Reduce Surface Transportation-Related Fatalities

June 27, 2018

Goal Leaders:

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Overview

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.

Challenges

- Some of that success has been offset recently by increases in the number of fatalities. During 2017, an estimated 37,150 people died in crashes on the Nation's roadways. An average of 101 people died each day in motor vehicle crashes. This is slightly less than the 37,431 fatalities in 2016.
- Human error continues to contribute to a significant number of transportation safety incidents.

Overview (cont.)

Opportunities

- New technologies and innovations can improve safety in all modes of surface travel.
- New data sources and more powerful analytical tools can help DOT identify problem areas and prioritize safety strategies more quickly.

Goal Structure & Strategies

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

	2016 Actual	2017 Target	2017 Actual	2018 Target	2018 Actual	2019 Target	2019 Actual	2020 Target	2020 Actual
Motor vehicle-related roadway fatalities per 100 million vehicle miles traveled	1.18	1.02	1.17	1.02		1.02		1.01	

DOT's strategies to accomplish the APG include the following:

- Improve and enhance data collection and analysis;
- Research and deploy advanced vehicle technology;
- Develop and enforce vehicle safety standards;
- Conduct national safety campaigns to promote safe driving practices;
- Support 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 of commercial operators and drivers.

Goal Structure & Strategies

Motor Vehicle-Related Fatality Supporting Indicators (FHWA, NHTSA, FMCSA)

	2016 Baseline	2017 Target	2018 Target	2019 Target	2020 Target
Passenger fatalities per 100 million vehicle miles traveled	0.75	0.75	0.75	0.74	0.74
Large truck and bus fatalities per 100 million vehicle miles traveled	0.144	0.114	0.114	0.114	0.114
Non occupant fatalities (pedestrian, bicycle) per 100,000 population	2.19	2.15	2.15	2.10	2.10
Motorcycle fatalities per 100,000 motorcycle registrations	60.9(r)	62	62	62	61

(r) Revised number based on updated information from NHTSA's Fatality Analysis Reporting System.

Goal Structure & Strategies (FMCSA)

Motor Vehicle-Related Fatality Supporting Indicators (FHWA, NHTSA, FMCSA)

FMCSA's strategies to accomplish the goal include the following:

- ***Our Roads, Our Responsibilities:*** This 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.
- **High-Risk Carriers:** Continue to conduct high-risk carrier investigations. These carriers are the Agency's top investigative priority. Investigative outcomes show that 45% of high-risk carrier investigations result in enforcement actions compared to a 15% enforcement rate observed on non-high-risk carriers.
- **New Entrant Safety Audits:** Continue to monitor New Entrants during their initial 18-months of operation and conduct New Entrant Safety Audits.
- **CDL Drug and Alcohol Clearinghouse:** Implement 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 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.

Goal Structure & Strategies (NHTSA)

Motor Vehicle-Related Fatality Supporting Indicators (FHWA, NHTSA, FMCSA)

NHTSA's strategies to accomplish the goal include the following:

- **Enhancing Data Collection.** NHTSA is continually improving its data systems by, for example, exploring new electronic data transfer technology. The agency also plans to undertake an initiative on the feasibility of performing a new Crash Causation Study. Understand the events leading up to a crash is crucial in developing new countermeasures and programs to prevent crashes from occurring in the future.
- **Promoting Safer Driving.** Driver error contributes to 94 percent of all serious crashes. NHTSA conducts research and develops safety programs to address these human factors, and provides guidance to States on implementing them. The agency conducts national media and enforcement campaigns to reduce alcohol and drug impaired driving and distracted driving, and to increase seat belt use. It also implements a range of initiatives on other safety issues such as consumer awareness and education campaigns on vehicle safety recalls, on the danger of leaving children in parked vehicles and on proper usage of child safety seats as well as efforts on pedestrian safety and teen driver safety, among others.
- **Strengthening Vehicle Safety.** NHTSA provides national leadership on Automated Driving Systems and related areas, such as cybersecurity by employing a holistic risk management approach to strengthen the cybersecurity posture of the automotive sector. This includes conducting applied research and testing and collaborating with other government agencies, international partners, and industry sectors, to build its knowledge base and proactively work with industry to address vehicle cybersecurity vulnerabilities, threats, and safety risks. NHTSA also develops and enforces vehicle safety standards, oversees vehicle safety defect recalls, and spurs deployment of safer vehicles through its 5-Star Safety Rating program.
- **Improving Survival Rates.** If a crash does occur, swift response by emergency medical services (EMS) can often be the difference between life and death. NHTSA is working with the States to upgrade and enhance the capacity of EMS providers to keep pace with advances in telecommunications technology.

Goal Structure & Strategies (FHWA)

Motor Vehicle-Related Fatality Supporting Indicators (FHWA, NHTSA, FMCSA)

FHWA's strategies to accomplish the goal include the following:

FHWA administers a $2.4 billion dollar Highway Safety Improvement Program (HSIP) program to States to address safety infrastructure challenges, including:

- FHWA's **Focused Approach to Safety initiative** provides targeted technical assistance and training to the cities with the most pedestrian and bicyclist fatalities.
- Through **Every Day Counts**, FHWA has two new initiatives for safety:
  - The **Data-Driven Safety Analysis:** Using tools to analyze crash and roadway data to predict the safety impacts of highway projects allows agencies to target investments with more confidence and reduce severe crashes on the roadways
  - **Safe Transportation for Every Pedestrian:** Pedestrians account for an estimated 15% of all roadway fatalities, the majority of which are at uncontrolled crossing locations (such as non-intersections) or at intersections with no traffic signal or STOP sign. This innovation helps transportation agencies address such crashes by promoting cost-effective countermeasures with known safety benefits.

In addition, FHWA focuses on three main areas that encompass approximately 90% of highway fatalities in the US – roadway departure, intersections, and pedestrian/bicycle crashes through the delivery of technical assistance, data analysis and action plan development and training.

Goal Structure & Strategies (FTA)

Transit-Related Fatalities per 100 Million Passenger-Miles Traveled (FTA)					
	2017 Baseline	**2018 Target**	**2019 Target**	**2020 Target**	**2021 Target**
Total transit fatalities per 100 million passenger miles by fiscal year	0.597	0.607	0.601	0.596	0.592

Actual data are subject to change and might differ from prior year materials based on the latest information available.

Strategies:

- Publication of FTA National Safety Plan.
- Implementation of State Safety Oversight Program.
- Safety directives and advisories.
- Temporary direct safety oversight.
- Safety Certification Training program.
- Implement Safety Management Systems Approach and Agency Safety Plans.
- Manage the drug and alcohol program.
- Safety Data Workgroup.
- SSO SOPs.
- SSOA certification of 30 States.

Goal Structure & Strategies

Rail-Related Fatalities (FRA) *				
	2017 Baseline	**2018 Target**	**2019 Target**	**2020 Target**
Highway-rail grade crossing incident rate per million train-miles	3.006	2.85	2.84	2.84
Rail right-of way trespass incident rate per million train-miles	1.513	1.55	1.51	1.48
* *Actual data are subject to change and might differ from prior year materials based on the latest information available. As of January 31, 2018.*				

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 over 250 and the number of trespass deaths has averaged over 450 per year since 2009. FRA strategies to reach the targets include education, e.g., public awareness programs about the dangers and consequences of trespassing and safe driving around highway-rail grade crossings, and engineering, by recommending installation of lights, gates, and dividers, and separating highways from train tracks.

Also, FRA is 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. Because FRA does not directly influence some significant grade crossing safety risks, including highway vehicle miles traveled and driver behavior, FRA partners with States, local governments, and organizations that can complement FRA activities.

Goal Structure & Strategies

Reduce Serious Pipeline Incidents (PHMSA)				
	2017 Baseline	**2018 Target**	**2019 Target**	**2020 Target**
Serious pipeline incidents involving major injury or fatality per million pipeline miles.	15	20	20	20

Serious Pipeline Incidents are those including a fatality or injury requiring in-patient hospitalization. Fire First incidents are excluded. Fire First Incidents are gas distribution incidents with a cause of Other Outside Force Damage and sub-cause of Nearby Fire/Explosion as Primary Cause of Incident.

PHMSA will continue to closely assess all accident data and take action where necessary and prudent to help protect people and the environment. PHMSA will also continue to urge operators to be vigilant in their operating practices to prevent accidents. In addition, the implementation of Safety Management Systems (SMS) by pipeline operators and other industries has been demonstrated to achieve results in improving safety. As such, PHMSA will continue to engage with the regulated industry to implement SMS and improve safety culture to further improve performance.

Reduce Serious Hazardous Materials Incidents (PHMSA)				
	2017 Baseline	**2018 Target**	**2019 Target**	**2020 Target**
Total serious hazardous materials incidents per 100 billion ton miles.	10	10	10	10

Serious incidents are those including a fatality or a major injury requiring admittance to the hospital and/or lost three days or more from work due to the extent of injury. .

PHMSA will continue to focus on its top safety rulemakings, the safe transportation of energy products, risk-based inspection, and outreach activities. PHMSA will also continue to analyze incident data to identify potential contributing causes, with an emphasis on human factor influences.

Summary of Progress – FY 18 Q1 and Q2

Surface Safety

In 2016, 37,461 people died in motor vehicle crashes. The fatality rate per 100 million vehicle miles traveled (VMT) was 1.18. While fatalities increased significantly in 2015 and 2016, early projections for 2017 show that fatalities have leveled off and will be slightly less than 2016. Although the number of highway fatalities have increase in the last two years, there has been great progress in reducing overall roadway-related fatalities and injuries despite increases in population and travel. From 2006 to 2016, highway fatalities have decreased by nearly 12 percent. Early projections for 2017 show that the increase in fatalities has leveled off, and that the overall results will be similar to 2016.

Transit Safety

Transit continues to be one of the safest modes. While the transit fatalities rate increased in 2015 and 2016, transit modes experienced a considerable reduction in fatalities during 2017 . 2018 data shows the transit fatalities rate might level or continue to decrease.

Rail Safety

Based on preliminary data from October 1, 2017, through January 31, 2018, the grade crossing incident rate increased by almost 12.1 percent, while the trespass incident rate was lower by more than 4.3, compared to the fiscal year 2017 performance. As the year progresses, FRA will determine whether these results are data anomalies or indications of longer term trends.

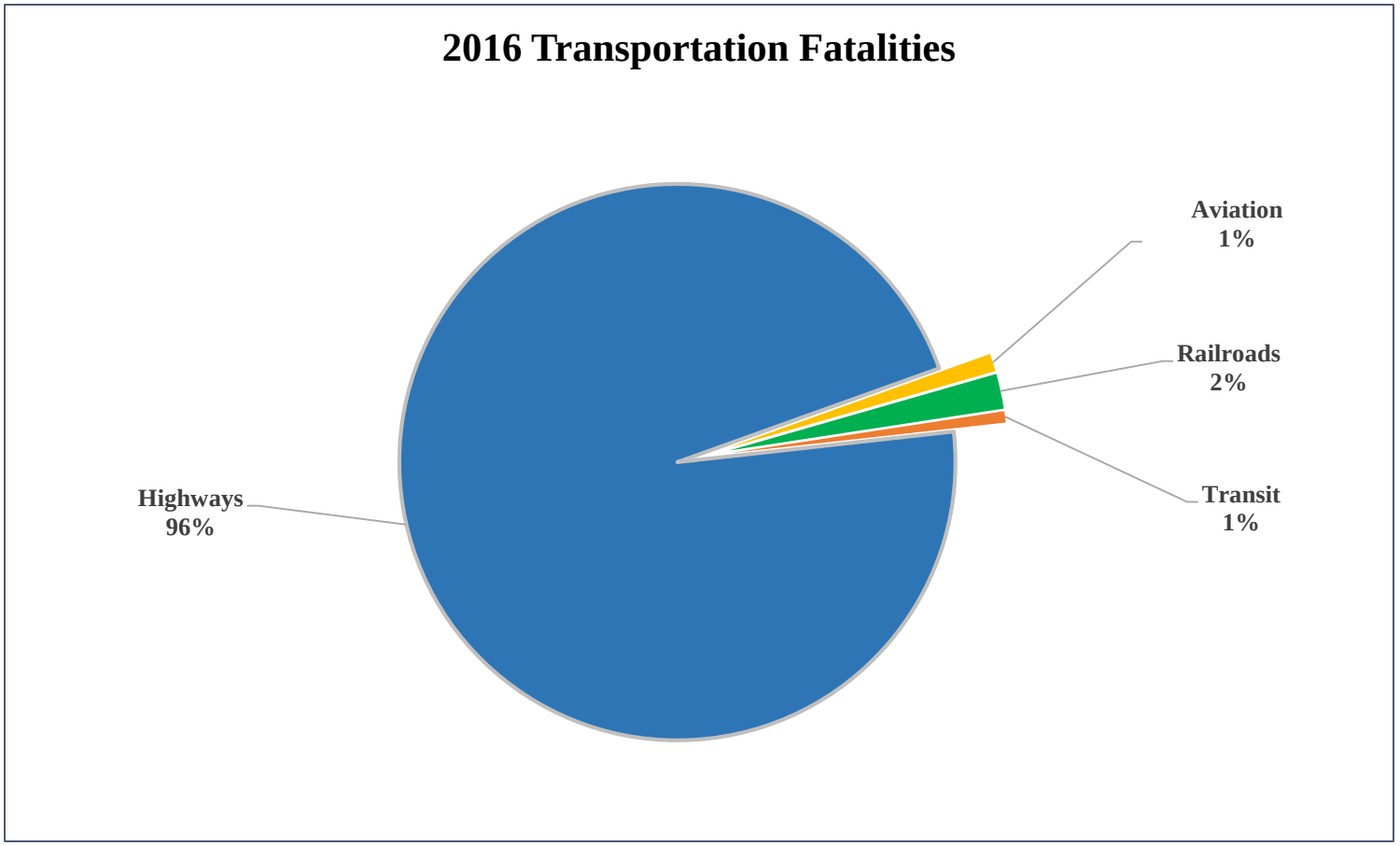
Pipelines Safety

Since the beginning of FY 2018, there have been 17 incidents involving death or major injury resulting from the transport of hazardous materials, including pipelines. Of the 17 incidents, 16 incidents were related to pipelines and one was related to hazardous materials transportation.

Hazardous Materials Safety

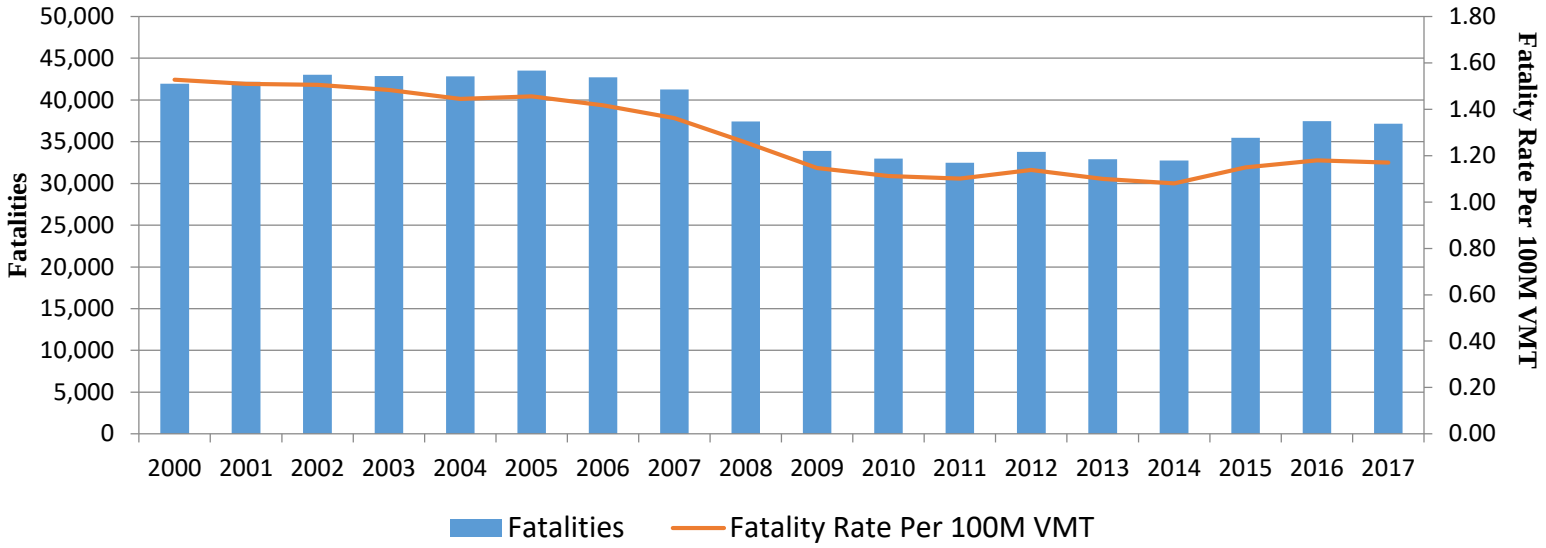
PHMSA evaluates the common causes of hazardous material transportation incidents for safety trends and emerging issues. PHMSA adjusts its risk-based oversight programs to target these safety issues.

Baseline/Trends



Key Indicators (Roadway Safety- FHWA, FMCSA, NHTSA)

Total Motor Vehicle Fatalities and Fatality Rate per 100 million Vehicle Miles Traveled

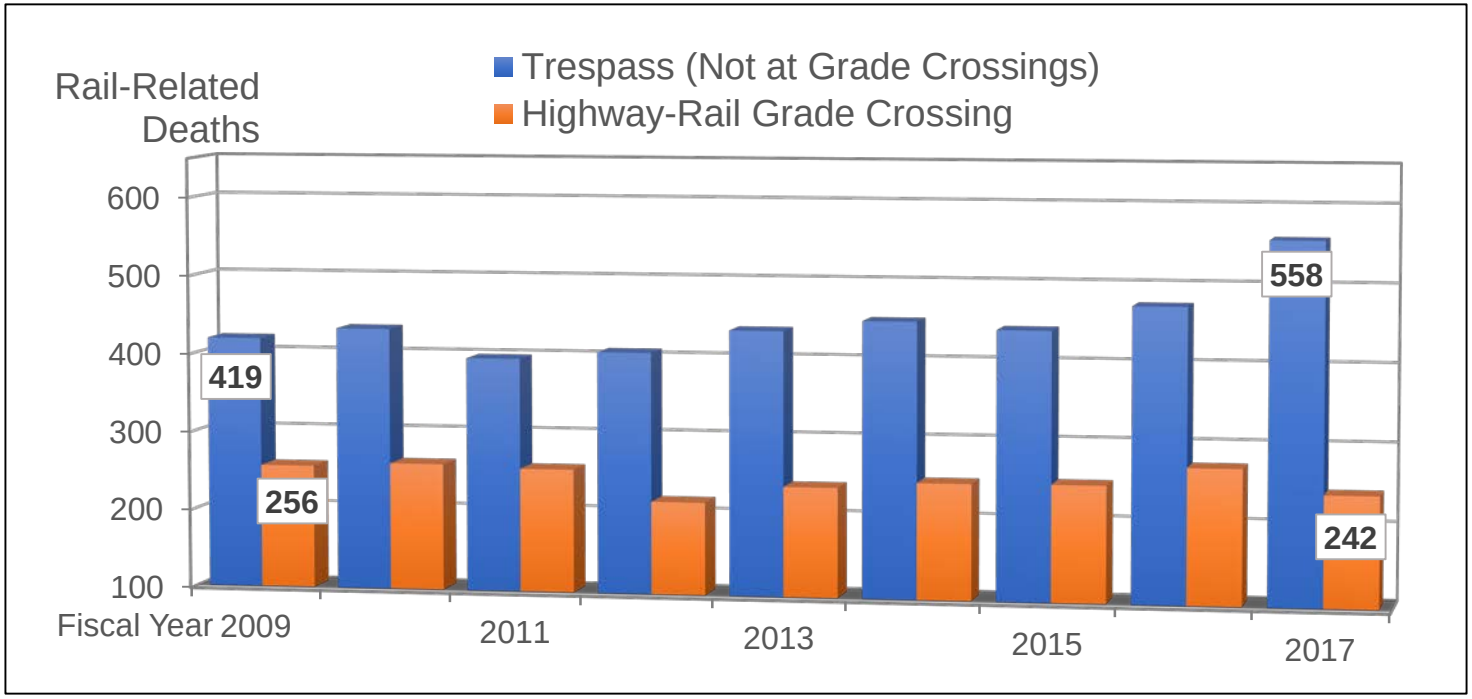


	2012	2013	2014	2015	2016	2017
Total Motor Vehicle Related Fatalities	33,782	32,893	32,744	35,485	37,461	37,150
Motor Vehicle Related Fatality Rate	1.14	1.10	1.08	1.15	1.18	1.17

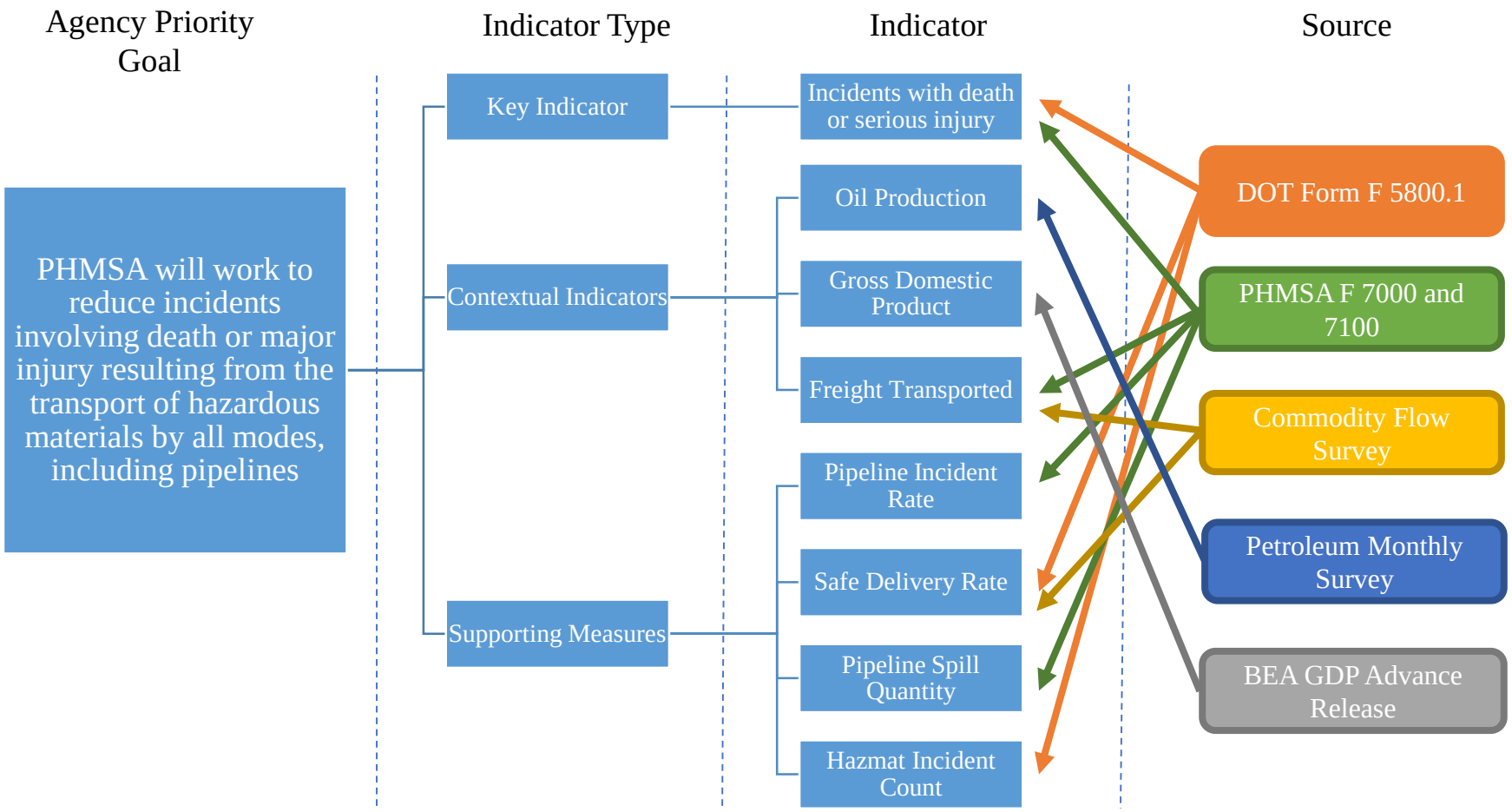
Key Indicators (Surface Safety- FTA)

Transit (excluding all FRA regulated transit)*	2010	2011	2012	2013	2014	2015	2016	2017	2018 (prelim. Jan-Feb)
Fatalities Rate (per 100M PMT)	0.506	0.507	0.574	0.586	0.497	0.544	0.570	0.548	0.421
Fatality Count:	**222**	**226**	**265**	**272**	**236**	**254**	**257**	**242**	**31**
Fatalities by Mode									
Bus (MB)	84	92	97	103	86	88	95	98	17
Heavy Rail (HR)	97	94	102	111	93	97	105	92	7
Light Rail (LR)	22	36	45	35	39	46	39	48	6
Other Modes	19	4	21	23	18	23	18	4	1
Total	**222**	**226**	**265**	**272**	**236**	**254**	**257**	**242**	**31**
Fatalities by Subgroup									
Suicides	62	62	63	71	61	74	80	68	9
Passengers	11	12	12	18	23	12	14	16	2
Revenue Facility Occupants	31	30	55	38	34	17	35	31	3
Employees	6	3	4	11	4	3	8	4	1
Other Workers	0	0	1	0	1	1	0	1	0
Bicyclists	12	5	6	11	13	7	9	10	0
Ped In Crossing	14	16	14	12	21	19	15	17	5
Ped Not In Crossing	19	19	24	16	13	28	10	7	0
Ped Crossing Tracks	3	5	8	5	9	12	0	0	0
Ped Walking Along Tracks	8	7	11	7	13	9	9	6	1
Other Vehicle Occupant	36	35	47	52	35	51	48	60	8
Other	20	32	20	31	9	21	29	22	2
Total	**222**	**226**	**265**	**272**	**236**	**254**	**257**	**242**	**31**

Key Indicators (Surface Safety- FRA)



Key Indicators (PHMSA)



Baseline and targets were developed for contextual indicators using FY 2017 levels. Baseline and targets for Key Indicators are determined by a regression model created to facilitate continuous improvement. Data quality of contextual Indicators is not currently sufficient for intended use due to the sources being annual or less frequent. PHMSA is researching ways to use more timely economic data so that rates change every quarter.

Data Sources and Methodologies

Surface Fatality Rates

Methodologies

The motor vehicle fatality rate measure is calculated by dividing the number of deaths from motor vehicle crashes by 100 M VMT. The fatality rate provides a way of examining motor vehicle deaths relative to the amount of driving (exposure). The fatality rate measure is benchmarked using two national information systems. FARS (Fatality Analysis Reporting System) is used for motor vehicle fatalities nationwide and HPMS (Highway Performance Monitoring System) is used to assess VMT (Vehicle Miles Traveled). For more information on FARS methodology, see https://cdan.nhtsa.gov/tsftables/FARS%20Operations.pdf.

All 50 States, the District of Columbia and Puerto Rico report a standard set of data on each fatal crash based on police accident reports. A roadway fatality is the death of any vehicle occupant (drivers and passengers), motorcyclists, and non-occupants (pedestrians and bicyclists) in a motor vehicle crashes on a public roadway occurring within 30 days of the crash.

Data Sources

- Fatality Analysis Reporting System (FARS)
  https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars
- Motor Carrier Management Information System (MCMIS)
  https://ask.fmcsa.dot.gov/app/mcmiscatalog/c_chap3
- Vehicle Miles Traveled (VMT)
  https://www.fhwa.dot.gov/policyinformation/travel_monitoring/17juntvt/
- Railroad Safety Information System (RSIS)
  http://safetydata.fra.dot.gov/

Data Sources and Methodologies

Transit Fatality Rates

Methodologies

The transit fatality rate measure is calculated by dividing calendar year fatalities from all transit modes (excluding FRA regulated transit) by 100 M PMT (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 the National transit Database which collects monthly data for safety events and annual data for passenger miles traveled.

All 50 States, the District of Columbia and Puerto Rico report a standard set of data on each fatal crash based on police accident reports. A roadway fatality is the death of any vehicle occupant (drivers and passengers), motorcyclists, and non-occupants (pedestrians and bicyclists) in a motor vehicle crashes on a public roadway occurring within 30 days of the crash.

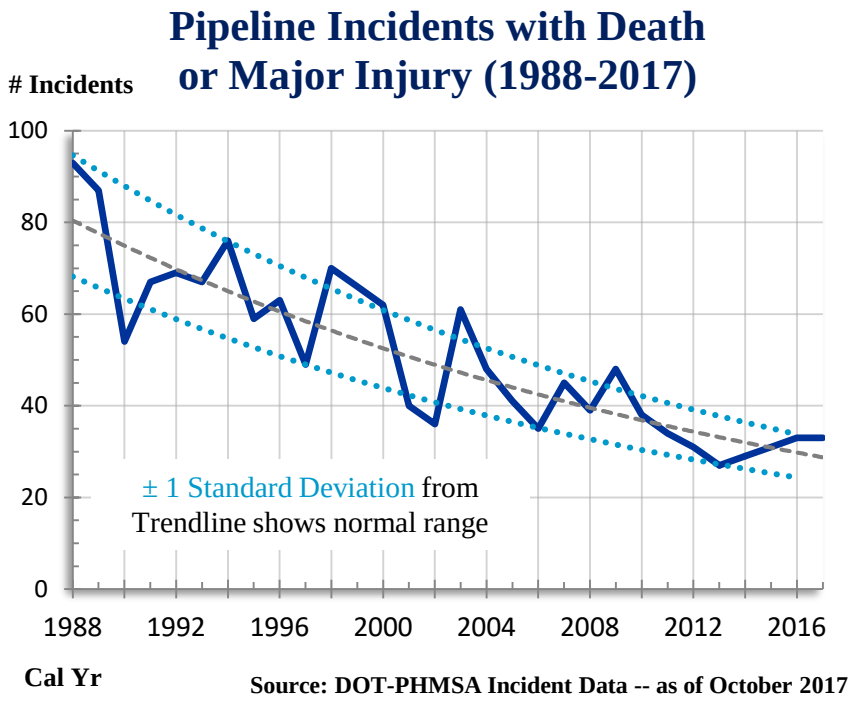
Data Sources

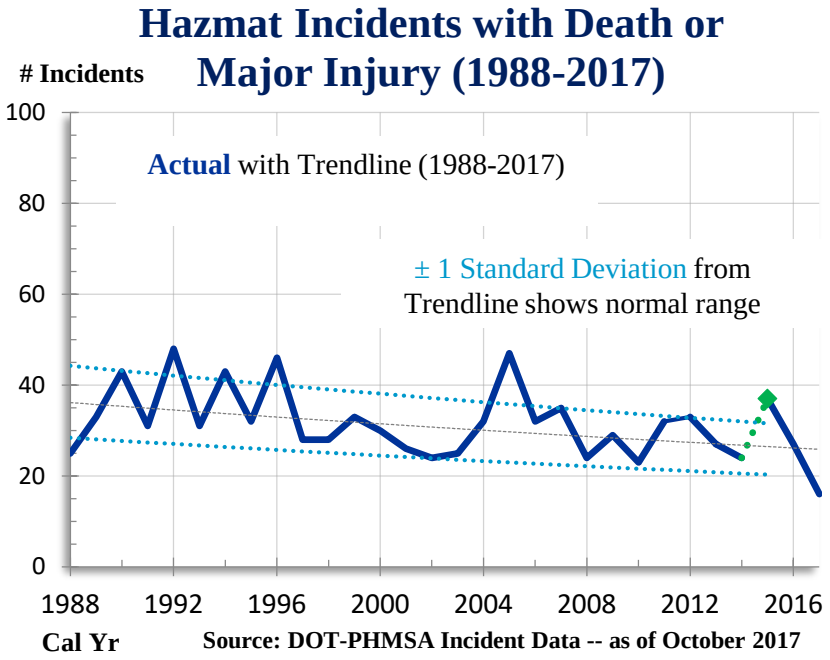
- National Transit Database - https://www.transit.dot.gov/ntd

Data Sources and Methodologies

Pipeline and Hazmat Fatality Rates

The targets are determined by running an exponential regression line each year on all past data, and calculating +1 and -1 standard deviation from the trendline. This is to account for normal variability year-to-year. Then the target is set at +1 standard deviation. Examples are shown below. The target breakdown is as follows: Hazardous materials incident target is 31 and pipeline incident target is 32 for a combined total of 63 incidents.





Data Sources and Methodologies

Pipeline and Hazmat (cont.)

- Incidents involving death or major injury resulting from the transport of hazardous materials is a combined measure of both pipeline-related and hazardous materials-related incidents involving death or major injury. Each component is further defined as follows:
  (1) hazardous materials incidents include those involving a fatality or a major injury requiring admittance to the hospital and/or loss of three days or more from work due to the extent of injury;
  (2) pipeline incidents include those involving a fatality or injury requiring in-patient hospitalization, but Fire First incidents are excluded. Fire First Incidents are gas distribution incidents with a cause of Other Outside Force Damage and sub-cause of Nearby Fire/Explosion as Primary Cause of Incident.
- For hazardous materials incidents, this metric is derived by counting the number of incidents with DOT Form 5800.1 filings that have been verified as having a death or serious injury resulting from hazardous materials in transportation.
- For pipeline incidents, this metric is derived by counting the number of pipeline incident reports that have been verified as having a death or serious injury resulting from pipelines. The sources of data for this measure include (1) DOT Form 5800.1 filings for hazmat incidents and (2) PHMSA Form 7100 filings, Datalink file (PIPES) and/or U.S. DOT Pipeline Data Mart (PDM) for pipeline incidents.

Additional Information

Contributing Programs

Organizations

- NHTSA has partnered with the Maryland Department of Transportation on a two-year pilot project to get more vehicles with open recalls repaired by linking recall notices to the time of vehicle registration.
- Under FHWA's **Safety Performance Management Measures Rule**, States and MPOs set targets for and track the number and rate of fatalities, the number and rate of serious injuries and the number of non-motorized fatalities and serious injuries. The first targets were set in August, 2017. Setting, monitoring and achieving thee performance targets will lead to better investment decision making and ultimately a reduction in fatalities and serious injuries.

Program Activities

- **National Registry for Certified Medical Examiners:** This FMCSA program sets baseline training and testing standards to equip medical examiners with a thorough understanding of DOT fitness standards to ensure that truck and bus drivers meet the physical qualification requirements to operate safely on the Nation's highways and roads.

Regulations

- **Electronic Logging Devices (ELD) FMCSA Final Rule:** Phase 2 of ELD is from December 18, 2017 to December 16, 2019. 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.

Tax Expenditures

- N/A

Policies

- NHTSA released its most recent guidance for the auto industry on automated vehicle technology, *Automated Driving Systems (ADS): A Vision for Safety 2.0*, in September 2017.

Additional Information

Stakeholder/Congressional Consultations

Describe how the agency incorporated any views or suggestions through consultations held w/ Congress or other stakeholders

- Through the *Road to Zero* coalition, NHTSA, FHWA and FMCSA have joined forces with State and local governments, other federal agencies and 500 organizations around the country to develop a roadmap to reduce fatalities now and work toward the day when there are zero fatalities. While that is a tall order, a future with zero traffic deaths is now more possible than ever with the emergence of automated driving systems and the Safe Systems transportation approach to safety. Moreover, by working together, multiple stakeholders with the same goal can achieve more than individual organizations working independently. For more information, see the *Road to Zero* coalition website at https://www.nsc.org/road-safety/get-involved/road-to-zero.

- NHTSA will continue to conduct meetings and listening sessions to obtain input on future directions on automated driving systems (ADS) with a wide variety of stakeholders, including the auto industry, disability rights organizations, safety advocacy groups and State transportation agencies. Information on upcoming events will be posted at https://www.nhtsa.gov/events-and-public-meetings as it becomes available.

Additional Information

Contributing Programs

Organizations

- Pipeline and Hazardous Materials Safety Administration
- Federal Aviation Administration, Federal Railroad Administration, Federal Motor Carrier Safety Administration

Program Activities

- Pipeline Safety Program
- Hazardous Materials Safety Program

Regulations

- Pipeline Safety Regulations (PSR; 49 CFR parts 192-199)
- Hazardous Materials Regulations (HMR: 49 CFR parts 171-180)

Other Federal Activities

- PHMSA cooperates with Department of Homeland Security's U.S. Coast Guard on enforcement of the HMR as it applies to vessel transportation of hazardous materials
- PHMSA also cooperates with Department of Energy's (DOE) Federal Energy Regulatory Commission on siting of pipelines, the State Department for cross-borer pipeline issues, and Department of Interior's (DOI) Bureau of Safety and Environmental Enforcement for offshore pipeline safety.
- PHMSA also works with the DOI's Bureau of Land Management, Department of Labor's Occupational Safety and Health Administration, DOE, the Environmental Protection Agency, and others on all safety matters and by virtue of our expertise in hazardous materials transportation.

Stakeholder/Congressional Consultations

- PHMSA works closely with its stakeholders to collect and share data and information to provide a standard of reference for safety performance, improve data quality, and motivate changes in behavior.