Safety Performance Measures

[The National Safety Plan](https://www.transit.dot.gov/regulations-and-guidance/safety/national-public-transportation-safety-plan) indicates four safety performance measures that must be included in an agency’s PTASP:

**FATALITIES**

Total number of reportable fatalities and rate per total vehicle revenue miles by mode

Reducing the number of fatalities is a top priority for the entire US DOT. As an industry, we must try to understand the factors involved in each fatality in order to prevent further occurrences. Measuring the number of fatalities over vehicle revenue miles, by mode, provides a fatality rate from which to assess future performance.

**INJURIES**

Total number of reportable\* injuries and rate per total vehicle revenue miles by mode

\*The thresholds for “reportable” fatalities, injuries, and events are defined in the [NTD Safety and Security Reporting Manual](https://www.transit.dot.gov/ntd/2019-ntd-safety-and-security-policy-manual).

Many transit agencies have never had a fatality, and continued safe operation is exactly what is desired. However, injuries occur much more frequently, and are due to a wide variety of circumstances. Analyzing the factors that relate to injuries is a significant step in developing actions to prevent them. Again, measuring the number of injuries by mode, over vehicle revenue miles provides an injury rate from which to assess future performance.

**SAFETY EVENTS**

Total number of reportable events and rate per total vehicle revenue miles by mode

The safety events measure captures all reported safety events that occur during transit operations and the performance of regular supervisory or maintenance activities. A reduction in safety events will support efforts to reduce fatalities and injuries, as well as damages to transit assets. Measuring the number of safety events by mode over vehicle revenue miles provides a safety event rate from which future performance can be compared.

**SYSTEM RELIABILITY**

Mean distance between major mechanical failures by mode

The system reliability measure expresses the relationship between safety and asset condition. The rate of vehicle failures in service, defined as mean distance between major mechanical failures, is measured as revenue miles operated divided by the number of major mechanical failures. This is a measure of how well a fleet of transit vehicles is maintained and operated. FTA recognizes the diversity of the transit industry, and that agencies have varied equipment types, with varied rates of performance, so this measure allows agencies to develop safety performance targets that are specific to their own fleet type, age, operating characteristics, and mode of operation.

Defining safety performance measures includes the use of safety-related metrics. Many safety-related metrics may not be applicable, depending on the size and scale of the transit agency. However, there are several general safety related metrics that can be used to measure transit safety performance. Metrics can be grouped into similar target areas.

**Table 2** provides examples of some performance target areas and metrics:

|  |  |
| --- | --- |
| **PERFORMANCE TARGET AREAS** | **MEASURES** |
| ***Casualties/Incidents:*** | * Number of fatalities and fatality crashes per specified time period
 |
|  | * Number of injuries and injury crashes per specified time period
 |
|  | * Fatal accidents per million passenger-miles/vehicle-miles traveled
 |
|  | * Injury accidents per million passenger-miles/vehicle-miles traveled
 |
|  | * Employee work days lost to injuries per specified time period
 |
|  | * Work-related fatalities per specified time period
 |
|  | * Workers compensation payments per specified time period
 |
|  |  |
| ***Operations:*** | * Employee work days lost to injuries per specified time period
 |
|  | * Work-related fatalities per specified time period
 |
|  | * Percent of positive drug/alcohol tests per specified time period
 |
|  | * Number of traffic tickets issued to bus operators per specified time period
 |
|  | * Percent of buses exceeding the speed limit per specified time period
 |
|  |  |
| ***Systems and Equipment:*** | * Number of vehicle defects reported by operators per specified time period
 |
|  | * Number of infrastructure defects reported by operators per specified period of time
 |
|  | * Number of vehicle defects reported during maintenance inspections
 |
|  | * Percent of preventative maintenance inspections completed within 10% of scheduled mileage
 |
|  |  |
| ***Safety Culture:*** | * Number of training hours for all staff per specified period of time
 |
|  | * Results of employee surveys
 |
|  | * Number of safety audits, assessments or inspections completed per specified period of time
 |
|  | * Number of staff participating in hazard reporting systems
 |
| ***Table 2: Examples of Performance Area Targets and Safety Measures/Metrics*** |