Report by Safety and Operations Committee (A)

Board Document

OVERVIEW			
PRESENTATION NAME	Updates to Metro Bus Service Guidelines and Metro Rail Service Standards	**DOCUMENT NO.**	300128
ACTION OR INFORMATION	Action		
STRATEGIC TRANSFORMATION PLAN GOAL	Service excellence;		
RESOLUTION	Yes		
EXECUTIVE OWNER			
EXECUTIVE TEAM OWNER	Webster, Thomas J.;		
ORGANIZATION	Planning and Performance		
DOCUMENT INITIATOR	Jordan H. Holt		
OTHER INFORMATION			
COMMITTEE	Safety and Operations Committee	**COMMITTEE DATE**	6/11/2026
PURPOSE/KEY HIGHLIGHTS	Staff will present and recommend Board adoption of updated Bus Guidelines and Rail Service Standards. Establishing guidelines and standards is a best practice in service planning, demonstrating good goverance by providing transparency over the parameters used in decision making. Metro's current Bus Guidelines and Rail Service Standards were last updated in December 2020 and February 2022, respectively. They define minimum frequencies, hours of operation, and standards at the route and network level for reliability, productivity, cost-effectiveness and regional impact. They underlie service planning recommendations included in the annual budget proposal.		

	Updating the guidelines and standards is part of the Service Design and Management program of the Strategic Transformation Plan. The proposed updates align service planning policies with current practices that support ridership growth, manage costs, and advance key commitments in the DMVMoves Plan. These updates support continuous service improvement and will guide the multi-year service plan included in the annual budget proposal.
DISCUSSION	Regional Alignment through DMVMoves On November 17, 2025, the Board endorsed the DMVMoves Plan, which committed to creating a more integrated and seamless regional transit network. The plan called for regional transit operators to adopt shared bus service guidelines by Fall 2026. These guidelines specify minimum standards for bus frequency and hours of operation intended to create a more consistent customer experience across the region, ensuring service levels align with local demand. The update to the Metro Bus guidelines incorporates these regional standards, fulfilling our commitment to advance the DMVMoves plan. Continuous Improvement of Metro Bus and Metro Rail The Bus Guidelines and Rail Service Standards were last updated in December 2020 and February 2022, respectively. Since then, Metro has made significant progress in prioritizing all-day frequent service, an approach that has helped drive ridership and better meet customer needs while also using the fleet more efficiently. The updated guidelines codify these practices by establishing service parameters that emphasize consistent frequency throughout the day. The guidelines will also serve as the foundation for continued service improvement. They establish a transparent framework for service planning that informs staff recommendations to adjust, add, or remove service through the budget process. In addition to productivity and cost-effectiveness measures, the guidelines incorporate customer experience factors and outline how performance standards will be used to identify and prioritize investments as part of the multi-year service plan. Promote Cost Efficiency The guidelines align planning practices to prioritize moving the greatest number of people with the fewest resources. They update

	standards to enable more strategic deployment of 8-car trains and articulated buses to better match service with demand. Additionally, the guidelines introduce updated productivity and cost-effectiveness standards to ensure service planning decisions support the efficient allocation of resources. A greater focus on all-day frequent service also helps reduce fixed costs by lowering peak vehicle requirements. Summary of Changes Rail Standards: • Hours of service updated to match FY2027 approved budget • Minimum frequency standard of 6 minutes set for all core stations, not just Red Line • Remove standard to operate 100% 8-car train. • No change to passenger loading standards, which continue to define crowding as more than 100 passengers per car during the busiest hour on the busiest segment on the busiest days • No change to on-time performance definition • Add network service quality metrics aligned to key results in the Strategic Transformation Plan and included in the Bus Guidelines (access to frequent service, average scheduled wait time, access to destination) Bus Guidelines: • Incorporate regional guidelines for service classifications, activity tiers, minimum frequencies, and minimum hours of service. Set one frequency standard for all-day service, rather than a specific standard for peak and off-peak times • Streamline list of standards for reliability, productivity, cost-effectiveness, and network performance to align with current service planning concepts and key results in the Strategic Transformation Plan • Add definitions and standards to inform bus priority investments, aligning to international standards for Bus Rapid Transit • Simplify standards for bus stop amenities • Simplify guidance for route design decisions • Update guidance on how the guidelines will be used to support continuous network improvement
INTERESTED PARTIES	None

Board Document

RECOMMENDATION/NEXT STEPS	The Board will be requested to adopt sections 1-9 of the Bus Service Guidelines and Rail Standards for minimum train frequencies, passenger load, and train length.
FUNDING IMPACT	The standards and guidelines set parameters for frequency, vehicle loading, hours of service, route design, productivity and cost effectiveness that inform recommendations to adjust, remove, or add service included in the annual budget proposal. The standards and guidelines provide a transparent framework for decision-making but are non-binding.

SUBJECT: ADOPTION OF UPDATED METRO BUS SERVICE GUIDELINES

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WHEREAS, The Board of Directors adopted the current Metro Bus Service Guidelines in Resolutions 2000-10 and 2020-43; and

WHEREAS, Updating the Metro Bus Service Guidelines advances the DMV*Moves* plan to create a more integrated and seamless regional transit network, including minimum standards for service frequency and hours of operation; and

WHEREAS, The updated Metro Bus Service Guidelines aligns with the current practice of promoting all-day frequent service to help grow ridership and meet customer needs; and

WHEREAS, The updated Metro Bus Service Guidelines promote cost efficiency by establishing standards that prioritize moving the greatest number of people with the fewest resources; and

WHEREAS, Staff recommends repealing the previously adopted Metro Bus Service Guidelines and adopting the updated Metro Bus Service Guidelines set forth in Attachment A;

NOW, THEREFORE, be it

RESOLVED, That the Board of Directors repeals all existing Metro Bus Service Guidelines and adopts the updated Metro Bus Service Guidelines set forth in Attachment A; and be it further

RESOLVED, That the General Manager and Chief Executive Officer, or their designee, is authorized to implement, administer, and modify the metrics shown in Appendices 4, 5, 7 and 8 to the updated Metro Bus Service Guidelines set forth in Attachment A; and be it further

RESOLVED, That the General Manager and Chief Executive Officer shall use the updated Metro Bus Service Guidelines set forth in Attachment A to consider bus service changes in the budget process; and be it finally

RESOLVED, That in order to timely use the updated Metro Bus Service Guidelines set forth in Attachment A for designing future service plans, this Resolution shall be effective immediately.

Reviewed as to form and legal sufficiency,

_____/s/_____
Patricia Y. Lee
Executive Vice President, Chief Legal Officer and General Counsel

WMATA File Structure No.:
6.6.4 Bus Route and Service Planning

Metro Bus Service Guidelines

Final June 2026

Washington Metropolitan Area Transit Authority

metro™

1. Introduction

In November 2025, the Metropolitan Washington Council of Governments (COG) and the Washington Metropolitan Area Transit Authority (Metro) Boards jointly endorsed recommendations from the DMVMoves Task Force, establishing a unified regional vision for a world-class transit network serving the National Capital Region. One of the objectives of this effort is to deliver consistent customer experience across similarly situated communities, regardless of jurisdiction, through the development of shared service guidelines that apply to all transit providers in the DMV, while preserving flexibility for local needs.

In support of this direction, and in response to significant changes in Metro's bus network, Metro is updating its Bus Service Guidelines for the first time since 2020. This update incorporates the regional guidelines established as part of DMV*Moves*.

These Service Guidelines serve three primary purposes: to set clear expectations for customers; to provide a transparent, data-informed framework for decisions about where and when to add, modify, or reduce service based on resource availability; and to balance regional consistency with the flexibility needed to meet diverse transit needs across communities and times of day.

These guidelines are not strict standards. They set the direction for where Metro Bus service wants to go as it improves and evolves over time, helping both understand resource needs and establish priorities for future investments. They also provide the framework to make decisions within the realities of limited resources.

By adopting these guidelines, Metro will:

- Create transparent and formalized approach to routing, service, and budget decisions;
- Develop apples-to-apples comparisons for similar types of service;
- Help ensure consistent service across the region.

As Metro's jurisdictional partners align their service guidelines with the regional framework established through DMV*Moves*, customers will increasingly experience a more integrated, regionally coordinated bus network. This approach is expected to deliver:

- Consistent and appealing service across the region as a result of cohesive planning, operations, and performance;
- Greater communication among agencies;
- Expanded access to key destinations by enabling more customers to use bus service across jurisdictions, regardless of where they live or when they travel;
- Greater transparency associated with "regional" services – where riders benefit from the clearer distinctions of how services are planned and allocated;
- Flexible and cost-effective transit and travel across the region through forms of bus that meet riders'

growing expectations; and

- Stronger connections between bus and land use, where people can access employment centers, key goods and services, and amenities and live affordably.

The following key elements will be addressed in the following sections.

- **Service Classifications and Activity Tiers (Chapter 2)** identify the types of transit services that are suitable throughout the region. This section provides a high-level overview of how and where these services should be operated. Routes serving different areas have different requirements; routes are categorized by "activity tier" based on area characteristics.

- **Service Guidelines (Chapter 3)** outline design guidelines by service classification, focusing on level of service (span of service and frequency). This provides a basis for ensuring similar services are scheduled consistently across the region.

- **Route Design Principles (Chapter 4)** outline key considerations and tradeoffs service planners should keep in mind when designing routes. These principles are intended to guide decision-making rather than serve as strict or binding requirements.

- **Performance Measures and Targets (Chapter 5)** provide guidelines for measuring key criteria at the route-level and inform the evaluation process to determine whether a route meets the standard for performance.

- **Network Guidelines (Chapter 6)** identifies key measures to evaluate overall transit performance across the region.

- **Route Benefit Analysis (Chapter 7)** provides a rubric on how to communicate a route's contribution to the bus network.

- **Bus Priority Corridors (Chapter 8)** provides key definitions for how roadway infrastructure can be improved to enhance bus performance and establishes clear standards for when interventions are needed.

- **Bus Service Investment Priorities (Chapter 9)** provides a plan for continuous service improvement, identifies factors contributing to lower performance, recommends targeted actions to improve results, supports justification for service changes, and presents findings from post-implementation reviews.

In addition to planning, these guidelines will support Title VI monitoring for on-time performance, vehicle load, and frequency; they will also be used to develop the multiyear service plan presented as part of the annual budget.

2. Service Classifications and Activity Tiers

Service classifications describe the major types of service that form the bus network: Core, Coverage, and Peak. The classifications were developed through DMV*Moves* and provide a common framework to plan service across the region.

Because the Washington, D.C. region is made up of diverse land use characteristics and various levels of transit demand that require varying levels of service, routes are also assigned to different activity tiers based on the number of people and jobs near route stops.

2.1 Service Classifications

Core Routes

Core routes form the backbone of the bus network, enabling riders to travel along major corridors and access destinations across the region. They function as the rubber-tire equivalent of a rail network, providing consistent, all-day mobility.

Core routes typically feature moderate to high frequency so customers can rely on service without closely consulting a schedule. Service generally operates throughout the day, 7 days a week, to support a wide range of trip purposes, including commuting, errands, education, and social activities. Core routes should also maintain direct alignments, minimize circuity and avoid deviations to serve low-demand areas.

Limited Stop routes are a subcategory of Core routes that typically operate along the same corridor, often overlaying an existing Core route. These services stop less frequently, resulting in faster travel times. The tradeoff is reduced accessibility, as riders may need to travel farther to reach a stop. As a result, these routes should try to service higher volume stops. Because they serve the same markets, Limited Stop routes are often evaluated in conjunction with the underlying Core routes when assessing performance.

Major Core Routes are a subcategory of Core routes that serve high-priority corridors and carry substantial ridership. While they are evaluated using the same framework, they are expected to meet consistent all-day frequent service standards 7 days a week to reflect their role and demand. Specific thresholds for these routes are outlined in the Frequency section below.

Coverage Routes

Coverage routes deliver service deeper into neighborhoods or commercial districts, especially areas with poor street network connections. These routes tend to have more stops per mile, lower service

frequency, shorter span of service, and can be more circuitous, especially in neighborhoods that contain cul-de-sacs or barriers such as freeways, water, or railways. These routes often provide a level of service for selected populations or specific destinations dependent on the route and often connect to other more frequent routes/modes at a transit hub.

Peak Routes

Peak routes are designed to connect residential areas or park-and-ride locations to major employment centers during peak periods. These routes typically begin with one or more closely spaced pickup stops, then operate non-stop, often via highways, to key destinations.

In some cases, Peak routes provide a direct, one-seat ride during high-demand periods that would require a transfer at other times of day. Stop spacing may vary, generally reflecting coverage-style spacing in residential areas combined with an express or limited-stop segment serving high-density corridors or major activity centers. Peak routes may operate in the peak direction only.

Express Routes are a subcategory of Peak routes focused on faster, limited-stop service. They are designed to provide high-speed connections, often linking residential areas or park-and-ride locations directly to major activity centers, such as downtowns or Metrorail stations. These routes typically begin with pickups in residential areas, operate non-stop via highways, and then drop off passengers in denser, destination-rich areas. Stop spacing is wide to support faster travel times.

For passenger safety and comfort, Express routes are designed to operate within seated capacity, particularly on highway segments.

Other Routes

A small subset of routes cannot be classified under the three primary service categories and are instead designated as Other. These routes are typically designed for specific, targeted purposes — such as replacing rail service overnight, serving major tourist destinations during limited hours, or addressing weekend-only travel needs that do not align with standard service types.

Because of their unique functions, these routes should be tailored to their specific use cases and are not governed by standardized service guidelines. Two common examples include:

Gap Routes provide direct service to key destinations, such as airports, within Metro's service area, particularly when other services are unavailable (e.g., during overnight hours). These routes typically operate with stop spacing similar to Peak routes and connect areas of high transit demand.

Shuttle Services are used to replace rail service during planned outages or to support special events. These services are not subject to typical performance standards and should be designed to respond to

demand. Rail replacement shuttles should provide a reasonable alternative that aligns with customer expectations for the rail service they are replacing.

2.2 Activity Tiers

Outside of the general service classifications, every route is assigned to an activity tier. Throughout the Capital region there are diverse land use characteristics and various levels of transit demand, and effective transit serving these areas requires the appropriate level of service and design elements.

Service is categorized into four activity tiers: Tier 1 (the densest) to Tier 4 (the least dense). Routes that serve more dense activity, whether that is residential population or job density, are grouped together and compared against each other, and vice versa for routes that serve less dense areas. Routes can move between tiers in any given year due to service changes or changes in development along a route.

- Tier 1
  - At least 50 percent of bus stops along a route are within a census block that has a population and employment density of 30 or more units (residents + jobs) per acre
- Tier 2
  - At least 50 percent of bus stops along a route are within a census block that has a population and employment density of 15 or more units (residents + jobs) per acre
- Tier 3
  - At least 50 percent of bus stops along a route are within a census block that has a population and employment density of 5 or more units (residents + jobs) per acre
- Tier 4
  - Under 50 percent of bus stops along a route are within a census block that has a population and employment density of 5 or more units (residents + jobs) per acre. Routes that meet this criterion should be considered for elimination unless there is a demonstrated need for continued service. As a result, Metro does not set specific service standards for Tier 4 routes.

3. Service Guidelines and Level of Service Targets

This section outlines service guidelines and level of service targets by service classification and activity tier. It focuses on improving connections, reducing duplication between routes, effectively serving transit demand, enhancing service efficiency, and leveraging investments in bus priority infrastructure across the region. These guidelines are designed to create a more consistent and cohesive customer experience across different geographies and land use contexts. While service levels may vary based on density and demand, the goal is to ensure that customers encounter a reliable and predictable level of service throughout the region.

The guidelines vary by service classifications, activity tier, and, in some cases, day of week. The guidelines apply to Core, Coverage, and Peak service classifications. For subcategories within a classification, the minimum service guidelines and performance targets of the parent service type apply unless otherwise noted. For example, Express routes (a subcategory of Peak routes), follow Peak service guidelines rather than having a separate set of standards.

Some routes do not currently meet these standards, but Metro uses this information to assess resource needs and prioritize future investments. Metro tracks these routes and uses the findings to guide service planning decisions and make improvements as described in section 9.

3.1 Span of Service

The span of service defines the number of hours a route operates each day. When setting the span for a route, Metro balances extending service to capture riders across different trip purposes and periods with efficiently allocating resources to the most productive times. Coordinating spans across routes and service types is essential to ensure the network meets rider needs throughout the day.

Many routes may operate beyond their minimum span of service standards to meet additional demand. For example, some routes provide 24-hour service. The decision on whether to extend service hours beyond the minimum standard will be evaluated based on demonstrated demand or other policy objectives such as connectivity to key overnight destinations or transfer points.

Table 1 shows the minimum span of service standards by service classification and activity tier.

Why this matters to customers: Longer spans give riders more flexibility to travel early in the morning, late at night, and for a wider range of trip needs.

How to calculate: Span is measured from the first stop of the earliest trip to the first stop of the latest trip on the route, using departure times. When determining if a route meets its standards, use the regular service day (i.e., Weekday, Saturday, or Sunday) with the shortest span.

Table 1 | Minimum Span of Service

	Core	Coverage	Peak
Activity Tier 1	16 hours, All Days	14 hours, All Days	4 hours, Weekdays Only
Activity Tier 2	14 hours, All Days	12 hours, All Days	4 hours, Weekdays Only
Activity Tier 3	12 hours, All Days	10 hours, All Days	4 hours, Weekdays Only

3.2 Frequency

Frequency is how often a bus arrives at a stop over a given period of time. As with span of service, Metro considers that while high frequencies reduce the time customers must wait for a route to arrive and minimize travel time, they also increase costs by requiring more buses and operators for the route. Metro also considers that customers who transfer to other routes to complete their trips will encounter multiple wait times.

Table 2 presents the minimum service frequency standards for each route classification and activity tier, applicable during all of the hours specified by the span of service standards. Service may be more frequent than these minimum standards during periods of high ridership, or for segments where routes operate together with other routes. Customers may also experience higher frequencies when travelling on corridors served by multiple routes.

Why this matters to customers: Higher frequencies mean less waiting and faster, more convenient trips - especially for riders who need to transfer.

How to calculate: Frequency is measured as the mode of the time between trips at a control timepoint on a route during the relevant time period. Routes should meet frequency standards only over the duration of their span standard; frequencies may be lower during hours that extend beyond the span standard.

Table 2 | Minimum Service frequency[1]

	Major Core Routes[2]	Core	Coverage	Peak
Activity Tier 1	6-12 mins	15 mins	30 mins	As needed
Activity Tier 2	6-12 mins	20 mins	30 mins	As needed
Activity Tier 3	N/A	30 mins	60 mins	As needed

1 Title VI service monitoring is conducted at the route level. The values in this table will serve as the standards for that analysis
2 Major Core routes should operate at least every 6-12 minutes between 7 a.m. and 9 p.m. Service will generally be more frequent during periods of high ridership, or where Major Core routes operate together with other routes. During the remainder of their service span, they should meet the standard frequency requirements for regular Core routes.

4. Route Design Principles

Routes can interact and influence one another in several ways: multiple routes or branches of the same route may converge and operate along the same corridor; a route or variant may deviate from its primary alignment; or separate routes may operate in parallel along nearby streets. Figure 1 illustrates these common route design patterns.

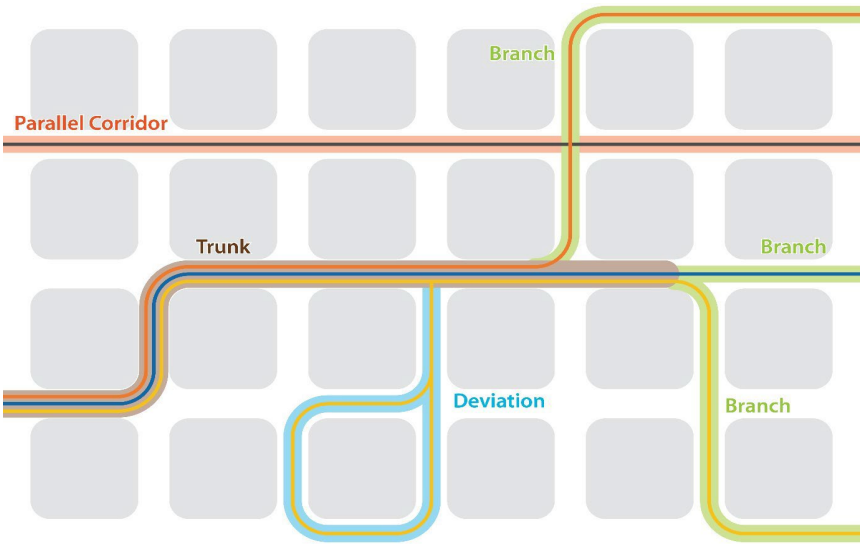

Figure 1 | Route Patterns

When designing routes, service planners consider a range of design principles that balance efficiency and coverage. While route design is an important consideration, it is not easily quantified. The following sections outline key concepts for planners to consider but do not establish specific standards or targets, as these concepts are inherently difficult to measure.

4.1 Deviations

A deviation occurs when a route leaves its primary corridor to serve a specific area or destination. While deviations can improve access to key demand generators, they also increase overall travel time. Deviations should be evaluated based on the additional travel time they introduce and their productivity (i.e., the number of customers relative to the resources required) to the rest of the route.

The appropriateness of deviations also varies by route type. On Coverage routes, deviations may be justified to provide essential access to populations or destinations that would otherwise have limited transit service. On Core and Major Core routes, however, deviations should generally be minimized to maintain faster travel times, direct connections, and reliable service.

Why this matters to customers: Deviations can improve access for some riders but may increase travel time for others.

4.2 Route Groupings and Trunks

In some cases, multiple routes operate on a shared segment, with coordinated service on the shared "trunk" portion of the route. In these cases, the "trunk" can refer to two related but distinct concepts.

The first is a shared alignment where multiple routes share routing over a significant distance before branching and they are planned and scheduled together. In these cases, the segment where the routes overlap is considered the trunk.

The second refers to alignments where routes are intentionally overlaid, such as when limited-stop service operates over local service. These complementary services are designed to improve travel times, support scheduling efficiency, and enhance legibility for customers traveling within the corridor. In these cases, the segment with shared local and limited-stop service is considered the trunk.

In both cases, the combined frequency and span of all services operating along the trunk may be considered when evaluating performance against the service guidelines. Additional analysis may be needed to determine the extent to which customers perceive the services as interchangeable, particularly where local and limited-stop services operate together. Appendix 4 provides additional detail on when and how routes should be evaluated together.

Why this matters to customers: When multiple routes share the same corridor, riders benefit from more frequent service, shorter wait times, and easier travel along that segment. Grouping routes in some places can provide higher levels of service where it is warranted without providing more service than necessary in areas with lower demand.

4.3 Parallel Corridors

When two routes operate along nearby parallel corridors for significant distances, they can create duplicative service. This can reduce the overall efficiency and effectiveness of the network, as multiple routes may compete for the same riders while providing similar service.

In cases where parallel corridors each meet or exceed service and productivity guidelines, this overlap may be justified. However, the intent of this design principle is to discourage parallel services that do not meet minimum service or productivity thresholds.

Why this matters to customers: When routes run close together along similar corridors, it can reduce overall service quality if resources are split instead of improving frequency or coverage elsewhere.

4.4 Circuity

Circuity occurs when a route takes an indirect path between destinations, increasing travel distance and travel time for riders. In general, lower circuity is preferred because more direct routes provide faster, simpler, and more reliable trips. Excessive circuity can make transit less competitive and more difficult for customers to understand and use.

However, some degree of circuity may be appropriate in certain situations where it improves access to important destinations, neighborhoods, or populations that would otherwise have limited transit service.

Higher circuity may therefore be more acceptable on Coverage routes, where expanding access is a primary goal. Core and Major Core routes, by contrast, should minimize circuity where possible and prioritize direct travel paths, faster travel times, and strong regional connections.

Why this matters to customers: More direct routes mean faster trips, while indirect routes can increase access.

4.5 Minimum Distance Between Stops

Distance between stops measures how far customers must travel to access bus service. When stops are too close together, buses spend more time slowing, stopping, and dwelling, which increases overall travel time.

Metro aims to have approximately 4-5 stops per mile with a minimum spacing of approximately 1,000 feet.

While some stops are currently closer than this threshold, Metro is working to reduce these instances, particularly for Core routes, except where specific conditions warrant an exception.

Core routes typically operate in dense urban environments where consistent stop spacing can be maintained to support faster and more reliable service. Coverage routes may require greater flexibility in stop spacing to provide access to key destinations or areas with less connected street networks.

Metro will track stops that do not meet the minimum spacing standard to identify locations where stop consolidation or other improvements may be appropriate.

Why this matters to customers: A minimum distance between stops reduces travel time and delay for customers on-board buses while maintaining accessibility for riders looking to catch a bus.

How to calculate: Distance between stops is measured as the shortest driving distance along the scheduled route between consecutive stops.

4.6 Vehicle Size

Vehicle size should be based on a number of factors:

- Service type: Core routes with high passenger turnover should be assigned vehicles with more standing room, more stroller/wheelchair space, and fewer seats; routes operating primarily on limited-access highways should be assigned vehicles with higher seated capacity;
- Street geometry: on constrained/narrow right-of-ways, vehicle turning movements (autoturns[3]) may limit what vehicle type can/cannot operate on that particular road; length and location of bus stop zones may also dictate vehicle assignment;
- Articulated buses are appropriate on high frequency routes that have very high ridership (routes that run at least every 12 minutes for the majority of the day);
- All other services should operate with standard-sized (40-foot) buses.

[3] Autoturn diagrams for bus movements should use a 45-foot Coach bus model for all simulations; corridors that have or may have articulated buses should also run a simulation with a 60-foot articulated bus as well.

5. Route Performance Measures and Targets

The following section outlines route-level performance measures used to assess productivity, reliability, and cost-effectiveness. Together, these measures provide a holistic view of service and form the core basis for evaluating overall route performance to determine when to add, modify or restructure service. Appendix 5 includes detailed calculations and targets for each measure, which vary by service classification and activity tier to reflect different service roles.

While not exhaustive, these measures represent the primary measures used in service planning, with additional factors considered as part of a broader evaluation.

5.1 Productivity Measures

Passengers per Revenue Hour

The passengers per revenue hour measure helps compare productivity across routes, with higher levels generally considered more productive. In some instances, routes with higher ridership may have longer spans of service or provide more trips throughout the day.

Core routes with higher passenger turnover – where customers frequently board and alight – will tend to have more passengers per hour than routes where passengers travel longer distances, such as Peak routes. As a result, target ranges differ by service classification and activity tier.

Why this matters to customers: This measure reflects how efficiently service is delivered by showing how many passengers are carried for each hour of service operated.

Passengers per Trip

Passengers per trip measures productivity by comparing how many riders are carried on each trip. It compares productivity across Peak services that provide long-haul trips that generally carry more passengers across longer distances, with longer stretches of the route not allowing passengers to board or alight.

Why this matters to customers: This measure reflects productivity at the trip level by showing how many passengers are carried per trip, regardless of trip length or duration. It also gives a sense of how crowded a route is likely to be when they ride.

Passenger Miles per Vehicle Revenue Miles

Passenger miles per vehicle revenue miles captures both how many people are riding and how far they travel, in relation to the number of miles the route operates. This helps highlight routes that generate higher overall usage for the level of service provided.

Routes that tend to perform well on this measure are those with high passenger volumes, such as Core routes, or sustained passenger loads over distance, such as Peak routes. In contrast, Coverage routes with lower ridership and shorter passenger trips may score lower, even when they provide important access.

Why this matters to customers: This measure reflects productivity by showing how many passenger miles are carried for each mile of service operated.

5.2 Reliability Measures

On-Time Performance (Schedule)

For schedule-based service, on-time performance evaluates how closely delivered service adheres to the published schedule. "On time" is evaluated based on a window that defines when a trip is too early or late relative to its scheduled departure. The measure reports the percentage of trips that depart selected stops (timepoints) on time during a trip.

Why this matters to customers: Measures how reliably buses stick to their schedule, helping riders plan trips with confidence. Reliability is a top driver of customer satisfaction.

On-Time Performance (Headway)

Headway-based service usually refers to the most frequent routes (12 minutes or better scheduled frequencies) that are managed to even out spacing rather than adhering to a schedule. For headway-based service, on-time performance evaluates the time between bus departures at a certain timepoint. A headway-based performance measure involves defining "on time" based on a buffer that usually defines when a trip is late relative to the scheduled service headway. The measure refers to the percentage of trips that depart a certain timepoint "on time".

Why this matters to customers: Measures how consistently buses meet their scheduled intervals, helping riders know they won't have long waits between trips.

Vehicle Load Factor

The vehicle load factor evaluates which routes may not be safely and/or comfortably transporting riders due to overcrowding. Generally, lower frequency routes should have a load factor that is close to the vehicle's seated capacity, while higher frequency routes can have load factors that tolerate some standing. Service that travels along highways for long stretches should not tolerate any standing.

Why this matters to customers: Measures how crowded buses are, helping ensure riders can travel safely and comfortably.

5.3 Cost Effectiveness Measures

Passengers per Thousand Dollars Spent

Passengers per thousand dollars spent evaluates how efficiently financial resources are converted into ridership. It measures the number of passengers carried relative to the cost of providing service, allowing for comparisons of productivity across routes with different operating costs and service levels.

Routes that tend to perform well on this measure are those with strong ridership relative to their operating costs, often including high-demand Core routes with efficient operations. Routes with lower ridership or higher operating costs per trip may perform less well, even if they serve important coverage or mobility needs.

Why this matters to customers: Helps ensure resources are used efficiently so transit agencies can provide more frequent, reliable service where riders need it most.

6. Network Guidelines

Metro Bus is designed to function as an integrated network, with routes connecting to one another, Metro Rail, and services provided by regional partners to improve mobility across the Capital Region. As such, it is important to establish network-level measures that assess overall system performance and its effectiveness in connecting the region.

These measures help improve availability and connectivity, ensure the system is safe to use, and maintain a consistent standard for passenger amenities that supports a comfortable and reliable customer experience.

6.1 Availability Guidelines

Availability in this context refers to the ability of residents, workers, and visitors to access transit at varying levels of service, regardless of operator, and reach desired destinations. A key component of availability is providing higher-frequency service in areas with greater concentrations of housing and jobs.

These measures are intended to assess how useful the bus network is and how effectively people in the Capital Region can reach their destinations using public transportation. They are evaluated at the network level and can be reviewed following service changes to understand their impact. Not all measures will have defined targets, but trends over time can be used to help interpret overall performance.

These measures can be evaluated for just Metro services or for the entire transit network in the Capital Region. They are intended to inform service planning and should be used as guidance, not as strict constraints on network design.

Destination Access

One of the primary goals of any public transportation system is to connect people to the places they need and want to go. This is a fundamental measure of a system's usefulness. Metro measures this by evaluating the number of jobs the average person can access within a fixed time budget (typically 30 or 60 minutes) using transit.

While a person's workplace is only one type of destination, jobs serve as a useful proxy for broader access to opportunities. Many key destinations, such as hospitals, grocery stores, entertainment venues, airports, schools, and universities, are also major employment centers.

Access to Frequent Service

Metro defines frequent bus service as service scheduled at intervals of 12 minutes or less. Metro measures the percentage of customers who board at stops where the scheduled wait time for the next

bus on the same route grouping is 12 minutes or less to understand how much of the customer base experiences short wait times. Frequency is a key driver of customer satisfaction and ridership, making transit more competitive with other modes.

Average Scheduled Wait Time

Metro also calculates a customer-weighted average scheduled wait time using stop-level boardings. Scheduled wait time is estimated as half of the scheduled frequency, and this value is averaged across all customers to better understand how long the typical rider is expected to wait based on the schedule. This measure captures all changes in frequency, for example increases from 30 minutes to 20 minutes.

Available Base Coverage

Coverage is also a critical component of providing transit service, ensuring that a sufficient number of people can access fixed-route options. Metro measures this by calculating the percentage of census blocks in the WMATA Compact area that meet at least Tier 3 activity criteria (population plus employment of 5 or more units per acre) and have access to any fixed-route service provided by Metro and/or other regional transit providers.

Combined, transit providers in compact area should serve 90 percent of census blocks that reach the Tier 3 activity criteria. In addition, Metro will look at service availability for Metro Bus service specifically, using a measure of the proximity of Metro Bus stops to a given population. This measure is helpful in assessing the level of access and service coverage Metro provides in the region, especially for minority and low-income residents compared to non-minority and non-low-income residents.

Funding Allocation Goal

Metro balances resources between higher-service routes and routes that provide broader coverage with lower frequency. Metro measures this by calculating the percentage of revenue hours allocated to Core routes compared with the rest of the system to ensure that service is not overly concentrated on coverage at the expense of higher-demand corridors.

The chart below is the expected breakdown for funding allocation between Core routes and all other bus service.

Table 3 | Funding Allocation Goals

	Core	All Other Routes
Activity Tier 1	85%	15%
Activity Tier 2	80%	20%
Activity Tier 3	75%	25%

6.2 Facility Guidelines

Metro Bus serves more than 7,000 bus stops across the region, with varying levels and quality of passenger amenities. Most of these stops are not owned by Metro, but by the jurisdictions that operate and maintain the surrounding roads and sidewalks.

To support a more consistent customer experience, bus stops should include a set of core amenities. Stops with higher ridership may warrant additional features, as reflected in the higher-level stop categories below.

Bus stops located at high volume locations, such as rail stations, transit centers, and major transfer hubs, are typically addressed through site-specific planning processes. As resources are available to improve bus stops, stops with high ridership should be prioritized.

Additional details on these and other amenities can be found in the 2019 Amenity Guide.

Table 4 | Passenger Amenities Measures

Stop Type	Measure	Minimum Amenities
Level 1	Less than 50 daily boardings	■ Bus stop sign ■ ADA 5'x8' landing pad or equivalent ■ Sidewalk (accessible pathway)
Level 2	50 to 99 daily boardings	All amenities listed in the Level 1 stop type, plus: ■ Expanded boarding & alighting area (rear-door access) ■ Seating ■ Trash receptacle ■ Real-time info screen (smaller scale) ■ Lighting, if served during early morning or evening/night hours
Level 3	100 or more daily boardings	All amenities listed in the Level 1 + Level 2 stop type, plus: ■ Shelter ■ Real-time info screen (larger scale)

7. Route Benefit Analysis

Routes should also be evaluated based on the role they play in the overall network, since not all routes are designed to do the same thing.

The Route Benefit Analysis (RBA) evaluates how each route contributes to the network's overall value by determining who and how many people it serves as well as the connections it provides. RBA provides a consistent, data-driven framework to assess the relative contribution of routes to the Metro Bus network. By placing routes on a common scale, the RBA enables clearer comparisons between routes that may serve different functions or geographies.

This approach is useful for prioritizing investments and improvements. The RBA helps identify which routes deliver the greatest overall benefit, which may warrant additional investment, and which routes may benefit from targeted changes to improve performance. It also provides a transparent basis for making tradeoffs when resources are limited, ensuring that decisions are aligned with systemwide goals rather than isolated route-level considerations. In addition, this method can be applied to proposed routes and used to help prioritize future service investments.

The evaluation rubric produces a benefit index for each route based on key characteristics, allowing Metro to compare routes against one another and make more informed decisions about where to enhance, maintain, or adjust service.

For this evaluation, each route is assessed based on three key characteristics:

- Demand
- Population Served
- Network Value

Appendix 7 provides a more detailed breakdown of these characteristics and how to calculate the route benefit index for each route.

8. Bus Priority Corridors

As traffic congestion increases and travel times increase across the region, making bus service fast, frequent, reliable, and convenient is essential – not only for existing riders, but also for encouraging mode shift and reducing car traffic congestion. Bus priority corridor treatments such as dedicated lanes with automated enforcement, transit signal priority, queue jumps, bus stop rebalancing (i.e., consolidation and relocation), in-lane stops, and all-door boarding are critical to delivering fast, reliable, high-quality service.

This section outlines key Metro definitions and bus priority corridor project types and provides guidance on the standards for different levels of design, the criteria for when bus priority should be considered, and expected outputs when bus priority is implemented.

8.1 Standards for Design

For bus priority to be effective, agencies and jurisdictional partners must be strategic in selecting both the type and level of investment for each corridor. Overinvesting in areas that do not require priority treatments is an inefficient use of resources that can make future investments less likely, while underinvesting in corridors that need them will result in minimal benefits that fall short of delivering meaningful improvements.

Metro defines three levels of bus priority to guide design and investment decisions.

- **Bus Rapid Transit** – The highest level of bus priority, defined more fully in the section below.
- **Medium-build Bus Priority** – Medium-build corridor-based projects with many or all of the priority features of BRT but involve less intense capital investment and construction impacts (e.g., may not relocate utilities or use shelters instead of larger BRT stations). Corridors should incorporate a high degree of priority investment to reduce dwell times and improve bus speed and reliability and may include a limited-stop service.
- **Quick-build Bus Priority** – The most targeted level of investment, consisting of shorter bus lane segment focused on the most congested segments and operating during limited, often peak, periods. These corridors should include some signal priority and queue jumps but typically do not require significant stop-level infrastructure improvements.

Appendix 8 defines the specific standards and thresholds for each level of priority. These represent the minimum treatments needed to achieve effective outcomes – anything less will likely result in limited or negligible gains.

8.2 Bus Rapid Transit

Bus Rapid Transit (BRT) is a high-quality, integrated bus service and infrastructure system designed to deliver fast, high-capacity, reliable, and rail-like service using dedicated lanes, intersection priority,

frequent service, and quick boarding. In response to increasing congestion resulting in deterioration of service speeds and reliability, Metro's priority is to focus BRT on densely populated, mixed-use, busy transit corridors. A key advantage of BRT is that the priority infrastructure can be used by other routes that extend beyond the boundaries of the infrastructure or for portions of the infrastructure providing benefits to multiple bus routes.

BRT encompasses a coordinated set of strategies across route design, service planning, street infrastructure, facilities, and technology. A BRT system should incorporate most, if not all, of the following elements:

- Physically segregated bus lanes to reduce incursions by other vehicles, preferably center-running to minimize conflicts with curbside demands and turning vehicles
- Durable guideways and relocated utilities to lower lifecycle costs and minimize service disruptions
- High levels of signal priority, including 24/7 priority where feasible, and minimal left turns across the transitway
- Level boarding, off-board fare collection, all-door boarding, distinct branding, and enhanced station amenities to reduce boarding times and improve customer convenience
- A strong, cohesive brand identity to differentiate the service from standard bus service

8.3 Conditions for Bus Priority Corridors

While not all corridors require dedicated bus priority treatments, certain conditions warrant some form of strategic priority intervention. These treatments are most critical in Core or Major Core corridors where ridership and frequency are high, delays significantly impact rider experience, or where there is strong potential to improve travel times and attract additional ridership. Metro evaluates the following criteria to determine where bus priority is needed and the appropriate level of investment:

- Average weekday ridership
- Service span
- Peak service frequency
- Current bus speeds
- Current or planned density

Appendix 8 outlines the specific thresholds used to assess each of these criteria and provides recommendations on the level of priority required. When these conditions are met, Metro will advocate for the appropriate level of bus priority and work with local jurisdictional partners, as needed, to support infrastructure design and implementation.

8.4 Targeted Performance Outcomes

When investing in bus priority, it is essential to clearly define what success looks like. These projects require meaningful resources, and they are expected to deliver measurable improvements; if they do not, it signals a need to reassess the design, implementation, or level of investment. Metro will evaluate all bus priority projects using a consistent set of performance measures to inform decisions about their effectiveness and any needed adjustments.

The key measures used to assess performance include, but are not limited to:

- Bus speeds:
  - 12+ miles per hour on urban arterial streets
  - 16+ miles per hour on suburban arterial streets.
- Reliability/Travel time variability
- Safety and Crashes (Auto and Bus)
- Ridership
- Corridor Capacity
- Customer Satisfaction

9. Service Improvement Plan

The guidelines are the blueprint used by Metro staff to make recommendations about where to adjust, remove, or add service. The rolling three-year service plan presented as part of the annual budget uses the guidelines to determine the most cost-effective ways to drive ridership through investments in improving reliability, expanding frequency and span, or investing in new connections. This multi-year service plan is best practice for guiding decisions about our workforce, fleet and facilities and providing clear information to regional partners to set expectations for opportunities and funding requirements. This section outlines the framework for recommending service changes, including modifying existing routes and introducing new service.

9.1 Route Performance Reporting

Performance reports will be prepared for each route to provide data on level of service, performance, and the Route Benefit Analysis. These reports will be regularly updated (at least annually) to improve transparency and help customers understand the rationale behind service changes.

Each report will include the route's classification, activity tier, Route Benefit Analysis, ridership, key performance measures, and ridership characteristics. The report will indicate the extent to which the route meets the standards set in the following areas:

- Level of Service (span and frequency)
- Productivity
- Reliability
- Cost Effectiveness

Service type and tier, level of service, and coverage area are not expected to change significantly from year to year unless there are major changes to the route or surrounding land use. In contrast, service performance can vary and should be reviewed regularly using the measures and targets outlined in Chapters 3 and 4. These reports support decisions about potential service modifications, such as changes to frequency or alignment. For example, a failure to meet standards for Level of Service indicates a need for additional investment. Routes cannot be expected to meet other performance standards if they do not first meet the appropriate level of service defined in these Guidelines.

9.2 Bus Service Investment Priorities

The Bus Service Investment Priorities (BSIP) is a living document of the highest priority investments that is used to develop the rolling three-year service plan included as part of the annual budget. Metro uses the Bus Service Investment Priorities (BSIP) to address performance challenges and identify and prioritize

investments to make progress towards implementing the Visionary Network – a blueprint for what Metrobus *could look like in the future* if there were enough funding and resources. It enables Metro to make data-informed recommendations for each pick and budget cycle, as well as respond to other opportunities that arise throughout each year.

The Bus Service Investment Priorities uses information from the route performance report, qualitative and quantitative data and feedback, and Metro's technical expertise to propose improvements in service. Priorities include:

- **Improve performance:** By addressing routes with insufficient cycle time, crowding, or other operational issues driving lower reliability.
- **Increase frequency and span:** By upgrading routes that do not meet the minimum span or minimum frequency, adding routes to the 12- or 20-minute Frequency Service Network, eliminating short turns, and bringing more routes to a minimum 30-minute frequency 6 a.m. - 9 p.m. 7 days per week.
- **Enhance service strategically:** By investing in routes with high expected demand, populations served, and network value, adjusting service based on current productivity, aligning with regional priorities, and adding connections to emerging activity centers.

As part of the service improvement process, Metro reviews the demographics of customers benefiting from service proposals developed in BSIP to support the required Title VI analysis[4] for major service changes.

The process is intended to evaluate routes only after they have accumulated approximately 6–12 months of operating data, allowing ridership patterns, service performance, and customer travel behavior time to stabilize. As a result, routes would generally only be considered for major service changes every 12–18 months, reflecting both the time needed to collect meaningful data and the duration of the planning and implementation process.

9.3 Additional Evaluations

After applying the measures described in the Guidelines above, Metro may consider additional analyses to better understand the factors contributing to a route's success or limiting its performance and inform the specific intervention recommended to improve. The following are examples of analyses that can support ongoing evaluation and reinforce Metro's commitment to continuous improvement of Metro Bus service.

4 Title VI of the Civil Rights Act of 1964 provides that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The FTA Title VI Circular requires an analysis of all major service changes prior to implementation.

Travel Analyses

Ridership by Road Segment

This measure looks at the total number of people riding buses on a road segment, regardless of route. This can be a useful statistic in evaluating potential for bus priority measures along the roadway and at intersections.

Origin-Destination Matrix

Systemwide origins and destinations show where there is demand within the current system and help transit providers on a planning level. This is useful in understanding how passengers are moving along a route, as well as throughout the system and region, and can be used to design more direct connections.

Top Transfer Locations/Services

Riders must often spend time at transfer locations; therefore, these are locations to consider as points of focus for customer comfort and wayfinding infrastructure and services. This measure also identifies areas that should be evaluated for capacity as new services are added/adjusted.

Unique Segment Ridership

Unique segment ridership is a measure of the percentage of ridership that occurs on a unique segment of a route that is not served by another route. This helps identify where a route provides distinct value to the network, rather than overlapping with nearby routes. By focusing on these unique segments, the measure supports efforts to reduce redundancy, improve network efficiency, and prioritize service where it fills gaps rather than duplicating existing coverage.

Operational Analyses

Revenue versus Non-Revenue Hours/Miles

Revenue versus non-revenue hours/miles is a comparison of the total hours/miles operated in revenue (or in service) to the total number of non-revenue hours/miles (travel between the garage and start/end of the route). The intent of this measure is to understand how efficiently service is being operated, regarding garage assignments, run cutting, and route design. This analysis can be conducted at both the network and route level.

Operating Cost per Passenger Mile

Total operating costs for the route are divided by the number of passenger miles on the route. This measure evaluates how productively a route is operating based upon how it is being used (i.e., for shorter trips or for longer trips).

Service Delivery

Unfortunately, not every scheduled trip occurs. Whether this is because of a driver scheduling error, driver absence, or bus malfunction, trips can be cancelled, making service less predictable and the bus a less attractive option to riders, which may negatively impact route productivity. This statistic shows the ratio of daily trips delivered and daily trips scheduled. It can provide insights and context to understand ridership-related measures.

Customer Complaints

Evaluating validated customer complaints can help identify routes that may not be providing a sufficient quality of service to riders. Complaint data should be considered on a per-rider basis so that routes with higher ridership are not disproportionately penalized simply because they serve more customers.

In addition to reviewing overall complaint trends, individual complaints should also be evaluated to better understand recurring issues or particularly serious concerns. Routes with consistently high levels of complaints, or complaints that indicate significant customer impacts, may be prioritized for further review and potential improvements through the service planning process.

Bus Operator Feedback

Bus operators are often one of Metro's most valuable sources of feedback on route performance and operating conditions. Their day-to-day experience operating service provides insight into issues that may not yet be reflected in performance data, including roadway conditions, stop locations, schedule challenges, customer activity, and recurring operational constraints.

Metro will gather input from operators through surveys, direct conversations, and ongoing engagement to better understand operational challenges across the system. This feedback will be evaluated alongside other performance measures to help identify and prioritize issues that may warrant operational changes or future investment.

9.4 Public Participation Process

Metro strives to be a leader in transit-oriented public participation, outreach, and communication. Metro's Public Participation Plan (PPP) showcases Metro's commitment to public participation by serving as a guiding tool to ensure customers and the public receive high-quality information, communication, and feedback opportunities around projects and initiatives; and to fulfill federal obligations.

Though our PPP was developed to satisfy Title VI requirements, its framework is designed to be applied to all communications efforts around projects and initiatives and designed to be accessible to all customers and the public. Bus service changes employ PPP strategies as a way to ensure customers and the public are aware of changes to routing, schedules, or the availability of service.

Appendix 4 Route Groupings

In some cases, multiple routes are designed to serve similar markets and operate along the same corridor for significant portions of their trips. Limited-stop routes are one example, but overlap can occur in other instances where routes share substantial segments of their trunk.

When this level of overlap exists, routes may be grouped together for evaluation. Grouped routes are assessed collectively to determine whether they meet performance standards (e.g., span, frequency, productivity, reliability, and cost) and to calculate a combined route benefit index.

Metro planners will identify routes that overlap by at least 30 percent of route miles and evaluate whether they serve similar markets. Where both conditions are met, the routes will be grouped and evaluated as a single service.

Appendix 5 Route Performance Measures and Targets

Productivity

Passengers per Revenue Hour

How to calculate: Divide unlinked passenger trips by actual revenue hours

The chart below displays the minimum passenger per revenue hour standard for each type of route classification and activity tier.

Table 5 | Passengers per Revenue Hour Standards

	Core	Coverage	Peak
Activity Tier 1	31	23	N/A
Activity Tier 2	26	22	N/A
Activity Tier 3	21	14	N/A

Passengers per Trip

How to calculate: Divide unlinked passenger trips by actual trips operated

The chart below displays the minimum passenger per trip standard for each type of route classification and activity tier.

Table 6 | Passengers per Trip Standards

	Core	Coverage	Peak
Activity Tier 1	N/A	N/A	27
Activity Tier 2	N/A	N/A	20
Activity Tier 3	N/A	N/A	18

Passenger Miles per Vehicle Revenue Mile

How to calculate: Divide passenger miles by actual vehicle revenue miles

The chart below displays the minimum passenger miles per vehicle revenue mile standard for each type of route classification and activity tier.

Table 7 | Passenger Miles per Vehicle Revenue Miles Standards

	Core	Coverage	Peak
Activity Tier 1	7	4	7
Activity Tier 2	6	4	7
Activity Tier 3	5	4	7

Reliability

On-Time Performance (Schedule)

How to calculate: Percent of timepoints delivered on time. All timepoints should be examined, not just the beginning or end of the route.

Schedule-based service is measured as the percent of timepoint pull-outs that are between 2 minutes early and 7 minutes late. The last timepoint of the route is considered on time if the bus arrives no more than seven minutes late.

The chart below displays the minimum on-time performance standard for each type of route classification and activity tier.

Table 8 | On-Time Performance (Schedule) Standards

	Core	Coverage	Peak
Activity Tier 1	77%	77%	77%
Activity Tier 2	77%	77%	77%
Activity Tier 3	77%	77%	77%

On Time Performance (Headway)

How to calculate: Percent of timepoints where buses are spaced within the acceptable headway range across all points along the route.

Headway-based service is measured as the percentage of timepoint departures that occur within the allowable headway window, defined as scheduled headway plus 15% and rounded up to the nearest minute after the preceding bus.

Metro does not currently have an official standard for headway-based service due to limited deployment of this service type.

Vehicle Load Factor

How to Calculate: Divide the average maximum number of passengers that a trip is carrying by the total seated passenger capacity of the vehicle that is making the trip.

Seated vehicle capacity is measured using the mode of seat counts across different vehicle types. This approach reduces sensitivity to variations in seat configurations, allowing Metro to balance seated capacity with overall passenger capacity as designs evolve. Current seated capacities by vehicle size are shown below:

Table 9 | Vehicle Seating Capacity

Vehicle Type	Mode Seating Capacity
40-foot bus	40 seats
60-foot bus	60 seats

The chart below displays the vehicle load factor standard for each type of route classification and activity tier.

Table 10 | Vehicle Load Factor Standards

		Core	Coverage	Peak[5]
Tier 1	Peak	1.20	1.20	1.00
	Off-Peak	1.00	1.00	
Tier 2	All Times	1.00	1.00	1.00
Tier 3	All Times	1.00	1.00	1.00

Cost

Passengers per Thousand Dollars Spent

How to calculate: Divide the number of annual passenger trips on the route by annual total operating cost and multiply by 1,000.

The chart below displays the maximum passengers per thousand dollars spent standard for each type of route classification and activity tier.

Table 11 | Passengers per Thousand Dollars Spent Standard

	Core	Coverage	Peak
Activity Tier 1	200	150	100
Activity Tier 2	150	125	100
Activity Tier 3	140	100	100

5 Customers on peak trips should have a seat, as these routes often involve longer-distance travel at higher speeds.

Appendix 7 Route Benefit Analysis

The Route Benefit Analysis measures and compares route performance based on demand, demographics, and network value. It produces an easy-to-understand index to help compare routes and prioritize investments when resources are limited.

For this evaluation, each route will be compared across three key characteristics:

- **Demand:** Total average daily ridership measures the demand for the route.
- **Population Served:** Not all routes serve the same purpose – each is designed to meet different travel needs and serve different customers. Core and Coverage routes aim to reach the greatest number of people while ensuring access for those who rely on transit. Peak routes are focused on moving riders to and from major employment centers during commute periods, so we take different populations into account by route type:
  - **General Population (Core routes + Coverage routes):** Providing access to bus service to as many people as possible is important to the success of a region's transit network. This measure is calculated by the total residential population (using census data) within a quarter mile of a bus stop.
    - **High-Propensity Population (Core routes + Coverage routes):** Access to routes for populations with high likelihood to use transit, such as minority and low-income riders. A route provides greater benefit when it is accessible to these populations. Furthermore, as part of the Bus Service Investment Priorities, Metro will review the demographics of customers benefiting from service proposals to lay the groundwork for the required Title VI analysis. For existing routes, propensity will be measured by the percentage of minority and low-income customers on given routes using passenger survey data. For new routes, propensity will be measured by the percentage of people of minority and low-income households within a quarter mile of a bus stop.
    - **Commuters (Peak routes):** Commuter ridership is a way to evaluate routes focused on providing efficient transportation options to employment opportunities. This measure is calculated by the number of jobs + population within one quarter mile of a bus stop.
- **Network Value:** The value of the route to the network acknowledges that each bus route does not stand alone; bus services comprise a critical element of the overall transit network. This component includes three subcomponents: transfers, unique access for people, and access to destinations.
    - **Rail Transfer Opportunities:** The number of transfer opportunities from a route to the rail network reflects its role as a feeder to the broader transit system and access to high-frequency service and major destinations. This measure calculates the number of unique rail stations accessible within a quarter mile of a bus stop along the route.
    - **Bus Transfer Opportunities:** The number of transfer opportunities from a route to other bus routes reflects its role in connecting riders to the broader bus network and

expanding access to destinations across the region. This measure calculates the number of unique bus routes accessible within a quarter mile of a bus stop along the route.

- **Unique Catchment:** This measure examines the number of people that fall within a quarter mile of a bus stop that is served by a route and do not fall within a quarter mile of a stop served by another route, including local jurisdictional partners.

- **Access to Destinations:** The number of jobs with a quarter mile of a bus stop served by the route.

Once these individual measures are evaluated, then a Route Benefit Analysis is developed for each route. This analysis is one input Metro uses to prioritize the routes to address during the planning process. With limited resources, not all routes will be able to be brought up to meet the guidelines.

This analysis is a composite index of the demand, population, and network value indices. As of June 2026, each component is weighted equally. The weights can be revised annually by Metro, prior to annual service planning, based on priorities at the time.

- **Demand:** 33.3 percent
- **Population:** 33.3 percent
    - Core and Coverage Routes:
        - General Population: 16.6 percent
        - High-Propensity Population: 16.5 percent
    - Peak Services:
        - Commuters: 33.3 percent
- **Value to the network:** 33.3 percent
    - Rail Transfer Opportunities: 10 percent
    - Bus Transfer Opportunities: 5 percent
    - Unique Catchment: 5 percent
    - Access to Destinations: 13.3 percent

In some cases, a forward-looking Route Benefit Analysis may be used to evaluate routes following proposed service changes. In these instances, Metro will apply the same framework but instead use projected characteristics and modeled demand in place of existing conditions. This approach supports forward-looking decisions and helps prioritize investments through the Bus Service Investments Priorities to build a stronger network.

Appendix 8 Standards for Design

The chart below details the preferred design elements for bus priority corridors. The design elements for BRT align with the five BRT basic elements of the Institute for Transportation and Development Policy (ITDP) Standard.[6] These criteria must be met for a Bus Priority Corridor project to meet the threshold for each level of design:

Table 12 | Preferred Design Elements for Corridor Investments

Elements	BRT	Bus Priority - Medium Build	Bus Priority - Quick Build
Length	Varies	Varies	Varies
Street Alignment	Center	Center or Offset	Center, Offset, or Curb
Dedicated Bus Lanes	Yes	Yes	Targeted in Congested Segments
Physical Separation	Yes	Partial/Optional	No
Bus Lane Enforcement Hours	24/7	24/7 or Limited	24/7 or Limited
Transit Signal Priority	75% of intersections	50-75% of intersections	Partial/Optional
All-Door Boarding	Yes	Yes	Yes
Bus Stop Rebalancing	Yes	Yes	Yes
Enhanced Stations Shelters	Yes	Partial/Optional	Partial/Optional
Level Boarding	Yes	Preferred	Optional
Off-Board Fare Collection	Partial/Optional	Partial/Optional	Not Required
Major Station Infrastructure	Yes	Not Required	Not Required
Distinct Branding	Yes	Not Required	Not Required

Bus Priority Corridor Investment Targets

The chart below outlines Metro's recommended investment targets for priority corridor types. The standard that meets the greatest number of criteria should be considered the preferred approach for implementation:

6 https://itdp.org/publication/the-brt-standard/

Table 13 | Bus Priority Investment Criteria Targets by Corridor Conditions

Condition	BRT	Bus Priority - Medium Build	Bus Priority- Quick Build
Avg. Weekday Ridership	At least 6,000	At least 4,000	At least 4,000
Minimum Service Span	At least 16 hours, 7 days a week	At least 14 hours, 7 days a week	At least 12 hours, 7 days a week
Minimum Frequency Standard	6- 12 minutes or better	12 minutes	20 minutes
Targeted Bus Speeds	12 mph or faster[7]	10 mph or faster	Based on local conditions
Current or Planned Density	75% Activity Tier 1 census Blocks	50% Activity Tier 1 census Blocks	50% Activity Tier 2 census Blocks

7 10 miles per hour or less (urban areas) and 12 miles per hours or less (suburban areas)

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202-GO-METRO
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SUBJECT: ADOPTION OF UPDATED METRO RAIL SERVICE STANDARDS

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WHEREAS, The Board of Directors adopted the current Metro Rail Service Standards in Resolution 2021-44; and

WHEREAS, Updating the Metro Rail Service Standards provides an opportunity to reflect current conditions and operating practices, including changes in service patterns, ridership, and use of eight-car trains; and

WHEREAS, Staff recommends repealing the previously adopted Metro Rail Service Standards and adopting the updated Metro Rail Service Standards set forth in Attachment A;

NOW, THEREFORE, be it

RESOLVED, That the Board of Directors repeals the existing Metro Rail Service Standards and adopts the updated Metro Rail Service Standards for "Minimum Train Frequencies", "Passenger Load", and "Train Length" as set forth in Attachment A; and be it further

RESOLVED, That the General Manager and Chief Executive Officer, or their designee, shall use the updated Metro Rail Service Standards set forth in Attachment A to consider rail service changes in the budget process; and be it finally;

RESOLVED, That in order to timely use the Metro Rail Service Standards set forth in Attachment A, this Resolution shall be effective immediately.

Reviewed as to form and legal sufficiency,

/s/
Patricia Y. Lee
Executive Vice President, Chief Legal Officer and General Counsel

WMATA File Structure No.:
20.5.1 Rail Scheduling

Metro Rail Service Standards

Washington Metropolitan
Area Transit Authority

metro™

Introduction

System Overview

The Metro Rail system connects and moves the Washington Metropolitan area. The system opened in 1976 and has grown to 98 stations along 128 miles of track, serving the District of Columbia and adjoining areas of Maryland and Virginia. Most Metro Rail stations provide multimodal transfer facilities, including Park-and-Ride and connections to the following transit services: Metro Bus services operated by Metro, bus services operated by local jurisdictions, Amtrak, and the MARC and VRE regional rail services. All station platforms are 600 feet long, and each platform can accommodate trains up to eight-cars in length. The system operates along six double-tracked rail lines (Red, Yellow, Green, Orange, Silver and Blue). All lines except the Red Line have interlined segments where service overlaps.

Service Standards

The Metro Rail Service Standards[1] guide deployment of service and offer information to the public about how Metro plans and schedules rail service. In developing and applying rail service standards, Metro defines the quality and frequency of service riders should expect from the system. Metro considers adjustments to rail service as needed to address evolving ridership patterns, making recommendations in the three-year rolling service plan provided annually as part of the budget cycle.[2] This multiyear plan is a best practice for guiding decisions about our workforce, fleet and facilities and providing clear information to regional partners to set expectations for opportunities and funding requirements.

[1] Metro's service standards were adopted by the Metro Board of Directors on December 9, 2021 in Resolution 2021-44.

[2] Metro Rail service levels are subject to deliberation and approval by the Board of Directors every year. In using the service standards to plan and schedule rail service, factors considered include ridership patterns, public outreach and equity analyses, available funding as part of the budget process, and operational constraints.

System Map As of June 2026:

Metro is accessible.

Metro Rail System Map

Map is not to scale

Minimum Train Frequencies

Minimum train frequencies establish the baseline level of service throughout the day. The standards[3] define a minimum level of service quality and maximum typical wait times riders can expect during regular service. Trains may run more frequently during high ridership periods, such as during the peak periods on weekdays, or to meet strategic objectives to increase ridership, mode share, and access to destinations. As of 2026, current service meets or exceeds these minimum standards.

Daytime and Evening	Late Night
System opening until 9:30 p.m., seven days a week	*9:30 p.m. until system close, seven days a week*
Trains will arrive at least every 12 minutes on all lines and every 6 minutes in the core.	Trains will arrive at least every 15 minutes on all lines and 10 minutes in the core.

Many riders will experience wait times shorter than the established minimum train frequency as a result of higher Board-approved service levels and/or interlined segments. Interlined segments, where two or more lines overlap, have higher effective frequencies. Service frequencies ramp up and down as the system opens and closes.

[3] Metro's minimum train frequency standards were adopted by the Metro Board of Directors on December 9, 2021 in Resolution 2021-44. These standards reflect current constraints in throughput on our lines and at our terminals based on our signaling system. Signal modernization and upgrades will enable better frequencies.

Passenger Loads

Passenger load standards[4] define target passenger loads and crowding levels used for planning regular service and fleet and facility capacity investments. Passengers per car is measured as the average passenger load over the busiest hour on the busiest segment of each rail line on the busiest days of the week.

Weekday Rush Periods

Average passenger loads at the maximum load points in the peak hour and peak direction will be at or below 100 passengers per car, with 101 to 120 passengers defined as "crowded," and 121 or more passengers defined as "very crowded."[5]

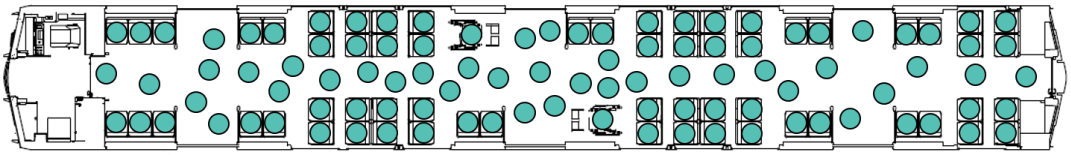
Non-Rush Periods

Average passenger loads at the maximum load points will be at or below 65 passengers per car – the approximate seated load of a rail car.[6]

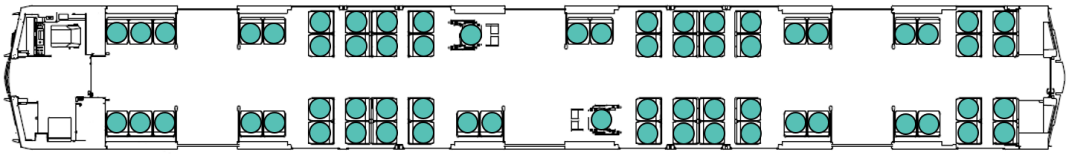
[4] Metro's passenger load standards were adopted by the Metro Board of Directors on December 9, 2021 in Resolution 2021-44.

[5] Because maximum load points are calculated as averages across all trains during the busiest hours on the busiest days of the week, some rail cars may exceed crowding thresholds. Metro aims to provide sufficient service and rail car capacity to keep average crowding below thresholds but cannot guarantee every rail car will remain below them.

[6] Metro railcars have 62 to 68 seats, depending on railcar series and type.



100 Passengers Per Car



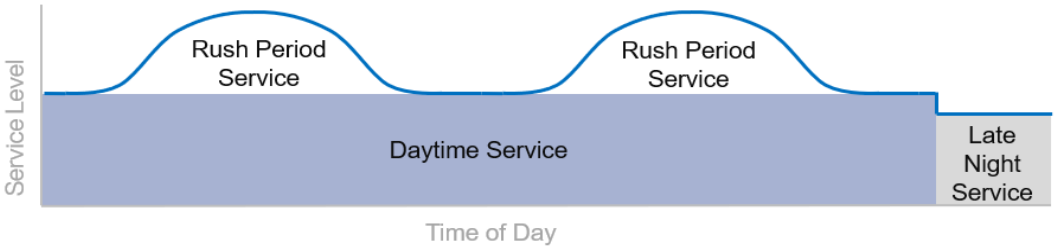
Seated Load

1 passenger

While the minimum train frequencies in Metro's rail service standards establish a base daytime service level, passenger load standards help determine when and where additional service may be needed to meet passenger demand and limit crowding. Metro may schedule service above daytime service levels to keep up with ridership and limit crowding, adding capacity to keep average loads at or below 100 passengers per car.[7] Together, these standards provide a conditions-based approach for adapting service to ridership levels and patterns over time.[8] The diagram below illustrates how Metro may provide additional service during rush periods above base daytime service levels.

[7] Metro has a design limit of 26 trains per hour over any one segment. Capacity constraints are most relevant at the maximum load points on the core trunk segments.

[8] Metro staff review average passenger per car data and crowding reports to determine if the loading standards are being exceeded and a service adjustment should be considered. Passenger load information is analyzed using a model which utilizes actual rail vehicle location information and fare media tap-in and tap-out data to estimate which train(s) each individual rider likely boarded. Staff assess options to adjust rail service to reduce crowding based on budgetary resources, fleet and workforce availability, and infrastructure constraints.



Metro Rail Service Levels

Train Length

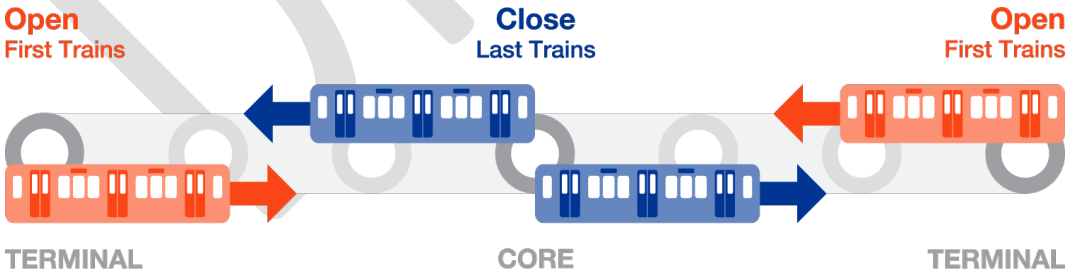
To meet Metro's passenger load standard, Metro Rail schedules assign recommended train lengths based on passenger demand at the maximum load points. Scheduled trains likely to consistently exceed 600 passengers at their maximum load point in daily operation are recommended as 8-car trains, barring any railcar availability or infrastructure constraints.

Hours of Operation

The Metro Rail system operates seven days a week, including holidays. Hours of operation are set by the Board through the annual budgeting process. Current system hours of operation[9] are:

Monday through Thursday	5 a.m. until 12 a.m.
Friday	5 a.m. until 2 a.m.
Saturday	6 a.m. until 2 a.m.
Sunday	6 a.m. until 12 a.m.

Exact hours of operation vary by station. At system opening time, first trains depart from the end of each line (also known as terminal stations) and run towards the core. Stations open on a rolling basis, 10 minutes prior to the first train. Last trains leave terminal stations approximately 30-60 minutes ahead of system closing so that they pass through the core at closing time.[10] Stations remain open until the last train in any direction departs, which is generally later than the system closing time.



First and Last Trains

[9] Rail operating hours are set by the Board of Directors. Metro's current hours of operation were adopted by the Board on April 10, 2025 in Resolution 2025-10.

[10] Last trains are scheduled in a coordinated sequence that guarantees connectivity. Customers who board the last train will be able to make transfers to reach their destination. In the event of delays, Operations will hold the last trains to ensure these transfers remain possible.

Service Quality Measures

In addition to standards for planning and scheduling service, Metro tracks the on-time performance of its rail service. Metro measures on-time performance in two ways.

Train on-time performance

Train on-time performance measures the adherence to schedules at station stops system-wide.[11]

Customer on-time performance

Customer on-time performance measures the percentage of customers who complete their journey within the maximum amount of time it should take according to Metro's scheduled service.[12]

On-time performance helps evaluate the reliability of Metro Rail service, a key driver of customer satisfaction. Train on-time performance is useful in determining how well Metro Rail operations adhere to the service schedule, while customer on-time performance emphasizes the experiences of Metro Rail riders using the system.

On-time performance may be impacted by infrastructure conditions, missed train dispatches, railcar delays (e.g., issues with railcar doors), delays caused by track work, railcar availability, speed restrictions, and single-tracking around scheduled track work. Customer on-time performance may additionally be impacted by the availability of fare gates, elevators, and escalators.

Metro measures four additional aspects of service quality:

[11] Train on-time performance is measured as the number of station stops delivered within two minutes (early or late) of the schedule.

[12] The maximum time is equal to the train run-time plus a headway (scheduled train frequency) for each leg of the trip plus 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 fare media to enter the system, to the time when the fare media is tapped to exit.

- Access to frequent service: percent of customer trips with 6 minutes or better frequency.
- Average wait time: average scheduled wait time in minutes, based on current ridership patterns. Wait times are defined as half of a scheduled headway.
- Access to destinations: average number of jobs accessible within 30 or 60 minutes on Metro.
- Service Availability: percent of Census blocks in the WMATA Compact area that have at least 5 or more population plus employment per acre and have access to any fixed-route service provided by Metro.

Temporary Service Adjustments

In some circumstances, Metro Rail service may require temporary adjustments which do not align with these service standards. This may be due to the need to accommodate track work, system maintenance, construction activities, weather events, holidays, or emergencies. Service planning for anticipated temporary adjustments requires consideration of rail infrastructure constraints, passenger demand and travel patterns, and operational resources (both rail and bus) required to operate alternative service. The goal of any temporary service adjustment is to minimize the impact on riders while maintaining safe and reliable service.

Non-Discrimination

These standards support delivery of good Metro Rail service by establishing a minimum level of quality transit service every rider can expect. The communities served by Metro are stronger when everyone has access to reliable and affordable transportation. Public transportation connects people to jobs, health care, schools, grocery stores, housing, and more, and Metro strives to eliminate barriers to transit.

Metro is committed to ensuring that no person is excluded from participation in or denied the benefits of its services on the basis of race, color, or national origin.[13] Metro monitors on-time performance, vehicle headways, vehicle loads, service availability,[14] passenger amenities, and vehicle assignments to ensure minority riders are not disparately impacted and low-income riders are not disproportionately burdened by Metro service and operational practices.[15]

[13] Title VI of the Civil Rights Act of 1964 provides that no person in the United states shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

[14] Service availability is a measure of the proximity of Metro Rail stations to a given population. This measure is helpful in assessing the level of access and service coverage Metro provides in the region, especially for minority and low-income residents compared to non-minority and non-low-income residents.

[15] When monitoring service, Metro staff apply established thresholds for significant disparity depending on the total number of daily riders impacted. Additional detail regarding Metro's Title VI analysis and monitoring practices is available in Metro's Title VI Program 2020 Update