

PERFORMANCE DATA COMPLETENESS AND RELIABILITY DETAILS

Each table includes a description of a performance measure and associated data provided by the agencies in charge of the measure. The Scope statement gives an overview of the data collection strategy for the underlying data behind the performance measure. The Source 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, 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 inside DOT.

For further information about the source and accuracy (S&A) of these data, and DOT's data quality guidelines in accordance with Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (P.L. 106-554), please refer to the BTS S&A compendium available at

http://www.bts.gov/programs/statistical_policy_and_research/source_and_accuracy_compendium/index.html.

Details on DOT Safety Measures

Passenger Vehicle Occupant Highway Fatality Rate (NHTSA / FHWA / FMSCA)

Measure

Passenger Vehicle Occupant Highway fatalities per 100 million passenger vehicle VMT (vehicle-miles traveled) are calculated for each calendar year (CY).

An occupant is any person inside or on top of a moving motor vehicle. This includes the driver, passengers, and all persons riding on the exterior of a motor vehicle. Passenger vehicle VMT (PVVMT) includes vehicle miles traveled by all types of passenger vehicles (e.g. passenger cars, vans, pickup trucks, and sport/utility vehicles) on public roads within the 50 States and the District of Columbia.

Scope

The number of fatalities is a count of passenger vehicle occupant deaths which occur within 30 days of a crash involving motor vehicle traveling on a traffic-way customarily open to the public within the 50 States and the District of Columbia.

Sources

Motor vehicle traffic fatality data is obtained from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). The FARS database is based on police crash reports and other State data, containing data derived from a census of fatal traffic crashes within the 50 States, and the District of Columbia.

Vehicle miles traveled (VMT) is estimated from FHWA's Traffic Volume Trends (TVT) report. TVT is a monthly report based on hourly traffic count data and annual data in the Highway Performance Monitoring System (HPMS), which is analyzed by FHWA Traffic Monitoring and Analysis System (TMAS). Passenger Vehicle VMT (PVVMT) is derived from the HPMS.

Fatality rates for CY 2010 were projected using recent passenger vehicle fatality rate trend data.

Statistical Issues

While based on historical data, the 2010 fatality rate projection depends on the continuation of individual and market behavior regarding highway safety policies, vehicle miles traveled, seat belt use, and alcohol related fatalities. The 2010 fatality rate projection does not reflect recent vehicle improvements. The assumptions inherent in these projections, together with the normal levels of uncertainty inherent in statistical evaluations, may influence the accuracy of the projection.

For HPMS, States provide annual average daily traffic (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, Interstate, and Principal Arterials and at least once every six years on Minor Arterials and Collectors. Traffic counts are adjusted by the States to reflect day-of-week and seasonal variations, current year conditions, and axle corrections, as necessary. States provide summary data on the local and rural minor collector roads. The AADTs from HPMS are used as a baseline for the TVT report, which compiles data from about 4,000 automated traffic recorders (ATRFs) provided by the States on a monthly basis. Because both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Completeness

FARS has been in use since 1975 and is accepted as a complete measure for describing safety on the Nation's highways. Total annual fatalities are available through CY 2009.

The final PVVMT estimate for 2009 will be available in December 2010, and the final PVVMT estimate for CY 2010 will be available in December 2011.

Reliability

This measure informs and guides the following programs for NHTSA, FHWA, and FMCSA:

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

Early indications show that fatalities have decreased while VMT have increased. However, it is too early to tell what the final result on the fatality rate will be, depending on the following factors, among others:

- high price of fuel,
- economic downturn,
- increased walking, bicycling, and motorcycle riding, and
- greater use of mass transit.

All of these factors are indications of fundamental changes in our mode of transportation that will adversely impact our ability to accurately estimate fatality and VMT projections for 2010 and beyond.

Details on DOT Safety Measures

Large Truck and Bus Fatality Rate (FMCSA/NHTSA /FHWA)

Measure

Large truck and bus fatalities per 100 million vehicle miles traveled (VMT).

The number of large truck and bus fatalities includes all large truck/bus occupants, occupants of other vehicles and non-occupants who died in crashes involving a large truck or bus. A large truck is defined as being over 10,000 pounds gross vehicle weight rating (GVWR), including single unit trucks and truck tractors. A bus is a large motor vehicle used to carry more than ten passengers, including school buses, inter-city buses, and transit buses. VMT for this measure includes all vehicle miles traveled by all types of vehicles including:

- Passenger cars,
- Motorcycles,
- Buses,
- All 2-axle 4 tire vehicles (including vans, pickup trucks, and sport/utility vehicles),
- Single unit 2-axle 6 tire or more trucks, and
- Combination trucks.

Scope

The number of fatalities is a count of deaths which occur within 30 days of crashes involving large trucks or buses traveling on a traffic-way customarily open to the public within the 50 States and the District of Columbia.

Sources

Motor vehicle traffic fatality data is obtained from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). The FARS database is based on police crash reports and other State data, containing data derived from a census of fatal traffic crashes within the 50 States, and the District of Columbia.

Vehicle miles traveled (VMT) is estimated from FHWA's Traffic Volume Trends (TVT) report. TVT is a monthly report based on hourly traffic count data and annual data in the Highway Performance Monitoring System (HPMS), which is analyzed by FHWA Traffic Monitoring and Analysis System (TMAS).

Fatality rates for CY 2010 were projected as a range of fatalities based on fatal crash data from CY 2005 – 2009, and partial data from CY 2010. FMCSA extrapolated the CY 2010 Motor Carrier Management Information System (MCMIS) fatalities into a projection for the entire year based on reports from CY 2005 – 2009. FMCSA analyzed the historical relationship between MCMIS and FARS fatality reporting to adjust the MCMIS number into a FARS projection for CY 2010.

Statistical Issues

The CY 2010 fatality rate projection depends on the continuation of individual and market behavior regarding highway safety policies, vehicle miles traveled, seat belt use, and alcohol related fatalities. The assumptions inherent in these projections, together with the normal levels of uncertainty inherent in statistical evaluations, may influence the accuracy of the projection. The major source of error is an inconsistent use of the definition of a large truck.

For HPMS, States provide annual average daily traffic (AADT) on all Federal-aid highway sections. The data is based on traffic counts taken at least once every three years on the National Highway System, Interstate, and Principal Arterials and at least once every six years on Minor Arterials and Collectors. Traffic counts are adjusted by the States to reflect day-of-week and seasonal variations, current year conditions, and axle corrections, as necessary. States provide summary data on the local and rural minor collector roads. The AADTs from HPMS are used as a baseline for the TVT report, which compiles data from about 4,000 automated traffic recorders (ATRs) provided by the States on a monthly basis. Because both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Completeness

FARS has been in use since 1975 and is accepted as a complete measure for describing safety on the Nation's highways. Total annual fatalities are available through CY 2009.

The VMT is complete through 2008. For 2009 and 2010, it is projected as a percentage of the total VMT projections. The final VMT estimate for 2009 will be available in December 2010, and the final VMT estimate for CY 2010 will be available in December 2011.

Reliability

This measure informs and guides the following programs for FMCSA, NHTSA, and FHWA:

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

It also tracks progress toward the goal of saving lives and reducing injuries by preventing large truck and bus crashes.

Early indications show that fatalities have decreased while VMT have increased. The final result on the fatality rate will depend on several external factors which may include:

- the high price of fuel,
- the economic downturn,
- changes in vehicle design and guidelines for large truck/bus drivers,
- increased walking, bicycling, and motorcycle riding, and
- a greater use of mass transit.

All of these factors are indications of fundamental changes in our mode of transportation that will adversely impact our ability to accurately estimate fatality and VMT projections for 2010 and beyond.

Details on DOT Safety Measures

Motorcyclist Fatality Rate (NHTSA / FHWA / FMCSA)

Measure

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

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

Scope

The number of motorcyclist fatalities is a count of motorcyclist (rider (operator) and passenger) deaths which occur within 30 days of a crash involving motorcycles traveling on a traffic-way customarily open to the public within the 50 States and the District of Columbia.

Sources

Motor vehicle traffic fatality data are obtained from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). The FARS database is based on police crash reports and other State data, containing data derived from a census of fatal traffic crashes within the 50 States, and the District of Columbia.

The States collect motorcycle registration data and provide the data to the Federal Highway Administration (FHWA), which then provides the data to the public.

Fatality rates for CY 2010 were projected using recent motorcycle fatality rate trend data.

Statistical Issues

While based on historical data, the 2010 fatality rate projection is dependent on the continuation of both individual and market behavior regarding highway safety policies, vehicle and equipment design, motorcycle registration, and alcohol related fatalities. The assumptions inherent in these projections, together with the normal levels of uncertainty inherent in statistical evaluations, may influence the accuracy of the projection.

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

Completeness

FARS has been in use since 1975 and is accepted as a complete measure for describing safety on the Nation's highways. Annual motorcyclist fatalities are available through CY 2009.

The motorcycle registration date varies among the 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. Motor vehicle registrations are reported by major vehicle classes: automobiles, buses, trucks, and motorcycles.

Reliability

This measure informs and guides the following programs for NHTSA, FHWA and FMCSA:

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

All State reported data are analyzed by FHWA for completeness, reasonableness, consistency, and compliance with data reporting instructions contained in “A Guide to Reporting Highway Statistics.” State reported data is adjusted if necessary to eliminate mistakes and to improve data uniformity among the States. The analysis and adjustment process is accomplished in cooperation with the States supplying the data. In some instances, corrections or revisions have been made in previously published data.

The FHWA motorcycle registration data includes all vehicles that have been registered at any time during the calendar year. Data includes 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 includes 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.

Motorcycle registration projections into future years are problematic. Contributing factors include, but are not limited to:

- increased motorcycle riding,
- the effect of the high price of fuel on increased motorcycle riding,
- the economic downturn,
- increased walking and bicycling, and
- a greater use of mass transit.

All of these factors are indications of fundamental changes in our mode of transportation that will adversely impact our ability to accurately estimate fatality and motorcycle registration projections for 2010 and beyond.

Details on DOT Safety Measures

Non-occupant Fatality Rate (NHTSA / FHWA / FMCSA)

Measure

Non-occupant fatalities rate per 100 million VMT are calculated for each calendar year (CY).

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

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

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

- passenger cars,
- motorcycles,
- buses,
- all 2-axle 4 tire vehicles (including vans, pickup trucks, and sport/utility vehicles),
- single unit 2-axle 6 tire or more trucks, and
- combination trucks.

Scope

The number of fatalities is a count of non-occupant deaths which occur within 30 days of a crash involving motor vehicle traffic traveling on a traffic-way customarily open to the public within the 50 States and the District of Columbia.

Sources

Motor vehicle traffic fatality data are obtained from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). The FARS database is based on police crash reports and other State data, containing data derived from a census of fatal traffic crashes within the 50 States, and the District of Columbia.

Vehicle miles traveled (VMT) is estimated from FHWA's Traffic Volume Trends (TVT) report. TVT is a monthly report based on hourly traffic count data and annual data in the Highway Performance Monitoring System (HPMS), which is analyzed by FHWA's Traffic Monitoring and Analysis System (TMAS).

Fatality rates for CY 2010 were projected using recent non-occupant fatality rate data.

Statistical Issues

While based on historical data, the 2010 fatality rate projection is dependent on the continuation of both individual and market behavior regarding vehicle miles traveled, infrastructure, vehicle design, and alcohol related fatalities. The assumptions inherent in these projections, together with the normal levels of uncertainty inherent in statistical evaluations, may influence the accuracy of the projection.

For HPMS, States provide annual average daily traffic (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, Interstate, and Principal Arterials and at least once every six years on Minor Arterials and Collectors. Traffic counts are adjusted by the States to reflect day-of-week and seasonal variations, current year conditions, and axle corrections, as necessary. States provide summary data on the local and rural minor collector roads. The AADTs from HPMS are used as a baseline for the TVT report, which compiles data from about 4,000 automated traffic recorders (ATRs) provided by the States on a monthly basis. Because both HPMS and TVT are based on samples of the traffic, there are associated sampling errors.

Completeness

FARS has been in use since 1975 and is accepted as a complete measure for describing safety on the Nation's highways. Annual non-occupant fatalities are available through CY 2009.

VMT is complete through 2008. For 2009 and 2010, it is projected as a percentage of the total VMT projections. The final VMT estimate for 2009 will be available in December 2010, and the final VMT estimate for CY 2010 will be available in December 2011.

Reliability

This measure informs and guides the following programs for NHTSA, FHWA and FMCSA:

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

Early indications show that fatalities have decreased while VMT have increased. However, it is too early to tell what the final result on the fatality rate will be, depending on the following factors, among others:

- high price of fuel,
- economic downturn,
- increased walking, bicycling, and motorcycle riding, and
- greater use of mass transit.

All of these factors are indications of fundamental changes in our mode of transportation that will adversely impact our ability to accurately estimate fatality and VMT projections for 2010 and beyond.

Details on DOT Safety Measures

Commercial Air Carrier Fatality Accident Rate (FAA)

Measure

Number of fatalities per 100 million persons onboard (FY)

Scope

This measure includes both scheduled and nonscheduled flights of U.S. passenger and cargo air carriers (14 CFR Part 121) and scheduled flights of regional operators (14 CFR Part 135). It excludes on-demand (e.g. air taxi) service and general aviation. Fatal accidents involving passengers, crew, ground personnel, and the uninvolved public are all included.

Note: Part 121 and Part 135 define how airlines can operate. Part 121 allows companies to act as scheduled airlines where they are allowed to run and publish a scheduled service. Part 135 allows airlines to run as charter companies.

Sources

The data on commercial fatalities come from the National Transportation Safety Board's (NTSB) Aviation Accident Database. All but a small share of the data for persons on board

comes from the air carriers, who submit information for all passengers on board to the Office of Airline Information (OAI) within the Bureau of Transportation Statistics (BTS). In addition, 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. However, crew on board is an estimate. Crew staffing varies only within a very small range for any given aircraft make/model. 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, 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 rep, or two deadheading passengers. Part 135 data also comes from BTS and Air Claims databases, but is not as complete. AEP calls the operators where BTS data have gaps. 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. Also note that the fatality rate is small 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. This data is 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 (e.g. Part 121 or Part 135).

The number of actual persons on board for any given period of time 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 the Office of Policy, Planning and Environment. However, changes to the number of persons on board should rarely affect the annual fatality rate. NTSB and FAA's Office of Accident Investigation meet regularly to validate the accident and fatality count.

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. FAA uses OAG data until official BTS data is available. The final result for the air carrier fatal accident 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 improved substantially. Lacking complete historical data on a monthly basis and independent sources of verification increases the risk of error in the activity data.

Reliability

Results are considered preliminary since they are based on projected activity data. FAA uses performance data extensively for program management, personnel evaluation, and accountability. Most accident investigations are a joint undertaking. NTSB has the legal responsibility to determine probable cause, while FAA has separate authority to investigate accidents and incidents in order to ensure that FAA meets its broader responsibilities. FAA's own accident investigators and other FAA employees participate in all accident investigations led by NTSB investigators.

Details on DOT Safety Measures

General Aviation Fatal Accident Rate (FAA)

Measure

Number of fatal accidents per 100,000 flight hours (FY)

Scope

The measure includes on-demand (non-scheduled FAR Part 135) and general aviation flights. General aviation comprises a diverse range of aviation activities including:

- single-seat homebuilt aircraft,
- helicopters,
- balloons, and
- all other aircraft from single and multiple engine land and seaplanes to highly sophisticated extended range turbojets.

Sources

The data on general aviation fatalities come from the National Transportation Safety Board's (NTSB) Aviation Accident Database. Aviation accident investigators with the assistance of the NTSB develop the data used.

Statistical Issues

The NTSB determines the actual number of general aviation fatal accidents. Since this is a simple count of accidents, there are no statistical issues relevant to this data.

The survey data for activity are highly accurate with a percent-standard error of less than one percent. The general aviation community and the General Aviation Joint Steering Committee (GAJSC) of the Safer Skies Initiative recommended development of a data collection program that will yield more accurate and relevant data on general aviation demographics and utilization. Improved survey and data collection methodologies have been developed.

As a result of these efforts, the FAA, working with the General Aviation Manufacturers Association, the NTSB, and other aviation industry associations, has made many improvements to the survey. First, the sample size has significantly increased. In addition, a reporting form has been created to make it much easier for organizations with large fleets to report. Finally, the agency worked with the Aircraft Registry to improve the accuracy of contact information. As a result, a survey was completed in FY 2004 that, for the first time, creates a statistically valid report of activity on which the general aviation community agrees.

Every year since 2004, significant improvements have been made which substantially improve the accuracy of the data.

The GAJSC General Aviation Data Improvement Team has worked closely with the general aviation community and industry to develop this performance measure and target. There is unanimous support and consensus for the measure and target.

Completeness

The number of general aviation fatal accidents, even when reported as preliminary, is very accurate. When final reports are issued, the number of fatal accidents does not change significantly. NTSB classifications are considered final when the Board issues their annual press release. Accidents during a fiscal year are addressed in the NTSB press release issued at the end of the following year.

GA Survey calendar hours are finalized by October 31 of the following year. As a result, the fatal accident rate for FY 2010 will not be considered final/complete until October 2011.

Reliability

FAA uses performance data extensively for program management and personnel evaluation and accountability. Most accident investigations are a joint undertaking between FAA and NTSB. NTSB has the legal responsibility, however, most of the accident investigations related to general aviation are conducted by FAA Aviation Safety Inspectors without NTSB's direct involvement. FAA's own accident investigators and other FAA employees participate in all accident investigations led by NTSB investigators.

As mentioned above, the large sample for FAA's activity survey, along with the ease of data collection, produce highly accurate flight hour data. The low standard error which results ensures the reliability of these data.

Details on DOT Safety Measures

Train Accidents Rate (FRA)

Measure

A count of train accidents per million train-miles traveled. (FY)

Scope

The Railroad Safety Information System (RSIS) is the principal monitoring strategy used by the FRA for the following:

- management, processing, and reporting of railroad related accidents/incidents,
- railroad inspections,
- highway-rail grade crossing data, and
- related railroad safety activities.

The Railroad Accident/Incident Reporting Subsystem (RAIRS) is the repository of all FRA-mandated reports of railroad accidents, incidents, casualties, highway-rail grade crossing collisions, and operating information.

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. The reporting threshold for CY 2010 was set at \$9,200. For CY 2011 this threshold has been set at \$9,400. Train accidents are reported on form FRA F6180.54, Rail Equipment Accident/Incident Report.

Operational data, including train-miles, are reported on form FRA F6180.55, Railroad Injury and Illness Summary.

Sources

FRA's Railroad Accident/Incident Reporting Subsystem.

Statistical Issues

None

Completeness

Railroads are required by regulation (49 CFR Part 225) to file monthly reports to the FRA of all train accidents that meet a dollar threshold (\$9,400 in CY 2011). They are also required to file monthly operations reports of train-miles, employee-hours, and passenger train-miles.

Reports must be filed within 30 days after the close of the month. Data must be updated when the costs associated with an accident vary by more than 10 percent (higher or lower) from that initially reported.

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, New York City Subway)
- track existing inside an industrial compound
- insular rail (rail that is not connected to the general system and does not have a public highway-rail crossing or go over a navigable waterway)

Reliability

FRA uses the data in prioritizing its inspections and safety reviews, and for more long-term strategic management of its rail safety program.

FRA has inspectors who review the railroads' reporting records, and who have the authority to write violations if railroads are not reporting accurately. Violations may result in monetary fines.

Details on DOT Safety Measures

Transit Fatality Rate (FTA)

Measure

Transit fatalities per 100 million passenger-miles traveled. (CY)

Scope

Transit fatality data includes passengers, revenue facility occupants, trespassers, employees, other transit workers (e.g. contractors) and others. A transit fatality is a death within 30 days after the incident, which occurs under one of the following categories defined by the National Transit Database (NTD) reporting systems:

- collision
- derailment
- personal casualty (not otherwise classified)
- fire
- bus going off the road

Previous to 2002, transit involved parties that were defined as patrons, employees, and others. Additionally, the safety data was collected on a fiscal year, as opposed calendar year, basis. Fatalities for the performance measurement only use transit agency Directly Operated (DO) mode data. Purchased Transportation (PT) data are not part of this measure. Certain fatalities are excluded, as they are not considered to be directly related to the operation of transit vehicles. Those include suicides and fatalities occurring in parking facilities or stations, and fatalities from fires in right-of-ways or stations. Also, the measure includes only the major transit modes (motor/trolleybus, light rail, heavy rail, commuter rail with vanpool, automated guideway, and demand response) and excludes ferryboat, monorail, inclined plane, cable car, and jitney.

The passenger-miles traveled on public transit vehicles (e.g. buses, heavy and light railcars, commuter railcars, ferries, paratransit vans, and vanpools) only refer to miles while in actual revenue service to the general public.

These data are reported annually by operators to the FTA National Transit Database (NTD) and to the Federal Railroad Administration's Rail Accident and Incident Reporting System (RAIRS). RAIRS data are used exclusively for commuter rail (CR) systems. NTD and RAIRS data are an input to FTA's Transit Safety and Security Statistics and Analysis program.

Sources

The Transit Safety and Security Statistics and Analysis Annual Report, is a compilation and analysis of transit accident, casualty, and crime statistics reported under the Federal Transit Administration's NTD Reporting System by transit systems that are beneficiaries of FTA Urbanized Area Formula funds (Section 5307 grantees). Starting in 2002, commuter rail safety data are being collected from FRA RAIRS to avoid redundant reporting to NTD.

Transit fatalities and transit passenger miles are based on information from the Transit Safety and Security Statistics and Analysis Annual Report.

Statistical Issues

The fatality counts in FTA's Transit Safety and Security Statistics and Analysis are a census. The major source of uncertainty in the measure relates to passenger-miles traveled. Passenger-miles are an estimate derived from reported passenger trips and average trip length. Passenger-miles are the cumulative sum of the distances ridden on passenger trips.

Transit authorities have accurate counts of unlinked passenger trips and fares. An unlinked trip is recorded each time a passenger boards a transit vehicle, even though the rider may be on the same journey. Transit authorities do not routinely record trip length. To approximate passenger-miles, total unlinked trips are multiplied by average trip length. To obtain an average trip length for their bus routes, transit authorities use Automatic Passenger Counters (APCs) with GPS Technology or a 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. Passenger-miles are the only data element that is sampled in the NTD. Validation based on annual trend analysis is performed on the passenger mile inputs from the transit industry. The validation is performed by statistical analysts at the NTD contractor (currently Savantage Solutions).

Completeness

The information for this measure comes from the FTA's Transit Safety and Security Statistics and Analysis program, formerly FTA's Safety Management Information System (SAMIS), which uses data reported by transit operators to the NTD. Many categories and definitions were added or changed in the new NTD in 2002, and have allowed for improvements and more timely analysis of trends and contributing factors. The 2009/2010 measure is an extrapolation of partial-year data, particularly of passenger-miles traveled.

Reliability

An independent auditor and the transit agency's CEO certify that data reported to the NTD are accurate. Using data from the NTD to compile the Transit Safety & Security Statistics & Analysis program data, the USDOT Volpe National Transportation Systems Center compares current safety statistics with previous years, identifies any questionable trends, and seeks explanation from operators.

Details on DOT Safety Measures

Natural Gas and Hazardous Liquid Pipeline Incidents (PHMSA)

Measure

The number of pipeline incidents involving death or major injury. (CY)

Scope

Natural gas pipeline incidents are reportable under 49 CFR 191.15, and hazardous liquid pipeline incidents are reportable under 49 CFR 195.50. Both interstate and intrastate pipelines are subject to incident reporting requirements.

An injury is reportable if it requires in-patient hospitalization resulting from a failure in a pipeline system in which there is a release of a hazardous liquid, CO₂, or natural gas being transported. 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, is it counted as a death, not 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/Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data are used. These data are derived from pipeline operator reports submitted on PHMSA Form F-7100.1 and F-7000.1. Most incidents are reported online through the PHMSA website.

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 incidents, 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 year-to-year (which shows a decline of about 3.5% on average each year over the past 22 years (1988-2009)). This provides about 80% 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, energy consumption, or U.S. population—that could affect the number of incidents with death or major injury.

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 may be a 30- to 60-day lag in reporting and compiling information in the database for analysis.

Projections from partial-year data include all months for which we have 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

PHMSA routinely cross-checks incident/accident reports against other sources of data, such as the telephonic reporting system for incidents requiring immediate notification provided to the National Response Center (NRC). PHMSA inspectors also regularly discuss incidents with operator personnel during routine inspections. PHMSA continues to work to improve Best Management Practices to ensure quality of the incident data.

Details on DOT Safety Measures

Hazardous Materials Transportation Incidents (PHMSA, FAA, FMCSA, FRA, USCG)

Measure

The number of hazardous materials transportation incidents involving death or major injury.
(CY)

Scope

Hazardous materials transportation incidents are reportable under 49 CFR Parts 171.15 and 171.16. All modes of transportation (air, water, rail, and highway) except pipelines are covered. In maritime transportation, tank vessels (where the vessel itself is the container) are exempt from reporting. This measure is limited to transportation-related releases of hazardous materials that are in commerce.

An injury is reportable if a person receives an injury requiring admittance to a hospital as a direct result of a hazardous material—during the course of transportation in commerce (including loading, unloading, and temporary storage). This includes employees, emergency responders, and the general public. Hospitalization means admittance to a medical facility, not treated and released for a facility such as a hospital emergency room where the person was never admitted to the hospital proper (detailed guidance is on the PHMSA website at www.phmsa.dot.gov).

Sources

DOT/Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data are used. These data are derived from reports submitted on Form DOT F 5800.1 and maintained in the Hazardous Materials Information System (HMIS).

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 incidents, 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 year-to-year (which shows a decline of about 1% on average each year over the past 22 years (1988-2009)). This provides about 80% 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 the amount of hazmat shipped, number of shipments, or U.S. population—that could affect the number of incidents with death or major injury.

Completeness

Compliance in reporting is very high and most incidents that resulted in death or major injury are reported. 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. There may be a 30- to 60-day lag in reporting, verifying, validating and compiling information in the database for analysis.

Projections from partial-year data include all months for which we have 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

PHMSA routinely cross-checks incident data against other sources of data, including matching incident reports with reports made to the National Response Center (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.

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.

Details on DOT Mobility Measures

Highway Infrastructure Condition (FHWA)

Measure

The percent of travel on National Highway Systems (NHS) that meets pavement performance standards for a “good” rated ride. (CY)

Scope

Data include Vehicle-Miles Traveled (VMT) on the Highway Performance Monitoring System (HPMS), reported NHS sections and pavement ride quality data reported using the International Roughness Index (IRI). IRI is a quantitative measure of the accumulated response of a quarter-car vehicle suspension experienced while traveling over pavement. An IRI of 95 inches per mile or less is necessary for a good rated ride. VMT represents the total number of vehicle-miles traveled by motor vehicles on public roadways within the 50 States, Washington, D.C., and Puerto Rico.

Sources

Data for this measure are collected by the State Highway Agencies using measurement devices that meet industry set standards and reported to FHWA. Measurement procedures are included in the FHWA *HPMS Field Manual*. The VMT data are derived from the HPMS.

Statistical Issues

The major source of error in the percentages is the differences in data collection methodologies between the States and the differences in data collection intervals. FHWA is revising the HPMS data collection guidelines to minimize these potential errors. VMT data are also subject to sampling errors. The magnitude of error depends on how well the sites of the continuous counting stations represent nationwide traffic rates.

Completeness

The 2010 actual results for this measure are reported based on 2009 data, which may be incomplete as late as January 2011. Note: The results are based on 61 percent of the total VMT in 2009, as reported by 36 states. Prior to 2009, actual results were reported in the previous year and projections for the current year were made based on data on hand.

Reliability

The HPMS data are collected by the 50 States, the District of Columbia, and Puerto Rico in cooperation with local governments. While many of the geometric data items, such as type of median, rarely change; other items, such as traffic volume, change yearly. Typically, the States maintain data inventories that are the repositories of a wide variety of data. The HPMS data items are simply extracted from these inventories, although some data are collected just to meet Agency requirements.

The 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 the 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 DOT Mobility Measures

Highway Bridge Condition (FHWA)

Measures

The percent of deck area on National Highway System Bridges classified as deficient. (CY)

Scope

The National Bridge Inspection Standards (NBIS) requires the inspection of all highway bridges located on public roads and the submission of the collected bridge inventory and inspection data to the FHWA for inclusion in the National Bridge Inventory (NBI). The FHWA maintains the NBI, which contains data on nearly 600,000 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, the FHWA monitors the condition of the Nation's bridges, which includes identifying those bridges that are either Functionally Obsolete or Structurally Deficient.

Sources

The bridge information is collected by the State DOTs and other bridge owners and is provided to the FHWA at least annually. As part of the FHWA's NBI, NBIS, and Highway Bridge Program monitoring and oversight responsibilities, the accuracy and reliability of the submitted NBI information is constantly evaluated through data checks and field reviews by both Headquarters and field office personnel.

Statistical Issues

As with any very large dynamic database, there is always the potential for data quality issues. However, procedures are in-place to identify and correct data issues as part of the annual submittal process. Because the performance measure relies on data associated with nearly 116,000 NHS bridges, the impact of any localized data quality problem is minimized in the overall national analysis.

Completeness

The NBI is the world's most comprehensive database of bridge information. The 2010 actual results for this measure are reported based on 2009 data, which may not be complete until October of 2010.

Reliability

The bridge information is collected by the State DOTs and other bridge owners and is provided to the FHWA at least annually (Note: Some States provide data quarterly). As part of the FHWA's NBI, NBIS and Highway Bridge Replacement and Rehabilitation Program the accuracy and reliability of the submitted NBI information is evaluated through data checks and field reviews by both Headquarters and field office personnel.

Details on DOT Mobility Measures

Highway Congestion (FHWA)

Measure

The percent of total annual urban-area travel occurring in congested conditions. (FY)

Scope

Data are derived from approximately 400 urban areas. The data reflects travel conditions on freeway and principal arterial street networks. An urban area is a developed area with a density of greater than 1,000 persons per square mile. Congested conditions exist when travel occurs below the posted speed limit(s).

Sources

Data collected and provided by the State Departments of Transportation from existing State or local government databases, including those of Metropolitan Planning Organizations. FHWA's Highway Performance Monitoring System (HPMS) serves as the repository of the data. The Texas Transportation Institute utilizes HPMS data to derive the above measures.

Statistical Issues

The methodology used to calculate performance measures has been developed by the Texas Transportation Institute (TTI) and reported in their annual Mobility Study. With sponsorship from the National Cooperative Highway Research Program of the Transportation Research Board, the methodology was significantly revised in both 2009 and 2010 to take advantage of new studies and detailed data sources that have not been previously available.

Completeness

The FY 2008 and prior measures are final. The FY 2009 measure is preliminary, as partial 2009 HPMS data were used to construct the estimates. HPMS data is compiled from the States and verified approximately 10 months from the base year. For example, FY 2010 actual numbers will not be available from HPMS until October 2011. The FY 2010 measure is a projection based on recent year trends.

Reliability

The HPMS data are collected by the 50 States, the District of Columbia, and Puerto Rico in cooperation with local governments. Most of the data items, such as type of median, rarely change between years. However, there are items such as traffic volume that change yearly. Typically, the States maintain data inventories that are warehouses for a wide variety of data.

The 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 the FHWA, both at the headquarters level and in the Division Offices in each State. All reported data is subjected to intense editing, 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 DOT Mobility Measures

Transit Ridership (FTA)

Measure

The average percent change in transit boardings per transit market (150 largest transit agencies).

Scope

This metric includes transit passengers at the 150 largest transit systems. These 150 systems account for over 95% of all transit boardings in the US.

Sources

Each of the transit systems reports total boardings by transit mode to the Monthly Module of the National Transit Database within 30 days of the end of each month. This data is then aggregated by the 103 transit markets primarily served by the 150 largest agencies. The metric is the average increase in boardings across those 103 transit markets.

Statistical Issues

Data is reported by the individual transit system. Transit systems with nine or more vehicles and who receive or benefit from FTA's Urbanized Area Formula Grants are required to report to the NTD Monthly Module. The quality of this metric is largely reliant upon the quality of the data collected and submitted by the individual transit systems.

Although FTA requires a 100% count of boardings to be reported whenever it is available, not every system has a 100% count available. In particular, several large subway systems with free transfers still rely on statistical sampling data to estimate the number of boardings each month.

The ranking of the 150 largest transit systems by transit boardings changes from year-to-year. FTA revises the list of 150 largest transit systems annually, which produces small variations each year in the number of transit markets included in the average.

Completeness

This measure only includes the 150 largest transit systems, as measured by ridership data available to FTA.

Reliability

FTA validates the submitted data against the historical data reported by each agency, but occasional reporting errors may remain undetected. As part of the validation process, changes to the data collection procedures by an individual transit system and identified by FTA are manually corrected in all calculations to ensure a consistent comparison of the ridership data.

Details on DOT Mobility Measures

Transportation Accessibility (FTA)

Measures

1. Percentage of bus fleets compliant with the Americans with Disabilities Act (ADA). (CY)
2. Percent of key rail stations compliant with the Americans with Disabilities Act (ADA). (CY)

Scope

ADA compliance for bus fleet means that vehicles used in scheduled, fixed-route transit services are equipped with wheelchair lifts or ramps.

Accessibility for key rail facilities is determined by standards for ADA compliance. Transit systems were required to identify key stations. A key station is one at the end of a line, at a transfer point, or that has been designated as such by the operator.

All new rail stations are required to be ADA compliant upon completion and must meet standards for new rail stations, not key stations. Altered stations are also required to be ADA compliant upon completion and must meet standards for alterations of transportation facilities by public entities.

Sources

Compliant bus fleets: National Transit Database (NTD)

Compliant rail stations: Rail Station status reports to the FTA Office of Civil Rights

Statistical Issues

The NTD collects data from all transit systems that receive or benefit from FTA's Urbanized Area Formula Grants. It is believed that NTD Data covers over 99% of the Nation's transit bus fleet. Information on the ADA key rail stations is reported to FTA by transit authorities.

Completeness

Data reported for key station accessibility excluded those stations for which time extensions had been granted under 49 CFR 37.47(c) (2) or 37.51(c) (2). There were 138 stations for which time extensions of various lengths were granted; some through 2020 the maximum permitted. These deadlines are now beginning to pass and the stations can no longer be excluded from the total key station accessibility figures. Currently, the total number of time extensions from 2009/2010 through 2020 stands at 14. The total number of key stations will increase and the percentage of compliant stations may decrease as they are added to the total key station count. Beginning in 2009/2010, the key station accessibility figures began reporting the total number of key stations, the total number that are accessible, and the number with outstanding time extensions.

Reliability

All data in the NTD are self-reported by the transit industry. The transit agency's Chief Executive Officer and an independent auditor for the transit agency certify the accuracy of this self-reported data. The data are also compared with fleet data reported in previous years and crosschecked with other related operating and financial data in the report. Fleet inventory

is also reviewed as part of FTA's Triennial Review, and a visual inspection is made at that time.

Information on ADA key rail stations is reported to FTA by transit authorities. The FTA's Office of Civil Rights conducts oversight assessments to verify the information on key rail station accessibility. Quarterly rail station status reports and key rail station assessments have significantly increased the number of key rail stations that have come into compliance over the last several years.

Details on DOT Mobility Measures

NAS On-Time Arrivals (FAA)

Measure

Percentage of flights arriving no more than 15 minutes late.

Scope

A flight is considered on-time if it arrives no later than 15 minutes after the 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 the published schedule, which may be dated.

The time of arrival of completed passenger flights to and from the 35 OEP airports is compared to their flight plan scheduled time of arrival. For delayed flights, delay minutes are subtracted from the total minutes of delay to determine lateness. Such delay minutes include:

- delay minutes attributable to extreme weather
- carrier caused delay
- security delay
- share of delay minutes due to a late arriving flight at the departure airport

If the flight is still late, it is counted as a delayed flight attributed to the National Aviation System (NAS) and the FAA.

Sources

The ASPM database, maintained by the FAA's Office of Aviation Policy and Plans, and the DOT's ASQP causation database, provides the data for this metric. By agreement with the DOT, certain major air carriers file ASQP flight data for all flights to and from most large and medium hubs. Flight records contained in the Traffic Flow Management System (TFMS) and flight movement times provided by Aeronautical Radio, Inc. (ARINC) which supplements the flight data.

Statistical Issues

Data are not reported for all carriers, only 20 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

The reliability of ASPM is 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 1500 registered users. ASQP data is filed monthly with DOT under 14 CFR 234, Airline Service Quality Performance Reports, which separately requires reporting by major air carriers on flights to and from all large hubs.

Details on DOT Global Connectivity Measures

Disadvantaged and Women-Owned Small Businesses (OST S-40)

Measure

1. Percent share of the total dollar value of DOT direct contracts that are awarded to women-owned businesses. (FY)
2. Percent share of the total dollar value of DOT direct contracts that are awarded to small disadvantaged businesses. (FY)

Scope

Includes contracts awarded by DOT Operating Administrations through direct procurement. It does not include FAA contracts exempt from the Small Business Act.

Sources

New data reports will come directly from the Federal Procurement Data System (FPDS). Data are compiled by USDOT Contracting staff from Department contract documents. Selected information is either transmitted from the operating administration contract writing systems, or manually data-keyed into the FPDS database. The FPDS website can be queried to compute all needed statistics.

All USDOT contracts are itemized.

Statistical Issues

DOT is currently required to examine FPDS/NG data and resubmit it for validation. After re-verifying these data against internal sources, all known major errors in the data are eliminated. Business types are identified in the Central Contractor Registration (CCR) database. However, random variation in the number of DOT contracts as well as the number of women-owned and small disadvantaged businesses each year results in some random variation in these measures from year to year.

Completeness

The Federal Procurement Data System (FPDS) is prescribed by regulations as the official data collection mechanism for DOT acquisitions.

Reliability

There is extensive regulatory coverage to ensure data reliability. The system is used to prepare many reports to Congress, the Small Business Administration (SBA), and others. Performance goals follow actual data, as finalized by the SBA, and is the only reliable basis for program evaluations as mandated by the Small Business Act, Section 644(g).

Details on DOT Global Connectivity Measures

St. Lawrence Seaway System Availability (SLSDC)

Measure

The percent of days in the shipping season that the U.S. portion of the St. Lawrence Seaway is available. (FY)

Scope

The availability and reliability of the U.S. sectors of the St. Lawrence Seaway (including the two U.S. Seaway locks in Massena, NY) 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 shipping, 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
- lock equipment malfunction

Sources

Saint Lawrence Seaway Development Corporation (SLSDC) Office of Lock Operations and Marine Services.

Statistical Issues

None

Completeness

SLSDC is the agency responsible for the operation and maintenance of the U.S. portion of the St. Lawrence Seaway. Furthermore, SLSDC's lock operations unit gathers primary data for all vessel transits through the U.S. Seaway sectors and locks, including any downtime in operations.

Data is collected on site, at the U.S. 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. In addition, SLSDC compiles annual System availability data for comparison purposes. Since SLSDC gathers data directly from observation, there are no limitations. Historically, the SLSDC has reported this performance metric for its entire navigation season (late March to late December). Unfortunately, due to reporting timelines, system availability data is only reported through September in this report.

Reliability

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 DOT Global Connectivity Measures

Reduced Barriers to Trade in Transportation (OST-X)

Measure

Number of potential air transportation consumers (in billions) in international markets.

Scope

The number of potential air transportation consumers is the total population of the U.S. and countries with open skies aviation agreements with the U.S. By the end of FY 2010, there were 99 open skies agreements. This measurement includes the annual increase in population for the countries where open skies have been achieved, as well as those in areas with newly negotiated open skies agreements. The estimate for the additional population is based on the median population size of the countries without open skies agreements. This measurement reflects how travel opportunities between the U.S. and countries, with previously restricted aviation agreements, is liberated after open skies agreements are created.

Sources

Estimate of the population of the U.S. and countries with open skies agreements with the U.S., Midyear Population, International Data Base, and U.S. Bureau of the Census (per website).

Statistical Issues

The International Data Base of the U.S. Bureau of the Census is a reliable source of population estimates. The Bureau's website and publications provide qualifying data notes that more fully describe technical and other issues. These qualifying notes do not significantly affect our analyses.

Completeness

The International Data Base of the U.S. Bureau of the Census is a reliable source of population estimates. The Bureau's website and publications provide qualifying data notes that more fully describe technical and other issues. These qualifying notes do not significantly affect our analyses.

Reliability

The International Data Base of the U.S. Bureau of the Census is a reliable source of population estimates. The Bureau's website and publications provide qualifying data notes that more fully describe technical and other issues. These qualifying notes do not significantly affect our analyses.

Details on DOT Global Connectivity Measures

Enhanced International Competitiveness of U.S. Transportation Providers (OST-X)

Measure

Number of international negotiations conducted annually to remove market-distorting barriers to trade in air transportation.

Scope

The measure used is the number (or rounds) of meetings and negotiations that are conducted in an effort to reach open skies agreements, other liberalized aviation agreements, or to resolve problems. By the end of FY 2010, there were 99 open skies agreements, and 19 liberalized (but not open skies) agreements. These numbers do not represent, but understate, the number of negotiating sessions that have historically been held to complete these agreements. The measurement reflects an estimate to the extent of and manner by which the DOT might best apply the necessary resources to open the competitive environment and provide increased travel opportunities and economic benefits.

Sources

The number of annual negotiating sessions required to achieve new open skies agreements is estimated. This is an internal estimate generated by the Office of the Assistant Secretary for Aviation and International Affairs and based on a number of analytical, economic and geopolitical factors.

Statistical Issues

Due to geopolitical factors, the nature of international aviation negotiations can follow an unpredictable course. It is impossible to gauge or comment upon the data limitations, statistical issues, data completeness and data reliability.

Completeness

Due to geopolitical factors, the nature of international aviation negotiations can follow an unpredictable course. It is impossible to gauge or comment upon the data limitations, statistical issues, data completeness and data reliability.

Reliability

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Details on DOT Global Connectivity Measures

Travel in Freight Significant Corridors (FHWA)

Measure

Number of freight corridors with an annual decrease in the average buffer index rating. (CY)

Scope

Travel time reliability is a key indicator of transportation system performance. FHWA uses measured speed data to calculate a Buffer Index (BI) for each freight significant corridor. The BI is a measure of travel time reliability and variability that represents the extra time (or time cushion) that would have to be added to the average travel time to ensure on-time arrival 95 percent of the time.

Sources

Travel time data for freight significant corridors is derived using time and location data from satellite communications equipment on-board mobile commercial vehicles. A Global Positioning System (GPS) or other communication devices in the vehicle transmits a

continuous or periodic signal to an earth orbit satellite. This technology allows commercial vehicles to serve as probes and enables direct measurement of commercial vehicle average operating speeds and travel rates and travel times. Selection of freight significant corridors and highway segments is largely based on the volume of freight moved on the segment.

Statistical Issues

The key issues are long term viability of data source, sampling size of the commercial vehicle probes, and frequency of the time and position sampling. In FY 2009, FHWA made progress in addressing the issues of sample size and the frequency of sampling. By entering into arrangements with two additional technology partners, FHWA added more than 150,000 vehicles to the sample size and enabled more precise detection of a vehicle's location, direction, and speed.

Completeness

FHWA is partnering with vendors that collect automatic vehicle information from a customer base, primarily with interstate long-haul carriers. The data provides nationwide coverage from approximately 500,000 vehicles (trucks and trailers) in the United States, Canada and Mexico. The majority of the data is from fleets that have signals sent to vehicles with readings taken as often as every 15 minutes. The interval between probe readings depends on the subscription and which services the individual carriers have authorized. The intervals vary and may range from every two minutes to every two hours.

The following data is transmitted:

- truck id
- latitude
- longitude
- date and time
- interstate route

In FY 2009, FHWA enhanced the completeness of the data set by adding two additional vendors. This increases the percentage of local truckload carriers, increases the coverage area, and provides access to the data that more accurately pinpoints a vehicle's location, direction and speed. FHWA processes and manages the data provided by the vendors to gather the information for this measure. On average the data set produces over 340,000,000 truck positions monthly and over 4,000,000,000 positions annually.

Reliability

Probe vehicle performance systems are designed to provide travel time and speed/delay information without traditional fixed-location traffic monitoring and data collection systems. Probe-based systems enable coverage of much larger geographic areas (e.g. entire roadway networks) without the cost of building fixed-location traffic data collection systems throughout those networks. This technique takes advantage of the significant reductions in the cost of GPS devices that report current location and time information with a high degree of accuracy. When placed in vehicles and combined with electronic map information, GPS devices are the primary component of excellent vehicle location systems. Storage and analysis of the GPS location data allow for very accurate roadway performance measurement. To provide reliable roadway performance estimates, a large enough number of vehicles must be equipped with GPS to provide an unbiased measure of roadway

performance, and to provide the temporal and geographic diversity desired by the performance measurement system. A significant drawback to probe vehicle-based performance monitoring is that it does not provide information about the level of roadway use (e.g. vehicle volume), but only provides information about the speeds and travel times being experienced.

Details on DOT Global Connectivity Measures

Border Crossing Operation Reliability (FHWA)

Measure

Number of U.S. border crossings with a decrease in unexpected delay.

Scope

U.S. Border Crossings with a decrease in unexpected delay, based on the average annual hours of unexpected delay, compares high-delay crossing times to average delay crossing times. The reliability measure, or Buffer Index, uses the 95th percentile crossing times to represent border crossing times during periods with the heaviest volumes and/or most limited capacity and the average crossing time to represent the expected time for commercial vehicles to cross the border.

Sources

In FY 2010, data collection was expanded from five U.S./Canada border crossings, listed below, to fifteen:

- Blaine (Pacific Highway): Blaine, WA
- Pembina: Pembina, ND
- Ambassador Bridge: Detroit, MI
- Peace Bridge: Buffalo, NY
- Champlain: Champlain, NY

In addition, data collection efforts were initiated at two U.S./Mexico border crossings.

Data collection is satellite-based and uses automated vehicle location (AVL) and other technologies to obtain information. Using this method, the specific location of a vehicle can be determined at regular time intervals using latitude and longitude positioning. When collected, the locations are stamped with a time, date and vehicle identification number. This data makes it possible to compute the average crossing times.

Another automated data collection approach used is RFID – Radio Frequency Identification. Under this method, tags are placed in commercial vehicles which can be read when passing through reader stations. A tag query process recovers unique identifiers for each vehicle allowing for tracking. Each reader station time stamps the tags read and forwards the data record to a central location for further processing. Similar tag reading stations are installed at the exits of border crossings to match unique identifiers. In all variations of tag readings, the baseline crossing time (e.g. the best crossing time under ideal operating conditions) and average crossing times are used to calculate the average delay at specific crossing locations.

To support data collection, FHWA has established contracts with third parties who arrange for access to data from technology vendors and commercial carriers.

Statistical Issues

The key issues are long term viability of data source, sampling size of the commercial vehicle probes, and frequency of the time and position sampling. In FY 2010, FHWA made positive progress in addressing the issues of sample size and the frequency of sampling. By entering into arrangements with two additional technology partners, FHWA added more than 150,000 vehicles to the sample size and enabled more precise detection of a vehicle location, direction and speed.

Completeness

Traffic travel time information is traditionally collected with fixed-location systems (e.g. detectors embedded in the roads and video cameras). While the border data collection methods used provide non-intrusive ways of measuring border delay, data are not collected on every commercial truck for a particular crossing. There is continuous sampling over time, but data are collected only for commercial vehicles equipped with the technology. There is also important information about the crossings that can significantly influence travel times that is not accounted for or explained by the data collection methods used. These include the number of inspection/processing booths, the traffic volume and/or threat levels. The addition of additional vendors will allow the FHWA to be able to collect data at more U.S./Mexico border locations.

Reliability

Probe vehicle performance systems are designed to provide border crossing time and delay information without traditional fixed-location traffic monitoring and data collection systems. Probe-based systems enable coverage of much larger geographic areas (e.g. the entire Northern border) without the cost of building fixed-location traffic data collection systems throughout those networks. Storage and analysis of the GPS location data allow for very accurate border performance measurement. To provide reliable border performance estimates, a large enough number of vehicles must be equipped with GPS to provide an unbiased measure of border transportation system

Details on DOT Environmental Stewardship Measures

Exemplary Human Environment Initiatives (FHWA)

Measure

Number of Exemplary Human Environment Initiatives recognized. (FY)

Scope

The FHWA seeks to recognize exemplary examples of transportation projects that either create or improve conditions for human activities. Projects are exemplary if they:

- meet a specific documented need
- are innovative
- are significant
- demonstrate results
- offer the potential for transferability
- demonstrate partnering and collaboration

- provide specific benefits to human activity
- are mainstreamed into transportation decision-making
- benefit more than one project category

Each year a number of Exemplary Human Environment Initiatives (EHEI) will be selected for nationwide recognition and promotion as models for other areas to consider implementing. Since 2008, projects can be recognized under both EHEI and the Exemplary Ecosystem Initiative to further demonstrate environmental stewardship.

Sources

State DOT and FHWA field offices submit a list, including descriptions, of human environment initiatives for consideration to FHWA Headquarters.

Statistical Issues

The data do not represent all ecosystem and habitat conservation initiatives underway. Submittals are made at the discretion of the States and FHWA field offices.

Completeness

All recognized initiatives are included. However, there may be other potential qualifying initiatives that have not been identified.

Reliability

The identification of Exemplary Human Environment Initiatives may not be consistent across all States and FHWA field offices. While the criteria are carefully defined and complete, they are still subject to interpretation.

Details on DOT Environmental Stewardship Measures

DOT Facility Cleanup (OST M-93)

Measure

Twelve-month moving average for the number of areas in conformity lapse. (FY)

Scope

The transportation conformity process is intended to ensure that transportation plans, programs, and projects will not:

- create new violations of the National Ambient Air Quality Standards (NAAQS)
- increase the frequency or severity of existing NAAQS violations
- delay the attainment of the NAAQS in designated non-attainment (or maintenance) areas

Sources

The FHWA and FTA jointly make determinations within air quality non-attainment and maintenance areas to ensure that Federal actions conform to the purpose of State Implementation Plans (SIP). With DOT concurrence, the U.S. Environmental Protection Agency (EPA) issues regulations pertaining to the criteria and procedures for transportation conformity, which are revised based on stakeholder comment.

Statistical Issues

None

Completeness

A 12-month conformity lapse grace period can be granted if:

- compliance cannot be determined within 24 months after SIP actions
- four years have passed since the last conformity determination

After the grace period, the consequences of a conformity lapse will apply.

During a conformity lapse, no new non-exempt projects may advance. This holds until a new determination for the plan and Transportation Improvement Program (TIP) can be made. This condition affects transit as well as highway projects. During a conformity lapse, FHWA and FTA can only make approvals or grants for projects that are exempt from the conformity process (pursuant to Sections 93.126 and 93.127 of the conformity rule) such as a safety project and transportation control measures that are included in an approved SIP. Only those project phases that have received approval of the project agreement, and transit projects that have received a full funding grant agreement, or equivalent approvals, prior to the conformity lapse may proceed. This measure is current and has no missing data.

Reliability

There are no reliability issues. FHWA and FTA jointly make conformity determinations within air quality non-attainment and maintenance areas to ensure that Federal actions conform to the purpose of the SIP.

Details on DOT Environmental Stewardship Measures

Environmental Impact Statements (FHWA / FAA/ FTA)

Measure

Median elapsed time in months to complete Environmental Impact Statements (EIS) for DOT funded infrastructure projects.

Scope

There are two purposes for an EIS. First, an EIS provides full and open evaluations of the human and natural environmental issues and alternatives. Secondly, an EIS is used to inform decision-makers and the public of reasonable alternatives that could avoid or minimize adverse impacts and enhance the quality of the environment. EIS completion time covers the period from publication of the Notice of Intent (NOI) to publication of the Record of Decision (ROD) for DOT-funded infrastructure projects.

DOT modes have tools for measuring the agency's performance in preparing and completing EISs for DOT funded infrastructure projects. Not only do they provide a measure of the time to complete an EIS and the intermediate steps, they will also help assess the success of environmental streamlining initiatives undertaken by DOT operating administrations.

Sources

Data are derived from FHWA, FTA, and FAA statistical compilations. FHWA data are collected primarily through the FHWA's Environmental Document Tracking System (EDTS). The EIS processing time is tracked from the NOI to the ROD. Frequent reports are

an integral part of a national communication strategy for environmental streamlining and are absolutely essential in responding to Congressional inquiries, periodic hearings, and mandated Congressional reports and annual reports to the Council on Environmental Quality. FHWA prepares more than 80 percent of EISs prepared during the fiscal year.

FAA has developed and initiated a database maintained by the FAA's Office of Environment and Energy. The database collects information on all agency EISs and all data not readily available. In addition the database provides information on agency Environmental Assessments, Endangered Species Expenditures, and EIS Cooperating Agency Information that are used to provide reports to DOT, Congress, and the White House. Start and completion dates of EISs are taken from published dates associated with the NOI to Prepare an EIS through Draft EIS, Final EIS, and ROD. Source materials are contained in the project files. The project manager for the EIS maintains the files and records.

FHWA collects data for all projects primarily through the FHWA's EDTS. The EIS processing time is tracked from the NOI to the ROD.

FTA maintains an EIS tracking database for EISs.

Statistical Issues

For FAA data, the various lines-of-business are responsible for providing and updating the data on a regular basis. In most cases the data is recorded in the database by the EIS project manager. This is the sole source of the information for the database. Unanticipated requirements, such as additional funding for airport improvements (ARAA) or a split in the Airport Improvement Program, can have an effect on the timeliness of reporting.

The FHWA division offices are responsible for entering data into EDTS on a regular basis. This measure is able to account for inactive periods in the processing of environmental documents. Delays can result from funding and/or to changes in State agency priorities.

FTA: None

Note that this measure does not account for "down time" in the process. For example, inactivity due to vacillating support for a project or diminished funding sources, and time required to complete ancillary studies.

Completeness

All EISs that have a NOI are entered into the FHWA EDTS as necessary. As the NEPA process progresses, the dates for the Draft EIS, Final EIS, and the ROD are also entered. FHWA reports out on the median time it takes to process an EIS from the NOI to the ROD.

For FAA, completeness and reliability of the data is the responsibility of the reporting lines-of-business. Unanticipated program changes can impact the timeliness of recording data and therefore the completeness of the database and accuracy of the reported performance measure. After the start and completion of each EIS is recorded the total time until completion can be calculated. Then the mean time for completion can be computed for the total number of projects over the time period being considered.

Reliability

There are no reliability issues. The data is submitted by States and Headquarters verifies those dates by the Federal Register Publication dates. This measure is reliable in the time it

takes to complete the “environmental process,” which satisfies environmental laws and permitting requirements that apply to a DOT-funded project after subtracting “down time.”

Details on DOT Environmental Stewardship Measures

Mobile Source Emissions (FHWA / FTA)

Measure

A twelve-month moving average of the number of areas in conformity lapse. (FY)

Scope

The transportation conformity process is intended to ensure that transportation plans, programs, and projects will not create new violations of the National Ambient Air Quality Standards (NAAQS), increase the frequency or severity of existing NAAQS violations, or delay the attainment of the NAAQS in designated non-attainment (or maintenance) areas.

Sources

The FHWA and FTA jointly make conformity determinations within air quality non-attainment and maintenance areas. This is done to ensure that Federal actions conform to the purpose of State Implementation Plans (SIP). With DOT support, the U.S. Environmental Protection Agency (EPA) has issued regulations pertaining to the criteria and procedures for transportation conformity, which were revised based on stakeholder comment.

Statistical Issues

None

Completeness

A 12-month conformity lapse grace period can be granted if:

- compliance cannot be determined within 24 months after SIP actions
- four years have passed since the last conformity determination

After the grace period, the consequences of a conformity lapse will apply.

During a conformity lapse, no new non-exempt projects may advance. This holds until a new determination for the plan and Transportation Improvement Program (TIP) can be made. This condition affects transit as well as highway projects. During a conformity lapse, FHWA and FTA can only make approvals or grants for projects that are exempt from the conformity process (pursuant to Sections 93.126 and 93.127 of the conformity rule) such as a safety project and transportation control measures that are included in an approved SIP. Only those project phases that have received approval of the project agreement, and transit projects that have received a full funding grant agreement, or equivalent approvals, prior to the conformity lapse may proceed. This measure is current and has no missing data.

Reliability

There are no reliability issues. FHWA and FTA jointly make conformity determinations within air quality non-attainment and maintenance areas to ensure that Federal actions conform to the purpose of the SIP.

Details on DOT Environmental Sustainability Measures Hazardous Liquid Pipeline Spills (PHMSA)

Measure

The number of hazardous liquid pipeline spills with environmental consequences. (CY)

Scope

Hazardous liquid pipeline incidents are reportable under 49 CFR 195.50. This measure tracks the number of spills, of five barrels or more, where the accident report noted any environmental consequences (fish, birds, terrestrial wildlife, soil, or water)—from hazardous liquid pipelines in the U.S.

Sources

DOT/Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data are used. These data are derived from pipeline operator reports submitted on PHMSA Form F-7000.1. Most incidents are reported online through the PHMSA website.

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 incidents, 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 year-to-year (which shows a decline of about 5% on average each year over the 8-year period 2002-2009)). This provides about 80% 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 incidents with environmental consequences.

Completeness

Compliance in reporting is very high and most or all incidents that meet reporting requirements are submitted. Operators must submit reports within 30 days of an incident or face penalties for non-compliance. There may be a 30- to 60-day lag in reporting and compiling information in the database for analysis.

Projections from partial-year data include all months for which we have 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

PHMSA routinely cross-checks incident/accident reports against other sources of data, such as the telephonic reporting system for incidents requiring immediate notification provided to

the National Response Center (NRC). PHMSA inspectors also regularly discuss incidents with operator personnel during routine inspections. PHMSA continues to work to improve Best Management Practices to ensure quality of the incident data.

Details on DOT Security Measures

Shipping Capacity (MARAD)

Measure

Percent of Department of Defense (DOD) required shipping capacity, complete with crews, available within mobilization timelines.

Scope

This measure is based on the availability of 49 ships in the Maritime Administration's Ready Reserve Force (RRF) and approximately 135 ships enrolled in the Voluntary Intermodal Sealift Agreement (VISA) program. The VISA program includes 60 ships enrolled in the Maritime Security Program (MSP).

The performance measure represents the number of available ships (compared to the total number of ships in the RRF and VISA) that can be fully crewed within the established readiness timelines. Crewing of the RRF vessels is accomplished by commercial mariners employed by private sector companies under contract to the government. Currently there are more qualified mariners than jobs, even in the most under represented categories. However, due to the voluntary nature of this system, there is no guarantee that sufficient mariners will be available on time and as needed especially during a large, rapid activation.

Sources

Material availability of ships: Maritime Administration records (and information exchanged with DOD) on the readiness/availability status of each ship by the Office of Sealift Support (MSP/VISA ships) and the Office of Ship Operations (RRF ships).

Typical reasons why a ship is not available include:

- the ship is in drydock
- the ship is undergoing a scheduled major overhaul
- the ship is undergoing an unscheduled repair

The Maritime Administration and DOD also maintain records of the sealift ships enrolled in the MSP and VISA and their crew requirements.

Availability of mariners: The Maritime Administration, through their Mariner Outreach System, extracts the number of qualified mariners from the data recorded in the U.S. Coast Guard's Merchant Mariner Licensing and Documentation (MMLD) system. The willingness and availability of these mariners to sail is then estimated using all available information including total U.S. requirements for deep sea mariners, recent sea service, and mariner surveys.

Statistical Issues

None

Completeness

Data are complete.

Reliability

The data is reasonably reliable and useful in managing the reserve fleet readiness program.

Details on DOT Security Measures

DOD-Designated Port Facilities (MARAD)

Measure

Percent of DOD-designated commercial strategic ports that are available for military use within DOD established readiness timelines.

Scope

The measure consists of the total number of DOD-designated commercial strategic ports for military use. Ports must forecast their ability to able to meet DOD-readiness requirements within 48 hours of written notice from the Maritime Administration, expressed as a percentage of the total number of DOD-designated commercial strategic ports. Presently, there are 15 DOD-designated commercial strategic ports. Port readiness is based on monthly forecasts submitted by the ports and semi-annual port readiness assessments by the Maritime Administration in cooperation with other National Port Readiness Network partners.

The semi-annual port assessments provide data or other information on a variety of factors, including the following:

- the capabilities of channels, anchorages, berths, and pilots/tugboats to handle larger ships
- rail access, rail restrictions, rail ramp offloading areas, and rail storage capacities
- the availability of trained labor gangs and bosses
- number and capabilities of available cranes
- long-term leases and contracts for the port facility
- distances from ports to key military installations
- intermodal capabilities for handling containers
- highway and rail access; number of port entry gates
- available lighting for night operations; and number and capacity of covered storage areas
- marshalling areas off the port
- required security clearances and operational Secure Terminal Equipment (STE)

Sources

The Maritime Administration's data are derived from monthly reports submitted by the commercial strategic ports and from MARAD/DOD semi-annual port assessments.

Statistical Issues

None

Completeness

Data are complete.

Reliability

The data is reasonably reliable according to the Bureau of Transportation Statistics and useful in managing its port readiness program.

Details on DOT Security Measures

Emergency Management with Training Requirement – DOT Personnel (OST)

Measure

Percent of DOT personnel with emergency management responsibilities with identified training requirements.

Scope

This performance measure reports the compliance with identified training requirements. This is one of two key indices of preparedness for disaster response. This measure is used to ensure DOT resources are appropriately trained to respond to disasters.

Sources

The Department of Homeland Security establishes training requirements for the department. For example, certain National Incident Management System courses are required. We notify staff of required courses and keep a list of all who are required to take the courses and those who have taken them.

Statistical Issues

Data collection is a manual process with self-reporting requirements. This can lead to under-reporting of those required to take courses and an under reporting of those who have taken them.

Completeness

The data is as complete as can be obtained in a manual process. It is possible that the names of some participants are not captured. In addition, staff turnover makes it necessary to continually update the list of those required to participate in exercises or training. In addition, staff turnover makes it necessary to continually update the list of those required to take training.

Reliability

The data is as reliable as can be expected for a system that requires participants to report their participation and where records are manually maintained.

Details on DOT Security Measures

Emergency Management with Exercises – DOT Personnel (OST)

Measure

Percent of DOT personnel with emergency management responsibilities participating in exercises

Scope

This performance measure reports the participation in required exercises. This is one of two key indices of preparedness for disaster response. We measure this to ensure DOT resources are appropriately trained to respond to disasters of any type.

Sources

A roster of participation is maintained which is matched against a list of staff required to participate in each exercise. For Example, The Office of Intelligence, Security and Emergency Response leads the Department's participation in four Principals Level Tabletop Exercises hosted by the White House Staff and in National Level Exercises that improve the Department's abilities to respond to natural disasters and terrorist events. Additionally, the Office of Intelligence, Security and Emergency Response leads DOT participation in Tier II exercises and White House hosted tabletop exercises.

Statistical Issues

Data collection is a manual process. The Office of Intelligence, Security and Emergency Response maintains a roster of all of those who participate in exercises and who report completion of required training.

Completeness

The data is as complete as can be obtained in a manual process. It is possible that the names of some participants are not captured. In addition, staff turnover makes it necessary to continually update the list of those required to participate in exercises.

Reliability

The data is as reliable as can be expected for a system that requires participants to report their participation and where records are manually maintained.

Details on DOT Security Measures

Emergency Management with Exercises – Operating Administrations (OST)

Measure

Percent of Operating Administrations meeting annual response requirements.

Scope

Fiscal Year (FY) 2009 was the first year this performance measure was reported upon. This performance measure attempts to gauge the ability of the Department to effectively respond to emergencies affecting the transportation sector. Since it is not possible to measure actual response activities as each disaster has a unique set of response requirements, the Office of Intelligence, Security and Emergency Response maintains measures the capability of the department to respond to emergencies based on activities that would be required in a response.

Sources

DOT establishes key response activities that are required of each of the Operating Administrations for operations of the Continuity of Operations sites, the Crisis Management center and the Regional Emergency transportation Program and evaluate whether they have

fulfilled the requirement for the activity. The results are then averaged for each of the Operating Administrations to determine the result for the Department.

Statistical Issues

Data for this performance measure are taken by direct observation.

Completeness

Because of the lack of meaningful metrics, there are limits in what can be measured. To ensure preparedness, compliance with requirements of the Continuity of Operations, Crisis Management Center and Response Programs there are a series of questions that are focused on. First, there are seven Continuity of Operation requirements that are measured:

- Did the Operating Administration continuity of operations site pass 95 percent of communications tests?
- Was the Operating Administration continuity of operations plans 90% or more in line with the *Continuity of Operations Evaluation Checklist*?
- Did the Operating Administration maintain a fully operational continuity of operations site?
- Was the Operating Administration able to fully participate in exercises/events from their continuity of operations site?
- Did the Operating Administration maintain adequate staffing to manage the continuity of operations program?
- Did the Operating Administration have a redundant continuity communications program?
- Did the Operating Administration ensure vital records were available at the continuity site?

In addition, three Crisis Management Center requirements are analyzed:

- Did the Operating Administration meet staffing requirements?
- Did the Operating Administration provide Emergency Coordinators when required?
- Did the Operating Administration report incidents per reporting requirements?

Finally, four Response Program requirements are measured:

- Did the Operating Administration provide required Regional Emergency Transportation Coordinator?
- Did the Regional Emergency Transportation Coordinator / Regional Emergency Transportation Representative maintain an adequate and trained cadre?
- Did the Operating Administration provide required financial support to Regional Emergency Transportation Coordinator program?
- Did the Operating Administration provide staffing to Federal Emergency Management Agency National Response Coordination Center Care.

Reliability

The data provide a reliable indicator of the Department's preparedness to respond to disasters and man-made events.

Details on Organizational Excellence Measures

Critical Acquisitions on Schedule/Critical Acquisitions on Budget (FAA)

Measure

1. Percentage of programs within a 10 percent variance of the investment's total established budget-at-completion. This is measured from the beginning of the fiscal year performance period.
2. Percentage of programs meeting 90 percent of milestones.

Scope

FAA's Air Traffic Organization (ATO) Service Units select specific milestone completion dates and programs that are determined to provide a capital asset to the NAS. For FY 2010, 64 selected milestones were tracked and monitored against 40 acquisition programs. Most of the programs selected were considered "major" and submitted an Exhibit 300. Milestones that do not provide exhibit 300s are included because they contribute an asset to the NAS with a useful life of more than two years. The designation of "critical acquisition programs" in the title of the performance target expresses the critical value of the program to the NAS.

The budget measure is set to the beginning of the Fiscal Year, September 2010, in the Capital Investment Plan (CIP). The schedule measure includes sixty-four milestones that must meet their targeted date to be within 90 percent of the performance goal. The schedule measure is set to only those milestones selected at the beginning of the current fiscal year. Once the selected milestones are approved, no milestones are added or deleted during the year. The FAA reported program performance against the total program acquisition baseline in Appendix D of the FY 2010, FAA National Airspace System Capital Investment Plan published in May 2010. This report documented the agency's performance in compliance with the *Federal Aviation Reauthorization Act of 1996*, PL 104-264, and Section 252 – Air Traffic Control Modernization Reviews.

Sources

ATO tracks and reports status of all schedule and cost performance targets using an automated database. ATO Service Units provide a monthly Red, Yellow, or Green assessment that indicates their confidence level in meeting their established milestones. To ensure milestones and cost are maintained within the established performance targets, comments are provided monthly that detail problems, issues, and corrective actions. The performance status is reported monthly to the FAA Administrator through FAA *Flight Plan* meetings.

Statistical Issues

Programs that are selected each fiscal year represent a cross section of programs within the ATO. They include programs that submit an Exhibit 300 in addition to other JRC approved baselined programs. The latter typically are not required to undergo a standard acquisition life cycle process. There is no bias with the selection of milestones. The milestones selected represent the program office's determination as to what effort they deem "critical" or important enough to warrant inclusion in the Acquisition Performance goal for the year. Typically there are anywhere from two to four milestones. Interim milestones are also tracked but not included in the final performance calculation.

Completeness

This measure is current with no missing data. Each DOT organization maintains its own quality control checks for cost, schedule, and technical performance data of each major systems acquisition in accordance with OMB Circulars A-11, A-109, and A-130, Federal Acquisition Regulations, and Departmental orders implementing those directives and regulations.

Reliability

Each DOT organization having major system acquisitions uses the data during periodic acquisition program reviews, to determine resource requests. They are also used during the annual budget preparation process, for reporting progress made in the President's Budget and for making key program management decisions. The monthly status is reported through the SPIRE database and included in monthly high-level management reviews. Once the program is selected and approved for tracking purposes it is reported with detailed commentary each month, and assigned a Red, Yellow, or Green confidence indicator when the cost is within the 10% threshold and selected milestones are accomplished as scheduled. These detailed reports are reviewed at all levels of the appropriate Service Unit, and Executive levels within the ATO, and the FAA Administrator.

Details on DOT Organizational Excellence Measures

Major DOT Infrastructure Project Cost and Schedule Performance (FHWA / FTA / FAA)

Measure

1. Percentage of major federally funded transportation infrastructure projects with less than 2 percent annual growth for project completion milestones. (FY)
2. Percentage of finance plan cost estimates for major federally funded transportation infrastructure projects with less than 2 percent annual growth in project completion cost. (FY)

Scope

This measure addresses the following:

- Active FTA New Starts projects with Full Funding Grant Agreements larger than \$1 billion
- FHWA projects with a total cost of \$500 million or more, or projects approaching \$500 million with a high level of public, Congress, or Administration interest
- FAA runway projects with a total cost of \$1 billion or more

Sources

FAA - Project cost performance for each major project is measured from cost estimates submitted by the airport sponsor to support its letter of intent (LOI) and actual expenditure data sources (for grants) and airport sponsor submissions (for overall project cost). Project schedule performance is measured from the Runway Template Action Plan (RTAP), as specified in the NextGen Implementation Plan (formerly Operational Evolution Plan).

FHWA - The percent cost estimates and scheduled milestones for a FHWA Major Project are measured from when the Initial Financial Plan (IFP) is prepared and approved to the required

Annual Project Update or from the previous Annual Update. The update contains the latest information about the cost and schedule for each of the Major Projects. Project Oversight Managers in FHWA Division Offices provide monthly status reports as a supplement to the Annual Update.

FTA - Oversight contractors and third-party risk assessment providers are used to validate the accuracy of project budgets and schedules before grantees are awarded Full Funding Grant Agreements. Project/Financial Management Oversight contractors review project budgets on a monthly basis and FTA assesses projected total project costs against baseline cost estimates and schedules.

Statistical Issues

FAA - Schedule completion performance is measured for two milestones: project design and project completion.

A project milestone is considered to meet the performance target if actual annual rate of completion is not more than two percent behind scheduled cumulative rate of completion, using the RTAP schedule as a base.

Cost performance is measured by comparing cumulative actual costs incurred at the end of each fiscal year with cumulative costs shown in the scheduled of costs submitted with the LOI application. A project will be considered to meet the cost performance target if annual costs are no more than two percent higher than projected costs in the cost schedule.

FHWA - A scheduled milestone is defined as being achieved upon completion of the project. Major Projects generally require six to ten years from an IFP to completion. Cost estimates are prepared by comparing the costs in the most recent Annual Update to the IFP estimate or the last Annual Update.

FTA - Scheduled milestone achievement is measured by the difference between the actual Revenue Operations Date and the date of the execution of the Full Funding Grant Agreement divided by the difference between the Revenue Operations Date in the Full Funding Grant Agreement and the date of execution of the Full Funding Grant Agreement. Cost estimate achievement is measured by the actual Total Project Cost divided by the Total Project Cost in the Full Funding Grant Agreement.

Completeness

FAA - Federal financial commitments to airport sponsors are tracked by two automated systems, the System of Airports Reporting (SOAR) and the Delphi financial system. These systems are updated immediately when a grant payment is made, amended or closed-out. The FAA relies on the airport sponsor to report actual project costs on a quarterly basis. Project design and construction milestones (scheduled and actual) are contained in the RTAP and developed by all involved FAA lines of business, the airport sponsor and airlines. The RTAP is comprised of tasks that must be considered when commissioning the runway and assigns accountability to the airport, airline, and FAA allowing early identification and resolution of issues that might impact the runway schedule.

FHWA - The FHWA Major Projects Team maintains the project schedules and cost estimate information in a spreadsheet, which is updated when a Project IFP is approved and/or the Annual Update is received and accepted. The data is available and reported on a semi-annual basis.

FTA - This measure is current with no missing data. The information is currently tracked with an in-house database. The measures are calculated monthly by an FTA Headquarters Engineer, checked by the Team Leader and reviewed by the Office Director.

Reliability

FAA - Reporting of Federal financial commitments to airport sponsors is done in accordance with FAA policy and guidance related to administering the Airport Improvement Program (AIP) and the authorizing statute. The FAA's AIP Branch monitors FAA regional offices for compliance with policy and guidance, including input into SOAR and Delphi, and conducts periodic regional evaluations. Actual project costs reported by the airport sponsor are verified by an annual single audit required by OMB. Such audits cover the entire financial and compliance operation of the airport sponsor's governing body. Status of the project design and construction schedule contained in the RTAP is updated quarterly, based on meetings held with the airport sponsor and airlines.

FHWA - Both the IFP and the Annual Update undergo a rigorous review by the Division Office and the Major Projects Team prior to approval and acceptance.

FTA - Calculations of schedule achievement are based on month of this report, and not on projected Revenue Operations Date. Re-calculations of schedule and cost baselines are made to reflect amendments to the Full Funding Grant Agreements. FTA uses oversight contractors and third-party risk assessment providers to validate the accuracy of project budgets and schedules before grantees' are awarded Full Funding Grant Agreements. FTA continues to work to improve its rigorous oversight program and has made project cost and budget performance a core accountability of every senior manager in the agency.

Details on DOT Organizational Excellence Measures

Transit Grant Process Efficiency (FTA)

Measure

Average number of days a grant is awarded after submission of a completed application.
(FY)

Scope

FTA grants obligated during a fiscal year period for major programs:

- Urbanized area, non-Urbanized area, and Elderly/Persons with Disabilities formula grants
- Capital grants
- Job Access and Reverse Commute grants
- Over-The-Road Bus grants
- Planning grants

Sources

FTA internal databases, including the Transportation Electronic Award Management (TEAM) system.

Statistical Issues

Processing time is calculated from submission date to obligation date. Zero-dollar, non-funding grant amendments are excluded from analysis.

Completeness

Data are current with no missing data since FTA uses internal databases, including the TEAM system. All grants obligated during the fiscal year for the selected programs (see Scope) are included in the original data set. In rare cases where the submission date is omitted (which prevents processing time calculation), missing dates are researched and added to the database prior to reporting. The zero-dollar amendments are excluded because they are not representative of the grant processing action being tested.

Reliability

The files that contain raw data from TEAM have been tested to ensure that all fiscal-year-to-date obligated grants are included and that data is current. Report programs screen various date fields to identify any missing or out-of-sequence dates that would skew averages; dates are corrected prior to reporting. Reconciliation reports of TEAM data are produced monthly and anomalies are explored and resolved. Detailed monthly grant processing progress reports provide management tools to the Regional Administrators, who continue to make this goal a top priority.