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**DEPARTMENT OF**

**TRANSPORTATION**

**Fiscal Year 2016 ANNUAL PERFORMANCE REPORT /**

**Fiscal Year 2018 ANNUAL PERFORMANCE PLAN**

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EXECUTIVE SUMMARY

# INTRODUCTION

The U.S. Department of Transportation (DOT) is responsible for ensuring the movement of people and goods throughout the United States as well as to and from our Nation’s borders.

This document is based on the current DOT Strategic Plan which covers 2014-2018. It reports DOT key performance metrics during FY 2016 and sets forth a basic performance plan for Fiscal Years 2017 and 2018.

DOT is developing a new strategic plan, which will re-structure the performance reporting and planning framework beginning in FY 2019.

FY 2016 Performance Report

The tables that follow summarize key goals based on the previous DOT Strategic Plan structure.

## ROADWAY SAFETY (FHWA, NHTSA, FMCSA)

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016 Actual | Results |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Highway fatality rate per 100 million vehicle-miles traveled (VMT). (r) – Revised from previous years | 1.10 | 1.14 | 1.10 (r) | 1.08 (r) | 1.13 | 1.02 | N/A | Not Met (2015) |
| Passenger vehicle occupant fatality rate per 100 million VMT. | 0.84 | 0.81 | 0.79 | 0.78 | 0.81 | 0.82 | N/A | Met (2015) |
| Motorcyclist rider fatality rate per 100,000 motorcycle registrations | 54.82 | 54.66 | 55.54 | 54.58 | 57.58 | 62 | N/A | Met (2015) |
| Non-occupant fatality rate per 100 million VMT. | 0.17 | 0.17 | 0.19 | 0.19 | 0.21 | 0.15 | N/A | Not Met (2015) |
| Large truck and bus fatality rate per 100 million VMT. | 0.137 | 0.142 | 0.142 | 0.138 | 0.140 | 0.114 | N/A | Not Met (2015) |

## AVIATION SAFETY (FAA)

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016 Actual | Results |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number of U.S.-registered, commercial air carrier fatalities per 100 million persons on board. | 0.0 | 0.0 | 0.1 | 0.6 | 0.1 | 6.7 | 0.6 | Met |
| Number of fatal general aviation accidents per 100,000 flight hours. | 1.12 | 1.09 | 1.11 | 1.09 | 0.99 | 1.02 | 0.91 | Met |
| Category A&B runway incursions per million operations. | 0.138 | 0.356 | 0.220 | 0.282 | 0.302 | 0.395 | 0.380 | Met |

## RAIL, TRANSIT, PIPELINE, HAZMAT SAFETY AND SAFETY POLICY

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016  Actual | Results |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Rail-related accidents and incidents per million train-miles. (FRA) | 16.072 | 15.194 | 15.028 | 16.160 | 15.808 | 15.900 | 16.044 | Not Met |
| Transit fatalities per 100 million passenger-miles traveled. (FTA) \* - Preliminary estimate | N/A | 0.533 | 0.547 | 0.613 | 0.609\* | 0.543 | 0.487\* | Potentially Met |
| Pipeline incidents involving death or major injury (PHMSA) (r) – Revised \* - Preliminary estimate | 32 | 33(r) | 27(r) | 24(r) | 39 | 20-31 | 25\* | Met |
| Hazardous materials incidents involving death or major injury. (PHMSA) (r) – Revised \* - Preliminary estimate | 23 | 32 | 33(r) | 27(r) | 23 | 31 | 22\* | Met |
| Number of States and localities that adopt roadway designs that accommodate all road users. (FHWA) (r) Revised \* - Preliminary estimate | N/A | 214(r) | 246(r) | 398(r) | 652 | 270 | -- | Met |

**STATE OF GOOD REPAIR**

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016 Actual | Result |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Roadway: Percent of VMT on National Highway System (NHS) with good to vary good ride quality.(FHWA) (r) Revised | 54.3% (r) | 57.1% (r) | 57.7% (r) | 58.7% | 60.3% | 61.4% | 62.8% | Met |
| Roadway: Percent of Deck Area on NHS Structurally Deficient Bridges. (FWHA) | 7.8% | 7.1% | 6.8% | 6.0% | 5.9% | 5.5% | 5.3% | Met |
| Transit: Backlog of transit capital assets in need of replacement or refurbishment. (FTA) *Biennial measure.* | $77.7 billion | No data | $85.9 billion | No data | $89.8 billion | $98 billion | NA | Met |
| Runways: Percent of runway pavement in excellent, good, or fair condition for paved runways in the National Plan of Integrated Airport Systems. (FAA) | 97.4% | 97.5% | 97.4% | 97.5% | 97.6% | 93% | 97.6% | Met |

**ECONOMIC COMPETITIVENESS**

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016 Actual | Result |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cumulative number of U.S. En Route air traffic control centers achieving Initial Operating Capability (IOC) and ultimately Operational Readiness Date (ORD) on ERAM (FAA) | 2  (IOC) | 9  (IOC) | 17  (IOC) | 16  (ORD) | 20  (ORD) | -- | -- | Met |
| By the end of FY2017 (September 2017), DATACOMM will be implemented at a cumulative total of 18 Airport Traffic Control Towers. (FAA) |  |  |  |  |  | 6 | 46 | Met |
| Roadway congestion (travel time index) in urban areas. (FHWA) | n/a | n/a | n/a | 1.36 | 1.37 | 1.36 | 1.35 | Met |
| Roadway congestion, freight (travel time reliability) in Top 25 Domestic Trade Corridors. (FHWA) | n/a | n/a | 16.3 | 18.6 | 18.8 | 18.5 | 19.3 | Not Met |
| Total number of urban public transit boardings (in billions) (FTA) | 10.26 | 10.47 | 10.53 | 10.67 | 10.44 | 10.99 | 10.32 | Not Met |
| Number of urbanized areas with increased transit market share among commuters to work. (FTA) | 1 | 4 | 3 | 4 | 4 | 6 | NA | Potentially not met |
| Number of Twenty Foot Equivalent containers transported across America’s Marine Highway routes. (MARAD) | 5,901 | 16,031 | 16,191 | 29,981 | 29,318 | 30,000 | 35,215 | Met |
| Percent of time the U.S. portion of the St. Lawrence Seaway is available to commercial users (SLSDC) | 99.0% | 99.7% | 99.1% | 97.2% | 97.3% | 99.0% | 99.7% | Met |

**ENVIRONMENTAL SUSTAINABILITY**

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016 Actual | Result |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent reduction in aviation fuel burned per revenue-ton-mile from the FY 2001 energy use baseline (FAA) | -22.2% | -22.7% | -21.7% | - 22.5% | 24.3% | - 22% | - 24.8% | Met |
| Percentage of alternative-fuel and hybrid vehicles in the total public transit revenue fixed route fleet. (FTA) | 44% | 45% | 47% | 50% | 50% | 50% | 50% | NA |
| Ratio of incoming Federally owned maritime vessels to vessels removed. (MARAD) | N/A | N/A | N/A | 1.0 | 1.0 | 1.0 | 1.0 | Met |
| Cumulative number of ships safely removed from the Suisun Bay Reserve Fleet for disposal since 2010 (MARAD) | 26 | 36 | 44 | 52 | 54 | 50 | 55 | Met |
| Major hazardous liquid pipeline spills (FMCSA) | 39 | 36 | 39 | 37 | 42 | 32 | 34 | Not met |
| U.S. population exposed to significant aircraft noise around airports (FAA) | 318,000 | 315,000 | 319,000 | 321,000 | 340,000 | 328,000 | 343,000 | Not Met |

**NATIONAL SECURITY AND PREPAREDNESS (MARAD)**

| Performance Measure | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 Target | 2016 Actual | Target |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total operating days U.S.-flagged, foreign commercial ships enrolled in the Maritime Security Program (MSP) are available to meet DoD requirements | 21,557 | 21,593 | 21,794 | 21,600 | 21,659 | 19,200 | 20,661 | Met |
| Percentage of DoD-required shipping capacity complete with crews available within mobilization timelines | N/A | N/A | N/A | 96% | 97% | 94% | 93% | Not Met |
| Percentage of DoD-designated commercial ports available for military use within DoD-established timelines | N/A | N/A | N/A | 94% | 100% | 87% | 99% | Met |
| Number of U.S. Merchant Marine Academy (USMMA) graduates. | 198 | 205 | 219 | 189 | 224 | 202 | 223 | Met |
| Number of State Maritime Academy graduates | 575 | 545 | 642 | 658 | 734 | 660 | 974 | Met |

FY 2018 DOT Performance Plan

# Improve the Safety of the Transportation System

*Improve the safety of the transportation system by addressing behavioral, vehicular, and infrastructure safety issues through prevention, mitigation, and response using innovative and effective partnerships, programs, and resources*.

DOT’s top priority is to make the U.S. transportation system the safest in the world. The Nation has made good progress in reducing overall transportation-related fatalities and injuries during the past two decades even though the U.S. population and travel increased significantly. The U.S. Department of Transportation (DOT) must continue to promote safer behaviors, vehicle and equipment designs, and infrastructure that will further reduce risks and minimize injury for all travelers.

DOT will work with its stakeholders—including transportation agencies, elected officials, law enforcement, industry representatives, bicycle and pedestrian groups, safety advocates, drivers, the disability and older adult communities, and the public—to keep the transportation system safe. The Department will use its safety regulatory authority over automobiles, aviation, rail, trucks, motorcoaches, pipelines, and hazardous materials as cost-effectively as possible to reduce crashes and injuries, and implement our expanded regulatory authority for public transit.

DOT will continue to direct federal resources to the highest safety risks and implement program reforms that will advance our safety mission. DOT will address these challenges through multimodal and mode specific strategies targeted toward identified risks, and work to ensure transportation systems are safe for all users.

All DOT Operating Administrations (OAs) contribute to the department’s safety goals.

## Roadway Safety (FHWA, FMCSA, NHTSA)

Over the past 10 years, the number of fatalities on the Nation’s roadways has dropped by nearly 18 percent. However, some of that success has been offset recently by increases in the number of fatalities. During 2015, 35,092 people died in crashes on the Nation’s roadways. An average of 96 people died each day in motor vehicle crashes, one fatality every 15 minutes.

The safety of our Nation’s transportation system is a top priority of DOT. Within DOT, FHWA, FMCSA, and NHTSA work together to address multiple dimensions of roadway safety. Roadway crashes represent 94 percent of all transportation-related fatalities in the United States. Each DOT OA plays a specific role in addressing pre-crash, crash, and post-crash factors that contribute to injuries and fatalities:

* FHWA improves safe mobility and infrastructure of our Nation’s roadways through national leadership and innovation.
* FMCSA aims to reduce commercial motor vehicle (CMV) transportation crashes, injuries and fatalities through education, innovation, regulation, enforcement and partnerships.
* NHTSA develops motor vehicle safety standards and evidence-based safety campaigns and programs. It also conducts advanced vehicle and behavioral safety research, and vehicle defects investigations and enforcement.

In the first 15 years of the 21st century, more than 611,000 people died on the Nation’s roadways. Among certain age groups, motor vehicle crashes are still a leading cause of death – mostly for young people. In 2014, motor vehicle crashes were the leading cause of death for young adults ages 16 – 24, and the second leading cause of death for children ages 4 – 15[[1]](#footnote-2). The total economic and social cost of highway crashes is $871 billion per year, according to [NHTSA estimates](http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf), an indication of the economic magnitude of highway crashes. DOT’s goal is to reduce roadway fatalities by the end of CY 2017 to 1.02 per 100 million vehicle miles traveled (VMT).

The Federal Government has the authority to establish national safety standards for vehicles, roadways and motor carriers. However, most of the activities that address safety issues are a partnership between Federal, State, and local governments.

#### Key Strategies

DOT emphasizes a data-driven approach to prioritize and determine the most effective ways to reduce crashes and fatalities. Data collection provides the foundation to better understand and quantify the nature of the problem and to develop evidence-based countermeasures as well as develop safer vehicles. Recognizing its importance, DOT will pursue data improvement initiatives in FY 2017 to further enhance and link existing systems. Modernizing and consolidating data programs enables not only DOT to make better traffic safety programming decisions, but allows State and local communities to do the same.

The Fixing America’s Surface Transportation Act (FAST Act), which authorizes DOT’s oversight of surface transportation, was signed into law by President Obama on December 4, 2015. The FAST Act covers five fiscal years through 2020, and is the first law in over ten years that offers long-term funding certainty to the Federal surface transportation program. States and local governments can now move forward with critical transportation projects, like new highways and transit lines, with the confidence that they will have a Federal partner over the long term. The Act also makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects. The FAST Act also includes additional motor vehicle safety measures, such as the authority to prohibit rental car companies from knowingly renting vehicles that are subject to safety recalls; increased maximum fines against non-compliant auto manufactures from $35 million to $105 million; and streamlines the Federal truck and bus safety grant programs, giving more flexibility to States to improve safety in these areas.

##### ***FHWA***

* Providing States with guidance for the implementation of safety programs and reporting (including HSIP, Older Driver and Pedestrian Special Rule Interim Guidance, High Risk Rural Roads, and State Safety Data Systems);
* Working with State DOTs to improve the State’s obligation of their HSIP funds;
* Providing technical assistance and expertise to research, design, and implement roadway infrastructure improvements; and to modernize highway geometric features and safety hardware as part of road and bridge construction, rehabilitation and restoration projects;
* Managing the Focused Approach to Safety to better address critical infrastructure safety challenges, specifically for roadway departure, intersection-related, and pedestrian crashes;
* Implementing the regulatory requirements for safety performance management and the requirements for HSIP to help States improve roadway and safety data; and
* Promoting the latest innovative safety tools and countermeasures as part of the Every Day Counts (EDC) initiative for Data Driven Safety Analysis (DDSA and Safe Transportation for Every Pedestrian (STEP).

##### ***NHTSA***

* Implementing a vehicle research plan to accelerate the potential benefits of connected automated vehicles on U.S. roadways. This includes in-vehicle technologies, such as automatic emergency braking, the use of radar, cameras and navigation as well as communications between vehicles;
* Continuing an ongoing initiative to restructure and strengthen its vehicle defects investigations program to ensure that the agency can better address vehicle safety defects today and in the future;
* Encouraging consumers to check for open recalls and to get their vehicles fixed as soon as possible through targeted public awareness campaigns.
* Maintaining a comprehensive series of programs to address unsafe driver behaviors particularly through high visibility enforcement (HVE) campaigns. These proven campaigns combine public outreach and intensified enforcement to both catch illegal behavior and serve as a deterrent to others. More than 10,000 State and local law enforcement agencies participate in HVE campaigns each year;
* Launching a new public-private partnership, the *Road to Zero Coalition*, to better engage stakeholders in developing new and innovative strategies to address traffic injury prevention;
* Mobilizing a cadre of peer law enforcement liaisons (LELs) to provide ongoing technical assistance and training to law enforcement agencies at the State and local level;
* Supporting a national network of 5,000 child safety seat inspection stations, and nearly 40,000 certified safety seat technicians. These include first responders, law enforcement officers, medical and public health professionals and safety advocates who work within their communities to improve occupant protection for all families
* Continuing to implement the *DOT Blueprint for Ending Distracted Driving* and vehicle and behavioral safety research on reducing distracted driving;
* Providing program guidance and technical assistance to States to implement their Highway Safety Plans, which detail how States will use their highway safety grant funds;
* Ongoing data modernization efforts to strengthen the collection and analysis of vehicle crash data through the development of more robust data systems; and
* Providing national leadership to promote and develop effective emergency medical services in all 50 States, and develop a Next Generation 911 system that will improve post-crash care and survival rates by upgrading the capacity of emergency response systems to utilize new forms of electronic communication.

##### ***FMCSA***

* Implementing Phase III of the Compliance, Safety, and Accountability (CSA) initiative to train States to be able to use all of the CSA interventions and enforcement actions;
* Completing a rulemaking to revise 49 CFR Part 385, Safety Fitness Procedures. FMCSA would establish safety fitness determinations based on safety data from inspections and violation history rather than just an investigation;
* Revising the new entrant safety audit program to allow offsite safety audits for new motor carriers that have evidence of compliance, helping States to complete more safety audits in the mandated timeframes;
* Improved information technology used to identify high-risk carriers; and
* Providing safety grant funding opportunities to State and local government agencies.

#### Next Steps

* Establishing safety performance measures in each State (including number of fatalities and serious injuries and rate of fatalities and serious injuries per 100 million VMT);
* Improved coordination of departmental programs in the implementation of State SHSPs;
* Improved use of the Systemic Approach to Safety to implement safety improvements based on high-risk roadway features correlated with specific severe crash types;
* Analysis and evaluation of the HSIP through review of online reports;
* Support the Secretary’s Safety Initiative by developing resources and providing technical assistance to address the safe use of non-motorized transportation;
* Promote EDC Data-Driven Safety Analysis tools and resources to State and local agencies;
* Increase States use of HSIP to implement live-saving infrastructure safety countermeasures;
* Refine and expand technical resources, guidelines and training to State and local organizations seeking to develop or expand highway safety programs and initiatives, working with researchers, associations, and other stakeholders to develop and distribute technical materials;
* Implement the modernized and more robust crash data collection system that will enhance all aspects of motor vehicle and roadway safety research, program development and education;
* Crash test 85 percent of the new model year fleet to provide consumers with more information on the relative safety of new vehicles through its 5-star rating program;
* Conduct four national HVE campaigns in FY 2017 to promote seat belt use, and deter impaired driving, and distracted driving;
* Convene five traffic safety stakeholder summits across the country in early 2016 leading to a national safety summit in Washington, DC in March 2016;
* Develop concrete actions that States and other safety advocates can take to address drowsy driving by holding stakeholder meetings and conducting research to help develop measures of drowsy driving, analyze existing data sources, and examine the potential of new State policies to change awareness and attitudes towards drowsy driving;
* Publish proposals to require vehicle-to-vehicle (V2V) devices on all light new vehicles, and on distraction guidelines that apply to nomadic devices in vehicles;
* Publish the Final Rule on Electronic Logging Devices (ELD) to establish minimum performance and design standards for ELDs; requirements for the mandatory use of these devices by drivers currently required to prepare hours of service (HOS) records of duty status; requirements concerning HOS supporting documents; and measures to address concerns about harassment resulting from the mandatory use of ELDs.

## Aviation Safety (FAA)

Aviation fatality rates are at historic lows and continue to drop over time. The Federal Aviation Administration (FAA) has an imperative to be smarter about how it assures safety as the aviation industry grows more complex. FAA has more safety data than it has ever had before. This provides an opportunity to be more proactive about safety and use safety management principles to make smarter, risk-based decisions.

FAA focuses on three areas of aviation safety:

* Commercial Aviation;
* General Aviation; and
* Runway Safety.

To continue to improve the current level of safety in the national airspace FAA recognizes the need to address precursors to accidents. In the past, FAA focused on actual incidents and accidents to identify risk within the aviation system. The number of accidents has now dropped to a level in which this is a more difficult activity to assess risk.

FAA is developing alternate methods to identify and address emerging safety risks and accident precursors to reduce the likelihood of such events. The Aviation Safety Information Analysis and Sharing (ASIAS) initiative is one of the key programs maintained by FAA, and frequently partners with the Commercial Aviation Safety Team (CAST) to monitor known risk, evaluate the effectiveness of deployed mitigations, and detect emerging risk. ASIAS has access to multiple data sources across Government and industry, including voluntarily provided safety data, through the participation of 46 Part 121 member air carriers and nine corporate operators. ASIAS has matured to the point that FAA and industry can leverage voluntarily provided safety data from operators

that represent 96 percent of U.S. air carrier commercial operations. ASIAS retains access to a wide variety of both public and proprietary data sources, each of which provides information from different parts of the National Airspace System (NAS). CAST leverages data from ASIAS to understand the underlying contributing factors and develop mitigation strategies.

#### Key Strategies

**Compliance Philosophy:** In 2016, the FAA continued efforts to implement the *Federal Aviation Administration Compliance Philosophy* throughout the agency and communicate this new approach to aviation stakeholders.

The compliance philosophy is the overarching guidance for implementing the FAA’s strategic safety oversight approach, pertaining to all users of our nation’s airspace. The compliance philosophy represents a focus on using, where appropriate, non-enforcement methods for correcting unintentional deviations or noncompliance that arise from factors such as flawed systems and procedures, simple mistakes, lack of understanding, or diminished skills. A compliance action is not adjudication, nor does it constitute a finding of violation.

The compliance philosophy emphasizes the importance of sharing information with and among our aviation community partners and analyzing data in order to identify safety risks and investigate the root causes of those risks. Under this philosophy, the FAA places its highest value on improving safety performance, with the understanding that traditional enforcement actions - such as civil penalties - are just one tool available to the agency as it protects the safety of our aviation system. An open and transparent exchange of information requires mutual cooperation and trust that can be challenging to achieve in a traditional, enforcement-focused regulatory model; but one that must occur to keep our increasingly congested airspace safe.

More information about the compliance philosophy can be found on the FAA’s website at: *https://www.faa.gov/about/initiatives/cp/*.

**Risk-Based Decision Making:** The aviation landscape has changed dramatically over the last decade. Several factors are increasing the complexity of the industry and introducing different types of safety risk into the aerospace system. These factors include new aerospace designs and technologies (e.g., Unmanned Aircraft Systems), changes in FAA’s surveillance and oversight model (e.g., designee management programs), and different business models for the design and manufacture of aircraft and products (e.g., supply chains).

The FAA has built the foundation to address the challenges created by this complexity and diversity by developing and implementing an SMS. Risk-Based Decision Making is one of four Strategic Initiatives identified by the FAA Administrator as a top priority. The initiative contains activities to help to further safety management in the FAA.

The Risk-Based Decision Making initiative will enable the FAA to make smarter decisions to improve safety in the aerospace system. Safety data will be shared among FAA organizations, industry, and international peers, leading to a broader spectrum of available data. The data will be analyzed using safety management principles to identify emerging hazards and predict the associated safety risk. The resulting information will be coordinated and shared with the people who are in the best position to manage the safety risk and make the aerospace system even safer. The Risk-Based Decision Making initiative includes the implementation of tools and processes that will enable the FAA to proactively address emerging safety risks using consistent, data informed approaches to support system-level decisions.

In order to do this, FAA established an Interim Safety Community of Interest in 2016 to serve as a prototype moving forward for how to standardize and integrate safety data at the agency level. This prototype builds on and incorporates in the work already completed on creating standardized taxonomies and determining the skills needed for safety analysts. It merges the original taxonomy and access to data activities into one integrated activity.

#### Next Steps

**Transitioning to a Compliance Philosophy:** As aviation evolves, the FAA’s oversight model must evolve with it. The FAA’s new philosophy on compliance is one of the key activities under the Risk-Based Decision Making initiative. This new approach ensures that FAA decisions affecting industry are made with safety risk fully considered and that oversight models are properly aligned with SMS in industry organizations. It is fully understood that the revised model will require a cultural change in how the FAA views and conducts oversight. In support of this change, FAA introduced and implemented the FAA Compliance Philosophy, providing the overarching guidance for implementing the agency’s strategic safety oversight approach. The approach emphasizes the accountability of all stakeholders but concentrates energy and resources on safety risk and problem solving. Using this approach, the FAA and industry will cooperate to actively manage safety risk in the aerospace system. FAA oversight decisions (frequency, depth, and focus) will be based on safety risk and the performance of industry organizations, and oversight resources will be focused on areas of highest safety risk.

**Identifying and Addressing Significant Safety Issues:** The FAA identifies and prioritizes cross-organizational Significant Safety Issues (SSIs). Each FAA Line of Business (LOB) is expected to identify SSIs within their area of responsibility and submit a subset of those issues for FAA executive-level consideration. These issues are consolidated and prioritized into an FAA SSI List. The purpose of the SSI list is to create a decision-making tool for FAA executives and assist them in prioritizing the application of FAA resources based on safety risk.

The SSI List contains crosscutting issues, which means that the issues are potentially systemic and would be most effectively treated by cross-organizational teams. An issue is considered crosscutting if it could affect more than one FAA organization, or if its mitigations require more than one FAA organization to implement. SSIs can indicate ineffective performance and their identification and prioritization will support management's decision making to implement necessary improvements in the system. This process will also increase cross-organizational communication and awareness.

The SSI List will be updated annually. Once the list is finalized, safety assessment teams will be established to conduct Safety Risk Management (SRM) on the issues in the priority established by the list. In 2016, FAA conducted a safety risk assessment on Misloaded Cargo. The assessment was focused on Part 121 certificated air cargo supplemental operators, which include cargo loaded on pallets and unit load devices (ULDs), as well as bulk and special cargo. The FAA SSI Team selected three SSIs to focus on in FY17—Runway Incursions, Inflight Pilot Report (PIREP) Collection and Dissemination, and Potential of Carry-on/Checked Passenger Devices to Cause Fire/Heat/Smoke Incident.

**Hazard Identification, Risk Management & Tracking Tool:** With the increasing complexity and interconnectivity of the National Airspace System (NAS), the FAA identified the need for a single integrated tool that provides a consistent and standardized methodology to manage and track hazards. On March 25, 2016, the FAA launched the Hazard Identification, Risk Management and Tracking (HIRMT) tool, a web-based software tool to capture, manage, and report on safety issues affecting multiple LOBs and Staff Offices.

While many organizations have hazard tracking systems in place, there has not been such a system at the FAA level. HIRMT is not intended to track every hazard across the entire FAA and will not replace existing organizational systems and processes. Instead, FAA will use HIRMT to track safety management efforts for the agency’s most complex, critical, and/or cross-organizational safety concerns. These Aerospace System Level (ASL) safety issues will be managed in HIRMT in accordance with the FAA’s Safety Risk Management Policy.

FAA personnel are currently being trained on the use of the HIRMT tool. The plan is to evolve the tool to provide enhanced functionality for users. Since the tool was launched, the team has released two updates. In fiscal year 2017, the goal is to implement data system enhancements that are best suited for interconnectivity with the HIRMT tool.

**Ongoing Air Traffic System Modernization:** FAA will continue to develop and deploy technologies to use U.S. airspace in safer, more efficient, and more environmentally sound ways. NextGen is a comprehensive overhaul of our NAS to make air travel more convenient and dependable. NextGen is providing air traffic managers and pilots with the tools to proactively identify and mitigate weather and other potential flight conflicts. Automatic Dependent Surveillance-Broadcast, or ADS-B, moves air traffic control from ground-based radar surveillance to a point-to-point broadcast surveillance.

**Runway Safety:** In 2018, the FAA plans to complete the transition from a reactive, event-based safety system to a proactive, risk-based system that incorporates the safety policies, culture, risk management, promotional, and analytical tools available in the Safety Management System.

The increasing capability of the Safety Management System will be matched by the development of risk-based operational metrics that support the identification of interacting hazards among system components and can classify the interdependencies created by these interactions. Surface safety metrics that identify the underlying linear, non-linear, static, and dynamic integrated risk characteristics will enable the development of organizational risk registers and allow the agency to effectively model future states.

In addition, the transition is dependent on the development of a portfolio-based approach to runway safety that incorporates risk-based decision making. The FAA has made this work a priority in 2017, focusing on the development of risk-based interagency, strategic, safety processes, using multiple data sources and stakeholder subject matter experts to assess current risk and establish relevant metrics that measure the reduction in risk.

## Railroad Safety (FRA)

FRA’s mission is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future. FRA executes this mission through development and enforcement of safety regulations, investment in passenger and freight rail services and infrastructure, and research and technology development. FRA’s activities, and those of the rail industry, have resulted in one of the safest decades ever. However, the rate of improvement has leveled off and new approaches that build on existing strategies are needed for future performance gains.

**Train Accidents and Incidents (1980 to 2015)**

These results are noteworthy because more Americans are choosing rail transportation. Amtrak ridership reached 30.8 million passengers in FY 2015, almost 29 percent higher than in FY 2005. In addition, U.S. rail intermodal freight traffic in FY 2015 exceeded 13.7 million containers and trailers—1.6 percent more than FY 2014.

Although FRA does not have the final safety performance data for FY 2016, significant risks remain in the rail transportation system. The rate of safety improvement has slowed and current safety strategies are approaching their effectiveness limits. In particular, the risk of highway-rail grade crossing incidents will likely grow with future train and highway traffic increases. Priority rail safety activities for FRA in 2016 included:

* Leading a multimodal, DOT campaign to strengthen safety awareness and enforcement at highway-rail grade crossings including a focus on smart use of technology; awareness about the most dangerous crossings in each state; improved signage, and partnerships with States and local safety agencies.
* Taking more than two dozen actions to ensure the safe transportation of energy products by rail, including issuing emergency orders and safety advisories, voluntary agreements with industry, and improving regulations.
* Requiring commuter and intercity passenger railroads to develop and implement system safety programs with proactive processes and procedures to identify and mitigate hazards on each railroad’s system.
* Expanding drug and alcohol regulations to cover maintenance of way employees to codify FRA guidance and respond to National Transportation Safety Board recommendations.

**Highway-Rail Grade Crossing and Pedestrian Safety:** Improving safety at the almost 130,000 public highway-rail grade crossings is one of FRA’s top priorities. Each crossing is the location of a potential collision between a train and motor vehicle. In fiscal year 2016, the number of grade crossing incidents decreased by 5 percent from the previous year. The number of fatalities was 213, a decrease of nearly 14 percent from FY 2015. The risk of highway-rail grade crossing incidents will likely grow with future train and highway traffic increases.

#### Key Strategies and Next Steps

While maintaining ongoing safety programs, FRA is targeting today’s most pressing rail transportation safety challenges:

* Passenger Rail: Commuter and intercity passenger railroads lack capital to deploy life-saving positive train control (PTC) technology and other safety improvements;
* Grade Crossings and Pedestrian Safety: Motor vehicle drivers and pedestrians continue to face significant risks at highway-rail grade crossings and around railroad rights of way;
* Critical Assets: Aging major infrastructure, including bridges and tunnels, on the Northeast Corridor; and
* Energy Products: Hazards from large volumes of crude oil and other energy products, including ethanol and liquefied natural gas, moving by rail.

**Passenger Railroad Safety:** While railroads have made remarkable safety progress in recent decades, accidents like the September 28, 2016 New Jersey Transit train crash in Hoboken and the May 12, 2015 Amtrak derailment makes clear that hard work remains. The good news is that technology exists today that can prevent some catastrophic accidents on passenger routes. Positive train control (PTC) would have prevented the 2013 Metro-North derailment that killed four people when an engineer operated a train too quickly around a curve.[[2]](#footnote-3)

The *Rail Safety Improvement Act of 2008* (RSIA) mandated that certain railroads implement the technology.[[3]](#footnote-4) FRA estimates that the mandate applies to about 68,000 route miles. Most major freight railroads do not expect to implement PTC systems fully until 2017 or later, according to public statements. Most Amtrak-owned routes are already equipped with functional PTC systems. Commuter railroads vary widely in their implementation status.

FRA regulations are the framework for the national PTC deployment. Before using PTC technologies in revenue service, each implementing railroad must submit its PTC safety plan to FRA and then receive FRA system certification. The certification process focuses on ensuring that railroads have (1) the capability to deploy the technology correctly, (2) established adequate training and maintenance programs, and (3) implemented technology that performs mandated functions safely and reliably.

Both before and since this derailment, FRA worked to help railroads plan and implement this critical, Congressionally-mandated, life-saving technology. FRA issued a $967 million loan to the New York Metropolitan Transportation Authority, the nation’s largest commuter rail service provider, for PTC deployment.

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The safest crossing is a closed crossing; therefore, increased funding for capital investment is critical. FRA would dedicate funds to local communities for safer highway-rail grade crossings, mitigation of adverse impacts of rail operations. FRA also would provide capital assistance to help resource-constrained short line railroads improve their infrastructure. In addition, FRA is exploring options for delivering effective highway-rail grade crossing grants. Combining DOT’s grade crossing resources will increase their effectiveness. FRA proposes new research, development, and technology, including field testing new technologies and developing an intelligent rail systems proof-of-concept for passively protected grade crossings. Additional money will fund a study of blocked highway-rail grade crossings and development of technologies other than conventional inductive loops to detect blocked crossings

**Critical Assets:** The Northeast Corridor (NEC) is the 457-mile rail backbone of the Northeastern United States that connects the Washington, D.C.; Baltimore, Maryland; Philadelphia, Pennsylvania; New York, New York; and Boston, Massachusetts, metropolitan areas. These areas collectively—

* Generate about 20 percent of U.S. economic output (gross domestic product).
* Have 51 million residents and will likely have 58 million residents by 2040.
* Choose rail for nearly 70 percent of combined air and rail travel in the Washington –New York market; and more than 50 percent of combined air and rail travel in the NewYork - Boston market.
* Support 2,200 passenger trains with approximately 720,000 intercity and commuter riders, every day on average.
* Average 70 freight trains daily.

In April 2015, the multi-party Northeast Corridor Infrastructure and Operations Advisory Commission released the first joint 5-year capital plan for investing in the corridor. The plan identified a nearly $14 billion backlog of major infrastructure assets (primarily bridges and tunnels) that have remained in service well beyond their expected useful life, require extensive maintenance and rehabilitation, and are major sources of corridor delays. The average age of these bridges and tunnels is over 100 years and failure of these infrastructure assets could cripple travel on the NEC.

**Movement of Crude Oil and Other Energy Products:** Rail transportation of crude oil increased significantly and rapidly, driven by new production from the North Dakota Bakken oil fields and imports from Canada. Ethanol and liquefied natural gas transportation by rail also increased significantly during the last decade. This is a national transportation phenomenon as energy products move from production areas to refineries on the East, West, and Gulf Coasts.

**Crude Oil, Ethanol, and Poison Inhalation Hazardous Materials Originations 2005 to 2014**

An accident involving large volumes of crude oil can be catastrophic. The 2013 Lac-Mégantic derailment killed 47 people. Since then, trains carrying crude oil have had 22 major accidents in the United States. As the safety and environmental risks grow with increasing shipments of energy products, Congress and the public are demanding rapid and effective remedies.

FRA will use new resources to expand FRA’s Automated Track Inspection Program, which complements and extend humans inspection capabilities to locate problems before they lead to derailments. FRA plans to use these resources to increase automated inspection mileage with existing systems, rehabilitate some equipment, and invest in a new platform with integrated track inspection technologies and rail defect detection systems. The funds will also help FRA advance its analytical capability and increase the flow of actionable information for targeted inspections.

FRA also will fund new research, development, and technology to mitigate rail transportation risks of crude oil and other energy products. Focus areas include tank car and rail integrity and developing the scientific and engineering foundation to continue revamping of FRA’s track safety regulations. These funds will also help the Short Line Safety Institute develop and expand, with an executive director and training director. Insurance companies, vendors, and shippers will also provide resources. FRA’s partnership with the Institute’s sponsor, the American Short Line and Regional Railroad Association, will increase our understanding of small railroads’ unique safety challenges and options for resolving them. FRA also plans to investigate the use of unmanned aircraft systems (UAS) to inspect railroad assets, anticipating that railroads intend to use UAS technologies in variety ways including inspecting tracks and bridges.

## Transit Safety (FTA)

According to the National Safety Council, passengers on the Nation’s bus, rail and commuter rail systems are 40 times less likely to be involved in a fatal accident than passengers in cars and trucks. Despite this record of safety, each year there are more than 200 fatalities related to public transportation. In 2015, 266 fatalities were reported on public transportation, an increase from 2014 when fatalities totaled between 236. It is worth noting that this number is still lower than 2013 and 2012 levels. The Federal Transit Administration (FTA) is committed to pursuing a flexible SMS approach in order to help a safe industry become even safer, by fostering sound safety policy, more efficient practices for risk management and safety assurance, and a strong safety culture at every transit system, whatever its size or mode of operation.

#### Key Strategies

FTA is working diligently to stand up the National Public Transportation Safety Program under MAP-21. To fulfill our commitment to developing an effective regulatory safety oversight program for the transit industry, FTA continues to strengthen the State Safety Oversight Program, develop a comprehensive SMS-focused training program, broaden the charter for the Transit Advisory Committee for Safety and kick-off the study of fatigue and operator assault prevention measures that will inform future safety rulemakings. FTA also initiated three safety research projects: 1) Pedestrian/Bicyclist Guidebook, 2) Transit Employee Safety Reporting Pilot, and 3) Safety Standard Strategic Plan & Data Collection. FTA also completed the safety standards compendium and solicited industry public comment consistent with a statutory requirement. In addition, FTA selected 13 transit agency projects out of 72 applications for $29 million to support cutting-edge efforts to improve track worker and passenger safety, improve natural disaster resilience, and respond more effectively to a range of emergencies.

The agency will also to continue to do inspections and provide directives as needed in order to assure a safe state of operations for WMATA and any other agencies that aren’t fulfilling their safety responsibilities.

#### Next Steps

In 2017, FTA will continue the launch of the Safety Research and Demonstration program to provide technical and financial support in for transit agencies to pursue innovative approaches to eliminate or mitigate known safety hazards in public transportation via demonstration of technologies, practices, and designs.

## Hazardous Materials Safety (PHMSA)

Every year, more than 2.5 billion tons of regulated hazardous materials—including explosive, poisonous, corrosive, flammable, and radioactive materials—valued at about $2.3 trillion move 307 billion miles on the nation’s transportation network.[[4]](#footnote-5)

Transporting hazardous materials underpins the United States’ economy and quality of life. Oil and natural gas are used to heat and cool homes and businesses, transport commercial products and people, and produce electricity. Hazardous materials are also used in processes like water purification, fertilizing crops, producing medicines, and manufacturing many other products. These shipments move through densely populated or sensitive areas where the consequences of an incident could be loss of life or serious environmental damage. The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides critical oversight that keeps the public, property, and the environment safe from hazardous materials during transport while also ensuring that these products can move easily through the marketplace to meet public demands.

PHMSA’s hazardous materials strategic goal is “to improve public health and safety by reducing transportation-related deaths and injuries.” This goal is aligned with PHMSA’s mission of protecting people and the environment from the risks of hazardous materials transportation. Accordingly, PHMSA measures the number of incidents with death or major injury involving the transport of hazardous materials against annual performance targets.

#### Key Strategies and Next Steps

PHMSA works to protect people and the environment from the risk of hazardous materials throughout the transportation system. To achieve our goal of reduced hazardous materials incidents resulting in death or major industry, the Office of Hazardous Materials Safety has focused on a number of key areas and implored targeted strategies to address the risks. These include:

* 1. *Streamlining, Clarifying, and Harmonizing Hazardous Materials Transportation Regulations:* Consistent with Executive Orders (EO) 12866, 13563, and 13610, OHMS frequently conducts retrospective reviews of our regulations to ensure they remain justified, are not duplicative, and reflect current practices and technologies. In addition, on January 30, 2017, President Trump signed an EO 13771 entitled “Reducing Regulation and Controlling Cost” requiring the removal of duplicative or unnecessary regulations. The reviews conducted by OHMS, consistent with the EOs, will identify and advance the streamlining of hazardous materials regulations. OHMS believes streamlining, updating, and clarifying regulations will improve compliance and allow industry and government to more effectively focus on high risk shipments.

International harmonization facilitates international trade by minimizing the costs and other burdens of complying with multiple or inconsistent safety requirements for transportation of hazardous materials. Safety is enhanced by creating a uniform framework for compliance, and as the volume of hazardous materials transported in international commerce continues to grow, harmonization becomes increasingly important. OHMS continues to work with modal partners and international regulatory bodies to strengthen global requirements.

* 1. *Industry, Community, and Emergency Responder Outreach:* Ensuring stakeholder awareness is essential in improving compliance while also mitigating consequences of hazardous materials incidents. OHMS utilizes a robust outreach campaign to reduce hazardous materials incidents involving death or major injury. This includes participation in the regulatory process, compliance assistance, training, and allocation of grant funding.
* **Regulatory Process**: OHMS provides ample opportunity for our stakeholders to provide input on the impacts and feasibility of our regulations. OMHS issues special permits to address the unique needs of individual companies and industries and to foster innovative solutions. In addition to posting rulemakings for public comment, OHMS implements a petition for rulemaking process that provides industry a voice in the development of new or the repeal of current regulations. This engagement ensures our regulations are clear and targeted.
* **Compliance Assistance**: In addition to day to day compliance inspections, over the past 10 years, PHMSA has engaged in a voluntary systems integrity approach to work collaboratively with global corporations to reduce risk. The program helps companies who have systematic noncompliance; a substantially high percentage of incidents leading to deaths, injuries, and environmental releases; or present a high level of risk to the public in actively developing sustainable solutions by investing in themselves. This voluntary action, in lieu of traditional enforcement actions, has improved compliance, obtained a higher level of safety than possible with standard processes, and leveraged limited investigator resources.
* **Training and Grants***:* OHMS oversees a diverse range of industry outreach and collaboration activities. We participate in the development and dissemination of the emergency response guidebook to assist emergency responders when they respond to a hazardous materials incident. OHMS also provides outreach to industry and dissemination of training, technical assistance, informational initiatives, and grants to improve safety and compliance and aid in emergency preparedness. This outreach is designed to increase preparedness and improve emergency response thus diminishing the consequences of a hazardous materials incident.
  1. *Safe transportation of Energy Products.* The emergence of the United States as a leading energy producer has changed our transportation system and presented new challenges for PHMSA. The increased transport of large volumes of energy products poses a significant risk to life, property, and the environment. To address the risks associated with such transportation, PHMSA conducts targeted research to gather additional data and further understand the risks associated with the transport of energy products. In addition, PHMSA is pursuing actions to address congressional mandates in the Fixing America’s Surface Transportation Act (FAST Act) that will improve the safety of transporting energy product. PHMSA is actively working to complete recommendations detailed in the FAST Act and has already made considerable progress on major accomplishments in FY 2016. PHMSA continues to address the risks associated with the transport of energy products and improve emergency preparedness and communication through outreach efforts and further future regulation.
  2. *Bulk Transportation of Hazardous Materials that are Toxic by Inhalation (TIH)* present a low probability, high-consequence risk in many modes of transportation. In 2005, a Chlorine train derailment in Graniteville, South Carolina claimed the lives of nine individuals and resulted in considerable property damage. To avoid such incidents, PHMSA is working with the industry to incorporate advanced rail tank car designs into regulation with a reasonable and safe phase out schedule of older tank cars. In addition, PHMSA plans to address other TIH issues highlighted by the regulated community through the Rail Safety Advisory Committee and industry petitions for regulatory reform.
  3. *Hazardous Materials that Present a Risk of Fire Aboard Aircraft*: An aircraft in flight is particularly vulnerable to the risk of fire, and the consequences can be catastrophic. PHMSA’s strategy for dealing with this challenge is to strengthen rules/standards for transporting lithium batteries and other hazardous materials by air; harmonize with international regulations, and stay current with advances in technology through outreach, research, and applications for permits and approvals; and
  4. *Rollover Crashes Involving Tank Trucks Carrying Gasoline and Other Flammable Liquids:* Annually, rollover accidents are a leading cause of death or major injury related to hazardous materials transport via highway. PHMSA understands this is an issue that spans multiple DOT agencies and is collaborating with NHTSA, FMCSA, and other appropriate agencies to develop a comprehensive approach to the issue. This may include the development of new standards for electronic stability control for trucks; and Work with other DOT operating administrations to improve driver training and to reduce driver fatigue.

## Pipeline Safety (PHMSA)

Natural gas and hazardous liquid pipelines supply more than two-thirds of the fuel used in American homes, cars, and businesses through a network of over 2.7 million miles of pipelines. Pipelines also supply the vast majority of energy used to fuel commercial transportation supporting growing domestic and international markets. While pipelines are by many measures the safest mode of transportation for these products, the nature of the cargo is inherently dangerous, and because of the large volumes transported, pipelines present a risk of low-probability, high-consequence failure.

Pipeline incidents with death or major injury (serious incidents) have declined significantly in the last 28 years from 95 in 1988 to 33 in 2016. At the same time, most measures of risk exposure—U.S. population, pipeline mileage, and pipeline ton-miles—have increased as pipeline networks multiply to support new markets, new energy sources and ever increasing demand.

Most of the risk (about 80 percent of the incidents with death or major injury) occurs on natural gas distribution systems, which provide direct services to near 70 million households and businesses. Since 1988, this risk has dropped from about 1.5 serious incidents per million services to 0.54 per million services.

#### Key Strategies and Next Steps

High risk, aging and obsolete pipeline infrastructure: Over 700,000 miles of pipelines were installed before 1970. Some of these pipelines were constructed of legacy materials including bare steel, iron, and copper that are more vulnerable to deterioration and failure than the materials commonly used today. PHMSA’s strategy for dealing with this challenge is to:

* Work with all stakeholders, including the public, industry and state regulators, to promote and expedite the construction of new, replaced or rehabilitated pipeline infrastructure that will meet the Nation’s energy supply needs.
* Work with State pipeline safety programs and pipeline operators to assure that the identification, repair, rehabilitation, requalification, or replacement of the highest risk pipelines is accelerated;
* Enhance pipeline integrity management programs to cover more miles of gas transmission and hazardous liquid pipeline systems;
* Work with State pipeline safety programs to assure gas distribution integrity management programs are in place to mitigate safety risks on the pipelines systems located underneath and throughout our cities and communities; and
* Investigate new technologies for improving the assessment, detection and control of pipeline risks.

Excavation and other outside force damage that compromises pipeline integrity remain the two leading causes of incidents involving gas transmission and gas distribution systems resulting in death or major injury. PHMSA’s strategy for dealing with these challenges is to:

* Enhance the “811—Call Before You Dig” program at the State and local levels to prevent pipeline damage from excavation;
* Continue to promote awareness and use of recommended practices for land use planning and development near transmission pipelines;
* Continue to support state damage prevention legislative initiatives; and
* Continue to promote awareness and use of the national pipeline mapping system.

1. Webb, C. (2016, July). *Motor vehicle traffic crashes as a leading cause of death in the United States, 2012-2014* (DOT HS 812 297). Washington, DC: National Highway Traffic Safety Administration. [↑](#footnote-ref-2)
2. Metro-North is the second largest commuter railroad in the United States, serving New York, Connecticut, and New Jersey, with an annual ridership of almost 83 million people. [↑](#footnote-ref-3)
3. All Class I railroad lines that carry poisonous by inhalation hazardous material and 5 million gross tons or more of annual traffic, and on any railroad’s main line tracks over which intercity or commuter rail passenger train service is regularly provided. A main line is a line over which 5 million or more gross tons are transported annually. [↑](#footnote-ref-4)
4. 2012 Commodity Flow Survey, Research and Innovative Technology Administration (RITA), Bureau of Transportation Statistics (BTS). See <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=CFS_2012_00H01&prodType=table> [↑](#footnote-ref-5)