide the data to FHWA, which then provides the data to the public.

Fatality counts for CY 2016 were taken from the 2016 FARS Annual Report File, and rates derived using FHWA's motorcycle registration data.

Statistical Issues

Motorcyclist fatalities occur in places not covered by FARS, which is limited to public roads.

The FHWA estimates of registered motorcycles may be an underestimate of the true number of motorcycles used on the roads each year. Data collected by the Motorcycle Industry Council corroborate this possibility and have noted that not all motorcyclists register their bikes (National Transportation Safety Board (NTSB)—Safety Recommendation Date: Oct 3, 2007).

The motorcycle registration date varies among states. Although many states continue to register specific vehicle types on a calendar year basis, all states use some form of the

"staggered" system to register motor vehicles. The "staggered" system permits a distribution of the renewal workload throughout all months. Most states allow pre-registration or permit "grace periods" to better distribute the annual registration workload.

In order to present vehicle registration data uniformly for all states, the information is shown as nearly as possible on a calendar-year basis. Insofar as possible, the registrations reported exclude transfers and re-registrations and any other factors that could otherwise result in duplication of the vehicle counts.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

Reliability

The FHWA motorcycle registration data includes all vehicles that have been registered at any time during the calendar year. Data include vehicles that were retired during the year and vehicles that were registered in more than one state. In some states, it is also possible that, contrary to the FHWA reporting instructions, vehicles that have been registered twice in the same state may be reported as two vehicles. The NHTSA data include only those vehicles that are registered as of July 1 of the given year. Therefore, they do not include vehicles registered in the last half of the calendar year or vehicles that may only be registered for a part of a year such as those for farm use.

To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

See verification and validation for Reduce Motor Vehicle-Related Fatalities (Overall).

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce High Risk Motor Carriers (FMCSA)

Measure

Average number of days to investigate "High Risk" designated carriers.

Scope

The average number of days from identification until investigation is the average number of days from identification as High-Risk to when an investigation is conducted, for carriers investigated during this time.

The average number of days from identification as "High-Risk" to when an investigation is conducted. FMCSA policy is to investigate identified high-risk carriers within 90 days.

This measure informs and guides the following programs for FMCSA:

- roadway safety policy,
- safety program planning,
- regulatory development,
- resource allocation, and
- operational mission performance.

The FMCSA identifies and investigates carriers that—based on roadside performance data and investigation results—pose the greatest safety risk.

Carrier type and high-risk criteria:

1. Passenger Carriers – two or more of the following Behavior Analysis and Safety Improvement Categories (BASICs) at or above the 90th percentile for one month: unsafe driving, crash indicator, Hours-Of-Service (HOS) compliance, and vehicle maintenance. These are the BASICs most closely correlated with crash risk; and have not received an onsite investigation in the previous 12 months.

2. Non-Passenger Carriers – two or more of the above BASICs at or above the 90th percentile for two consecutive months; and have not received an onsite investigation in the previous 18 months.

Sources

Investigation data are obtained from MCMIS. MCMIS Crash File contains data on commercial trucks and buses in fatal, injury, and towaway crashes (crashes in which at least one vehicle is disabled as a result of the crash and transported away from the crash scene). Crash severity thresholds and vehicle type definitions in MCMIS differ slightly from those in

FARS and the General Estimating System (GES)/Crash Report Sampling System (CRSS), and all tables are noted accordingly.

Statistical Issues

The MCMIS Crash File is intended to be a census of trucks and buses involved in fatal, injury, and towaway crashes; however, some States do not report all FMCSA-eligible crashes, and some report more than those that are eligible. FMCSA continues to work with the States to improve data quality and reporting of eligible large truck and bus crashes to the MCMIS crash file.

Completeness

MCMIS fatal crash data used in the calculation for large trucks and buses are reported based on a subset of the Model Minimum Uniform Crash Criteria (MMUCC) used by FARS.

Total annual fatalities are available from MCMIS through CY 2016 and partial data are available through December 2017.

Because FMCSA investigation results take time to upload, all data are considered preliminary for 22 months to allow for changes.

Reliability

Further research is needed.

Verification and Validation

FMCSA analyzes motor carrier self-reported MCMIS registration data and applies filters to identify and remove inaccurate entries to avoid over- or under-estimating values.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Motor Carrier Fatal Crashes (FMCSA)

Measure

Number of motor carrier incidents (number of large truck and bus fatal crashes).

Scope

The number of fatal crashes included in national reports includes a count of deaths occurring within 30 days of a crash involving large trucks or buses traveling on a traffic-way customarily open to the public within the 50 states, the District of Columbia, and Puerto Rico.

Sources

Roadway fatality data are obtained from the NHTSA FARS. The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico, and is based PARs. A large truck is defined in FARS as a truck with a gross vehicle weight rating (GVWR) greater than 10,000 pounds. A bus is defined in FARS as any motor vehicle designed primarily to transport nine or more persons, including the driver.

Statistical Issues

Further research is needed.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

Reliability

To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

See verification and validation for Reduce Motor Vehicle-Related Fatalities (Overall).

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Rail-Related Deaths and Injuries (FRA)

Measure

Highway-rail grade crossing incident rate per million train-miles.

Rail right-of way trespass incident rate per million train-miles.

Scope

The railroad accident/incident reporting subsystem compiles rail-related accident and incident data from railroads subject to Federal Rail Administration (FRA) oversight. Railroads subject to oversight must have an accident and incident record-keeping system that meets or exceeds federal standards. Requirements to report an event to FRA apply when the event's consequences exceed the annually adjusted damage threshold. The reporting threshold for calendar year 2016 was $10,500. A rail equipment (including train) accident is any collision, derailment, fire, explosion, act of God, or other event involving the operation of railroad on-track equipment (standing or moving) that results in damages greater than the current reporting threshold to railroad on-track equipment, signals, track, track structures, or roadbed. Railroads must also maintain internal records on accountable events (those that are generally less impactful than reportable events), employee on-duty injuries, and occupational illnesses that are not required to be reported to FRA. These internal records are subject to FRA review.

Railroads report train accidents on FRA form F6180.54, Rail Equipment Accident/Incident Report and operational data, including train-miles, on FRA form F6180.55, Railroad Injury and Illness Summary.

Sources

FRA's railroad accident/incident reporting subsystem compilation of railroad-reported data that railroads submit as required under 49 CFR Part 225. This subsystem contains approximately 40 years of data on railroad casualties, train accidents, highway-rail grade crossing collisions, and operating statistics, including train-miles.

Statistical Issues

Highway-rail grade crossing incident rate is calculated in terms of train miles (operated). Adding vehicle exposure would provide a more accurate picture.

Completeness

Railroad systems that do not connect with the general rail system are excluded from reporting to FRA. Examples include: subway systems (e.g., Washington, D.C. Metro and New York

City Subway); track existing inside an industrial compound; and insular rail (e.g., rail not connected to the general system and not intersecting a public highway-rail grade crossing or navigable waterway).

Although railroads are generally required to report accidents and incidents within 30 days after the end of the month in which the event occurred, FRA keeps its data files open for amendment for five years to capture late reports, audit findings, and other updates. Data must be updated if the costs of a particular accident are more than 10 percent higher or lower than the initially reported cost. Data processing requires up to 30 days to prepare the information for merging into the database. As a result, FRA measures are subject to change and might differ from previous reports. A more detailed explanation of this process is available in FRA's Guide for Preparing Accident/Incident Reports at http://safetydata.fra.dot.gov.

Reliability

FRA audits railroads' reporting and internal records. If railroads do not report accurately, completely, and timely, FRA can assess civil monetary penalties.

Validation and Verification

FRA's systems and periodic audits help validate railroad-submitted data to ensure that it is timely, complete, accurate, and reliable. Every 2 years, FRA conducts a data reporting audit of each of the seven largest carriers, known as Class I railroads, and Amtrak. FRA also audits the smaller railroads about every 5 years. The purpose of these audits is to check for properly completed reports and verify the reported data, including identifying accidents or incidents that meet thresholds, but were not reported. After verification and validation, FRA provides public access to the data through its website at http://safetydata.fra.dot.gov.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Improve Safe Rail Transport of Hazardous Materials (FRA)

Measure

Rate of Non-Accident Releases (NAR) of HM per 10,000 tank-car originations.

Scope

NARs are the unintentional release of a hazardous material while in transportation, including loading and unloading while in railroad possession, that is not caused by a derailment, collision or other rail related accident. NARs consist of leaks, splashes, and other releases from improperly secured or defective valves, fittings, and tank shells, and include undesired venting of non-atmospheric gases from safety relief devices. Normal safety venting of atmospheric gases such as carbon dioxide and nitrogen is not considered a NAR. The majority of reported NARs involve small quantities. Although 99.99 percent of all HM shipments are transported without incident, the tracking and analyzing of NAR data allows FRA to identify trends and set inspection priorities for inspection and auditing offeror (shipping/receiving) facilities and their "pre-trip" processes.

Sources

Pipeline and Hazardous Materials Safety Administration (PHMSA) Hazardous Material Release Reports (5800.1).

Surface Transportation Board (STB) Confidential Waybill Sample.

Association of American Railroads (AAR) Annual Hazmat Leak Reports.

Statistical Issues

None.

Completeness

This measure reflects data reported primarily by the Class I railroads with limited 5800.1 reporting from the regional and short line railroads. Initial 5800.1 reporting is required to be completed within 30 days of the discovery of a release, while a final report can take months to complete.

STB waybill data are provided to FRA on a quarterly basis.

AAR's annual leak reports are usually published in August (e.g., AAR will publish its 2018 data in August 2019).

Reliability

If the railroads do not report NARs timely and accurately, and FRA does not receive the waybill data from STB timely, FRA estimates specific inputs by extrapolating trends.

Verification and Validation

FRA does not audit or verify the data from the outside sources. When subject matter experts observe inconsistencies or unexpected results, FRA works with those sources to resolve any questions. Validation of the previous calendar year takes place after receipt of AAR's annual leak report in August.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Transit Collisions Involving Persons (FTA)

Measure

Total rail transit collisions with persons.

Scope

Only includes rail transit systems subject to Federal Transit Administration's (FTA) State Safety Oversight Program. Excludes the Dubuque Street Elevator, Los Angeles Angel's Flight, Los Angeles Strand Beach Funicular, and the Las Vegas Monorail, all of which do not accept FTA funding and so are not subject to FTA's State Safety Oversight Program. Excludes all commuter rail systems, the Alaska Railroad, the PATH system in New York City, the Austin Capital Metro, and the Portland TriMet Westside Express system, all of which accept FTA funding, but are subject to FRA regulation. Also excludes the Florida Virgin Brightline and the Chicago-New Orleans Pullman Line, which do not accept FTA funding and are subject to FRA regulation. Excludes all aerial tramway systems. Excludes Amtrak, including the FTA-funded Keystone Corridor and Maine Downeaster Corridor, which are grandfathered into FTA funding.

Only includes collisions between transit rail and a person that results in a reportable safety event, which in this case would be an event resulting in one or more fatalities, one or more serious injuries, or one or more people being taken away from the scene for medical treatment.

Sources

National Transit Database (NTD), Monthly Safety Event Reporting.

Statistical Issues

None, these data are collected as a complete count.

Completeness

Within the scope defined above, the data are complete.

Reliability

Transit systems must report reportable safety events to the NTD within 30 days of the event. Most reportable rail safety events must also be investigated by the State Safety Oversight Organization that has been designated in each state with rail transit. NTD safety event reports are reconciled against the list of State Safety Oversight Investigations on an annual basis.

Data reports are self-certified by a designate of the transit system's Chief Executive Officer (CEO).

Verification and Validation

FTA employs an NTD Validation Services contractor that verifies and validates safety event reports.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Total Transit-Related Fatalities (FTA)

Measure

Total transit fatalities.

Scope

Only includes rail transit systems subject to FTA's State Safety Oversight Program. See Reduce Transit Collisions Involving Persons for systems excluded from oversight.

Additionally, fatalities are collected from all other non-rail transit systems. Excludes fatalities from rural transit systems and from small urbanized systems that receive a small system reporting waiver.

Transit fatality data include passengers, revenue facility occupants, trespassers, employees, other transit workers (e.g. contractors), pedestrians, occupants of third-party vehicles, and others. A transit fatality is a death within 30 days of an incident on transit right-of-way, in a transit revenue facility, in a transit maintenance facility, or involving a transit revenue vehicle. Excluded are deaths due to medical conditions or natural causes occurring on public transportation systems. Also excluded are occupational safety deaths occurring inside administrative buildings.

Sources

NTD Monthly Safety Reports.

Statistical Issues

None, these data are collected as a complete count.

Completeness

Within the scope defined above, the fatality count data are complete.

Reliability

Transit systems must report reportable safety events to the NTD within 30 days of the event. Rail safety events are reconciled against State Safety Oversight Investigatory Reports. Data reports are self-certified by a designate of the transit system's CEO.

Verification and Validation

FTA employs an NTD Validation Services contractor that verifies and validates safety event reports.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Transit-Related Fatalities per 100 Million Miles (FTA)

Measure

Total transit fatalities per 100 million passenger-miles.

Scope

Only includes rail transit systems subject to FTA's State Safety Oversight Program. See Reduce Transit Collisions Involving Persons for systems excluded from oversight.

Additionally, fatalities are collected from all other non-rail transit systems. Excludes fatalities from rural transit systems and from small urbanized systems that receive a small system reporting waiver.

See Reduce Total Transit-Related Fatalities for transit fatalities included in the measure.

Sources

NTD Monthly Safety Reports.

Statistical Issues

Fatality rates are calculated by dividing calendar year fatalities by NTD report year passenger miles for those systems reporting monthly fatalities. The major source of uncertainty in the measure relates to passenger-miles traveled. Passenger-miles are an estimate typically derived from reported unlinked passenger trips and average trip length by each transit authority. Differences in measurement occur across transit authorities.

To approximate passenger-miles, total unlinked trips are multiplied by average trip length. An unlinked trip is recorded each time a passenger boards a transit vehicle, even though the rider may be transferring from one transit vehicle to another on the same journey. Transit authorities do not routinely record trip length. To obtain an average trip length for their bus routes, transit authorities use Automatic Passenger Counters with Global Positioning System (GPS) Technology or an FTA-approved sampling technique. To obtain passenger mile data on rail systems, ferry boats and paratransit, transit authorities often use computerized tracking systems, such as the Smart Card. In some cases, such as small fare-free systems or large free-transfer systems (e.g. the New York City subway), passenger miles are sampled directly since a 100 percent count of unlinked passenger trips is not available. Validation based on annual trend analysis is performed on the passenger mile inputs from the transit industry. The validation is performed by analysts at the NTD program.

Completeness

Within the scope defined above, the fatality count data are complete. Transit systems must report reportable safety events to the NTD within 30 days of the event.

Reliability

Rail safety events are reconciled against State Safety Oversight Investigatory Reports. Methodologies for reporting passenger miles must either follow FTA guidance, or else by approved by a qualified statistician. Data reports are self-certified by a designate of the transit system's CEO.

Verification and Validation

FTA employs an NTD validation services contractor that verifies and validates safety event reports. Passenger mile data are validated against the operations and financial data in the rest of the annual NTD report to ensure consistency and also are validated against the prior year's reported passenger miles.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Total Transit Injuries (FTA)

Measure

Total transit injuries.

Scope

Only includes rail transit systems subject to FTA's State Safety Oversight Program. See Reduce Transit Collisions Involving Persons for systems excluded from oversight.

Additionally, total injuries are collected from all other non-rail transit systems. Excludes injuries from rural transit systems and from small urbanized are systems that receive a small system reporting waiver.

Transit injury data include passengers, revenue facility occupants, trespassers, employees, other transit workers (e.g. contractors), pedestrians, occupants of third-party vehicles, and others. A transit injury, for purposes of this measure, is an injury requiring immediate medical transport away from the scene resulting from an event occurring on transit right-of-way, in a transit revenue facility, in a transit maintenance facility, or involving a transit revenue vehicle. Excluded are injuries due to medical conditions or natural causes occurring on public transportation systems. Also excluded are occupational safety injuries occurring inside administrative buildings.

Sources

NTD Monthly Safety Reports.

Statistical Issues

None, these data are collected as a complete count.

Completeness

Within the scope defined above, the injury count data are complete. Transit systems must report reportable safety events to the NTD within 30 days of the event.

Reliability

Rail safety events are reconciled against State Safety Oversight Investigatory Reports. Data reports are self-certified by a designate of the transit system's CEO.

Verification and Validation

FTA employs an NTD validation services contractor that verifies and validates safety event reports. However, FTA does not collect safety event reports for events involving a single person being injured in a slip, trip, or fall. Injuries resulting from those events are collected only as a total count and validation is limited to detecting unusual outliers in the trend of the total number of such events.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Increase State Safety Oversight Programs (FTA)

Measure

Total number of certified states with the Moving Ahead for Progress in the 21st Century Act (MAP-21) System Safety Oversite (SSO) programs.

Scope

By law, 31 SSO programs must be certified by April 15, 2019.

Sources

FTA administrative records.

Statistical Issues

None. A State Safety Oversight Organization is either certified by FTA, or it is not yet certified by FTA.

Completeness

The 31 states that must be certified are a complete list of all such states. Nevada and Iowa do not need to establish a State Safety Oversight Organization, because the only rail transit systems in those states do not accept federal funds and so are not subject to FTA state safety oversight.

Reliability

These data are reliable. A State Safety Oversight Organization is either certified by FTA, or it is not yet certified by FTA.

Verification and Validation

No verification or validation of these data are needed.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Serious Injuries from Motor Vehicle Crashes (NHTSA)

Measure

Occupants ejected from passenger vehicles per 100 Emergency Medical Services (EMS) motor vehicle crash dispatches.

Scope

EMS data from states and territories of the United States..

Sources

The National Emergency Medical Services Information System (NEMSIS) database. NEMSIS is a product of NHTSA's Office of EMS and in collaboration with the University of Utah Technical Assistance Center (TAC). It is a national database that is used to store EMS data from states and territories of the United States. NEMSIS is a universal standard for how patient care information resulting from an emergency 9-1-1 call for assistance is collected. NEMSIS is a collaborative system to improve patient care through the standardization, aggregation, and utilization of point of care EMS data at a local, state and national level.

Local agencies send and receive EMS data in the proper XML format to states, then on to the National EMS Database. The system is versatile and allows local and state agencies to customize their reports while also maintaining consistent national elements.

1. Local agency providers select elements according to their needs—keeping the national elements and state elements as part of their selected elements.
2. States select elements from the NEMSIS Dataset according to their needs—keeping the national elements as part of their selection.
3. The national elements are transmitted to the NEMSIS TAC to populate the National EMS Dataset.

Statistical Issues

The National EMS Database data are "event-based" and not "patient-based." That is, a single patient may be represented in more than one record for a variety of reasons. For example, several agencies may respond to the same event (i.e., one patient) and each submit a patient care record to the National EMS Database.

Completeness

Data files received from contributing EMS agencies and states are checked for completeness, logical consistency, and proper formatting. Any data files not passing the NEMSIS validation and data cleaning processes are rejected or flagged; based upon the seriousness of the

discovered errors. A data profile report is generated for each submitted file from a state (and/or submitting entity) allowing the opportunity to review the quality of submitted data, correct errors and resubmit their data if needed.

The proportion of missing data varies across data elements in National EMS Database. In most cases, NEMSIS data are not missing at random and analyses, therefore, are subject to bias if missing data are ignored. Excluding observations with missing values is the default for most software programs when running statistical analyses. Another option is to provide plausible values for the missing data, either by single value or multiple value imputation. A single imputation of a value may be an educated guess at the value, substitution of the mean value, or substitution based on a regression equation using other (observed) values. Most statistical software packages can do imputations without much difficulty.

Reliability

NEMSIS is a large convenience sample—it consists solely of data submitted by participating EMS agencies within states and it is not a population-based data set. In addition, the National EMS Database inherits the individual deficiencies originating from its contributing entities.

Verification and Validation

The NEMSIS TAC employs edit checks to identify invalid or out of range values for the variables included the research data set. There are currently over 300 edit checks.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Improve Safety of Fleet on United States Roadways (NHTSA)

Measure

Vehicle 5-Star Safety Rating.

Scope

Each year, NHTSA tests new cars, trucks, sport utility vehicles and vans and rates them using the 5-Star Safety Rating system. Five stars indicate the highest safety rating and one star the lowest. The 5-Star Safety Rating evaluates how well vehicles perform in crash tests to help consumers make smart decisions about safety when purchasing a vehicle. Vehicle safety ratings are provided at the point of sale on the window sticker that is applied to new vehicles, on NHTSA's website, and other consumer information outlets. This provides consumers with a reliable, transparent, and unbiased assessment of the safety performance of passenger cars and trucks sold in America.

Sources

NHTSA fleet crash test program.

Statistical Issues

None.

Completeness

NHTSA conducts crash testing on approximately 85 percent of the new vehicle fleet. NHTSA categorizes vehicles by class and "curb" weight of a vehicle—standard equipment including the maximum capacity of fuel, oil, coolant, and air conditioning.

A vehicle's 5-Star Safety Rating combines the results of the frontal crash tests, side crash tests and a rollover resistance test into one score that indicates the overall risk of injury to a vehicle occupant if the vehicle is involved in a crash. The rating also includes information about recommended advanced crash avoidance technologies:

- forward collision warning,
- automatic emergency braking, and
- lane departure warning.

Reliability

NHTSA has developed detailed control mechanisms to ensure that the crash testing process is consistent and reliable for crash tests conducted across all brands and vehicle types. The data are carefully reviewed for any potential anomalies.

Verification and Validation

NHTSA’s protocols for conducting crash tests has been developed, refined and verified over the course of 50 years of the program.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Improve Timeliness of Data (NHTSA)

Measure

Percentage of states that meet the quarterly timeliness benchmark for reporting motor vehicle fatalities in FARS.

Scope

The data collected are a count of deaths of a motorist or a non-motorist occurring within 30 days of a crash involving a motor vehicle traveling on a traffic-way open to the public within the 50 states, the District of Columbia, and Puerto Rico.

Sources

Roadway fatality data are obtained from NHTSA's FARS. The FARS database is a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico, and is based on PARs.

Statistical Issues

Further research is needed.

Completeness

Annual traffic fatalities are currently available through CY 2016, published in August 2018.

Reliability

To complete each FARS case, the analyst applies specific definitions and guidelines and inputs the appropriate element values for each data element into the data entry system. In this way, all data contained in the FARS system are uniform, eliminating state differences in collecting and maintaining relevant crash records.

Verification and Validation

See verification and validation for Reduce Motor Vehicle-Related Fatalities (Overall).

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Improve Safe Delivery of Pipeline Products and Hazardous Materials – Pipeline Hazardous Liquid Products (net) Spilled (barrels) (PHMSA)

Measure

Pipeline hazardous liquid products (net) spilled (barrels).

Scope

Hazardous liquid pipeline accidents are reportable to PHMSA under 49 CFR 195.50. PHMSA tracks both gross and net volume spilled from pipeline systems transporting crude oil, refined products, and biofuels. The gross spilled volume measure shows how effective pipeline safety standards and programs are at containing energy products moving through pipelines, while the net spilled volume considers the effectiveness of remediation standards and pipeline operator actions after the spill. While PHMSA tracks both gross and net volume spilled, PHMSA uses the net spill as the performance measure in fiscal year (FY) 2018 since it considers both safe delivery and clean up. Beginning in FY 2019, PHMSA will include a measure of the gross volume spilled for crude oil, refined products, and biofuels.

Sources

DOT/PHMSA accident data are used for this measure. The data are submitted online by pipeline operators using PHMSA Form F-7000-1.

Statistical Issues

Results in any single year should be interpreted with caution. There is some normal annual variation in the volume spilled each year, particularly given the small number of failures, and this variation might not reflect real changes in the underlying risk.

Targets are presented as ranges to account for this variation. The target each year is set at one standard deviation from the trendline to account for normal variation annually. This provides about 80 percent probability of achieving the target if the risk continues to follow the trendline. An exponential trendline is used to reflect the concept of diminishing returns as the numbers decline.

The performance measure is not normalized for changes in exposure—external factors like changes in pipeline mileage, petroleum consumption, or ton-miles moved through pipelines—that could affect the number of major hazardous liquid spills.

Completeness

Compliance in reporting is very high and most or all accidents that meet reporting requirements are submitted. Operators must submit reports within 30 days of an accident or

face penalties for non-compliance. There is typically a 30-day lag between the date of the accident and PHMSA receipt of the report.

Reliability

PHMSA routinely cross-checks accident reports against other sources of data, such as immediate notifications provided to the National Response Center (NRC) and media outlets. PHMSA inspectors also regularly discuss accidents with operator personnel during routine inspections. PHMSA continues to work to improve the quality of the accident data.

Verification and Validation

All pipeline accident data are collected on an Office of Management and Budget (OMB)-approved form online in the PHMSA Portal. Detailed, OMB-approved instructions are available on the PHMSA website. Validation checks are run in the Portal prior to submittal to ensure all required data fields have been populated. PHMSA staff are responsible for reviewing each accident report to ensure the data matches information gained during PHMSA investigation or media reports. Pipeline operators have online access to each report they have submitted and can supplement the report at any time after original submittal.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Improve Safe Delivery of Pipeline Products and Hazardous Materials – Hazardous Materials Incidents Reported Annually (PHMSA)

Measure

Hazardous materials incidents reported annually.

Scope

Title 49 of the Code of Federal Regulations (49 CFR Parts 171-180) requires that certain types of hazmat incidents be reported to PHMSA. Any person in possession of a hazardous material during transportation (air, water, rail, and highway), including loading, unloading and storage incidental to transportation, must report if certain conditions are met under 49 CFR 171.15 and 171.16.

All injuries and fatalities that are a direct result of the HM during transportation are reportable. An individual, which includes employees, emergency responders, and members of the general public, that was injured as a direct result of the HM and was admitted to the hospital overnight and/or lost three days or more from work due to the injury is deemed as a major hazmat injury. An individual that was injured as a direct result of the HM and sought onsite treatment or was seen in the emergency room and released is deemed as a minor hazmat injury.

Sources

Hazardous Materials Transportation Incident data are derived from reports submitted on Form DOT F 5800.1 and maintained in the Hazardous Materials Information System (HMIS). In addition, PHMSA's Office of Hazardous Materials Safety seeks information and data to identify potentially reportable incidents through the NRC as well as monitoring print, television, and social media daily.

Statistical Issues

PHMSA's Office of Hazardous Materials Safety is currently examining factors that could be used to normalize the data. Specifically, PHMSA's Office of Hazardous Materials Safety is examining economic indicators that could be used to normalize the data as well as methods (i.e., ton miles traveled) to normalize the data when comparing different modes. Currently, targets are presented as ranges to account for this variation. The target each year is set at one standard deviation from the trend line to account for normal variation year-to-year (which shows a decline of about 10 percent on average every eight years over the past 28 years (1988-2015)). This provides about 80 percent probability of achieving the target if the risk continues to follow the trend line. An exponential trend line is used to reflect the concept of diminishing returns as the numbers decline.

Currently, the performance measure is not normalized for changes in exposure—external factors like changes in the amount of hazmat shipped, number of shipments, or population of the United States—that could affect the number of incidents with death or major injury.

Completeness

PHMSA's Office of Hazardous Materials Safety has instituted a number of actions to improve compliance with regard to incident reporting. Specifically, PHMSA's Office of Hazardous Materials Safety has implemented rulemakings to increase the penalty for not reporting when required. In addition, PHMSA field operations have focused enforcement efforts on individuals who fail to comply when the incident resulted in a fatality or major hazmat injury.

Lastly, as previously mentioned, PHMSA's Office of Hazardous Materials Safety seeks information and data to identify potentially reportable incidents through the NRC as well as the monitoring print, television, and social media. 49 CFR 171.16 requires a written report for certain types of hazmat incidents within 30 days of the incident, and a follow-up written report within one year of the date of incident, based on certain circumstances. Each person in physical possession of a hazardous material at the time an incident occurs (loading, unloading, and temporary storage) during transportation must submit a Hazardous Materials Incident Report on DOT Form F 5800.1 (01-2004) within 30 days of discovery of the incident. This means that when the conditions apply for completing the report, the entity having physical control of the shipment is responsible for filling out and filing DOT Form F 5800.1. There may be a 30- to 60-day lag in reporting, verifying, validating, and compiling information in the database for analysis, as many companies do not file incident reports on time.

Projections from partial-year data include all months for which PHMSA has reliable data plus an estimated number for the missing months based on the historical fraction those months represent in the final totals over the past five years.

Reliability

Incidents with death or major injury are considered to be the most reliable of the incident data. These incidents have additional verification and validation procedures to include follow-up contact with the company or individual who made the report, contact with state and local law enforcement and/or emergency response officials, and matching data with initial reports made to the NRC.

Verification and Validation

PHMSA routinely cross-checks incident data against other sources of data, including matching incident reports with reports made to the NRC and the use of a news clipping service to provide information on significant hazmat incidents that might not be reported. If sufficient information exists, PHMSA follows up with carriers who may need to file an incident report.

PHMSA has established several data quality initiatives. These include, but are not limited to:

- Standardizing Processes to Improve Efficiencies − Evaluating and documenting current systems requirements and implementing a standardized continuous improvement process. This process will provide performance management, identify areas for improvement and implement processes to promote efficiencies.
- Fostering Innovation and Enhancement of Data Collection Systems − Improving Information Technology (IT) functionality and internal and external systems with regard to incident reporting. This includes the development of web-based systems to improve the user experience.
- Enhancing Risk Management Principles and Encouraging the Use of Safety Management Systems − Continuing to build a risk assessment methodology based on a multidisciplinary approach, including developing better commodity flow data, and applying statistical analysis, data modeling, and predictive analytics.
- Increasing Compliance, Training, and Outreach − Educating the regulated community on incident reporting particularly what must be reported and the mechanisms available to report. This includes the development of educational materials such as quick reference guides to the DOT 5800.1 incident reporting form.
- Enhancing Coordination with other Agencies − Working closely with other government agencies to ensure sharing of data and collaboration where appropriate.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Surface Transportation Related Fatalities (PHMSA)

Measure

Incidents involving death or major injury resulting from the transport of HM by all modes, including pipeline.

Scope

Incidents on gas pipeline systems, liquefied natural gas facilities, and underground natural gas storage facilities are reportable to the PHMSA under 49 CFR 191.15. Hazardous liquid and carbon dioxide (CO_2) pipeline system accidents are reportable to PHMSA under 49 CFR 195.50. Both interstate and intrastate pipeline systems are subject to the reporting requirements. Additionally, any person in possession of a hazardous material during air, water, rail, or highway transportation, including loading, unloading and storage incidental to transportation, must report incidents if certain conditions are met under 49 CFR 171.15 and 171.16.

An injury is reportable if it requires in-patient hospitalization resulting from a failure in a HM transportation system in which there is a release of a hazardous liquid, CO_2, or natural gas. This includes operator employees, contractors working for the operator, other workers in the right of way, emergency responders, and the general public. If the person dies within 30 days of the incident date, it is counted as a death, not as an injury. In-patient hospitalization means hospital admission and at least one overnight stay (detailed guidance is on the PHMSA website at www.phmsa.dot.gov).

Sources

DOT/PHMSA incident data are used for this measure. For pipeline, these data are derived from pipeline operator reports submitted on PHMSA Forms, F-7100.1, F-7100.2, F-7100.3, and F-7000-1. PHMSA regulations require incidents to be reported online through the PHMSA Portal. For all other modes, Hazardous Materials Transportation Incident data are derived from reports submitted on Form DOT F 5800.1 and maintained in the HMIS. In addition, PHMSA's Office of Hazardous Materials Safety seeks information and data to identify potentially reportable incidents through the NRC as well as the monitoring print, television, and social media daily.

Statistical Issues

Results in any single year should be interpreted with caution. There is some normal annual variation in the number of reported incidents each year, particularly given the small number of these fatalities, and this variation might not reflect real changes in the underlying risk.

Targets are presented as ranges to account for this variation. The target each year is set at one standard deviation from the trend line to account for normal variation year-to-year. This provides about 80 percent probability of achieving the target if the risk continues to follow the trend line. The trend line is evaluated and calibrated at the end of every fiscal year.

The performance measure is not normalized for changes in exposure—external factors like changes in pipeline mileage, energy consumption, or U.S. population—that could affect the number of incidents with fatality.

Completeness

Compliance in reporting is very high and most incidents that meet reporting requirements are submitted. Operators must submit reports within 30 days of an incident or face penalties for non-compliance. There is typically a 30-day lag between the date of the pipeline incident and PHMSA receipt of the incident report. Pipeline operators can supplement incident reports at any time after original submittal. For other modes, there may be a 30- to 60-day lag in reporting, verifying, validating, and compiling information in the database for analysis, as many companies do not file incident reports on time. Filers have one year to modify their 5800.1 submission.

Reliability

Further research is needed.

Verification and Validation

PHMSA routinely cross-checks incident reports against other sources of data, such as immediate notifications provided to the NRC and media outlets. PHMSA inspectors also regularly discuss incidents with operator personnel during routine inspections.

All incident data are collected on OMB-approved forms online. Detailed OMB-approved instructions for incident reports are available on the PHMSA website. Validation checks are run in the online instrument prior to submittal to ensure all required data fields have been populated. PHMSA staff are responsible for reviewing each incident report to ensure the data matches information gained during PHMSA investigation or media reports. Pipeline operators have online access to each report they have submitted. On the PHMSA website, the public can download all the incident raw data or view 20-year trend lines of pipeline incident data with drills to individual report data.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Increase Awareness of Calling #811 before Digging (PHMSA)

Measure

Percentage of homeowners who plan to dig that are likely to call 811 before they break ground on a digging project.

Scope

PHMSA damage prevention outreach campaigns seek to increase awareness of the 811 call-before-you-dig messages and to influence anyone planning digging projects to use the service before excavation. Excavation damages are the number one cause of pipeline related injuries and fatalities. Measuring likelihood of calling is a direct indication of the success or failure of PHMSA's programs to influence use of the service.

The Common Ground Alliance (CGA), a national stakeholder organization, focuses on safe excavation and conducts an annual survey to measure the likelihood of respondents to call 811 before digging. This can be considered one indication of the success of 811 outreach program. The survey, known as the "Call before You Dig/811 National Awareness Study" was conducted for CGA by Povaddo, LLC. The study was conducted at the U.S. Census division level and evaluates general (not limited to professional excavators) awareness of call before you dig services. Survey results show a continuing upward trend in the percentage of homeowners who plan to dig and who intend to call 811 before digging projects.

Sources

The Call before You Dig/811 National Annual Awareness Study (a survey of a random sample of households to measure awareness of the 811 service and likelihood of use), conducted by CGA under contract with PHMSA.

Statistical Issues

Results in any single year should be interpreted with caution from a single survey. The performance measure does not fully capture other damage prevention results or external factors. A household survey completed each year on a statistically reliable sample size is the gold standard for measuring awareness and likelihood of use.

Completeness

The 811-awareness survey collects a statistically significant random sample and is a reliable measure of awareness and likelihood of use.

Reliability

The data are reliable in that the 811-awareness survey is conducted by an independent party, is done each year without methodological change, is reported out annually to interested parties.

Verification and Validation

The 811-awareness survey is peer reviewed by a committee comprised of excavation damage prevention subject matter experts and the results are published on the CGA web site.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce U.S.-Owned Commercial Carrier Aviation Fatalities per 100 Million Person on Board (FAA)

Measure

U.S.-owned commercial carrier fatalities per 100 million persons on board (formerly known as Commercial Air Carrier Fatality Rate).

Reduce the commercial air carrier fatalities per 100 million persons on board by 50 percent over 18-year period (2008-2025). No more than 4.4 per 100 million persons in 2025.

Scope

This metric includes both scheduled and nonscheduled flights of U.S. passenger and cargo air carriers (14 CFR Part 121) and scheduled passenger flights of commuter operators (14 CFR Part 135). It excludes on-demand (i.e., air taxi) service and general aviation. Accidents involving passengers, crew, ground personnel, and the un-involved public are all included.

Sources

The data on commercial fatalities come from NTSB's Aviation Accident Database. All but a small share of the data form persons on board comes from the air carriers, who submit information for all passengers on board to the Office of Airline Information within BTS. Additionally, Federal Aviation Administration (FAA) estimates crew on board based on the distribution of aircraft departures by make and model, plus an average of 3.5 persons on board per Part 121 cargo flight.

Statistical Issues

Both accidents and passengers on board are censuses, having no sampling error.

Crew on board is an estimate with a small range of variation for any given make and model of aircraft. Departure data and enplanements for Part 121 are from the BTS. The crew estimate is based on fleet makeup and crew requirements per number of seats. For the current fleet, the number of crew is equal to about seven percent of all Part 121 enplanements. The average number of cargo crew on board is 3.5 per departure, based on data from subscription services such as Air Claims (Ascend), a proprietary database used by insurers to obtain information such as fleet mix, accidents and claims. Cargo crews typically include two flight crew members, and occasionally another pilot or company representative or two deadheading passengers. Part 135 data also comes from BTS and Air Claims databases but is not as complete. The Office of Aviation Policy and Plans verifies with the operators when it identifies gaps in the data. Based on previous accident and incident reports, the average part 135 enplanement is five per departure. Crew estimates for Part 135 are based on previous accident and incident data. Any error that might be introduced by estimating crew will be

very small and will be overwhelmed by the passenger census. Importantly, the fatality rate is low and could significantly fluctuate from year to year due to a single accident.

Completeness

The FAA does comparison checking of the departure data collected by BTS. These data are needed for crew estimates. However, FAA has no independent data sources against which to validate the numbers submitted to BTS. FAA compares its list of carriers to the DOT list to validate completeness and places the carriers in the appropriate category (i.e., Part 121 or Part 135). The number of actual persons on board for any given period is considered preliminary for up to 18 months after the close of the reporting period. This is due to amended reports subsequently filed by the air carriers. Preliminary estimates are based on projections of the growth in departures developed by Office of Aviation Policy, Planning, and Environment (APL). However, changes to the number of persons on board should rarely affect the annual fatality rate.

To overcome reporting delays of 60 to 90 days, FAA must rely on historical data, partial internal data sources, and Official Airline Guide (OAG) scheduling information to project at least part of the fiscal year activity data. The FAA uses OAG data until official BTS data are available. The final result for the air carrier fatality rate is not considered reliable until BTS provides preliminary numbers. Due to reporting procedures in place, it is unlikely that calculation of future fiscal year departure data will be markedly improved. This lack of complete historical data on a monthly basis and independent sources of verification increases the risk of error in the activity data.

NTSB and the Office of Accident Investigation and Prevention confer periodically to validate information on the number of fatalities. Accident data are considered preliminary. NTSB usually completes investigations and issues reports on accidents that occur during any fiscal year by the end of the next fiscal year. Results are considered final when all those accidents have been reported in the NTSB press release published early in the following year. FY 2018 results will therefore be final after the 2020 press release. In general, however, the number of fatalities is not likely to change significantly between the end of the fiscal year and the date they are finalized.

Reliability

Results are considered preliminary based on projected activity data. Most accident investigations are a joint undertaking. NTSB has the statutory responsibility to determine probable cause, while FAA has separate statutory authority to investigate accidents and incidents in order to ensure that FAA meets its broader responsibilities. The FAA's own accident investigators and other FAA employees participate in all accident investigations led by NTSB investigators.

Verification and Validation

NTSB and the Office of Accident Investigation and Prevention confer periodically to validate information on the number of fatalities. Accident data are considered preliminary. The FAA's own accident investigators and other FAA employees participate in all accident investigations led by NTSB investigators. The FAA uses performance data extensively for program management, personnel evaluation, and accountability. Results are considered final when all those accidents have been reported in the NTSB press release published early in the following year. For departure data, FAA does comparison checking on the data collected by BTS. Data are reviewed by FAA senior leadership every week.

This metric is part of a core group of goals which the FAA pegs employee performance-based pay.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce General Aviation (GA) Fatal Accidents per 100,000 Flight Hours (FAA)

Measure

United States General Aviation (GA) fatal accidents per 100,000 flight hours (formerly known as General Aviation Fatal Accident Rate).

Reduce the GA fatal accident rate to no more than 0.89 fatal accidents per 100,000 flight hours by 2028. No more than 0.98 fatal accidents per 100,000 flight hours in FY 2018.

Scope

This metric includes United States registered on-demand (non-scheduled 14 CFR Part 135) and GA flights. GA comprises a diverse range of aviation activities, from single-seat homebuilt aircraft, helicopters, and balloons, single and multiple engine land and seaplanes, to highly sophisticated, extended range turbojets.

Sources

The data for GA fatal accidents comes from the NTSB Aviation Accident Database. Aviation accident investigators, under the auspices of the NTSB, develop the data. Annual flight hours are derived from the FAA's annual GA and Part 135 Activity Survey. The FAA's Forecast and Performance Analysis Division provides current year estimates.

Statistical Issues

The NTSB finalizes the actual number of GA fatal accidents. Since this is a simple count of accidents, there are no statistical issues relevant to the data.

The GA community and the General Aviation Joint Steering Committee (GAJSC), as part of the Safer Skies initiative, recommended development of a data collection program that will yield more accurate and relevant data on GA demographics and utilization. Improved GA survey and data collection methodologies have been developed. As a result of these efforts, FAA, working with the General Aviation Manufacturers Association (GAMA), the NTSB, and other aviation industry associations, has made many improvements to the survey.

An improved survey was initiated in FY 2004. These annual surveys created, for the first time, a statistically valid report of activity on which the GA community could agree. First, the sample size has significantly increased. Second, a reporting form has been created to make it much easier for organizations with large fleets to report. Third, the agency worked with the Aircraft Registry to improve the accuracy of contact information. Each year, significant improvements are being made to substantially improve the accuracy of the data.

The General Aviation Joint Steering Committee (GAJSC), the Safety Analysis Team of the GAJSC and General Aviation Data Improvement Team worked closely with the GA community and industry to develop this performance metric and target. There was unanimous support and consensus for the metric and target.

Completeness

The number of GA fatal accidents, even when reported as preliminary, is very accurate. NTSB and the Office of Accident Investigation and Prevention confer periodically to validate information on the number of fatalities. NTSB usually completes investigations and issues reports on accidents that occur during any fiscal year by the end of the next fiscal year. Results are considered final when all those accidents have been reported in the NTSB press release published early in the following year. FY 2018 results will therefore be final after the 2020 press release. In general, however, the numbers of fatalities are not likely to change significantly between the end of the fiscal year and the date they are finalized.

Further research is needed to determine how well annual flight hours derived from the FAA's annual GA and Part 135 Activity Survey capture total GA flight hours.

GA survey calendar hours are finalized by December 31 of the following year. Hence, the fatal accident rate for FY 2018 will not be considered final/complete until December 31, 2019.

Reliability

Results are considered preliminary based on projected activity data. Most accident investigations are a joint undertaking. NTSB has the statutory responsibility to determine probable cause, while FAA has separate statutory authority to investigate accidents and incidents in order to ensure that FAA meets its broader responsibilities. The FAA's own accident investigators and other FAA employees participate in all accident investigations led by NTSB investigators.

Verification and Validation

For the number of fatal accidents, NTSB and the Office of Accident Investigation and Prevention confer periodically to validate their information. For flight hours, GA survey data are highly accurate with a percent-standard error of less than 1 percent. The GA community and the GAJSC, as part of the Safer Skies initiative, recommended development of a data collection program that will yield more accurate and relevant data on GA demographics and utilization. Improved GA survey and data collection methodologies have been developed. As a result of these efforts, FAA, working with the GAMA, the NTSB, and other aviation industry associations, has made many improvements to the survey. An improved survey was initiated in 2004.

FAA senior leadership review safety data on a weekly basis. This metric is part of a core group of goals which the FAA pegs employee performance-based pay.

Details on Safety Measures
Goal 1/Objective 1: Systemic Safety Approach
Reduce Runway Incursions (Near Misses) Per Total Procedures (FAA)

Measure

Category A & B (most serious) runway incursions per million operations.

Surface Safety Risk Index, an aggregate, weighted measure of overall airport surface operations safety risk per million operations.

Scope

The definition of a runway incursion is defined by International Civil Aviation Organization standards. A runway incursion is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft. They are grouped in three general categories: air traffic control, pilot, or vehicle/pedestrian events. Runway incursions are reported and tracked at airports that have an operational air traffic control tower.

Operations are defined as total takeoffs and landings.

Category A: Separation decreases to the point that participants take extreme action to narrowly avoid a collision. For the purposes of tracking incursion performance, an accident will be treated as a Category A runway incursion.

Category B: Separation decreases, and there is a significant potential for a collision.

This target was set based on historical and long-term trends of the rate of serious runway incursion events.

The FAA is proposing the Surface Safety Risk Index, which is an improved risk-based approach to runway safety that will monitor all types of relevant safety events that occur in the runway environment. The metric measures the overall safety performance of the National Aviation System (NAS) in the airport surface operations environment. It includes runway collision accidents, runway excursion accidents, taxiway collision accidents, runway incursion incidents, runway excursion incidents, and taxiway surface incidents. Operations are defined as total takeoffs and landings. Commercial operations are considered those operating under Federal Acquisition Regulation (FAR) Parts 121, 129, and 135; all other operation types are considered non-commercial.

Sources

For the Runway Incursion measure, air traffic controllers and pilots are the primary source of runway incursion reports. The data are recorded in the Comprehensive Electronic Data Analysis Reporting (CEDAR) system. CEDAR replaced the FAA Air Traffic Quality

Assurance (ATQA) database. Preliminary incident reports are evaluated when received and evaluation can take up to 90 days.
Operation data used to calculate the runway incursion rate are provided via Operational Network (OPSNET), and are downloaded directly from the FAA Operations and Performance Data database.

For the Surface Safety Risk Index, the NTSB database is the primary source of runway accident data. Runway excursion data are supplemented by Accident Investigation and Prevention's (AVP's) Aviation System Analysis and Sharing database, which aggregates runway excursion data from multiple sources. Air traffic controllers and pilots are the primary source of runway incursion and surface incident reports. The data are recorded in the CEDAR system. CEDAR replaced the FAA Air Traffic Quality Assurance database for the Air Traffic Organization. Preliminary incident reports are evaluated when received and evaluation can take up to 90 days. Operations data used to calculate the runway incursion rate are provided via OPSNET, and are downloaded directly from the FAA Operations and Performance Data database.

Statistical Issues

Categorization of the various accidents is performed using statistical modeling, which is prone to sampling error and statistical bias.

Completeness

For runway incursions per million operations, the data are typically not finalized for 90 days following the close of the fiscal year. Surface event reports are reviewed on a daily basis to determine if the incident meets the definition of a runway incursion. Runway incursions are a subset of the incident data collected and the completeness of the data are based on the reporting requirements and completeness for each of the incident types.

If the operations data are not up to date, these calculations must be revised. The rate may also need to be recalculated if runway incursions are reported late. Historical volume data have been changed over the last three years, resulting in adjustments to current baselines.

The Surface Safety Risk Index uses additional data sources: There is some delay to the finalization of NTSB reports. Preliminary report narratives and information about injuries and damage are usually populated quickly, which are sufficient for classifying accident type. There is also a delay in receiving additional runway excursion data from AVP because it requires manual review. Surface event data are typically not finalized for 90 days following the close of the fiscal year. Surface event reports are reviewed on a daily basis to determine if the incident meets the definition of a runway incursion.

Runway incursions are a subset of the incident data collected and completeness of the data are based on the reporting requirements and completeness for each of the incident types. The Surface Safety Risk Index will be recalculated if accidents or incidents are reported late or if operations data are retroactively adjusted.

Reliability

For the Surface Safety Risk Index, a classification algorithm with approximately 95 percent accuracy is used to classify NTSB events as runway collisions, taxiway collisions, or runway excursions. Given this classification error, there is a small chance that irrelevant accidents will be included in the Surface Safety Risk Index calculation or relevant accidents will be excluded.

Verification and Validation

The FAA verifies and validates the accuracy of the data through the initial validation process followed by quality assurance and quality control reviews. Reconciliation of the databases is conducted monthly and anomalies are explored and resolved. In cases where major problems are identified, a request to re-submit is issued. The FAA conducts annual reviews of reported data and compares them with data reported from previous years. Annual runway incursion incident data are used to provide a statistical basis for research and analysis and outreach initiatives.

Validation for NTSB and runway excursion data classification was completed based on sampling and manual review of historical data to achieve satisfactory performance. However, there is no existing standard to define the other types of events that are part of SSM derivation and, therefore, no mechanism by which future data can be validated for those event types.

FAA senior leadership review safety data on a weekly basis. This metric is part of a core group of goals which the FAA pegs employee performance-based pay.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Median Environmental Impact Statements (EIS) Completion Time (FHWA)

Measure

Median elapsed time in months to complete an EIS, as measured by the number of months required for a project to proceed from Notice of Intent (NOI) to Record of Decision (ROD), for FHWA infrastructure projects.

Scope

FHWA division offices are required to report the progress on projects initiated after the effective date of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The data are used for required reports to Congress, the Federal Permitting Dashboard, project updates, and program analyses. FHWA does not include non-construction projects (e.g. Tier 1 studies) since these projects are not easily comparable to EIS construction projects or Supplemental EISs for projects.

Median EIS timeframes are reported in the FHWA Leadership Team Dashboard report as a measure of whether the FHWA is continually improving the ability of FHWA and our partners to efficiently deliver the federal highway programs.

Sources

Division offices provide information on the progress of projects through regular updates to the FHWA Project and Program Action Information (PAPAI) tracking system.

Statistical Issues

Division offices are responsible for entering data into PAPAI on a regular basis and PAPAI can account for inactive periods in the processing of environmental documents when a project is officially put on hold. Unless a project is placed on hold, the measure does not account for inactivity resulting from vacillating support for a project, diminished funding sources, or time required to complete ancillary studies.

Completeness

All EISs that have a NOI dated after October 1, 2005, are entered in PAPAI. Division Offices are required to update the project information in PAPAI monthly, or within 5 days of completion of a project milestone, whichever is sooner. PAPAI does not include information on projects initiated in National Environmental Policy Act (NEPA) states after the effective date of their Memorandum of Agreement. These states are responsible for entering their project information into the Dashboard and these projects not included in the calculation.

Reliability

This measure is reliable in reporting the time it takes to complete the environmental process, after subtracting any time the project is placed on hold, and satisfies environmental laws and permitting requirements that apply to a DOT-funded project.

Verification and Validation

The start and end date of the environmental review process for an EIS is determined by statute, through publication of Federal Register notifications for both NOI and ROD. FHWA verifies the data submitted by the division offices using the Federal Register publication dates.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Environmental Review Completion Time (FAA)

Measure

Average time to complete environmental review for major FAA owned projects.

Scope

This measure tracks progress towards reducing the average time to complete the environmental review process, based on a rolling average of reviews completed in the previous four quarters.

For the purposes of this goal, FAA has defined "major transportation projects" as certain infrastructure projects undertaken by FAA or which FAA is funding, approving or licensing and that require an EIS or an Environmental Assessment (EA).

"Major transportation projects" include Metroplex projects (air traffic procedures in metropolitan areas with multiple airports and complex air traffic flows); new airports, new runways, major runway extensions, terminal projects and ancillary facilities; new commercial space launch sites; and certain projects of national importance to the National Plan of Integrated Airport Systems.

Sources

The data used to track progress for this metric are pulled from the Federal Infrastructure Permitting Dashboard, which is populated by the FAA Permitting Dashboard Administrator, a member of Office of Environment and Energy (AEE)-400. This staff member works with representatives from each line of business to ensure that all data are captured in a timely, efficient, and accurate manner.

Statistical Issues

Reporting may not reflect long-term performance because of a relatively small data set. For example, the average time to complete environmental reviews for major transportation projects for FY 2018 of 11.74 months was based on just four projects completed during that time period and did not include any EISs.

Completeness

The FAA will work to ensure that data associated with major transportation projects is updated on the permitting dashboard in a timely, accurate, consistent manner and that all data are complete. The AEE's Permitting Dashboard Administrator will conduct regular check-ins with all FAA lines of business to ensure that all projects are up to date and accurate. Because the data are reliant on communication with the Lines of Business (LOB) points of contact

responsible for obtaining project data, AEE is working to put in place a more effective internal reporting and coordination system and providing training on the data requirements to LOB staff.

Reliability

Reliability for EIS is extremely high, since the beginning dates are based on published notices in the Federal Register and the end date on a signed ROD. Beginning dates for EAs are more difficult to establish, since FAA may not initiate the process but may instead begin with a draft EA prepared by a project sponsor.

Verification and Validation

AEE is implementing a new system under which LOB points of contact collect data from project managers using a spreadsheet tool customized for this purpose and verify/validate the data before forwarding it to AEE. AEE then enters the data into the permitting dashboard. This system will reduce the potential for errors in data entry.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Environmental Review Completion Time (OST-P)

Measure

Average months to complete an environmental review for major infrastructure projects for which DOT is the NEPA Lead.

Scope

Office of the Secretary of Transportation - Policy (OST-P) will begin collecting the data in 2019 with the first estimate in 2020.

Sources

Not applicable.

Statistical Issues

Not applicable.

Completeness

Not applicable.

Reliability

Not applicable.

Verification and Validation

Not applicable.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Percent of DOT Projects on Permitting Dashboard that are on Schedule (OST-P)

Measure

Percent of DOT EIS posted on permitting dashboard that are on schedule.

Scope

The number of EISs on the permitting dashboard where the lead agency is a DOT Operating Administration (OA). The permitting dashboard tracks DOT projects that result in either an EA or EIS. In addition, the dashboard also tracks other agencies' EISs and EAs for infrastructure projects that are covered projects. EISs are projects that result in significant impacts to the environment as defined by each agency through experience. These projects are often complex and involve a number of actions with associated milestones that are tracked on the dashboard.

A project remains on schedule if the milestones have been completed or if any estimated milestone dates have not been reached.

Sources

- Permitting dashboard
  https://www.permits.performance.gov

- DOT Specific Projects:
  https://data.permits.performance.gov/Permitting-Project/DOT-Projects/4yc7-szmr

- Environmental Impact Statements:
  https://data.permits.performance.gov/Permitting-Project/DOT-EISs-In-Progress/sgra-wju6

Statistical Issues

None identified.

Completeness

Each mode is responsible for updating the project schedules on a quarterly basis. Some modes are better at uploading their project schedules than others. When there is a missed milestone, it may be attributed to failure to update the schedule rather than the project being delayed. OAs are creating ways to streamline the entry process so that there are not duplicative tracking processes and data are more complete and up to date.

Reliability

The information provided in the federal dashboard is limited to only a few dashboard administrators having access to modifying the data. This ensures that the data being entered are reliable and accurate; however, it does result in delays of getting the information put into the system. As OAs develop ways to streamline the data entry into the permitting dashboard through allowing internal systems to seamlessly download to the dashboard, the OAs should do more quality assurance/quality control (QA/QC) of the data to ensure that the information is reliable and accurate.

Verification and Validation

DOT pulls a report of the data every quarter. DOT asks each OA to verify that they have updated their project schedules and the data in the permitting dashboard is up to date prior to the pull. The OAs are tasked with ensuring the verification and validation of the information within the dashboard.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Percent of DOT Projects on Permitting Dashboard that are on Schedule (FAA)

Measure

Percent of FAA owned projects posted on permitting dashboard that are on schedule.

Scope

This measure tracks the progress of EAs and EISs for major transportation projects for which FAA is the lead agency. These projects are posted on the Federal Infrastructure Permitting Dashboard, an online tool for federal agencies, project developers, and interested members of the public to track the federal government's environmental review and authorization processes for large or complex infrastructure projects, part of a government-wide effort to improve coordination, transparency, and accountability. The permitting dashboard includes project timelines and milestones with target and actual dates.

For the purposes of this goal, FAA has defined "major transportation projects" as certain infrastructure projects undertaken by FAA or which FAA is funding, approving or licensing and that require an EIS or an EA. "Major transportation projects" include Metroplex projects (air traffic procedures in metropolitan areas with multiple airports and complex air traffic flows); new airports, new runways, major runway extensions, terminal projects and ancillary facilities; new commercial space launch sites; and certain projects of national importance to the National Plan of Integrated Airport Systems.

Sources

The data used to track progress for this metric are pulled from the Federal Infrastructure Permitting Dashboard, which is populated by the FAA Permitting Dashboard Administrator, a member of AEE-400. This staff member works with representatives from each LOB to ensure that all data are captured in a timely, efficient, and accurate manner.

Statistical Issues

Reporting may not reflect long-term performance because of a relatively small data set. For example, over the course of FY 2018, the FAA was tracking just 11 projects, with no more than six active environmental reviews at any given time.

Completeness

The FAA will work to ensure that data associated with major transportation projects are updated on the permitting dashboard in a timely, accurate, consistent manner and that all data are complete. AEE's Permitting Dashboard Administrator will conduct regular check-ins with all FAA lines of business to ensure that all projects are up to date and accurate. Because these data are reliant on communication with the LOB points of contact responsible for

obtaining project data, AEE is working to put in place a more effective internal reporting and coordination system and providing training on the data requirements to LOB staff.

Reliability

The percentage of FAA Projects on schedule should reflect actual progress as FAA project managers become more familiar with the milestones on the permitting dashboard.

Verification and Validation

AEE is implementing a new system under which LOB points of contact collect data from project managers using a spreadsheet tool customized for this purpose and verify/validate the data before forwarding it to AEE. AEE then enters the data into the permitting dashboard. This system will reduce the potential for errors in data entry.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Increase the Number of States and Local Agencies using Federal Innovative Finance Methods (FHWA)

Measure

Number of states and local agencies that have used federal innovative finance methods.

Scope

The number of states in which a public project sponsor has used one of the following finance tools in the current fiscal year to assist a Title 23 eligible project, regardless of whether the project receives regular Federal-aid funds:

- Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance
- Private Activity Bond (PAB) issuance
- Grant Anticipation Revenue Vehicle (GARVEE) bond issuance
- Availability Payment (AP) reimbursement agreement
- State Infrastructure Bank (SIB) credit assistance

Sources

Build America Bureau for TIFIA and PABs and FHWA data files for GARVEEs, APs and SIBs submitted by division offices.

Statistical Issues

Further research is needed.

Completeness

The Center for Innovative Finance Support has established a web-based comprehensive data collection process for GARVEEs and SIBs information. States and FHWA division offices are required to report their GARVEE and SIB data on March 1 of each year. As such, the GARVEE and SIB data are based on the most recent 12 months. It is possible that within a 12-month period the data are not reported if annual updates fall outside of this time frame.

Reliability

GARVEE and SIB data are collected from the 50 states and territories and are reviewed and approved by FHWA division offices. For PABs and TIFIA this information is tracked and published as the transaction closes. Thus, this information is reliable.

Verification and Validation

The information are verified and validated with the FHWA Financial System, SIB Biannual Audited Financial Statements, DOT Credit Council Reports and Capital Markets (Bond Buyer, Municipal Securities Rulemaking Board). The information is reviewed annually by the Center for Innovative Finance Support and for consistency and accuracy.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Improve Major Project Performance in FHWA Portfolio – Projects over $500 Million within 2 percent of Schedule and Costs (FHWA)

Measure

Percentage of FHWA-funded projects over $500 million within two percent of schedule and costs.

For each financial plan annual update approved, the percent difference between the current performance and the previous year's performance is calculated. Then the percentage of the total number of financial plans approved with cost or schedule not exceeding two percent is calculated.

Scope

To assess the performance of each project in the portfolio of major projects, FHWA monitors project financial plans annually to determine the percentage that are within two percent of the prior year cost estimate and project completion date. The goal is to maintain at least 80 percent of the financial plans approved each fiscal year within two percent of the prior year cost estimate and completion date. Cost increases include items such as: utility, railroad, or right-of-way costs; in-situ field conditions unknown during the design process; changes in design criteria; construction bids higher than the engineer's estimate; and settlement claims. Schedule increases include items such as: scope changes in the project; lack of funding; design delays; and utility or construction delays. The major causes of cost or schedule delays are tracked annually and the results are used to establish or update program improvement initiatives such as webinars, training, or other outreach activities.

Sources

Project cost and completion date information is collected by FHWA from annual financial plans submitted by project sponsors.

Statistical Issues

There is minimal variability of the cost and schedule measures at the project level as these projects are tightly managed. However, some additional variability does appear in the national rollout of the measure due to the variation in the total numbers of financial plans submitted each quarter, and from year to year.

Completeness

All states with active major projects are required by law to submit an annual financial plan with updates on project cost and schedule. As a result, the measure is expected to include 100 percent of active major projects. The measure is reported quarterly and is based on the most

recent 12 months of financial plans submitted. It is possible that within a 12-month period all major projects are not reported if annual updates fall outside of this time frame, as some states or project sponsors do not always meet the due dates for submitting a financial plan.

Reliability

To ensure reliability, FHWA provides guidance to states and project sponsors for the preparation of financial plans.

Verification and Validation

FHWA provides guidance to states and project sponsors for the preparation of financial plans. FHWA reviews all financial plans for consistency and adherence to the guidance. Cost and schedule data obtained from the financial plans are consolidated in a database maintained by FHWA with limited access rights to select users. The cost and schedule trend information are reviewed annually and compared with previously reported data for consistency and accuracy. In addition, FHWA conducts a workshop before the first financial plan is developed to establish the best estimate of project cost and schedule which is used as the baseline for tracking as the project is constructed.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Improve Major Project Performance in FTA Portfolio (FTA)

Measure

Percentage of FTA-funded projects over $500 million within or minus 10 percent of cost.

This measure is calculated as the following percentage, subject to the scope below:

Numerator: Number of projects whose current cost estimate is 110 percent or less of the currently-approved cost baseline.

Denominator: The total number of projects.

Scope

This measure only includes projects from FTA's Capital Investment Grant program that had a cost baseline of at least $500 million as of October 1st of the current fiscal year.

Sources

FTA's Office of Capital Projects Management (TPM-20).

Statistical Issues

If a Full-Funding Grant Agreement for a project over $500 million is signed during the current fiscal year, it is not included in the measure until the following fiscal year.

If FTA formally approves a new baseline for a project, the total cost of the project is measured against the original baseline. If the new baseline takes the cost estimate for the project above $500 million, it will not be included in the measure until the next year.

Completeness

These data are complete of all such projects.

Reliability

Baselines are reliable as they are based on formally-approved baselines. Current project estimates are provided to us by project sponsors. The current project estimates are subject to the normal uncertainties that would apply to any estimate made by the project sponsor.

Verification and Validation

FTA engages project management oversight contractors to provide some oversight over the validity of current project estimates provided by project sponsors.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Increase Grants with Rural Incentives (FTA)

Measure

FTA grant dollars allocated to rural areas and small urban areas.

The total number of grant dollars that are allocated to urbanized areas under 200,000 in population, or to rural areas (areas under 50,000 in population).

Scope

This measure includes both formula and discretionary grant programs.

Sources

FTA's full-year apportionments notice provides the allocations of formula dollars to these areas. Amounts allocated to these areas from discretionary programs are announced once the project selections are made from these discretionary grants and published in the Federal Register as being available for obligation.

Statistical Issues

None, this measure is a 100 percent count.

Completeness

None, this measure is comprehensive of all FTA grant programs. However, just because FTA makes funding available to these geographical areas does not mean that the announcement will necessarily result in an obligation.

Reliability

These data are reliable, as they are formal records published in the Federal Register.

Verification and Validation

No verification or validation of these data are needed as these are formal records published in the Federal Register.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Decrease Grant Processing Time – Average Number of Days (FTA)

Measure

Average number of days from grant application submission to grant award.

This measure is the sum of all days from the date that each grant was formally submitted to the date that each grant was formally awarded, divided by the total number of all such grants.

Scope

This measure includes all grants made by FTA whose obligation date was in the current fiscal year. It also includes Transportation Investment Generating Economic Recovery/Better Utilizing Investments to Leverage Development (TIGER/BUILD) grants for which FTA is the lead agency and whose obligation date was in the current fiscal year.

Sources

FTA's Transit Award Management System (TrAMS) provides these data.

Statistical Issues

These data are not weighted by award amount. A large grant has as much weight in the average as a small grant.

Completeness

The time from formal grant application to formal award of the grant only reflects a portion of the timeline for processing and approving a grant.

Reliability

These data are reliable as they are directly measured from TrAMS.

Verification and Validation

No verification or validation is needed, as these data are directly measured from TrAMS.

Details on Infrastructure Measures
Goal 2/Objective 1: Project Delivery, Planning, Environment, Funding and Finance
Decrease Grant Processing Time – Percentage of Inactive Grants Closed or Returned to Active Status (FTA)

Measure

Percentage of grants identified as inactive at the beginning of the fiscal year that are either closed or returned to active status.

This percentage is calculated as follows:

Numerator: The total number of grants from the denominator for which an acceptable action was taken during the fiscal year.

Denominator: The total number of grants identified at the beginning of the fiscal year as potentially inactive.

Scope

The scope is established by FTA. FTA identifies the list of potentially inactive grants at the beginning of each fiscal year.

Sources

These data are pulled from FTA's TrAMS.

Statistical Issues

There are no statistical issues within the scope.

Completeness

These data are complete within the scope.

Reliability

These data are reliable within the scope.

Verification and Validation

No verification and validation activities are conducted.

Details on Infrastructure Measures
Goal 2/Objective 2: Life Cycle and Preventive Maintenance
Maintain Good Runway Condition (FAA)

Measure

Percent of runways in FAA's National Plan of Integrated Airport Systems (NPIAS) in good condition (Formerly known as Runway Pavement).

Maintain runway pavement in excellent, good, or fair condition for 93 percent of the paved runways in the NPIAS.

Scope

The metric covers all open and paved runways at federally funded NPIAS airports.

Sources

Data and information are collected through visual inspection of runway pavement in accordance with existing FAA guidance; including Advisory Circular 150/5320-17 Airfield Pavement Surface Evaluation and Rating Manuals provide uniformity to field observations made by individuals collecting data for the Airport Master Record (FAA Form 5010). The pavement condition is reported in the 5010 Airport Master Record database and results of the inspections are entered into FAA's National Airspace System Resource.

Statistical Issues

None.

Completeness

The inspection and reporting of conditions are conducted in accordance with existing FAA guidance. The data are publicly available and therefore can be examined and evaluated by any federal auditor.

Reliability

Not applicable.

Verification and Validation

Runway pavement condition data are collected annually by FAA Airport Certification Safety Inspectors during their physical inspection of all certified airports in the United States and its territories. Other public use airports are inspected by airports or airport safety data inspectors under an FAA contract ever three years. Information is collected through visual inspection of runway pavement in accordance with existing FAA guidance, resulting in a condition rating

for each runway of excellent, good, fair, poor, or failed. FAA senior leadership reviews the data on a monthly basis, with more frequent review at the LOB level.

Details on Infrastructure Measures
Goal 2/Objective 2: Life Cycle and Preventive Maintenance
Improve Bridge Condition in the National Highway System (FHWA)

Measure

Percent of deck area on NHS bridges in poor condition (formerly known as Highway Bridge Condition).

Scope

This measure serves as an indicator of trends in bridge conditions on the NHS. The surface area (i.e., length multiplied by width) of bridge decks is viewed as a more meaningful measure than simply a count of bridges in poor condition. The area measure recognizes the size difference among bridges and avoids the pitfall associated with counting bridges where every bridge is treated the same regardless of size.

Since 1971, the National Bridge Inspection Standards (NBIS) have required the inspection of all highway bridges located on public roads and the submission of bridge inventory and inspection data to FHWA for inclusion in the National Bridge Inventory (NBI). FHWA maintains the NBI, which contains data on more than 615,000 highway bridges.

The information in the NBI contains 95 data items for each of the bridges as required by the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges. From the data provided, FHWA monitors the condition of the nation's bridges, which includes identifying those bridges that are in poor condition.

Sources

Data used to determine if a bridge is in poor condition are contained in the NBI and are currently assembled from annual data submittals from states, federal agencies, and tribal governments. The deck area is calculated from length and width data also reported to the NBI.

Statistical Issues

Further research is needed.

Completeness

The NBI is the world's most comprehensive database of bridge information. States, federal agencies, and tribal governments are required to report their data by March 15th of each year. However, updates are accepted until end of year at which time the full data set is archived and published.

Reliability

Because the performance measure relies on data associated with more than 143,000 NHS bridges, the impact of any differences in reporting across states is minimized in the overall national analysis.

Verification and Validation

The NBIS require annual submittal to FHWA of bridge inventory and inspection data collected and submitted by 50 states, the District of Columbia, and Puerto Rico in cooperation with local governments. In addition, 19 federal agencies and a growing number of Tribes submit data for federally and tribally owned bridges. Through the NBI Program Oversight Process, FHWA division offices annually evaluate the quality of each state's and agency's bridge inspection program using 23 different metrics, two of which pertain to data quality and timely submission.

The inspection programs are evaluated comprehensively using statistical sampling methods, file reviews, field reviews, and data analysis. A written annual evaluation is provided to each state and agency to document problems and require corrective actions.

Upon annual submittal of the NBI data to FHWA headquarters, additional safety and reasonableness checks are performed on the data prior to acceptance, including comparisons with previously reported data. Data re-submittal is required in cases where significant or safety-related problems are identified. The accuracy and reliability of the submitted NBI information are evaluated through data checks by both headquarters and division office personnel, and as part of FHWA's annual NBIS compliance reviews.

Details on Infrastructure Measures
Goal 2/Objective 2: Life Cycle and Preventive Maintenance
Improve Roadway Pavement Condition – Percentage of NHS Pavements in Good Condition (FHWA)

Measure

Percent of travel on NHS that meets pavement performance standards for a "good" rated ride (calendar year).

Scope

Data include VMT and pavement ride quality data reported using the International Roughness Index (IRI) on the reported NHS sections in the HPMS. VMT represent the total VMT by motor vehicles on public roadways within the 50 states, Puerto Rico, and the District of Columbia. IRI is a quantitative measure of the accumulated response of a quarter-car vehicle suspension experienced while traveling over pavement. An IRI of less than 95 inches per mile is generally considered indicative of a good rated ride.

Sources

See Reduce Motor Vehicle-Related Fatalities (Overall) for VMT source information.

Statistical Issues

Both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Completeness

The projections are made using the most recent trend data. Changes are expected in the way data are collected and reported beginning with data collected in 2018.

Reliability

There is concern about consistency in vehicle counts across states. Further research is needed to address this concern.

Verification and Validation

FHWA provides guidelines for data collection in the HPMS Field Manual. Adherence to these guidelines varies by state, depending on issues such as staff, resources, internal policies, and uses of the data at the data provider level. An annual review of reported data is conducted by FHWA, both at the headquarters level and in the division offices in each state. The reported data are subjected to intense editing and comparison with previously reported data and reasonability checks. A written annual evaluation is provided to each state to

document potential problems and to encourage corrective actions. Data re-submittal is requested in cases where major problems are identified.

Details on Infrastructure Measures
Goal 2/Objective 2: Life Cycle and Preventive Maintenance
Monitor Condition and Performance of Transit System (FTA)

Measure

State of good repair backlog (current-year dollars) (formerly known as Transit Capital Assets Backlog).

Backlog of transit capital assets in need of replacement or refurbishment (as defined by an estimated condition rating of 2.5 or lower).

Scope

This measure includes all capital assets of the United States transit industry and, as such, incorporates all transit systems in the country, both urban and rural. The replacement value of all United States transit assets is estimated at $847.5 billion.

Sources

The size of the national state of good repair backlog is estimated by the Transit Economic Requirements Model (TERM) based on capital asset data from the NTD and other ad hoc capital asset surveys.

Statistical Issues

An inventory of revenue vehicles is reported to the NTD annually. Data on all other capital assets are based on ad hoc surveys that are updated periodically and on estimates created by TERM.

During FY 2016, FTA took substantial steps towards implementing the National Transit Asset Management System by issuing a final Rule. The Rule includes FTA's first-ever definition of state of good repair, requirements for each FTA grantee to establish a transit asset management plan, and a suite of state of good repair performance measures against which each of FTA's grantees are required to set targets. Concurrently, FTA also expanded the NTD to collect additional capital asset inventory information, as well as condition data towards the state of good repair performance measures in the Rule. The expanded NTD data collection will take effect in September 2018, with the data first becoming available in Fall 2019, and updated backlog estimates based on the new data available in 2020.

Data results from TERM are only available once the Conditions & Performance Report is cleared by the Office of the Secretary and OMB. This can lead to long time delays before performance measures are publicly available. For example, as of December 2018 the most-recent public edition of the Conditions and Performance Report is the 22nd edition.

Completeness

Most of the large, and many medium-sized, agencies have provided asset inventory data to the database that are used for this calculation. Assets for smaller systems are estimated by the model. FTA is in the process of expanding the capital asset data collected by the NTD, see statistical issues, above.

Reliability

The transit agency's CEO certifies that the vehicle data reported to the NTD are accurate. These data are reviewed by analysts and compared to trend data for the transit system and to National benchmarks. The other three quarters of transit assets are updated on an ad hoc basis, and do not require a CEO certification. However, these are the best-available data inventories that transit agencies have available, and they are generally considered to be reliable.

Verification and Validation

Data reported to the NTD are subject to validation for consistency with the rest of the annual report, as well as comparison with the prior year's report. Other capital asset data are collected on an ad hoc basis, and are not able to validate against other sources. The parameters of TERM were developed based in part upon independent consultant work done in the transit industry. FTA periodically seeks outside review of TERM, including a recent review conducted by the National Academies of Sciences.

Details on Infrastructure Measures
Goal 2/Objective 2: Life Cycle and Preventive Maintenance
Improve Asset Management Practices (FHWA)

Measure

Number of states with FHWA certified processes to develop and use state asset management plans for the NHS.

Scope

Requirement is codified in 23 CFR Part 515, specifically section 515.13. Not later than 90 days after the date on which the FHWA receives a description of a State DOT process and request for certification or recertification, the FHWA shall decide whether the State DOT process for developing its asset management plan meet the requirements of section 515.11. A state-approved asset management plan submitted not later than June 30, 2019, shall include all required analyses, performed using FHWA-certified processes, and the section 150 measures and State DOT targets for the NHS pavements and bridges. The plan must meet all requirements in section 515.7 and 515.9. This includes investment strategies that are developed based on the analyses from all processes required under section 515.7 and meet the requirements in 23 U.S.C. 119(e)(2).

The measure is used to ensure State DOT compliance with 23 CFR Part 515 and to identify the current state-of-practice in State DOTs to management asset conditions. The information from helps FHWA align resources where there are the greatest needs across the country for assistance.

Sources

Division offices assess State DOT asset management plans on a four-year cycle, or when the State DOT changes their processes, whichever comes first. The division offices use FHWA guidance that includes a checklist to conduct this assessment. The findings are documented and measure determined based on a list that is accessible to all division offices and head-quarter (HQ) units.

Statistical Issues

There are no statistical issues as this is not a calculated measure. The division offices conduct a qualitative assessment that is documented for official record keeping.

Completeness

FHWA monitors the progress reported by division offices and follows up with the state if any required fields are not populated.

Reliability

Not applicable.

Verification and Validation

FHWA looks at the variability of the assessment findings across all division offices by reviewing a sampling of the submitted asset management plans and the findings from division offices. The review is primarily focused where division offices have requested assistance or in locations where State DOTs have less maturity in managing asset conditions.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Decrease Average Wait Time (FAA)

Measure

Achieve a NAS on-time arrival rate of 88 percent at core airports. NAS on-time arrival rate is the percentage of all flights with less than 15 minutes of delay with NAS assigned as the cause.

Scope

A flight is considered on time if it arrives no later than 15 minutes after its published, scheduled arrival time. This definition is used in both the DOT Airline Service Quality Performance (ASQP), and Aviation System Performance Metrics (ASPM) reporting systems. Air carriers, however, also file up-to-date flight plans for their services with the FAA that may differ from their published flight schedules. This metric measures on-time performance against the carriers' filed flight plan, rather than what may be a dated published schedule.

The arrival time of completed passenger flights to and from the core airports is compared to their flight plan scheduled arrival time. For delayed flights, delay minutes attributable to extreme weather, carrier caused delay, security, and a prorated share of delay minutes due to a late arriving flight at the departure airport are subtracted from the total minutes of delay. If the flight is still late, it is counted as a delayed flight attributed to the NAS and the FAA.

The core airports are those which have one percent or more of total U.S. enplanements (the DOT large hub airports) or 0.75 percent or more of total U.S. non-military itinerant operations.

Sources

The ASPM database, maintained by the FAA's Office of Performance Analysis (AJR-G), in conjunction with DOT's ASQP causation database, provides the data for this metric. By agreement with the DOT, certain major U.S. carriers file ASQP flight data for flights to and from most large and medium hubs. Flight records contained in the Traffic Flow Management System supplement the flight data.

Statistical Issues

Data are not reported for all carriers; at present, 147 operating carriers report monthly into the ASQP reporting system.

Completeness

Fiscal year data are finalized approximately 90 days after the close of the fiscal year.

Reliability

Further research is needed.

Verification and Validation

ASPM data are verified on a daily basis by the execution of a number of audit checks, comparison to other published data metrics, and through the use of ASPM by over 1700 active users.

FAA senior leadership reviews ASQP data on a monthly basis under 14 CFR Part 234, Airline Service Quality Performance Reports, which separately requires reporting by major U.S. air carriers on domestic flights to and from reportable airports.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Maintain Airport Capacity (FAA)

Measure

Maintain an average daily capacity (hourly throughput that an airport's runways are able to sustain during periods of high demand) for core airports of 59,303 or higher, arrivals and departures during reportable hours.

Scope

Only the core airports are included in this metric. The core airports are those which have one percent or more of total U.S. enplanements (the DOT large hub airports) or 0.75 percent or more of total U.S. non-military itinerant operations.

Reportable hours are based on a review of called rates and actual flight counts for each of the core airports.

15 Reportable Hours: DFW, IAH, LGA, MCO, PHX, SLC
16 Reportable Hours: ATL, BOS, CLT, DCA, DEN, FLL, IAD, LAS, MDW, MIA, MSP, ORD, PHL, SEA, SFO, TPA
17 Reportable Hours: BWI, DTW, EWR, HNL, LAX, SAN
18 Reportable Hours: JFK
24 Reportable Hours: MEM

Each airport facility determines the number of arrivals and departures it can handle for each hour of each day, depending on conditions, including weather. These numbers are the called arrival and departure rates of the airport for that hour. The average daily capacity is calculated on a daily, monthly and annual basis.

Sources

The ASPM database, maintained by the FAA's Office of Performance Analysis (AJR-G), provides the data for this metric. The individual air traffic facilities for the core airports provide arrival and departure rates through the use of the National Traffic Management Log (NTML) ASPM obtains the capacity rates from the NTML system.

Statistical Issues

None.

Completeness

Fiscal year data are finalized approximately 90 days after the close of the fiscal year.

Reliability

Further research is needed.

Verification and Validation

ASPM data are verified on a daily basis by the execution of a number of audit checks, comparison to other published data metrics, and through the use of ASPM by over 1700 active users.

FAA leadership reviews the data on a monthly basis. Data are reviewed at the LOB level on a weekly basis. This metric is part of a core group of goals which the FAA uses to establish employee performance-based pay.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Increase the Integration of Drones into the Airspace without Sacrificing Safety – Average Time Processing Part 107 Unmanned Aircraft Systems (UAS) Airspace Authorizations (FAA)

Measure

Average time for processing Part 107 UAS airspace authorizations.

Scope

An average of the total number of processing days for Part 107.41 authorizations completed since the beginning of FY 2018. Although now in FY 2019, FY 2018 will be used as the starting point to bring the cumulative average forward. Processing days are calculated as the number of days from when a Part 107.41 authorization is received to when it is responded to through either Low Altitude Airspace and Notification Capability (LAANC) or DroneZone.

Processing time reduction goals for FY 2019 will use the following baselines: 50 days for processing authorizations (DroneZone and LAANC combined) and 106 days for processing DroneZone authorizations. These are based on FY 2018 averages for overall processing days (all sources combined) and the processing days for manual authorizations, respectively.

Sources

For applications submitted through DroneZone, an application is generated through a website application process then tracked in the system to determine how long it takes to process. For applications submitted through LAANC, through a web based application that provides expedited processing of airspace authorizations below the approved altitudes on the FAA UAS facility maps.

Statistical Issues

Volatility in the number of applications received over time through LAANC.

Completeness

The lead office (Emerging Technologies Team, AJV-115) will track Part 107.41 applications from submission to disposition through various sources discussed above. These sources are interacted with assigned staff on a daily basis. The staff follows a standard operating procedure to process applications to ensure continuity and accuracy.

The data are collected by multiple sources and merged into one to provide the reporting metric. The data pulls from both the existing manual processes and our new automated process through LAANC.

Reliability

This is a manual process requiring queries from two data sources merged to provide a unified response. It is subject to human error.

Verification and Validation

Inherent in the processes above.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Increase the Integration of Drones into the Airspace without Sacrificing Safety – Average Time Processing UAS Part 107 Operational Waivers (FAA)

Measure

Maintain the average time for processing (approve or deny) part 107 waivers at 50 days for FY 2018 with a 5-day reduction each following year to FY 2022.

Part 107 UAS waiver processing time is calculated as the number of days between receipt of request and delivery of a response. The response can be either an approval or a denial.

Scope

Airspace Authorizations are permissions given by air traffic control to use a specific airspace in a specific time frame. If the UAS operator intends to fly in controlled airspace, the operator will need an authorization in addition to a waiver (for example, if operator wants to fly over people within 5 miles of an airport). The authorization process ensures the specific use of that aircraft in the NAS does not endanger other users of the NAS.

Part 107 waivers are requested when the operator wants to operate in a manner that is not currently allowed by regulation. The UAS operator is asking for a particular portion of a regulation to be waived (for examples, flying over people).

Sources

Tracking data are obtained from the operational waiver portal of FAA Drone Zone. The FAA Drone Zone is an enterprise IT solution to consolidate several UAS systems into a central and fully functional environment. This platform is the foundation for the next generation of UAS support applications, including those to support operational waivers.

Statistical Issues

Average processing time is measured in calendar days, which includes weekends and government holidays. The FAA do not process waiver applications on weekends or

government holidays, which negatively skews the statistics. Additionally, on applications where the applicant includes at least 50 percent of the information required for approval, a request for information (RFI) is sent to the responsible person listed on the waiver application. An applicant is provided 30 calendar days to provide a response. The time the applicant has to respond to the RFI adds additional processing days to the processing day average but is not reflective of the team's adjudication performance.

Completeness

This metric includes applications submitted to the General Aviation and Commercial Division (AFS-800) Waiver Team via the on-line portal and manual (paper) submissions.

Reliability

FAA Drone Zone provides an improved external user experience on a modernized platform and a design that is easy to understand and navigate. Although confidence is high the data are reflective of number of applications and days in process, data are subject to human error during the application process. Scheduled user experience and functionality enhancements are in place to enhance waiver application completeness and reliability, limit erroneous waiver applications, and reduce duplicate waiver applications.

Verification and Validation

The FAA verifies and validates the accuracy of the data through QA/QC reviews of Drone Zone waiver applications. Data are reviewed and reconciled as needed, but, predominantly on a weekly basis. Potential errors identified in these reviews are explored and resolved.

To verify performance plan metrics are being met the waiver team posts weekly and monthly operational waiver performance reports two distinct Knowledge Services Network (KSN) SharePoint sites. Once posted, the performance information is available for all parties with specific SharePoint access to review, validate and address abnormalities. Staffing levels and processes are monitored as the average processing time target is reduced to ensure the appropriate level of resources are available to maintain performance.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Alleviate Urban Congestion – Interstate (FHWA)

Measure

Interstate travel time reliability, as percent of person-miles traveled that are reliable (formerly Travel Time Index in urban areas).

Scope

The interstate travel time reliability measure examines the reliability of travel (i.e., consistency from day to day and/or hour to hour) on the interstate system from the perspective of the user as reported as the percent of person-miles traveled that are reliable.

National targets may be adjusted further after additional data are available in 2019.

Sources

Data sources include average travel time data for interstates from the National Performance Management Research Data Set (NPMRDS). The data reflect actual, observed travel times on the interstates, reported as an average every 15 minutes. Data are collected by INRIX and provided by the University of Maryland CATT Lab to FHWA as the NPMRDS. The vehicle probe data can be from cell phones, in-vehicle navigation units, and/or fleet (e.g., truck, delivery vehicles, taxi) management systems. Related volume data for weighting the measure are found in HPMS.

Statistical Issues

PMT estimation requires information on the number of vehicle occupants that is not available in the monthly vehicle-miles traveled data. Additionally, the monthly VMT data does not distinguish between passenger and freight vehicle-miles traveled.

Completeness

Missing data in the NPMRDS do occur, either due to short road segment length (i.e., between interchanges in urban areas where cars pass too quickly through that they are not reporting speed and location) or where there are low volumes and no probe vehicles traveling through during a 5-minute period especially overnight and in some rural areas. The rulemaking recognized this limitation and accounts for missing data, in part, by using average travel times for every 15 minutes.

Reliability

Reliability for these measures is excellent. All metric submissions as well as all targets and other reporting are reviewed by FHWA. Data resubmittal is requested in cases where major

problems are identified. As many as 34 states use an analysis tool developed as part by the TPM Capacity Building pooled fund study which provides consistent and reliable results.

Verification and Validation

NPMRDS data are validated quarterly in limited locations by comparing to ground truth travel time data. Results are within specifications of the contract. Recently available volume data from HPMS are used to calculate the results. Typically, there is a lag in data availability and of conflation to the NPMRDS location referencing network. The 2017 travel time data was conflated with 2015 HPMS data.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Improve Passenger Rail (On-Time) Performance – Shorter Distance Intercity Routes (FRA)

Measure

On-Time Performance (OTP) for Northeast Corridor (NEC) routes.

OTP for state supported routes.

Scope

OTP measures for Amtrak service record train reliability at the route's endpoint, each station, and weighted for each customer. OTP is the percentage of total train arrivals on-time at each station, with every arrival weighted equally. An Acela train is late when it arrives at a station more than 10 minutes after its scheduled time; a Northeast Regional or state-supported train is late when it arrives more than 15 minutes after its scheduled time.

NEC routes are those which operate predominantly on the 457-mile northeast corridor (Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island). State supported routes are those which operate short-distance corridors of not more than 750 miles between endpoints—not including NEC routes. (49 U.S.C. 24102)

Sources

Amtrak captures the data for each service and provides reports to FRA with annual, quarterly, and monthly measures. FRA publishes the quarterly Service Quality Report for Amtrak Services each quarter using the data.

Statistical Issues

None.

Completeness

FRA and stakeholder groups, including the Northeast Corridor Commission and State-Amtrak Intercity Passenger Rail Committee, monitor and evaluate Amtrak OTP closely. FRA receives adequate information from Amtrak to monitor OTP.

Reliability

No reliability issues in terms of OTP data integrity. Actual Amtrak performance varies depending on the degree of delays caused by Amtrak's host freight railroads, Amtrak's own causes of delay, and third-party issues, such as extreme weather and accidents.

Verification and Validation

FRA tracks Amtrak OTP data each month, matches it against other performance data, and conducts monthly meetings with Amtrak and host railroads to better understand the nature of Amtrak delays.

Details on Infrastructure Measures
Goal 2/Objective 3: System Operations and Performance
Provide Sustainment Sealift Capacity to the United States Armed Forces (MARAD)

Measure

The number of U.S. flag vessels.

Scope

Ships in the Maritime Administration (MARAD) registry. MARAD tracks the number of large internationally trading ocean-going commercial vessels (1,600 gross tons or more) operating under U.S. flag to help ensure an adequate U.S. flag fleet, crewed by U.S. qualified Merchant Mariners, to meet Department of Defense (DoD) requirements for sealift support during national contingency operations. Most of the ships that MARAD tracks participate in the Voluntary Intermodal Sealift Agreement (VISA) program, including those participating in the Maritime Security Program (MSP).

MARAD estimates that at least 125 large internationally-trading U.S. flag commercial ships of 1,600 gross tons and over are required to maintain a sufficient force of unlimited credentialed mariners to meet sustainment sealift needs in a major contingency situation exceeding 4-6 months in duration.

Sources

MARAD relies on both commercial and private data sources to maintain an accurate ship list. The basis for the ship list is an extract of ship data from Information Handling Service Markit, which is a commercial vendor of vessel registry data, and is the trusted and widely used source for such data across the maritime shipping industry.

MARAD also validates the data against ship information received from the United States Transportation Command (TRANSCOM) and the Military Sealift Command. Additionally, MARAD oversees the MSP, and receives data on these vessels directly from participants operating in the program. MARAD also employs the Sea Web online database to track the actual movements of MSP vessels worldwide to ensure they are meeting program requirements.

Statistical Issues

The list of ships includes the population of ships meeting the vessel criteria outlined above for the measure. Accordingly, no statistical methods are used to create the list. Basic trend analysis is done to identify any anomalies in terms of number and type of ships.

Completeness

The internationally sailing vessel list produced by MARAD is the complete list of large, U.S. flag self-propelled, privately-owned merchant vessels carrying cargo from port to port that are not eligible to serve in United States domestic trade. It is relatively easy to keep a good handle on the number of such ships because of the limiting criteria.

Reliability

The number of vessels MARAD tracks is highly reliable. The ships tracked are among the largest in the world fleet, all catalogued in international databases and subject to tracking via established online services. The commercial data vendor is considered the trusted source in the maritime industry.

Verification and Validation

MARAD is able to ensure validation and verification through data collected directly from vessel operators and other federal resources. MARAD conducts monthly data assurance checks to account for and resolve any discrepancies in the data.

Details on Infrastructure Measures
Goal 2/Objective 4: Economic Competitiveness and Workforce
Alleviate Freight Congestion (FHWA)

Measure

Interstate Truck Travel Time Reliability (TTTR) Index (formerly the Freight Buffer Index).

Scope

Travel time reliability is a key indicator of transportation system performance. The TTTR index measures the reliability or consistency of truck travel times on the interstate from day to day over the course of a year. The TTTR index is the ratio of the 95th percentile truck travel time to the 50th percentile truck travel time for each roadway segment, which is then averaged for the entire interstate system to give a TTTR Index.

The TTTR Index represents a system-wide average of extra time or cushion that needs to be added to typical or average travel time to ensure on-time arrival 95 percent of the time. Higher TTTR values above 1.0 indicate a less reliable roadway, while lower TTTR values above 1.0 indicate a more reliable roadway. This gives a system-wide indication of how much extra time, on average, a motor carrier needs to budget for freight travel on the interstate to avoid further delays that can lead to extra shipping and carrying costs.

National targets may be adjusted further after additional data are available in 2019.

Sources

NPMRDS provides vehicle probe-based travel time data for passenger vehicles and trucks and is used by FHWA and State DOTs to calculate the TTTR Index. Real-time probe data are collected from a variety of sources including mobile devices, connected autos, portable navigation devices, commercial fleets and sensors. NPMRDS includes historical average travel times in five-minute increments daily covering the entire NHS.

Statistical issues

The key concerns are the sample size of commercial vehicle probes and frequency of the sampling time and position sampling. The data provide nationwide coverage from over 700,000 freight vehicles operating in North America. Most of the data are from medium to large fleets that operate tractor-trailer combination trucks in every sector of the industry and every region of the United States and Canada.

Completeness

The NPMRDS provides average travel times in 5-minute increments daily covering the entire NHS. Based on the most recent review, the interstate system had 93 percent completeness for travel time date collected daily on each segment of the interstate.

Reliability

To provide reliable roadway performance estimates, a large enough number of freight vehicles must be equipped with GPS to provide a valid and reliable measure of roadway performance, and to provide the temporal and geographic diversity desired by the performance measurement system.

Through use of the NPMRDS, FHWA has made progress in increasing sample size and the frequency of sampling by increasing the sources of the probe data and the number of vehicles providing position information. The NPMRDS travel times are produced using path processing. In path processing, a space mean speed is calculated for each individual probe vehicle from the points along its trajectory path. This provides more accurate average vehicle speed data. Probe vehicle performance systems, such as the NPMRDS, are designed to provide travel time and speed or delay information without traditional fixed-location traffic monitoring and data collection systems. Analysis of the GPS location data allow for very accurate roadway measurements.

Verification and Validation

The NPMRDS includes a measurement of the density of data used to generate each average travel time. There are quarterly validations conducted that compare deployed Bluetooth sensor travel-time data to the NPMRDS data.

Details on Infrastructure Measures
Goal 2/Objective 4: Economic Competitiveness and Workforce
Reduce Time to Issue Hazmat Transportation Permits (PHMSA)

Measure

HM special permit applications average number of days to resolution.

Scope

Number of days to process and make a determination of a Special Permit application on average.

Special Permits vary in both political and technical complexity. PHMSA has found that by averaging the number of days to evaluate applications, the range of complexity is accounted for and efficiency of the Special Permit evaluation processes is better reflected.

Sources

Data retrieved from the PHMSA Portal, Special Permits processing tool, and collated in the PHMSA Data Mart (formerly the Hazmat Information Portal).

Statistical Issues

When there are a particularly low number of Special Permit applications, the results will be skewed.

Completeness

Data are only available back to FY 2017 following the transition to conducting special permit evaluations on the Portal application.

Reliability

Issues with software, impacting the flow of data from the Portal application to the Data Mart, have impacted reliability of results in the past. In time, the situation was corrected.

Verification and Validation

Anecdotal review and observation of trends to determine if results fall within reasonable variation.

Details on Infrastructure Measures
Goal 2/Objective 4: Economic Competitiveness and Workforce
Provide a Safe, Secure, Reliable, and Efficient United States Portion of the St. Lawrence Seaway to its Commercial Users (SLSDC)

Measure

Percentage of time the United States portion of the St. Lawrence Seaway is available to commercial users.

Scope

The reliability of the U.S. sectors of the St. Lawrence Seaway (including the two U.S. Seaway locks in Massena, New York) are critical to continuous commercial shipping during the navigation season (late March to late December).

System downtime due to any condition (weather, vessel incidents, malfunctioning equipment) causes delays to ships; affecting international trade to and from the Great Lakes region of North America.

Downtime is measured by:

- hours/minutes of delay for weather (visibility, fog, snow, ice),
- vessel incidents (human error, electrical and/or mechanical failure),
- water level and rate of flow regulation, and
- lock equipment malfunction.

Source(s)

Saint Lawrence Seaway Development Corporation (SLSDC) Office of Lock Operations and Marine Services.

Statistical Issues

None.

Completeness

The SLSDC is the federal agency responsible for the operation and maintenance of the United States portion of the St. Lawrence Seaway. Furthermore, SLSDC's lock operations unit gathers primary data for all vessel transits through the United States Seaway sectors and locks, including any downtime in operations.

Data are collected on site, at the United States locks, as vessels are transiting or as operations are suspended. This information measuring the system's reliability is compiled and delivered to SLSDC senior staff and stakeholders each month.

Reliability

The SLSDC compiles annual system reliability data for comparison purposes. Since the SLSDC gathers data directly from observation, there are no limitations. The SLSDC historically reports this performance metric for its navigation season (typically late March to late December).

Verification and Validation

The SLSDC verifies and validates the accuracy of the data through review of 24-hour vessel traffic control computer records, radio communication between the two Seaway entities and vessel operators, and video and audiotapes of vessel incidents.

Details on Innovation Measures
Goal 3/Objective 1: Development of Innovation
Increase the Development of Innovations in Transportation - Research Laboratory Utilization Rates (OST-R)

Measure

Research laboratory utilization rates.

Scope

DOT features an array of laboratories that engage in advanced transportation research: FAA's William J. Hughes Technical Center, FHWA's Turner-Fairbank Highway Research Center, Office of the Secretary of Transportation-Research's (OST-R's) Volpe National Transportation Systems Center, and FRA's Transportation Technology Center. DOT will assess utilization of DOT research laboratories, identify barriers that hinder such utilization, and implement measures to ultimately increase utilization.

Sources

OST-R is the department's representative for the Federal Laboratory Consortium and coordinates with DOT's laboratory directors. OST-R is leading coordinating efforts to ensure appropriate monitoring of this performance measure.

Statistical Issues

OST-R and lab points of contact are collaborating to identify ways to track performance measurement data through key performance indicators that can be analyzed to quantify the utility rate.

Completeness

OST-R is collecting information on all DOT labs within the research centers and analyzing the data for completeness.

Reliability

The source of information is internal and in full control of DOT staff.

Verification and Validation

OST-R is chairing a working group to ensure it is controlled and monitored on a quarterly basis and plans to assess it annually.

Details on Innovation Measures
Goal 3/Objective 1: Development of Innovation
Increase the Development of Innovations in Transportation – Research Results and Technical reports made publicly available (OST-R)

Measure

Research results and technical reports made publicly available.

Scope

DOT is committed to increasing the efficiency and influence of its research investments by collaborating with external stakeholders early in the research and development (R&D) process. DOT is making research results (software, data, and all other DOT-sponsored information) easy to locate to increase visibility and utility. To expand information accessibility, DOT is committed to identifying stakeholders and aligning technology transfer activities early in the process of formulating R&D agreements. This alignment may increase the impact of societal benefits attributed to DOT's R&D investment.

DOT plans to increase the visibility of its research results with stakeholders by connecting them to the National Transportation Library and Research Hub. FY 2019 is the baseline year.

Sources

National Transportation Library (NTL).

Statistical Issues

NTL provides the number of total publications made available to the public and research results through the Research Hub which were developed through DOT sponsored research. NTL has capability of producing statistical analysis of its archived items. FY 2019 is the baseline year.

Completeness

OST-R is coordinating with the modal administrations to help ensure that all DOT-sponsored reports and outcomes are made publicly available. FY 2019 is the baseline year.

Reliability

Further research is needed.

Verification and Validation

None.

Details on Innovation Measures
Goal 3/Objective 2: Deployment of Innovation
Increase Effectiveness of Technology Transfer – Technologies Toward Implementation and Success Stories (OST-R)

Measure

This measure tracks the number of times DOT-sponsored activities led to the actual use of technologies and the number of success stories. The term technology is used broadly to describe the R&D results of DOT-sponsored activities.

Scope

DOT will coordinate and partner with technology deployment experts within the OAs and leverage expertise and resources within and outside DOT to identify whether DOT sponsored activities led to the actual use of technologies through pilots, demonstrations, or related activities. These measures can help monitor the effectiveness of DOT's tech transfer activities, which can lead to identifying societal benefits through formal evaluations.

Sources

OST-R is implementing a process throughout DOT to increase the level of visibility of post R&D activities through evaluations. OST-R is monitoring implementation progress through quarterly reviews. FY 2019 is the baseline year.

Statistical Issues

None.

Completeness

OST-R is coordination with all OAs to ensure the entire R&D portfolio is included. FY 2019 is the baseline year for technologies toward implementation.

Reliability

OST-R is leading the effort and collecting the data directly from the R&D sources.

Verification and Validation

OST-R is implementing a review process that collects and reviews key performance indicators to verify and validate information on a quarterly basis. FY 2019 is the baseline year for technologies toward implementation.

Details on Innovation Measures
Goal 3/Objective 2: Deployment of Innovation
Improve NextGen Rollout (Projects Completed On-Time (NextGen Advisory Committee (NAC) Recommendations) (FAA)

Measure

Complete 80 percent of the NAC Recommendations.

Scope

This metric measures the Next Generation Air Transportation System's (NextGen's) success in completing the identified milestones in five areas:

- Surface Operations and Data Sharing (Surface);
- Multiple Runway Operations (MRO);
- Data Communications (DataComm);
- Performance-Based Navigation (PBN), and
- NEC.

Sources

Completion of these commitments are closely tracked, monitored, and coordinated across NextGen, Aviation Safety (AVS), and Air Traffic Organization (ATO) LOB. The agency will continue to monitor progress by conducting internal meetings at least monthly to oversee implementation status. Senior FAA and industry leadership will provide quarterly updates to the NAC's subcommittee. Progress reports will be provided publicly through the NAC with advance notice available to the public in the Federal Register. The FAA will also report on progress against the milestones for each focus area of the NextGen Performance Snapshots website.

Statistical Issues

There are no statistical issues related to the NextGen Priorities.

Completeness

The decision to declare a commitment complete is as follows:

- Implement a functioning capability at a specific location or finish an assessment/study.
- Hold the monthly NextGen Integration Working Group meeting where Subject Matter Experts (SME) share recent accomplishments with Office of NextGen (ANG), ATO, and AVS leadership.
- ANG, ATO, and AVS leadership jointly determine if the commitments is complete. If so, the commitment's status is changed from "on track" to "complete" on the public NextGen Performance Snapshot website.

Reliability

The metric has no reliability issue. The NAC recommended commitments are either complete or they are not.

Verification and Validation

Inherent in the processes above.

Details on Innovation Measures
Goal 3/Objective 2: Deployment of Innovation
Improve NextGen Rollout Projects Completed on Budget (Major System Investments) (FAA)

Measure

90 percent of major baselined acquisition programs must be maintained within 10 percent of their current acquisition cost, schedule, and performance baseline as of the end of FY 2019.

Scope

Programs classified as Acquisition Category (ACAT) 1, 2, or 3 considered strategic or part of NextGen are considered "Major" programs and included in this measure. For FY 2018, twenty-one major acquisition programs will be tracked and monitored. This measure is consistent with Public Law 104-264, which requires the FAA Administrator to consider termination of a program if the program is breaching the cost, schedule, or technical performance baseline by more than 10 percent.

Sources

FAA LOBs report monthly status of their Acquisition Program Baselines using Simplified Program Information Reporting and Evaluation (SPIRE) tool, an automated database. FAA LOBs provide a monthly status of Estimated Cost at Completion (ECAC), Estimated Schedule at Completion (ESAC) and technical performance including an analysis of the risks in maintaining program baselines. Performance indicators and commentary are provided monthly that details problems, issues, and corrective actions, to ensure baselines are maintained within the established acquisition baseline parameters. The performance status is reported monthly to the senior level managers via the monthly Performance Committee Meetings.

Statistical Issues

The programs selected each fiscal year represent a cross section of programs within the FAA. They include Automation, Communication, Facility, NextGen, Navigation, Weather, and Surveillance programs that have an Acquisition Category 1, 2, or 3 are of strategic importance to the agency.

Completeness

This measure is current with no missing data. Reporting will begin 30 days after the list of programs is finalized.

Reliability

Further research is needed.

Verification and Validation

Inherent in the processes above.

Details on Innovation Measures
Goal 3/Objective 2: Deployment of Innovation
Monitor Adoption of Self Driving Vehicles (NHTSA)

Measure

Deployment of Automated Driving Systems.

Scope

Data collection has not started for this measure.

Sources

Not applicable.

Statistical Issues

Not applicable.

Completeness

Not applicable.

Reliability

Not applicable.

Verification and Validation

Not applicable.

Details on Accountability Measures
Goal 4/Objective 1: Regulatory Reform
Reduce the Regulatory Burden on the Transportation Industry and Public While Still Achieving Safety Standards (DOT) – Compliance with Executive Order

Measure

Compliance with executive order to reduce two regulations for each new regulation (ratio).

Scope

This is measured as the number of DOT regulatory actions classified as "deregulatory" divided by the number of significant regulatory actions classified as "regulatory."

The "deregulatory" and "regulatory" categorizations are determined through negotiations with Office of Information and Regulatory Affairs (OIRA).

All DOT rulemakings completed within the fiscal year.

Sources

Regulatory impact analyses and other economic analyses produced in support of the rulemakings. These classifications also are published in the Federal Register.

Statistical Issues

Not applicable as this is not a statistical data collection.

Completeness

Applies to 100 percent of rulemakings completed by DOT.

Reliability

Not applicable as this is purely an accounting exercise.

Verification and Validation

Review within modes and by OST. Reviewed, audited, and approved by OIRA at the end of the fiscal year.

Details on Accountability Measures
Goal 4/Objective 1: Regulatory Reform
Reduce the Regulatory Burden on the Transportation Industry and Public While Still Achieving Safety Standards – Reduce Economic Impact of Regulations (DOT)

Measure

Reduce the economic impact of regulations, expressed in terms of total cost savings (annualized, adjusted at a 7 percent discount rate).

Scope

This is calculated as the sum of regulatory costs imposed by significant DOT rules less the sum of deregulatory cost savings for all DOT deregulatory actions for the fiscal year.

All final DOT rulemakings completed within the fiscal year, except for nonsignificant regulatory actions.

Sources

Regulatory impact analyses and other economic analyses produced in support of the rulemakings.

Statistical Issues

To the extent that there are statistical issues, these would be raised and addressed through OST and OIRA review as well as through notice and public comment.

Completeness

Applies to 100 percent of rulemakings completed by DOT, which are covered by EO 13771.

Reliability

Not applicable as this is purely an accounting exercise.

Verification and Validation

Review within modes and by OST. Reviewed, audited, and approved by OIRA at the end of the fiscal year.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Improve Information Technology (IT) Project Performance (OCIO)

Measure

Percentage of major DOT IT projects within or minus 10 percent of projected costs while meeting incremental development targets.

Scope

OAs track IT project management performance and report to OST monthly. For major IT investments, DOT reports these data to OMB, which then publishes it to the IT Dashboard.

Sources

Data are collected in Corporate Investment Management System as part of OMB IT Investment data requirements.

Statistical Issues

Not applicable.

Completeness

Not applicable.

Reliability

Not applicable.

Verification and Validation

Not applicable.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Consolidate Data Centers (OCIO)

Measure

Percentage of data centers (dedicated spaced used to house computer systems and associated components, such as telecommunications and storage systems) consolidated by OA.

Scope

Data center activity across DOT.

Sources

Data are manually collected through coordination with the OAs.

Statistical Issues

Not applicable.

Completeness

Not applicable.

Reliability

Not applicable.

Verification and Validation

Not applicable.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Improve DOT's Cyber Security – Systems with Proper Security Authorizations (OCIO)

Measure

Percent of systems with proper security authorizations.

Scope

DOT systems.

Sources

Data collected in the Cyber Security Assessment and Management (CSAM) tool.

Statistical Issues

Not applicable.

Completeness

Further research is needed.

Reliability

Further research is needed.

Verification and Validation

Not applicable.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Improve DOT's Cyber Security – Systems Converted to an Ongoing Authorization Process (OCIO)

Measure

Percent of systems converted to an ongoing authorization process.

Scope

DOT Systems.

Sources

Data collected in the CSAM tool.

Statistical Issues

Not applicable.

Completeness

Not applicable.

Reliability

Not applicable.

Verification and Validation

Not applicable.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Decrease Improper Payments (OST-B)

Measure

Improper payment percentage.

Scope

Improper payment legislation defines a program as susceptible to significant improper payments when annual improper payments exceed 1.5 percent and $10 million of outlays, or $100 million of outlays regardless of the error rate. The legislation requires agencies to obtain a statistically valid estimate and report an annual amount of improper payments in programs that were identified, by risk assessment, as susceptible to significant improper payments.

As of FY 2018, three DOT programs are identified as susceptible to significant improper payments and subject to annual reporting requirements:

- FHWA Highway Planning and Construction,
- FTA Emergency Relief Program—Disaster Relief Act, and
- Office of Inspector General (OIG) Disaster Relief Appropriations Act

A risk assessment, statutory law, OMB, or management may identify additional programs as susceptible to significant improper payments and require DOT to report annual estimates. For FY 2019, DOT does not anticipate that additional programs will be required to an improper payment estimate. Beyond FY 2020, DOT expects to report additional improper payment estimates related to disaster relief funding received from the Bipartisan Budget Act of 2018.

Sources

The population of payment data are extracted from Delphi, DOT's financial system of record. A DOT program office or grant recipient could be the source of detailed supporting documentation on the payment requirements.

Statistical Issues

DOT derives improper payment estimates rates based on probability samples with estimates for sampling error in accordance with OMB Circular A-123, Appendix C, *Requirements for Payment Integrity Improvement*. Improper payment estimates represent the results of programs susceptible to significant improper payments and are not a statistical estimate for all of DOT's programs.

Completeness

The Enterprise Service Center, DOT's financial management service provider, reconciles the data extracts to the OA's financial statements to ensure completeness. Next, the statistician and DOT officials collaborate to identify the final payment populations for sampling.

Reliability

Further research is needed.

Verification and Validation

A statistician prepares and an agency official certifies that DOT's sampling and estimation plans are in accordance with OMB Circular A-123, Appendix C requirements. The statistician designs and refines the sampling plans considering the nature and distribution of payments made by our programs. For grant-related programs, DOT typically employs a multi-stage random selection methodology. The first stage involves generating a sample from DOT payments to grant recipients. At the second stage, the statistician develops a sample from the list of invoices the grant recipient applied to the DOT payment. Next, DOT samples and tests line items from the grant recipient's invoice to determine if the expenditures are proper. After DOT officials confirm improper payments within the samples, the statistician extrapolates the results to arrive at the estimate.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Improve Effectiveness and Efficiency of Support Services (OST-M)

Measure

Percent of actions in implementation plan to consolidate similar work performed across modes (Human Resources (HR), IT, and Acquisition (ACQ)).

Scope

"Sharing Quality Services" is one of several Key Performance Indicators (KPI) within the broader President's Management Agenda Cross Agency Priority Goal: Cross-Cutting Priority Areas.

Currently, DOT delivers mission support services—HR, IT, and ACQ—from each of 11 Operating Administrations including FAA (modes), resulting in duplicative, costly technology, redundant staff roles, and the proliferation of inconsistent, manual processes.

With anticipated budget cuts and an administration mandate to reorganize, DOT must find a way to improve mission support operations, cut costs, and increase accountability and oversight.

DOT has outlined management reforms including a shared services model implementation to consolidate similar work performed across the modes and ensure policies and practices are applied consistently throughout DOT.

Sources

As the single authoritative repository for federal procurement award data, the Federal Procurement Data System (FPDS) is the primary data source for the IT Contract Spend. Data that are provided via GSA's Data to Decisions (D2D) dashboards, which are endorsed by OMB and encouraged for use by agencies in managing and overseeing their category management program implementation. The data provided in the D2D dashboards are based on contract data entered into Federal Procurement Data System—Next Generation (FPDS-NG).

During FY 2014, DOT began a major systems integration effort called DP2 to link the Delphi financial management system to a single instance of Performance and Registration Information Systems Management (PRISM), the department's standard contract writing system. DP2 eliminates the individual versions of PRISM that had been in use at each OA. The integration with Delphi supports the linkage of real-time fund commitments to requisitions and the financial recording of obligations when contract records are executed in PRISM.

HR workload at DOT is measured by three indicators: the number of transactions, recruitment cases, and the staff-to-customer ratio. The final workload indicator is the staff-to-customer ratio. Per the Office of Personnel Management (OPM), the median federal agency HR servicing ratio is 60 employees per HR staff, with a range of 46 to 100.

The HR life cycle at DOT is supported by the IT systems described in the table below. Two of these systems are owned and operated by the Department of Interior Business Center (IBC), which is one of several HR LOB organizations approved by OPM to provide services to customer agencies throughout the Federal government.

Table. IT Systems Supporting DOT's HR Life Cycle

System	Ownership	Description and use
USAJOBS	OPM	Interfaces with federal job seekers as the government's official recruiting site.
Monster Government Solutions (MGS)	Commercially available	Used by many federal agencies to manage the staffing function. Used by HR specialists to rate and rank applications, build certificates of eligible candidates, share certificates and application materials with hiring managers, document selections, and maintain selection case files.
Federal Personnel/Payroll System (FPPS)	IBC	Used as the official system of records for position management and employee records, as well as the pay agent for DOT.
Consolidated Automated System for Time and Labor Entry (CASTLE)	DOT (FAA)	Interfaces with employees, timekeepers, and FPPS to account for and process time and leave.
Workforce Transformation and Tracking System (WTTS)	IBC	Integrates as an overlay system with FPPS, MGS, security clearance processing, and several other systems.

Statistical Issues

Not applicable.

Completeness

Information collected to assess DOT's performance against this goal is based on data entered into FPDS by individual contracting officers within DOT OAs. Federal regulation and DOT acquisition policy requires contracting officers to ensure all records for contracting actions are entered and finalized in FPDS within three days of award.

Reliability

Not applicable.

Verification and Validation

There may be instances when it is not apparent to OMB and GSA when a requirement is not a common requirement, but more mission specific and should not be included in the addressable spend. Therefore, it is incumbent upon the agencies to cleanse the data prior to utilizing it for any significant decision-making.

The data are initially entered into FPDS via interface between DOT's contract writing system, PRISM, and then validated by individual contracting officers. Since there is a data validation step prior to finalization in FPDS, DOT is satisfied that the data are primarily accurate; however, since human error is possible, there may be mistakes in minor pieces of the data pulled from FPDS.

As an additional verification of FPDS data accuracy, DOT OA contracting offices perform an annual review of FPDS data to ensure accuracy and completeness in accordance with FAR 4.604 and provide assurance statements to the OSPE as to their results. Using the OA responses, OSPE provides a consolidated report to GSA each fiscal year on behalf of the department.

Hiring and recruitment actions are entered into Monster via the Executive Agent. Once a selection has been made, a hiring action is entered to FPPS/WTTS by the hiring manager or administrative support. The hiring action is validated by the Budget and HR operations offices before final approval is granted.

DOT HR offices (both the Executive Agent and the OAs) follow legislative, OPM, and OMB guidance. Regarding hiring from outside the government, all OAs follow the guidance, processes and procedures set out in the department's Personnel Manual and implemented by the EA. Each OA has its own merit promotion plan which dictates policies for filling jobs from within the government.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Increase Use of Best in Class (BIC) Contracts (OST- M60)

Measure

Percent of all DOT contract dollars that are qualified, are obligated on a BIC contract as defined by OMB/GSA.

Scope

"Increasing Use of Best in Class" is one of several KPI within the broader President's Management Agenda Cross Agency Priority Goal: Category Management.

The scope of Category Management encompasses spending in ten common categories of goods and services. These categories are: facilities; construction; professional services; information technology; medical services; transportation and logistics services: industrial products and services; security and protection; human capital; office management; and travel.

BIC contracts have vetted by OMB and GSA against a rigorous set of criteria and determined to meet the Category Management Principles and thus should be utilized to the maximum extent practicable.

BIC achievement to target numbers are based on actual obligation data provided with each contract action in FPDS-NG and summarized for category management agency program officials in the GSA D2D dashboards, which are endorsed for use by the OMB.

Sources

As the single authoritative repository for federal procurement award data, the FPDS is the primary data source for the BIC data that is provided via GSA's D2D dashboards, which are endorsed by OMB and encouraged for use by agencies in managing and overseeing their category management program implementation.

The data provided in the D2D dashboards are based on contract data entered into FPDS-NG.

Statistical Issues

To calculate BIC, OMB and GSA must first determine, for each common category and subcategory, what is included in the "addressable spend." To do this, OMB and GSA have created a "tier logic" based on relevant Product or Service Code (PSC) and NAICS codes, all of which is collected and tracked as described in the dashboards utilizing data from FPDS-NG. There may be instances when it is not apparent to OMB and GSA when a requirement is not a common requirement, but more mission specific and should not be included in the addressable spend. Therefore, it is incumbent upon the Agencies to cleanse the data prior to utilizing it for any significant decision-making.

Completeness

Information collected to assess DOT's performance against this goal is based on data entered into FPDS by individual contracting officers within DOT OAs. Federal regulation and DOT acquisition policy requires contracting officers to ensure all records for contracting actions are entered and finalized in FPDS within three days of award.

Reliability

Not applicable.

Verification and Validation

The data are initially entered into FPDS via interface between DOT's contract writing system, PRISM, and then validated by individual contracting officers. Since there is a data validation step prior to finalization in FPDS, DOT is satisfied that the data are primarily accurate; however, since human error is possible, there may be mistakes in minor pieces of the data pulled from FPDS.

As an additional verification of FPDS data accuracy, DOT OA contracting offices perform an annual review of FPDS data to ensure accuracy and completeness in accordance with FAR 4.604 and provide assurance statements to the OSPE as to their results. Using the OA responses, OSPE provides a consolidated report to GSA each fiscal year on behalf of the Department.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Facility Consolidation Measure (OST-M)

Measure

Square Footage Reduced year over year based on the Reduce the Footprint (RTF) base line established by GSA.

Scope

Nationally, DOT manages 31.3 million SF of building space. With approximately 56,100 real property assets of which 498,00 (89 percent) are owned and 6,400 (11 percent) are leased. While, leased assets include 280 GSA leases, the majority are direct leases. Owned assets have an estimated replacement value of $13 billion. Annually the department spends approximately $315 billion for 11.4 million SF of leased assets.

Although the DOT portfolio contains sixteen different GSA building categories. The space reductions are focused on the categories of 9.4 million SF (30.1 percent) as Office and 2.8 million SF (9 percent) as warehouse. The remaining 19.0 million SF (60.8 percent), is tied to unique mission or functional requirements. These specialized facilities include:

- schools/training (2.8 percent);
- labs (4.2 percent);
- navigation and traffic aids (34.8 percent); and
- other types (18.7 percent).

Sources

Real Property data used to calculate reductions for owned and direct lease information is from the DOT Real Estate Management System (REMS). GSA's Federal Real Property Program (FRPP) provides information on Occupancy Agreements (OA) where GSA provides space for the Department.

Statistical Issues

None.

Completeness

To ensure accuracy of DOT's real property assets in REMS, personnel confirm information that includes: verifying lease records and land ownership documents, validating square footage, confirming against operational databases, and contacting maintenance personnel. FAA is developing a system to support a new triennial inventory process with automated cross-checks with other FAA systems and program office information to align with real property information. A major challenge to implement these features is alignment of REMS and FRPP assets with information from the operating office.

Reliability

DOT looks at trends based on prior FRPP submissions to ensure changes can be supported by specific real property activities, general real property strategies, or data quality improvement efforts.

FAA's Bureau Variance Report is produced from the FRPP submission and supports this review while also identifying obvious anomalies. Since DOT reports on roughly 57,000 assets, this review is completed at a portfolio level by OA and focuses on quantifiable measures such as total number of assets by type, acreage, SF, replacement value, repair needs, and operating costs.

With data from prior FRPP submission, DOT checks the trend of major indicators going back several years. Since establishment of the RTF initiative, DOT has conducted an asset level review of office and warehouse facilities, with sensitivity to any reported changes year over year.

Verification and Validation

The Department is focused to ensure accurate REMS data through several processes. One method is the REMS "Invalid Data Module" that checks asset information against a set of business rules.

When data errors are identified, they are corrected immediately. Inaccuracies are reported monthly and made available for investigation.

The FAA assigns the Invalid Data report to regional personnel to validate and correct. Additionally, the Real Property Management Office performs periodic checks, such as reviewing high-level SF totals reported against a subset of facility types. While this approach may not indicate a specific issue, it can identify inconsistencies that require further data evaluation. In some instances, comparing data may identify miscoding in one of the systems. Using this approach revealed that SF at one facility was overstated and research identified several building improvements erroneously entered as new buildings. These assets were corrected in the system.

High-level metrics are produced monthly, quarterly, and annually to identify portfolio-wide trends and verify that changes are a result of real property initiatives.

Details on Accountability Measures
Goal 4/ Objective 2: Mission Efficiency and Support
Reduce the Number of Unessential Federal Advisory Committees (OST- M)

Measure

The number of Federal Advisory Committee Acts terminated.

Scope

All Federal Advisory Committee Acts in DOT.

Sources

Federal Advisory Committees Act database maintained by S-10 in DOT.

Statistical Issues

Not applicable as this is not a statistical data collection.

Completeness

Applies to 100 percent of DOT's Federal Advisory Committees.

Reliability

Reliability depends upon S-10 coordination with the operating administrations.

Verification and Validation

Review and approved within modes and by OST.

Reviewed, and approved by GSA as each committee is terminated, and at the end of each year.