

# Definitions

KPI	How is it measured?	What does this mean and why is it key to our strategy?
<b>QUALITY SERVICE</b>		
MyTripTime:  Metrorail Customer On- Time Performance	Percentage of customer journeys completed on time  Number of journeys completed on time ÷ Total number of journeys	Rail Customer On-Time Performance (OTP) communicates the reliability of rail service, which is a key driver of customer satisfaction. OTP measures the percentage of customers who complete their journey within the maximum amount of time it should take per WMATA service standards. The maximum time is equal to the train run-time + a headway (scheduled train frequency) + several minutes to walk between the fare gates and platform. These standards vary by line, time of day, and day of the week. Actual journey time is calculated from the time a customer taps a SmarTrip® card to enter the system, to the time when the SmarTrip® card is tapped to exit.  Factors that can effect OTP include: railcar availability, fare gate availability, elevator and escalator availability, infrastructure conditions, speed restrictions, single-tracking around scheduled track work, railcar delays (e.g., doors), or delays caused by sick passengers.
Metrobus On- Time Performance	Percentage of bus service delivered on-time  Schedule-based routes = Number of time points delivered on time based on a window of 2 minutes early and 7 minutes late ÷ Total number of time points delivered  Headway-based routes = Number of time points delivered within the scheduled headway + 3 minutes ÷ Total number of time points delivered	Bus on-time performance (OTP) communicates the reliability of bus service, which is a key driver of customer satisfaction and ridership.  ▶ For schedule-based routes, OTP measures adherence to the published route schedule for delivered service.  ▶ For headway-based routes, OTP measures the adherence to headways, or the time customers wait between buses. Headway-based routes include routes 70, 79, X2, 90, 92, 16Y, and Metroway.  Factors that can effect OTP include: traffic congestion, detours, inclement weather, scheduling, vehicle reliability, operational behavior, or delays caused by passengers.
MetroAccess On- Time Performance	Adherence to Schedule  Number of vehicle arrivals at the pick-up location within the 30 minute on-time widow ÷ Total trips delivered	This indicator illustrates how closely MetroAccess adheres to customer pick-up windows on a system-wide basis. Factors that effect on-time performance are traffic congestion, inclement weather, scheduling, vehicle reliability, and operational behavior. MetroAccess on-time performance is essential to delivering quality service to the customer.
Rail Fleet Reliability	Mean Distance Between Delays (MDBD)  Total railcar revenue miles ÷ Number of failures during revenue service resulting in delays of four or more minutes <hr/> Mean Distance Between Failure (MDBF)  Total railcar revenue miles ÷ Total number of failures occurring during revenue service	The number of miles traveled before a railcar experiences a failure. Some car failures result in inconvenience or discomfort, but do not always result in a delay of service (such as hot cars). Mean Distance Between Delay includes those failures that had an impact on customer on-time performance.  Mean Distance Between Failure and Mean Distance Between Delay communicate the effectiveness of Metro's railcar maintenance and engineering program. Factors that influence railcar reliability are the age and design of the railcars, the amount the railcars are used, the frequency and quality of preventive maintenance, and the interaction between railcars and the track.

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Bus Fleet Reliability	<p>Mean Distance Between Failures (MDBF)</p> <p>The number of total miles traveled before a mechanical breakdown requiring the bus to be removed from service or deviate from the schedule</p>	<p>Mean Distance Between Failures is used to monitor trends in vehicle breakdowns that cause buses to go out of service and to plan corrective actions. Factors that influence bus fleet reliability include vehicle age, quality of maintenance program, original vehicle quality, and road conditions affected by inclement weather and road construction.</p>
Elevator and Escalator Availability	<p>In-service percentage</p> <p>Hours in service ÷ Operating hours</p> <p>Hours in service = Operating hours – Hours out of service</p> <p>Operating hours = Operating hours per unit × number of units</p>	<p>Escalator/elevator availability is a key component of customer satisfaction with Metrorail service. This measure communicates system-wide escalator and elevator performance (at all stations over the course of the day) and will vary from an individual customer's experience.</p> <p>Availability is the percentage of time that Metrorail escalators or elevators in stations and parking garages are in service during operating hours.</p> <p>Customers access Metrorail stations via escalators to the train platform, while elevators provide an accessible path of travel for persons with disabilities, seniors, customers with strollers, and travelers carrying luggage. An out-of-service escalator requires walking up or down a stopped escalator, which can add to travel time and may make stations inaccessible to some customers. When an elevator is out of service, Metro is required to provide alternative services which may include shuttle bus service to another station.</p>
FTA Guideway Condition (Federal Transit Administration Transit Asset Management Performance Measure)	<p>Percentage of track segments with performance restrictions at 9:00 AM the first Wednesday of every month</p> <p>Number of track miles with performance restrictions ÷ 234 total miles</p>	<p>In 2016, the Federal Transit Administration (FTA) issued its Final Rule on Transit Asset Management, which requires transit properties to set targets and report performance on a variety of measures, including guideway condition. Guideway includes track, signals and systems.</p> <p>A performance restriction occurs when there is a speed restriction: the maximum train speed is set below the guideway design speed. Performance restrictions may result from a variety of causes, including defects, signaling issues, construction zones, and maintenance causes. FTA considers performance restrictions to be a proxy for both track condition and the underlying guideway condition.</p>
Headway Adherence (Train On-Time Performance)	<p>Number of station stops delivered within the scheduled headway plus 2 minutes during rush (AM/PM) service ÷ Total station stops delivered</p> <p>Number of station stops delivered up to 150% of the scheduled headway during non-rush (midday and evening) ÷ Total station stops delivered</p>	<p>Train on-time performance measures the adherence to weekday headways, or the time customers wait between trains. Factors that can effect on-time performance include: infrastructure conditions, missed dispatches, railcar delays (e.g., doors), or delays caused by sick passengers. Station stops are tracked system-wide, with the exception of terminal and turn-back stations.</p>
Trains in Service	<p>Percentage of required trains that are in service at 8:15 AM and 5:00PM</p> <p>Number of Trains in service ÷ Total required trains</p>	<p>Trains in Service is a key driver of customer on-time performance and supports the ability to meet the Board standard for crowding. WMATA's base rail schedule requires 140 trains during rush periods. Fewer trains than required results in missed dispatches, which leads to longer wait times for customers and more crowded conditions. Key drivers of train availability include the size of the total fleet and the number of "spares", railcar reliability and average time to repair, operator availability, and balancing cars across rail yards to ensure that the right cars are in the right place at the right time.</p>

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Offloads	Number of railcar offloads	An offload is any time all passengers traveling on a train must get off the train for any un-scheduled reason (e.g., not a turnback or planned removal from service). Offloads are a key driver of customer on-time performance and communicates the impact of Metro's maintenance and engineering programs on customer service. Factors that influence railcar offloads are railcar performance, rail infrastructure performance, rail operations policies, and customer behavior.
Crowding	Percentage of passenger time spent on vehicles exceeding crowding guidelines  Number of crowded passenger minutes ÷ Total number of passenger minutes	Crowding is a key driver of customer satisfaction with Metrorail and Metrobus service. Crowding measures the percentage of passenger time spent on vehicles that exceed crowding guidelines per WMATA service standards:  ▶ Metrorail: 100 passengers per car  ▶ Metrobus: 120% of seated capacity during peak, 100% off peak [100% at all times on express routes]  Crowding informs decision making regarding asset investments, service plans and scheduling.  Factors that can effect crowding include: service reliability, missed trips insufficient schedule, or unusual demand.
Customer Satisfaction	Survey respondent rating  Number of survey respondents with high satisfaction ÷ Total number of survey respondents	Surveying customers about the quality of Metro's service delivery provides a mechanism to continually identify those areas of the operation where actions to improve the service can maximize rider satisfaction.  Customer satisfaction is defined as the percent of survey respondents who rated their last trip on Metrobus or Metrorail as "very satisfactory" or "satisfactory." The survey is conducted via phone with approximately 400 bus and 400 rail customers who have ridden Metro in the past 30 days. Results are summarized by quarter (e.g., January–March).

**SAFETY AND SECURITY**

Customer Injury Rate	Customer injury rate:  Number of injuries ÷ (Number of passengers ÷ 1,000,000)	The customer injury rate is based on National Transit Database (NTD) Reporting criteria. This measure includes customers injured during Metro operations when the injury is considered serious or requires immediate medical attention away from the scene.  Customer safety is the highest priority for Metro and a key measure of quality service. Customers expect a safe and reliable ride each day. The customer injury rate is an indicator of how well the service is meeting this safety objective.
Crime	Reported Part I Crimes	Part I crimes reported to the Metro Transit Police Department for Metrobus (on buses), Metrorail (on trains and in rail stations), or at Metro-owned parking lots in relation to Metro's monthly passenger trips. Uniform Crime Reporting, managed by the Federal Bureau of Investigation, include Part I offense classifications of Criminal Homicide, Forcible Rape, Robbery, Aggravated Assault, Burglary, Larceny, Motor Vehicle Theft, and Arson.  This measure provides an indicator of the perception of safety and security customers experience when traveling the Metro system. Increases or decreases in crime can have a direct effect on whether customers feel safe in the system.

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Derailments	Number of derailments	<p>A derailment is a non-collision event that occurs when a train or other rail vehicle unintentionally comes off its rail, causing it to no longer be properly guided onto the railway.</p> <p>The number of derailment incidents is an indicator of how well Train Operators and Rail Controllers are paying full time and attention to their operating environment and how efficient communications are from controllers to operators. Derailments are also an indicator of the state of good repair of both the right-of-way and rail vehicles (trains, RMMs, Flat Cars, Hi-Rail trucks).</p>
Rail Collisions	Number of rail collisions	<p>Rail collision incidents reflect any incident on the mainline or yard where a train, with or without customers, or a Roadway Maintenance Machine (RMM) makes contact with another vehicle, equipment, or object, and meet the NTD threshold of substantial damage.</p> <p>The number of rail collision incidents is an indicator of how well Train and Equipment Operators and Rail Controllers are paying full time and attention to their operating environment and how efficient communications are from controllers to operators.</p>
Fire Incidents	Number of fire incidents	<p>Fire incidents consistent of any fire that occurs within the Metrorail system regardless if active suppression was required. There are three main types of fires that occur within the Metrorail system: non-electrical (e.g., debris, rubbish such as leaves, newspapers), cable, arcing events (track components, train components) and station equipment.</p> <p>The number of fire incidents is an indicator of how well Metro is keeping its right of way clean and dry, and its equipment in state of good repair.</p>
Red Signal Overruns	Number of red signal overruns	<p>Red signal overrun incidents reflect any time a train or equipment operator passes a red signal on the right-of-way (including in rail yards), or when the operator passes an employee on the roadway who's telling the train or Roadway Maintenance Machine (RMM) to not move any further.</p> <p>The number of red signal overruns is an indicator of how well Train Operators and Rail Controllers are paying full time and attention to their operating environment and how efficient communications are from controllers to operators.</p>
NTD Bus Collision Rate	<p>NTD bus collision rate:</p> $\frac{\text{Number of NTD reportable collisions} +}{(\text{Total number of bus miles operated} \div 1,000,000)}$	<p>The NTD collision rate is a subset of the Bus Collision Rate and is based on National Transit Database (NTD) Reporting criteria. It reflects bus collisions that result in injuries requiring transport for any involved vehicle or pedestrian; towaway of any involved vehicle; or total damages that cost \$25,000 or more.</p> <p>NTD-reportable collisions reflect a measure of serious bus collisions and represent an opportunity to fully investigate the incident; determining causal factors and root causes. The NTD bus collision rate is an indicator of how well service is meeting this safety objective.</p>
Bus Collision Rate	<p>Bus collision rate:</p> $\frac{\text{Number of NTD reportable collisions} +}{(\text{Number of bus miles operated} \div 1,000,000)}$	<p>A bus collision includes all incidents where the transit vehicle comes in contact with another vehicle, object or person, regardless of fault. Collisions impact the ability to adhere to the published route schedule, reduce bus service quality, and reliability.</p>
Bus Pedestrian Strikes	Number of pedestrian or cyclist strikes	<p>Bus pedestrian strikes counts include all incidents where the impact of a the transit vehicle with a person or cyclist causes immediate medical transport from the scene.</p>

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Employee Injury Rate	Employee injury rate: $\text{Number of injuries} \div (\text{Total work hours} \div 200,000)$	<p>An employee injury is recorded based on OSHA 1904 Recordkeeping Criteria, when the injury is (a) work related; and, (b) one or more of the following happens to the employee: 1) fatality, 2) injury or illness that results in loss of consciousness, days away from work, restricted work, or job transfer 3) receives medical treatment above first aid, 4) diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones or teeth, and punctured eardrums, 5) special cases involving needlesticks and sharps injuries, medical removal, hearing loss, and tuberculosis.</p> <p>Per the Occupational Safety and Health Act, employers are obligated to provide a workplace free of recognized hazards which may cause employee death or serious injury. OSHA recordable injuries are a key indicator of how safe employees are in the workplace.</p>
<b>FINANCIAL RESPONSIBILITY</b>		
Ridership	Total Metro ridership $\text{Metrorail passenger trips} + \text{Metrobus passenger boardings} + \text{MetroAccess passenger trips}$	<p>Ridership is a measure of total service consumed and an indicator of value to the region. Drivers of this indicator include service quality and accessibility.</p> <p>Passenger trips are defined as follows:</p> <ul style="list-style-type: none"> <li>▶ Metrorail reports passenger trips. A passenger trip is counted when a customer enters through a faregate. In an example where a customer transfers between two trains to complete their travel one trip is counted.</li> <li>▶ Metrobus reports passenger boardings. A passenger boarding is counted via the onboard Automatic Passenger Counter (APC) when a customer boards a Metrobus. In an example where a customer transfers between two Metrobuses to complete their travel two trips are counted.</li> <li>▶ MetroAccess reports passenger trips. A fare paying passenger traveling from an origin to a destination is counted as one passenger trip.</li> </ul> <p>*For performance measures and target setting, Metro uses total ridership numbers including passengers on bus shuttles to more fully reflect total passengers served. Metro does not include bus shuttle passenger trips in its budget or published ridership forecasts.</p>
Vacancy Rate	Percentage of budgeted positions that are vacant $(\text{Number of budgeted positions} - \text{number of employees in budgeted positions}) \div \text{number of budgeted positions}$	<p>This measure indicates how well Metro is managing its human capital strategy to recruit new employees in a timely manner. Factors influencing vacancy rate can include: recruitment activities, training schedules, availability of talent, promotions, retirements, among other factors.</p>