marta | METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

MARTA Service Standards FY 2019

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CONTENTS

List of Tables

1. EXECUTIVE SUMMARY

The Metropolitan Atlanta Rapid Transit Authority's (MARTA) mission is to advocate for and provide safe, multi-modal transit services that advance prosperity, connectivity and equity for a more livable region. The Service Standards set forth in this document lay out a framework for achieving our mission.

The MARTA service area encompasses the Counties of Fulton, DeKalb, Clayton, and the City of Atlanta. The Service Standards are intended to guide MARTA in ensuring that its service meets the expectations of passengers and taxpayers as well as being cost-effective for the agency. These standards guide every change and investment in service as the mobility needs of the City of Atlanta and Fulton, DeKalb, and Clayton Counties evolve.

Because markets, customer expectations and MARTA's resources change over time, service standards are evolutionary by nature. MARTA must be responsive to these changes to retain current customers and achieve and sustain ridership growth.

This document discusses the details of the standards and how they are used in decision-making at MARTA. Updated service standards are developed by the Office of Planning and presented annually to the Planning and External Relations Committee as well as the Operations and Safety Committee. The service standards are then distributed and presented to the MARTA Board for approval.

2. BACKGROUND

2.1. MARTA in Brief

MARTA is one of the top 10 transportation agencies in the United States[1], providing reliable transit to approximately 388,100 people every weekday in fiscal year (FY) 2018. The MARTA service area encompasses Fulton, DeKalb, and Clayton Counties, as well as the City of Atlanta. The service area is home to more than 2 million residents[2] and contains nearly 1.4 million jobs[3] within 947 square miles. Since opening in 1979, MARTA has made over 5 billion trips carrying passengers by bus and rail.

MARTA operates a network of bus routes linked to a heavy rail system consisting of 48 miles of rail track with 38 rail stations supported by fleet of 338 rail cars. In 2018, MARTA took over operation of the Atlanta Streetcar which operates 2.6 miles of track and 12 stations in downtown Atlanta. More than 550 buses provide service along 1,100 miles of road on 110 routes.

2.2. Overview of the Authority

MARTA was formed by an act of the Georgia General Assembly in 1965. MARTA plans, contracts for, finances and operates a rapid transit system within the City of Atlanta, Fulton, DeKalb, and Clayton Counties. MARTA's multimodal system is composed of heavy rail, conventional fixed-route bus, streetcar, and complementary ADA paratransit service. MARTA is a multi-county Authority that is governed by a Board of Directors consisting of representatives appointed from City of Atlanta, Fulton, DeKalb, and Clayton Counties. Fiscal Year 2019 is the first year that MARTA has operated a streetcar. As of July 1, 2019, the ownership and operation of the Atlanta Streetcar was transferred from the City of Atlanta to MARTA. This transfer has increased the types of service provided by MARTA and expanded service and connectivity within the City of Atlanta.

2.3. Overview of the Service Area

The communities within the MARTA Service Area are diverse and constantly changing. Guidelines to reflect these changes have been established and are

[1] MARTA ranks 9th among U.S. transportation agencies in terms of annual unlinked passenger trips, according to 2016 data from the National Transit Database.
[2] American Community Survey, 2017 Estimates
[3] Atlanta Regional Commission

outlined in this document in order to allow for consistent and continual evaluation of services. Because markets, customer expectations and MARTA's resources change over time, service standards are evolutionary by nature. MARTA must be responsive to these changes in order to retain current customers and sustain ridership growth. As new and emerging technologies are introduced, it is anticipated that future revisions to this document will enhance MARTA's ability to collect and analyze data for an objective and more effective service planning process.

2.4. Overview of the Service Delivery

MARTA provides multiple service delivery options including heavy rail, conventional fixed-route bus service, streetcar, and complementary ADA paratransit service.

Heavy rail service varies by time of day, and is broken into the following service periods:

- Peak
- Off-Peak
- Night
- Weekend
- Holiday

These are further described in later sections.

Bus service is split into five categories, which outline MARTA's transit family in terms of their different service levels, characteristics, and network roles.

Table 1: Bus Service Types and Characteristics

Bus Service Type	Service Characteristics
Core	Generates 2,000 or more average daily ridership, operating primarily along major corridors and arterial streets
Supporting Local	Generates less than 2,000 average daily ridership, providing access to residential and commercial areas
Lifeline	Generates less than 2,000 average daily ridership and serve critical Lifeline facilities
Peak-Only	Generates less than 2,000 average daily ridership and operates during peak periods only
Community Circulator	Fixed-route bus service utilizing smaller neighborhood-friendly vehicles to provide appropriate levels of service in terms of capacity and impact to community

The streetcar operates at a consistent headway during all hours of service. This is described in detail in the following sections regarding standards.

MARTA Mobility operates based on trip demand and scheduled services within the hours of operation of fixed route service. This is described in more detail in Section 14.

3. THE STANDARDS

The dynamic nature of real estate development and changing travel markets within the service area requires constant review of current service, new service, service expansion, or service reduction options. MARTA must be able to rationally evaluate service changes and adjust service within the constraints of budget and equipment availability.

The Standards define a policy level set of warrants and evaluation metrics which serve as a management tool to assess the efficiency, effectiveness, and quality of service design and delivery. The Standards ensure that MARTA is consistent with the Authority's enabling legislation (The MARTA Act) and other external mandates, such as Title VI of the Civil Rights Act of 1964, by:

- Identifying quantifiable warrants and evaluation metrics used to measure whether MARTA's transit services achieve their delivery objectives and evaluate whether MARTA services are provided in an equitable manner (as defined by Title VI);
- Outlining a Service Planning Process that applies the Service Standards in an objective, uniform, and accountable manner; and
- Involving the public in the Service Planning Process in a consistent, fair, and thorough manner.

The five primary areas of focus for monitoring the quality of service delivery include:

- Heavy Rail Service Delivery Standards
- Bus Service Delivery Standards
- Streetcar Service Delivery Standards
- Transit Amenities
- Other Service Considerations
    - MARTA Mobility
    - Special Events
    - Seasonal Routes
    - Contracted Services

It is important to note that MARTA took over ownership and operations of the Atlanta Streetcar on July 1, 2018. This is the first year this service mode is included in the Service Standards. Therefore, all standards relating to the streetcar are preliminary and will be evaluated over the course of FY 2019.

Under each of these sections, specific factors, measures, and policies are identified that are relevant to the service mode, passenger amenities, or special features of MARTA service delivery. The relevant areas of focus for each mode are as follows:

Heavy Rail Service Delivery: Headways, Load Factors, Span of Service Hours, Transit Access, and On-Time Performance.

Bus Service Delivery: Headways, Load Factors, Route Productivity, Stop Spacing, Vehicle Distribution, Span of Service Hours, Transit Access, and On-Time Performance.

Streetcar Service Delivery: Headways, Load Factors, Span of Service Hours, and On-Time Performance.

Transit Amenities: Heavy Rail Station Amenities, Bus Shelter and Bench Placement, Streetcar Station Amenities, and Vehicle Amenities.

Other Service Considerations: MARTA Mobility (Paratransit Service), Special Events, Seasonal Routes, and Contracted Services.

"The mission of the Metropolitan Atlanta Rapid Transit Authority is to advocate for and provide safe, multi-modal transit services that advance prosperity, connectivity and equity for a more livable region."

4. THE PROCESS

4.1. Application of Service Standards

The standards help identify routes which are most in need of service changes, such as restructuring to eliminate lower-productivity segments or branches, or adjusting service frequency to better reflect the demand for service. The standards for evaluation of existing routes are not intended to preclude changes to routes that meet these minimum standards. In many cases, it may be possible to improve the productivity of routes that meet the minimum standards by making changes to headways or trip times. Selection of which services to provide or curtail is based on these performance standards and no service is considered guaranteed or beyond review.

Service expansion may occur when funds are available. Service reduction may occur in the event of times of fiscal constraint. The General Manager/Chief Executive Officer (GM/CEO) may request the Board of Directors to hold public hearings to gather input regarding proposed discontinuation of a route or reduction of service levels consistent with the MARTA Act. Additionally, in times of fiscal constraint or fiscal emergency, the GM/CEO may request the Board of Directors to hold public hearings to gather input regarding proposals of discontinuation or reduction of service levels on routes that meet productivity performance measures or have failed to meet performance targets twice within a year as required under non-resource-constrained or fiscal emergency conditions.

4.2. Updating of Service Standards

Internal staff review and subsequent approval by the MARTA Board of Directors of the Service Standards occur annually. This process facilitates a continual analysis of the effectiveness of services being provided, as well as ensuring equitable, consistent delivery of services and use of resources.

Changes in the Authority's goals and objectives, including the possibility of prolonged budget deficits, will be used to determine if any standards should be added or revised. While it is important that this document provides tools to aid in assessment of service productivity, it also identifies policy standards that will be maintained to guide the development and evaluation of MARTA's services. Any proposed exceptions to the established standards will be presented to the MARTA Board for consideration when involving service essential to maintaining system integrity.

4.3. Legal & Contractual Requirements

4.3.1. State Requirement (MARTA Act)

Service standards for the Authority should be adopted and published not later than 120 days after the end of each fiscal year. Additionally, any adjustment to the amounts to be charged for transportation service to the public will occur during the same 120 days.

4.3.2. Federal Requirements

As a recipient of federal monies, MARTA is subject to certain rules and regulations. The federal rules and regulations directly affecting the delivery of service by MARTA cover four areas: public hearing requirements for fare and service changes, charter/school service restrictions, service requirements for seniors or persons with disabilities and Title VI of the Civil Rights Act of 1964.

The Title VI regulations prohibit discrimination based on race, color, or national origin in the provision of any program or activity, including transit service, receiving federal financial assistance. The specific objectives of this federal regulation are to ensure that the following areas are provided without regard to race, color, or national origin:

a) equitable distribution of services
b) equal access and mobility
c) opportunities to participate in the transit planning and decision-making processes
d) decisions on the location of transit services and facilities
e) corrective and remedial action to prevent discriminatory treatment

Service standards are particularly identified in the Federal Register for Title VI and are defined as the "established policy or service performance measure used by a transit provider or other applicant, recipient, or sub-recipient as a means to plan, program, or distribute services within its service area."

Five indicators are listed for inclusion to maintain compliance with Title VI:

1. Vehicle Load – an indicator of the extent of probable overcrowding or the need for additional vehicles.

2. Vehicle Assignment – the process by which transit vehicles are assigned to routes throughout the system due to variations among vehicles.

3. Vehicle Headway – a measurement of the time interval between two vehicles traveling in the same direction on the same route.

4. Distribution of Transit Amenities – refers to items of comfort and convenience available to the general riding public (escalators at rail stations, park-and-ride facilities, etc.).

5. Transit Access – the distance a person must travel to gain access to transit service. This serves as a general measure of the distribution of routes within a transit district and applies to existing services and proposed changes.

4.3.3. Accessibility Requirements

Section 504 of the Rehabilitation Act of 1973 (as amended) and Urban Mass Transportation Act established requirements on transportation for seniors and people with disabilities for all planning, capital, and operating assistance projects receiving federal financial assistance.

MARTA is also subject to The Americans with Disabilities Act of 1990 (ADA). Required plans have been submitted to and approved by the Federal Transit Administration covering complementary paratransit and key station conformance.

4.3.4. Labor Agreement

The labor agreement between MARTA and the Amalgamated Transit Union (Local 732) is negotiated on a periodic basis and is therefore subject to change. The labor agreement can impact both the amount and quality of service provided to the public due to the budgetary implications and work assignment rules contained in its provisions.

Notwithstanding the above, the equity protections of Title VI and Environmental Justice requirements will always be applied in the delivery of quality transit service in the Authority's service area.

5. HEADWAYS

Headway is defined as the time interval between vehicles traveling in the same direction along a route/line.

5.1. Heavy Rail

Heavy Rail Headway is defined as the interval of time between trains traveling in any given direction of travel.

- Weekday peak hour heavy rail headway will be less than or equal to 10 minutes on all lines.
- Weekday off-peak headway will be between 12 and 20 minutes on all lines.
- Weekend and holiday headways will operate every 12 to 20 minutes on all lines.
- Headways shall vary between peak periods and off-peak periods as outlined below in order to minimize operating expenses and provide the most efficient service during weekday peak demand periods as described in Chapter 7, "SERVICE HOURS" (page 16).

5.1.1. Headway by Period

- Weekday early morning: 15 – 20 Minutes – each line
  (7.5 – 10 Minutes on Trunks)
- Weekday morning/afternoon peak: 10 Minutes – each line
  (5 Minutes on Trunks)
- Weekday midday: 10 – 15 Minutes – each line
  (5 – 7.5 Minutes on Trunks)
- Weekday evening: 15 – 20 Minutes – each line
  (7.5 – 10 Minutes on Trunks)
- Weekday/Weekend late night: 15 – 20 Minutes –– each line
  (Red Line from Lindbergh Center to North Springs)
- Weekends: 15 – 20 Minutes – each line
  (7.5 – 10 Minutes on Trunks)

"Trunks" are defined as the segments of service that overlap between two or more rail services (i.e. North-South service between Lindbergh Center Station and Airport Station and East-West service between Ashby Station and Edgewood-Candler Park Station), resulting in improved headway benefit.

5.1.2. Determining Factors

The following factors will be considered when adjusting heavy rail headways:

- Load Factor – Assessed annually
- The number of rail cars available – Assessed monthly (average = 244)
- Passenger Demand – Assessed bi-annually or as necessary
- On-Time Performance – Assessed monthly (average = 97.2%)

5.2. Bus

Bus Headway is defined as the interval of time between buses traveling in any given direction on a route.

- Weekday morning and evening peak periods will maintain headways of 45 minutes or less.
- Weekday off-peak and weekend service will maintain headways of 75 minutes or less.
- Headways shall vary between peak periods and off-peak periods where demand dictates as outlined in Chapter 7, "SERVICE HOURS" (page 16) – in order to minimize operating expenses and provide the most efficient service during weekday peak demand periods.

5.2.1. Headway by Period

- Weekday morning/afternoon peak period 45 minutes or less
- Weekday off-peak/Weekends 75 minutes or less
- A peak period exception of 60 minutes will apply to weekday routes that maintain the same headways during all service periods, peak or off-peak.
- No bus route shall have headways that exceed 75 minutes unless otherwise approved by the MARTA Board.

5.2.2. Determining Factors

The following factors will be examined when establishing and adjusting headways:

- Load Factor
- Equipment Allocation
- Passenger Demand
- Route Length

- Running Time
- Passenger Volume

When developing schedules, clock headways of 15, 30, 45, and 60-minute intervals will be maintained where practical. Running times may be adjusted for known traffic conditions, wherever economically practical and feasible, within fiscal and contractual constraints. Consistent trip departure times and pulse headways will help to facilitate timed-transfers and facilitate passenger connections with other bus routes.

5.3. Streetcar

Streetcar Headway is defined as the interval of time between vehicles traveling in the same direction of travel.

Unlike heavy rail, streetcar service does not follow a set schedule, with set timepoints at different stations. Instead, headways are set at 10-15 minutes for all service times. This will be evaluated over the next year to assess the headways for streetcar service during peak and off-peak hours.

The following factors will be examined when establishing and adjusting headways:

- Load Factor
- The number of streetcar vehicles available
- Passenger Demand
- On-Time Performance

6. LOAD FACTORS

Load Factor is the ratio of passengers on a transit vehicle compared to the number of seats, expressed as a percentage. A load factor above 100% indicates that not all passengers may be seated, but is still acceptable to a certain level, as vehicles were designed for seated and standing passengers.

6.1. Heavy Rail

Heavy Rail Load Factor is defined as the ratio of passengers on the train to the number of seats available.

- The maximum load factor during all hours of service is 150%.
- The seated capacity for a single heavy rail car is 64.
- Applying the load factor to a six-car consist, the maximum allowable load will be 576 passengers, with 384 seated.

Train capacities for seated and acceptable loads are as follows:

- 2-car consist (Green Line): 128 seated; 192 maximum acceptable load[4]
- 4-car consist: 256 seated; 384 maximum acceptable load
- 6-car consist: 384 seated; 576 maximum acceptable load
- 8-car consist: 512 seated; 768 maximum acceptable load

Heavy Rail load factors shall not exceed 150% during all hours, ***except*** between Peachtree Center and Five Points Station where it shall not exceed 170%. Between Five Points and Peachtree Center, the maximum acceptable load for 6 and 8-car consists is 653 and 870, respectively.

Load factors for heavy rail are determined using manual point checks at eight key locations on the rail system:

- Bankhead
- Buckhead
- Dome/GWCC/Philips Arena/CNN Center
- Garnett
- Georgia State
- Lenox

[4] 2-Car consist are typically used on the Green Line and special events.

- Lindbergh Center
- Peachtree Center

These counts will be performed annually to measure maximum rail car volume for weekday, Saturday and Sunday service, as well as various stations upon request. Other sources of passenger activity such as station entries and exits can be used to complement the manual point checks to monitor and evaluate load factors.

Upon confirmation through investigation, if the load factor consistently exceeds 150%, corrective action shall be considered to achieve balanced loading within acceptable limits of these standards. Potential actions include an increase in train consist size or an increase in service frequency. Consistently exceeding the maximum load factor shall be determined through random checks of ridership over a period of sixty days excluding events, such as conventions and other special proceedings.

MARTA's Rail Fleet Management Plan functions to provide a description of the projected rail car fleet requirements of the Authority over a ten-year period. These projected rail car fleet requirements are based on forecasted ridership expected to occur in the peak direction at the maximum load point on the North-South and East-West Lines.

6.2. Bus

Bus Load Factor is defined as the ratio of passengers on board a bus to the number of seats available.

The standard load factor for bus service is not to exceed 150% of seated capacity. The standard load factor for any service operating 10 or more miles per trip on limited-access highway is 100% of seated capacity.

Therefore, the maximum load factors are as follows:

- A 60-foot, 54-seat bus: 82 or more riders exceed the maximum load factor
- A 40-foot, 37-seat bus: 57 or more riders exceed the maximum load factor
- A 35-foot, 30-seat bus: 46 or more riders exceed the maximum load factor
- A 30-foot, 25-seat bus: 39 or more riders exceed the maximum load factor

If a bus exceeds this standard, it will be monitored. If the overload is documented repeatedly during the mark-up period at or above a 150% load factor (100% for any service operating 10 or more miles per trip on limited-access highway), corrective actions shall be taken to achieve balanced loading within acceptable limits of these standards. Corrective action may include increased frequency, supplemental "plug" service, adjustment or trips before or after the affected trip

and/or increased vehicle size. Plug service is defined as anticipated extra service implemented to avoid overcrowding and inconveniencing the riding public during scheduled special events. Peak to off-peak service standards vary by Service Type however the off-peak is between 4% – 15% less than the Peak Load Factor.

6.3. Streetcar

Streetcar Load Factor is defined as the ratio of passengers on the streetcar to the number of seats available.

- The maximum load factor during all hours of service is 150%.
- The maximum allowable load will be 90 passengers, with 60 seated.

If a streetcar exceeds this standard, it will be monitored. If the overload is documented repeatedly during the mark-up period at or above a 150% load factor, corrective actions may be taken to achieve balanced loading within acceptable limits of these standards. Potential corrective actions may include increased frequency along the alignment.

7. SERVICE HOURS

Service hours, also known as Span of Service, is defined as the hours that service will operate at any given point within the system.

7.1. Heavy Rail

Heavy Rail service is maintained for a span of up to 21 hours, seven days per week considering service demand and maintenance requirements.

The MARTA heavy rail system serves as the spine of the transit network with a service span of up to 21 hours. There is a three-hour suspension of service in the early morning hours to perform routine track maintenance.

Peak

- Morning Peak 6:00 a.m. – 9:00 a.m.
- Afternoon Peak 3:00 p.m. – 7:00p.m.

Off-Peak

- Early Morning before 6:00 a.m.
- Midday 9:00 a.m. – 3:00 p.m.
- Evening 7:00 p.m. – 9:00p.m.
- Late night after 9:00p.m.
- Weekend service is considered off-peak all day long with consistent headways operating throughout the service day subject to rail maintenance.

7.2. Bus

Certain commuter routes may be limited to morning and afternoon peak hour service only while rail service is maintained for a span of up to 21 hours.

The span of bus service varies by route according to demand. Weekday service periods are identified as peak and off-peak and are defined as follows:

Peak

- Morning Peak 6:00 a.m. – 9:00 a.m.
- Afternoon Peak 3:00 p.m. – 7:00 p.m.

Off-Peak

- Early Morning before 6:00 a.m.
- Midday 9:00 a.m. – 3:00 p.m.
- Evening 7:00 p.m. – 9:00 p.m.
- Late Night after 9:00 p.m.
- Weekend service is considered off-peak all day long with midday service levels operating between 6:00 a.m. and 7:30 p.m.

Most bus service is offered during morning peak, midday, afternoon peak, and evening service. Extension of service into the late night and early morning periods are justified by demand and monitored for effectiveness. Connectivity with heavy rail service will be considered in the distribution of service provided in the late night and early morning periods.

The fixed-route bus service is comprised primarily of routes serving one or more heavy rail stations. Particular attention is given to maintaining key linkages to the heavy rail system during bus system hours of operation.

Modification to the span of service for a particular route will be considered when:

- The first or last hour of service shows productivity greater than or less than the productivity of similar service during the same time period.
- Changes in employee shift time or work hours for major employers that produce an increase or decrease demand for service within the same route alignment.

Modifications to the rail schedule require changes in the hours for Core bus routes to maintain connectivity between the modes.

7.3. Streetcar

Streetcar span of service hours are defined by day of the week as follows:

- Monday through Thursday 6:00 a.m. to 11:00 p.m.
- Friday 6:00 a.m. to 1:00 a.m.
- Saturday 8:15 a.m. to 1:00 a.m.
- Sunday 8:15 a.m. to 11:00 p.m.

Due to the fact that this is MARTA's first year operating the streetcar, ridership and productivity will be measured over Fiscal Year 2019 to assess the span of service. Changes will be considered if the first or last hour of service shows productivity greater than or less than streetcar productivity during hours immediately before and after assessed hours.

8. TRANSIT ACCESS

Transit Access is defined as a measure of the distance a person must travel to gain access to transit service. The distance is measured by the actual path of travel rather than 'straight-line distance' to better represent a person's ability to access the system.

As a standard, this measure indicates the distribution of routes within a transit service area. It is measured by distance along the street network, as opposed to directional distance that does not consider physical barriers to travel.

8.1. Heavy Rail

Heavy Rail service is considered accessible within a ½ (0.5)-mile pedestrian or wheelchair travel distance of any given heavy rail station during all hours of service.

8.2. Bus

Bus services will have a maximum ¼ (0.25)-mile pedestrian or wheelchair travel distance.

Exceptions will be considered when the following factors exist within the system:

- Geographical barriers and street network restrictions.
- Service alignment that is designed to serve areas of higher demand or higher densities.
- Maximum pedestrian access over ½ (0.5)-mile is probable in outlying areas on the edge of service coverage.

8.3. Streetcar

Streetcar service is considered accessible within a ½ (0.5)-mile pedestrian or wheelchair travel distance of any given streetcar station during all hours of service.

9. ROUTE PRODUCTIVITY

Along with minimum performance standards, routes are evaluated in comparison with each other to determine efficiency and effectiveness. All routes should achieve a minimum level of established productivity goals which is derived from evaluation of key performance measures.

9.1. Heavy Rail

The current route productivity standard is not applied to heavy rail, as the alignment is fixed. The index is used to compare bus route performance in comparison to other routes and to continue to strive for efficient bus operations.

9.2. Bus

Route Productivity is an assessment of overall performance of a bus route. This assessment is based on three **Core Performance Measures**:

- Passengers per hour
- Total costs per passenger
- Average load/occupancy rate

Route productivity standards dictate the minimum productivity a route must maintain. The standards for evaluating portions of routes are intended for use in identifying routes and/or route segments needing service improvements. Together, these performance measures will be used to identify and bring unproductive routes into compliance with the overall service standards. These standards may also be used to evaluate proposals for new route extensions or deviations on existing routes.

To establish benchmarks and make all routes comparable despite differences in their alignment, length, and span of services, the MARTA Board adopted a new Route Productivity and Ranking Process in 2018 that calculates an index score for each of the three performance measures.

The following are example formulas used to develop the index value. These formulas are used for each core performance measure, with the Passengers per hour measure used as an example. These formulas normalize the scores for easy comparison across all MARTA services.

$$.Normalized\ Value: \frac{Route\ Value\ (Pax\ per\ Hr) - Systemwide\ Minimum(Pax\ per\ Hr)}{SystemwideMaximum(Pax\ per\ Hr) - SystemwideMinimum(Pax\ per\ Hr)}$$

$$Indexed\ Value = \frac{Route\ Composite\ Score}{Systemwide\ Composite\ Score\ Average}$$

Using this index score, the higher the value, the better the ranking. If a score equals 1.00, then it is performing at the system average. If the value is below 1.00 then it is performing below average, and if it is above 1.00 it is performing above average.

Each mark-up period, all routes will be assessed using these index formulas for each of the three core performance measures. If a route scores low in two of the three core performance measures for two consecutive mark-up periods, it will be potentially considered for service changes, such as span of service, frequency, and/or alignment.

9.3. Streetcar

The current route productivity standard is not applied to streetcar, as the alignment is fixed. The index is used to compare bus route performance in comparison to other routes and to continue to strive for efficient bus operations.

10. STOP SPACING

This standard involves how far apart bus stops are spaced and where they should be located on streets. This process involves balancing access to service with minimizing delay for too many stops.

10.1. Heavy Rail

Not Applicable – Considered only during construction design.

10.2. Bus

Efficient bus stop placement balances the need to minimize travel time for transit vehicles with the need to minimize walk distances to bus stops for transit riders. MARTA staff survey proposed site locations to ensure that bus stops offer the maximum possible safety and convenience for boarding and alighting passengers; a number of unique factors are considered when determining bus stop locations, including safety, convenience, accessibility, and spacing to other stops.

Based on land use characteristics and street connectivity, MARTA aims to place stops in a range of 800 to 1,200 feet whenever possible. This range typically represents a spacing of no less than two city blocks at the minimum and a maximum of nearly a quarter mile, which is MARTA's transit access standard (walking distance) for local bus service (see Chapter 7: "Transit Access"). It is most achievable in areas with consistent development patterns and a higher concentration of street connectivity and intersections.

While many bus stop placements will ideally fall within this range, conditions unique to each stop and roadway may require MARTA to place stops outside of the target range. Closer stops may be required to provide access to sensitive facilities such as government buildings, senior centers and healthcare facilities; stops may be farther apart due to considerations such as sparse development, operating needs, or unsafe roadside conditions.

10.3. Streetcar

Not Applicable – Considered only during construction design.

11. VEHICLE DISTRIBUTION

MARTA assigns vehicles every day for peak and off-peak hours to ensure a fair and equitable distribution of vehicles throughout the service area. The Authority assigns vehicles, including standard 40-foot buses, articulated buses, and community circulator buses to specific routes based on ridership, demand and route service type so that necessary capacity is met and efficiency is realized. Within those service types, vehicles are randomly assigned so that

11.1. Heavy Rail

Within the heavy rail system, all vehicles are the same type. Vehicles of varying age are distributed equitably across all four lines. The number of car-consists used is dependent on ridership and the demand at peak and off-peak periods for each line.

11.2. Bus

MARTA's Bus Fleet Management Plan functions to maintain the average fleet age distributed across the divisions subject to fuel type requirements and anticipated capacity needs in the future. Vehicle Distribution will be equitable throughout the system at the divisional level between garages and during daily vehicle assignment.

Factors that must be considered include:

- fuel type
- availability by division
- peak vehicle requirement by division
- maintenance capabilities by division

Vehicles shall be equitably distributed throughout the service area. This includes vehicle assignment to each garage and among service provided from each garage.

Specific equipment will be assigned to a given route based on load factor and capacity requirements. At non-CNG equipped bus facilities, diesel buses will operate the service. The 30-foot and 35-foot buses are prioritized to be assigned to community circulator routes.

11.3. Streetcar

There are four streetcar vehicles, two are used at a time to maintain the 10-15-minute headway. The usage of these vehicles is rotated, and allows for up to two vehicles to be out of service without disrupting service.

12. ON-TIME PERFORMANCE

On-time performance standards define the minimum expectation of scheduled service that should be operated as "on-time." MARTA defines "on-time" as zero minutes early to five minutes late at each timepoint, disregarding early arrivals at the final timepoint. On-time performance reflects both predictability and reliability of service.

12.1. Heavy Rail

Heavy Rail on-time performance is measured from scheduled departure to arrivals at all terminal points within five minutes. For any train that arrives at or departs from terminal points more than five minutes late, data are captured as a delay in service.

12.2. Bus

Bus on-time performance is defined as buses departing published time points no more than five minutes late and zero minutes early. The on-time performance of bus service is affected by many variables, including loads, traffic congestion, accidents, weather, road conditions, infrastructure maintenance work, vehicle failures, etc. The Schedule Adherence Standards provide ways of measuring how reliably services adhere to the published schedules. If a service does not pass the Schedule Adherence Standards, the Authority will determine the reason why it does not consistently meet standards and will take action to correct the problems. This may include adjusting running times, changing headways, etc.

12.2.1. Bus Schedule Adherence Standards

Schedule Adherence Standards provide the tools for evaluating the on-time performance of individual MARTA routes. Passengers using high-frequency services are generally more interested in regular, even headways than in strict adherence to published timetables, whereas passengers on less frequent services expect arrivals/departures to occur as published, and customers generally time their arrival at bus stops to correspond with the specific scheduled departure times. Scheduling staff analyzes reports that present average travel times between time points utilizing Automatic Vehicle Location (AVL) data to evaluate schedule reliability. During the development of schedules, these reports will be used to address any run time deficiencies that are found in the new schedule. The Schedule Adherence Standards for bus routes are designed to ensure that routes

operate as reliably as possible without early departures, chronic delays, or unpredictable wait and/or travel times.

12.2.2. Bus Route Test

The Bus Schedule Adherence Standard determines whether or not a route is on time, based on the proportion of time points on the routes that are on time over the entire service day. For a route to be in compliance, 78.5% of all departure times on the route over the entire service day must pass their on-time tests. As service is analyzed, Scheduling staff endeavor to improve the on-time performance beyond the baseline service standards. The review includes an analysis of the cost versus the benefit of any route modification.

Exception
A schedule may note that certain trips will not leave until another vehicle arrives and allows passengers to transfer. (For instance, the last bus trip of the day might wait for passengers from the last train of the day.) When applying the standard, these trips are not included.

12.2.3. Bus On-Time Performance

Definition
Bus on-time performance is measured against all defined time points, excluding starting and ending points on a given route over the service period measured.

Calculation Method
Bus on-time performance is calculated by dividing the number of departures between zero and five minutes after scheduled departure time at the defined time points by the overall number of departures as captured by the AVL system, and multiplying the result by 100. Note that 30 seconds are added to both ends of the zero to five-minute interval to capture the deviation of various time-tracking equipment.

On-time performance is monitored on a route-by-route basis. If the on-time performance for a route falls below the target rate of 78.5%, it will be flagged and subject to review. Upon identification of causes for substandard on-time performance, actions will be developed and implemented as resources permit. These actions generally include adjustments to headways and/or running times.[5]

[5] In FY16 the MARTA Board adopted the Comprehensive Operations Analysis (COA). The implementation of the COA continued in FY17, FY18, and is continuing in FY19. Subsequent years will implement changes identified in the upcoming MARTA Transit Development Plan (TDP).

12.3. Streetcar

Currently, streetcar operators communicate with dispatchers to maintain a 10 to 15-minute headway during service hours. Over the next year, the streetcar will be integrated into MARTA's AVL (automatic vehicle location) system to track on-time performance, and streetcar schedule adherence standards will be established.

13. TRANSIT AMENITIES

Transit amenities include features available to passengers traveling on board transit vehicles, as well as features available to patrons waiting for a transit vehicle.

13.1. Heavy Rail

13.1.1. Vehicle Amenities

MARTA heavy rail vehicles have the following amenities:

Passenger Information
Television-type displays placed on MARTA heavy rail cars. Displays on board heavy rail cars offer news, MARTA marketing information, advertising, and radio channels for passengers.

Wi-Fi
All trains are equipped with free Wi-Fi allowing riders to browse the web, send e-mails and connect to social media sites.

13.1.2. Station Amenities

All MARTA heavy rail stations will contain:

Trash Receptacles
Heavy rail stations include multiple trash receptacles.

Passenger Information
Stations include multiple passenger information cases with fare information, a system map, nearby attractions, and schedules.

Breeze Card Vending Machines
Heavy rail stations each have multiple Breeze card vending machines for passengers to purchase fares for MARTA heavy rail and bus service, as well as other regional system fares, including CobbLinc, Gwinnett County Transit, and Georgia Regional Transit Authority services.

Emergency Phones
Heavy rail stations are equipped with emergency phones for passengers to call MARTA Police should they see or experience an emergency.

Electronic Signs
MARTA heavy rail stations have electronic signs displaying real-time estimated arrival information for trains.

Level Boarding Platform
Heavy rail station platforms were constructed for level boarding onto heavy rail vehicles.

ADA Accessible Platforms
MARTA heavy rail stations have escalators and elevators at each station for access to platforms.

Other amenities will be distributed equitably throughout the MARTA service area.

13.2. Bus

13.2.1. Vehicle Amenities

MARTA buses are equipped with the following vehicle amenities:

Bike Racks
All buses in MARTA's fixed-route vehicle fleet are outfitted with fold-down bicycle racks capable of holding two bikes.

Automated Announcement Systems
All buses are equipped with audio and visual announcements identifying the route and stop or intersection based on AVL (automated vehicle locator) equipment.

Fare boxes
Fare boxes to pay fares or process cash and Breeze Card transactions

Wi-Fi
All buses are equipped with free Wi-Fi allowing riders to browse the web, send e-mails and connect to social media sites.

13.2.2. Stop Amenities – Benches & Shelters

All MARTA bus stops are marked with a MARTA bus stop sign including a phone number to call for information regarding bus schedules and customer service. Bench and Shelter amenities are placed throughout the system based on multiple factors.

Placement of bus shelters or benches at bus stops involves consideration of several factors. Planning will provide MARTA's bus shelter contractor with a list of

stops that qualify for placement of a bus shelter or bench at the beginning of each markup period based on scoring of these factors. These factors are:

- Ridership
  - Ridership for a bench: at least 15 boardings per day
  - Ridership for a shelter: at least 25 boardings per day
- Bus Stop Level of Service (span of service, average trip frequency)
- Proximity to other shelters
- Equity – Title VI Compliance
  - Existing bench or shelter locations will be considered for equity in distribution within the service area.
- Local Land Use – proximity to Lifeline facilities such as senior centers, hospitals, government offices, etc.

Since advertising displays may not be conducive to all locations where shelter demand exists, the MARTA bus shelter contract allows the placement of 10 shelters without advertising each year. Additionally, the scoring mechanism above addresses the need for equitable shelter placement. MARTA will review shelter placement to ensure equity throughout the service area, regardless of advertising status.

Shelter locations will also be evaluated based on input from customers and staff through the Bus Stop Request Form on www.itsmarta.com and on requests received by Customer Services.

All proposed shelter or bench locations will have a field evaluation for viability. The following factors are considered in field evaluation:

- Location must accommodate a concrete pad and must be set back 10 feet from the roadway;
- Location must be ADA compliant which includes being wheelchair accessible;
- Surface of the location must be flat, not on a slope;
- Location must not be next to a guard rail/barrier or fire hydrant;
- The bench or shelter must not block vehicular traffic; and
- The site must comply with all other requirements of the local jurisdiction, including local ordinances and design guidelines.

Once a site has been approved for a bench or shelter based on the above criteria, a survey is completed, site drawings are produced, and permit applications are completed for each location. The entire package is then submitted to the appropriate jurisdiction for approval.

13.3. Streetcar

13.3.1. Vehicle Amenities

All streetcar vehicles are equipped with the following:

Cash Fare Boxes
Streetcar vehicles do not accept Breeze cards and have cash fare boxes on board to collect the $1.00 fare.

Automated Announcement Systems
All streetcar vehicles are equipped with audio and visual announcements identifying the route and stop or intersection.

Wi-Fi
All streetcar vehicles are equipped with free Wi-Fi allowing riders to browse the web, send e-mails and connect to social media sites.

13.3.2. Station Amenities

All streetcar stations include the following amenities:

Shelter
All streetcar stations have a shelter to provide shade and/or cover from precipitation while passengers are waiting.

Passenger Information
Stations include a passenger information case with fare information, a system map, nearby attractions, and connections to the MARTA heavy rail system.

Fare Vending Machines
Streetcar fares may be paid in advance with credit cards or Breeze cards with stored value at vending machines located on station platforms.

Level Boarding Platform
Streetcar station platforms were constructed above the sidewalk grade to allow for level boarding onto the vehicles.

ADA Platform
Streetcar station platforms were constructed with ADA accessible ramps from the sidewalk to the platform level.

14. OTHER SERVICE CONSIDERATIONS

The following service categories describe types of service provided by MARTA that vary in characteristics and consideration with respect to regular rail, bus, or streetcar services. These services may have particular policy guidelines and performance measures whereas others relate to maintaining access to protected population segments. Specialized services include those services that do not conform to the characteristics of conventional bus services. Therefore, specialized requests are evaluated separately.

MARTA currently operates the following four types of specialized services:

- MARTA Mobility
- Special Event Service
- Seasonal Routes
- Contracted Services

14.1. MARTA Mobility

Per the Americans with Disabilities Act (ADA), MARTA provides complementary paratransit service, known as MARTA Mobility, for persons with disabilities who are unable to navigate the MARTA fixed-route system for some or all of their travel.

Categories of Eligibility

- Unconditional – Any trip within the ADA service area and times.
- Conditional – Restrictions are made on a trip-by-trip basis.
- Temporary – Persons who are deemed eligible for a defined temporary period based on their application.

Categories of Service

- Subscription – Must have the same origin and destination three or more times per week.
- Advance Reservation – Reservations can be made from one to seven days prior to travel.

Neither type of service has reservation priority.

Subject to certification criteria, complementary paratransit service for ADA-eligible persons shall be origin-to-destination service. Curb-to-curb feeder service (passenger transported to a MARTA fixed-route service instead of a final destination) may be provided to conditionally eligible passengers who can navigate

the fixed-route system and do not require assistance from the curb to the door of their final destination. Mobility services outside of the MARTA service area will be governed by intergovernmental agreement and adhere to federal guidelines. Since January 2006, persons eligible for MARTA Mobility service have been offered the option of transitioning from MARTA Mobility service to "fare free" travel on the regular fixed-route service.

Eligibility Requirements

- Certification of eligibility must be on file including a two-part application (client and health care provider) with approval letter.
- Origins and destinations must be within ¾-mile of a MARTA fixed-route service operating in Fulton, DeKalb, and Clayton Counties only.

Performance Standards

These performance measures will be calculated monthly to measure quality of service:

- On-Time Performance for pick-up not to fall below 90%;
- Customer Complaints per 1,000 Unlinked Passenger Trips not to exceed 4.0;
- Collision Rate per 100,000 Miles not to exceed 2.5;
- Adherence to 0% Trip Denial requirement;
- Reservation Call Average Wait Time not to exceed 2 minutes;
- Reservation Call Abandonment Rate not to exceed 5.5%.

14.2. Special Events

Special events are defined as events requiring added service that take place infrequently, not on an annual or otherwise regular basis. Therefore, these services are not included in the annual approved work plan. An example of this type of service is the Falcons games, Hawks games, conferences, concerts and special attractions (NCAA Final Four Championships, Super Bowl, etc.)

Special event service is operated when, in the opinion of the General Manager or his/her designee, the operation will financially benefit the Authority or meet a broader community goal, which includes a cooperative partnership between the Authority and the event sponsor.

14.3. Seasonal Routes

Seasonal routes are defined as service that operates on a seasonal schedule only. These services occur on a regular, annual basis and are included in the service

planning process. An example of this type of service is Route 201 Six Flags shuttle. Route 201 is the only seasonal route MARTA operates currently.

14.4. Contracted Services

In the interest of leveraging MARTA's resources, both fixed and intellectual, the Authority will seek to provide contracted bus service where beneficial. This interest will apply to alternative and innovative forms of transit, such as shuttle operations, as well as to more traditional forms, such as fixed-route.

Certain parameters will be applied when making decisions to pursue contracted services:

- Consistent with MARTA Act Section 24A, Transportation Services Contract, all costs, both direct and indirect shall be borne by one or more of the following:
  - Fares;
  - Other revenues generated; and/or
  - Subsidies.

- Proposed service will directly benefit patrons residing in MARTA's legislated service district, currently the Counties of Fulton, DeKalb and Clayton and the City of Atlanta. Such benefit will be designated as increasing mobility and access to employment or social opportunities throughout the Metro Atlanta Region.

- Any reciprocal transfer agreement that results will take into consideration increased operational costs stemming from linkages to the MARTA System.

- All of the Civil Rights requirements in the Annual FTA Master Agreement signed by the Authority will be applicable. All contractors will be required to assist MARTA in ensuring that compliance with all prevailing Civil Rights requirements are met on an on-going basis.

15. SERVICE MONITORING & RIDERSHIP DATA REPORTING

Ridership data are available through the following sources:

- Automatic Passenger Counters (APC);
- Manual ride checks, manual point checks; and
- Breeze automated fare collection system reports.

Data will be continuously collected, processed, and used to assess route productivity. This assessment will be used to evaluate the productivity of individual bus routes and heavy rail station entry points. More in-depth reporting will occur tri-annually coinciding with mark ups and identify those routes that are underperforming based on the Service Standards, as well as those that are declining and need further evaluation. A report of these results will be produced within 60 days of the end of the reporting period. Periodic monitoring may be performed on individual routes that are reported as underperforming by the APC or through reports received from Breeze automated fare collection system reports.

16. SERVICE EVALUATION & MODIFICATION PROCESS

16.1. Guiding Principles

All MARTA service changes are guided by the following principles:

1. Maximize Ridership
2. Preserve Lifeline Service
3. Maintain Core Service Quality While Retaining Critical Link
4. Maintain Equity and System Connectivity
5. Minimize Adverse Impacts on Complementary ADA Paratransit Services
6. Maintain Safety and Transit Security

1. Maximize Ridership

MARTA will evaluate riders' traveling patterns on heavy rail, bus, and streetcar service to identify opportunities to retain existing riders and attract new riders.

2. Preserve Lifeline Service

Lifeline services ensure access to key activity centers and facilities. Specifically, these routes operate in low-income and transit-dependent areas and provide access to jobs, medical facilities and non-discretionary destinations.

3. Maintain Core Service Quality While Retaining Critical Links

Core service is defined as service that ensures a basic level of access throughout the service area, connecting major trip origins and destinations. Maintaining a Core service as a viable option for riders who make both a transit lifestyle and a transit Lifeline choice is essential. MARTA endeavors to optimize Core service by taking into account safety, convenience and reliability. Consideration is also given to the preservation and connectivity of the regional system as modifications to MARTA service directly impacts the other regional systems (CobbLinc, Gwinnett County Transit, GRTA *XPRESS* Service) and non-transit modes (Hartsfield-Jackson Atlanta International Airport). As importantly, with the tremendous regional growth throughout the greater Atlanta region, there are important trip generators and attractions across the expanded regional area for transit riders in the MARTA service area and beyond.

4. Maintain Equity and System Connectivity

Modifications to heavy rail, bus, and streetcar service are made with the understanding that changes to either will affect the entire system. MARTA will

comply with Title VI and Environmental Justice requirements and to the extent feasible, endeavor to balance the impacts of service modifications among the Authority's member jurisdictions.

5. **Minimize Adverse Impacts on Complementary ADA Paratransit Services**
Complementary ADA Paratransit Services (MARTA Mobility) must be taken into account to ensure compliance with the Americans with Disabilities Act.

6. **Maintain Safety and Transit Security**
MARTA's transit security initiatives are firmly established by the mission of its accredited MARTA Police Department to provide constant safety and security for all passengers and employees. Policy guidance from Homeland Security Presidential Directives has established protective measures, security strategies, and recommendations for national critical infrastructures like MARTA (a Tier I Transit Agency). The MARTA Police Department has adopted the National Awareness Campaign known as "Transit Watch" and developed a brochure titled "See Something? Say Something" as a guide to transit safety and security for MARTA's patrons and employees.

16.2. Lifeline Service

A "Lifeline" service designation ensures the retention of transit links originating from low-income and transit-dependent areas to destinations including public facilities and major activity centers. MARTA considers three elements when determining the Lifeline status of routes:

- Transit-dependency and low-income status;
- Access to critical facilities; and
- Access to major activity centers.

As a way to protect sensitive population groups during service changes, minimum levels of service (headways and span of service) based on Lifeline element type must be maintained as outlined in this section. This is not to imply that a specific route needs to be maintained, however connections to Lifeline-designated locations must be maintained.

16.2.1. Transit-Dependency & Low-Income Status

Transit-dependent areas include those with a high percentage of transit-dependent persons with no auto availability. An area is deemed transit-dependent if the percentage of the population with no auto availability exceeds the MARTA service area average of 13.8%. Low-income areas include those where the median

household income based on census data is less than $31,375, or 125% of the Federal poverty level[6] for a family of four.

To qualify as Lifeline service, at least one third (1/3) of a route's length must be within a transit-dependent or low-income area.

The minimum headway for routes serving transit-dependent or low-income areas is 60 minutes; the minimum weekday span of service is from 5AM to 12AM, and the minimum weekend span of service is from 6AM to 11PM.

16.2.2. Fixing America's Surface Transportation Act (FAST-Act)

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act into law. FAST Act is the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs.

The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, included provisions to make the Federal surface transportation more streamlined, performance-based, and multimodal, and to address challenges facing the U.S. transportation system, including improving safety, maintaining infrastructure conditions, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery. The FAST Act builds on the changes made by MAP-21.

16.2.3. Facility Access

Routes eligible for Lifeline designation include those that serve the following facilities: hospitals (100+ beds and an emergency room), county health departments, Department of Family and Children's Services (DFCS) centers, county senior centers, universities with 1,000 or more students, courthouses, and unemployment centers. Routes that directly serve facilities (within 1/8 of a mile) are eligible for Lifeline status.

If two or more routes directly serve a facility, Lifeline status is weighted towards service that previously qualified as a Lifeline by other measures. If a key facility is already served by routes not designated as Lifeline service, then the route with the best performance score equally based on Passengers/Revenue Mile,

[6] Federal Poverty Level as defined in 2018 by U.S. Department of Health and Human Services. https://www.healthcare.gov/glossary/federal-poverty-level-FPL/

Passengers/Revenue Hour, Net Cost/Passenger, and Farebox Recovery is selected as the Lifeline.

The minimum span of service for facility access Lifeline services is from 7AM to 7PM for days when a facility is open. For services that are designated Lifeline based on serving hospitals, the minimum span of service is from 6AM to 11PM on all days.

16.2.4. Major Activity Center (MAC) Access

Routes that serve major activity centers (MACs) designated by the Atlanta Regional Commission (ARC) are eligible for Lifeline designation. These MACs include Buckhead, Downtown (CBD), Fulton Industrial, Midtown, North Point, and Perimeter Center.

If two or more routes serve a MAC, Lifeline status is weighted towards service that previously qualified as a Lifeline by other measures. If a key facility is already served by routes not designated as Lifeline service, then the route with the best performance score equally based on the following factors is designated as Lifeline service:

- Passengers/Revenue Mile
- Passengers/Revenue Hour
- Net Cost/Passenger;
- Farebox Recovery

The minimum weekday span of service for MAC access Lifeline service is from 5AM to 12AM, and the minimum weekend span of service is from 6AM to 11PM.

16.3.Service Assessment Process

For evaluation purposes, MARTA's conventional bus service has been divided into five categories:

1. Core – served on each end by a rail station or other major ridership generator, accommodating comparable ridership patterns in both directions. Additionally, these routes generate ridership greater than 2,000 passengers per day

2. Lifeline – A service designation ensures the retention of transit links originating from low-income and transit-dependent areas to destinations including public facilities and Major Activity Centers

3. Supporting Local – A service that has fewer than 2,000 passengers per day and does not specifically serve a Lifeline facility

4. Peak Hour Only – a route that operates on weekdays only during the AM and PM peak periods.

5. Community Circulator – a service that operates on a regular fixed route utilizing smaller vehicles to provide appropriate levels of service in terms of both load and impact to the community

As stated, these classifications are used for analysis purposes only. There is no variation between the categories regarding fare or service requirements under these Service Standards.

The bus service assessment will identify those routes that are under-performing or declining in trend and need further evaluation based on the Service Standards. Once a particular route has been identified as underperforming, a report will be produced identifying the routes in need of modification. All recommendations for major service modification or total route discontinuation will follow the public hearing and Board approval process as set forth by the MARTA Act and described within these Service Standards. A route will be determined as potentially deficient if, for two consecutive mark-up periods, two of the three performance measures score low compared to system-wide scores of the same criteria index.

Fixed-Route Performance Measures

- Passengers per hour
- Total costs per passenger
- Average load/occupancy rate

Example of methodology

The performance measures discussed under Route Productivity are calculated for the entire system and then organized by type of service. If a route is categorized as a 'Core' route it will be compared against the average result of the other 'Core' routes.

Following the assessment of route productivity and any subsequent analysis, proposals for corrective actions will be generated as necessary for consideration. These actions include service modifications to increase productivity and efficiency for both the passengers and the Authority. If a route is found deficient and extenuating circumstances do not exist, a strategy including a schedule for corrective actions will be developed.

The strategy may include any of the following:

- Community input
- Increased marketing
- Route modifications
- Change of service frequency
- Change in hours of service
- Change in the days that service is provided
- Removal of non-productive trips or segments

The strategy will be monitored to determine whether corrective actions are achieving the desired results. If implementation of the strategy fails to improve a route's performance, staff may create a new strategy, allowing an appropriate time period for improved performance. If reasonable actions do not result in the route meeting established standards, staff will request permission from the Board of Directors to hold a public hearing to gather input regarding the proposed discontinuation of the route or route segment.

16.3.1. Factors Affecting Service Modification Implementation

Evaluation of resource availability for expected service modifications or additions:

- Budgeted Operating Expenses - Proposed service modifications must be identified within the established Fiscal Year Work Plan for Operation of Service for that year.
- Proposed new services that will incur additional cost outside of the work plan can be implemented if one of the modifications listed in the following section applies.

16.3.2. All Service Modifications

Assurance of Service Equity
Recommendations for change involving the reduction or addition of service will be reviewed to avoid the disparate distribution of "benefits and burdens" of service provision due to such proposals. This will maintain comparable service levels to areas identified as having a concentration of protected population segments, particularly minority and low-income. The threshold used by MARTA to determine a census tract as sensitive to service equity from a minority standpoint is the service area average of minority population by Census Tract as prescribed by Title VI of the Civil Rights Act of 1964. MARTA will follow the guidelines detailed in FTA Circular 4702.1B.

Vehicle Availability
Any new services requiring additional peak vehicles that would result in an unacceptable reduction in "spares-to-peak scheduled vehicle" ratio (20%) would not be implemented until (a) fleet size is expanded, or (b) service modifications on existing routes reduce peak vehicle requirements sufficiently to accommodate any such new services.

Vehicle Storage and Serving Capacity
If proposed new services require acquisition of additional vehicles and existing storage/service facilities are at capacity, no new services will be implemented until storage/service facilities are constructed and/or acquired.

Vehicle and Operator Availability

Adequate budget, equipment and qualified operators/drivers must be available to provide the proposed service.

16.3.3. Requests for New Service

Public Input
The consensus of a majority of the residents or political representatives of an area will be considered when new bus service is requested by individuals and/or communities. Such requests shall be documented through endorsement resolutions or other demonstrated interest. In addition, service requests that result from outreach meetings held in the community to discuss service will be considered and evaluated.

Potential Ridership
The proposed new route should generate sufficient ridership to produce a farebox recovery ratio comparable to that for similar existing service. Productivity of new services will be assessed after one year of implementation.

Level of Development
The number and square footage of major office and retail development in the request area should be at a level in similar areas where regular services are currently provided. Special consideration may be given to areas with established Transportation Management Associations (TMA) or Community Improvement Districts (CID) for new, supplemental or circulator services.

Demonstration Status
Any new bus route or innovative service, such as shuttle services, that has received public input may be designated by the Board of Directors as a demonstration project. This demonstration period may extend for a period up to

one year from the first date of service on the new route or innovative service. During the demonstration period, the Board of Directors may choose to change the new route or innovative service after notification to the existing passenger base. Any bus route or innovative service being considered as a "demonstration project" shall be identified as such on the public timetable.

Monitoring of service that is classified as demonstration will take place monthly for the first three months. The frequency of checks will be reduced to tri-annually for the remainder of the demonstration period. However, any major changes to the service within this time will require three monthly checks and three subsequent tri-annual checks.

Requests of Board Members
Any request brought to staff from a member or members of the Board of Directors shall be considered as an expressed mobility need of the respective constituency.

16.3.4. Requests for Additions / Deletions to Existing Service

Additional Trips
The following factors shall be considered for implementation of additional trips on existing routes:

- Vehicle loads; not to exceed the maximum load factor per the service standards;
- Maintaining level of service (i.e., headways) while expanding service coverage;
- Other transit services available in the area that could reasonably satisfy the specified need; and
- The provision of connections with the first or last train with the current first/last trip.

Modification of Existing Routes (Rerouting)
The following factors shall be considered for modification of existing routes.

- Vehicle loads of trips close (in time) to the requested service;
- Availability of other transit services within approximately ¼-mile of the area of request;
- The total number of passengers that would be denied service because of the rerouting;
- Potential for generating additional trips;
- Impact on schedule adherence; and
- Directness of routing to minimize through-trip delays.

Requests for Removal of Trips
The following factors shall be considered for implementation of removal of trips on existing routes:

- The total number of passengers that would be denied service;
- Availability of other transit service in the area that could reasonably satisfy the specified need;
- Historical significance of the route;
- Fare recovery rate; and
- Community consensus.

Public Involvement
The involvement of the public/private sector shall be considered where feasible and such considerations shall be documented.

16.4. Guidelines for Major Service Contraction

In times of national or regional economic distress, cost containment and/or revenue generating actions taken by the Authority will include a multiple of alternative considerations:

- Implementing internal productivity-cost containment initiatives;
- Seeking new revenue sources;
- Considering and proposing fare increases; and
- Reducing service as needed.

Depending on the severity of the particular fiscal crisis, a significant contraction of service may be required to align the provision of service with expected revenues. The initial step in this process will be the identification of unproductive service, as outlined previously.

This section serves to provide guidance for considering a systemic contraction of service when faced with major operating budget shortfalls.

16.4.1. System Components

When faced with the certainty of severely reducing transit services, the Authority must specifically define the types and levels of core bus services that will be preserved given the Authority's complex multi-modal characteristics. MARTA essentially operates a feeder bus system. The investment in the permanently fixed heavy rail system was generally based on the concept of conveying passengers to the high capacity, more frequent and faster rail service. The addition of the

streetcar added another permanent, fixed-route type of service that provides connectivity to the rail system and access throughout Downtown Atlanta. The system components are defined as follows based on the utilization of the feeder bus concept:

- Heavy Rail Service
- Streetcar Service
- Core Bus Service
- Lifeline Bus Service
- Special Services

Heavy Rail Service
The high volume of passengers using the heavy rail service requires preservation of high frequencies to prevent overcrowding that cannot otherwise be avoided. Unlike bus service, the heavy rail system is permanently fixed and small changes, such as modifying headways (time between trains), have larger impacts. Heavy rail service can be adjusted, as appropriate, to accommodate estimated passenger loads from the bus, park/kiss-and-ride, and non-motorized modes of transit.

Streetcar Service
Unlike bus service, the streetcar alignment is permanently fixed. Streetcar service can be adjusted, as appropriate, to accommodate estimated passenger loads from the bus and heavy rail and local destinations in Downtown Atlanta.

Core Bus Service
Core corridor routes are identified as those operating in major corridors that feed the rail system. They shall be preserved as major "branches." These routes typically operate on major roads or thoroughfares, at high frequencies of between 10 and 20-minute intervals (including short turn alignments). The operating characteristics for this service group will be standardized to operate similar headways and service hours, with the primary operating characteristic being service frequency.

Lifeline Bus Service
Lifeline service which access destinations critical to the livelihood of the community – particularly minority, low-income, and transit-dependent communities – shall be maintained at a level of accessibility and availability based on defined thresholds.

Critical Lifeline Bus Service Links:
- Hospitals
- Government Facilities

- Activity Centers off of the rail system[7]

Connections to major job centers, hospitals, and government facilities shall be retained based on the highest and most critical of demands. The level of service will be specifically tailored to the hours of service of said destinations, with a higher priority given to span of service hours over service frequency. Additional outreach to these communities and partners (e.g., TMAs) will be made and will provide critical feedback for identifying these destination-community links. Further, consistent with mandates under the Americans with Disabilities Act (ADA), and the Guiding Principles included under this section, exhaustive consideration will be given to the impact of service contraction on the complementary paratransit services provided by the Authority (MARTA Mobility). The coverage of this service is based on a ¾-mile buffer around fixed-route service. Therefore, when examining the critical Lifeline service links, the emphasis will be on streamlining service intensity in order to retain the maximum service area coverage, while minimizing/eliminating duplicative service.

Special Services
In order to maintain essential Core services, special services, such as recreational/leisure shuttles, will be of lower priority or discontinued as necessary. Customers who utilize these special services will be advised of the remaining alternatives.

16.4.2. Duration

All service reductions under this "contraction" scenario will be effective until the Authority's financial condition permits the full or partial restoration of the discontinued service and eventual consideration for expansion of services.

16.4.3. Approval

As with all other service modifications including reductions and restoration of services, the process for approval shall include:

- Briefing the MARTA Board of Directors on the extent of proposed service reductions, including staff's proposal that will be presented to the public for comment;
- Request to hold public hearings;
- Holding Community Exchanges/Public Hearings; and

[7] Such as Fulton Industrial Blvd, GA-400 Corridor, Northpoint, high concentrations of minority, low-income, transit-dependent communities

- Requesting the Board of Directors' final approval of staff's service reduction recommendation based on the analysis of technical information and final comments received from the public.

17. PUBLIC HEARING REQUIREMENTS

17.1. Federal Requirement for Public Comment

The Urban Mass Transportation Act of 1964 as amended requires that recipients of federal financial assistance establish a local process to receive and consider public comment prior to fare changes and major service reductions.

17.2. MARTA Act Requirements on Public Hearings

MARTA's enabling legislation (MARTA ACT) provides that…

> *"The Board shall determine by itself exclusively after public hearings as hereinafter provided, the routes, to be operated by the Authority, the scheduled services to be made available to the public and, ... the amounts to be charged therefore. Before making any determinations as to scheduled services or amounts to be charged for such services, … the Board shall first hold at least one public hearing after giving notice of the time and place by twice advertising on different days in the newspaper having the largest circulation in the metropolitan area not more than ten days or less than five days prior to the hearing. As to all other matters, the Board may hold such public hearings as it may deem appropriate, and as to all public hearings, it may prescribe reasonable rules and regulations to govern such hearings not inconsistent with the Act."*

17.3. MARTA Board Requirements on Public Hearings

The MARTA Board of Directors (the Board) requires that the following service change actions be taken only by the Board following the public hearing process referenced in the MARTA ACT, above:

1. The establishment of a new bus route to include the initial service alignment and headway parameters for that route.

2. A substantial geographical alteration, such as the addition or deletion of more than one and one-half (1½) directional miles on a given route.

3. The discontinuation of any bus service not under the demonstration project status.

4. A major route modification which causes a 25% or greater increase or reduction in the number of daily trips provided. This may also apply to route segments as appropriate.

5. Implementation of new service.

6. Changes in fare policy.

An accurate stenographic transcription or audio recording will be made of each public hearing. Public hearings will be held at facilities convenient to the affected customers and accessible to the disabled.

18. MONITORING OF APPROVED SERVICE STANDARDS

All standards listed in this document will be monitored and reported on a tri-annual basis. The report will be prepared and submitted to the CEO and MARTA Board for review and will also be made available upon request from the Office of Transit System Planning.

19. GLOSSARY

Accessibility - the extent to which facilities are barrier free and usable by persons with disabilities, including those who use wheelchairs.

Central Business District (CBD) - the downtown retail trade and commercial area of a city or an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels and services.

Community Circulators - a targeted, shorter-distance fixed route that connects residents with neighborhood shopping, education, medical facilities, or transit network within the community

Comprehensive Operations Analysis (COA) - an analysis of existing transportation services and recommended service changes based on analysis of existing ridership, service performance, and market conditions supported by public outreach

Core - served on each end by a rail station or other major trip generator, accommodating comparable ridership patterns in both directions. Additionally, generates more than 2,000 passengers per day

FAST Act (Fixing America's Surface Transportation Act) - the federal update to MAP-21 which funds surface transportation programs – including, but not limited to Federal-aid highways – at over $305 billion for fiscal years (FY) 2016 through 2020. The first long-term surface transportation authorization enacted in a decade that provides long-term funding certainty for surface transportation.

Fixed Route - a system in which buses follow a fixed time schedule over a prescribed route. It is different from such modes of transportation as taxicabs or demand-responsive transportation, where each trip may differ in its origin, destination, or schedule.

Frequency - the number of transit vehicles on a given route or line, moving in the same direction, that pass a given point within a specified interval of time, usually one hour.

Headway - the time interval between the passing of successive transit vehicles moving along the same route in the same direction, usually expressed in minutes.

Land Use - the purpose for which land or the structure on the land is being used, for example, residential, commercial, light industry.

Lifeline Service - a Lifeline service designation ensures the retention of transit links originating from low-income and transit-dependent areas to destinations including public facilities and Major Activity Centers

Map-21 - Moving Ahead for Progress in the 21st Century. MAP-21 gives FTA significant new authority to strengthen the safety of public transportation systems throughout the United States. The act also puts new emphasis on restoring and replacing our aging public transportation infrastructure by establishing a new needs-based formula program and new asset management requirements.

Operating Cost - the sum of all costs that can be associated with the operation of the system during the period under consideration.

Paratransit - demand-responsive transportation that requires a request for service and which does not necessarily operate on a fixed route or fixed schedule. Satisfies Americans with Disabilities Act (MARTA Mobility).

Peak-Hour Only - a service which operates on weekdays only during the AM and PM peak periods as defined. Peak Period - the period during a normal weekday when demand for transportation service is heaviest. (generally, between 6 AM – 9 AM and 3 PM – 7 PM)

Plug Service - anticipated extra service implemented to avoid overcrowding and inconveniencing the riding public during scheduled special events.

Productivity - the ratio of units of transportation output to units of input; for example, vehicle miles per operator hour, or passenger miles per unit cost of operation.

Regional - transit lines with few stations and high operating speeds. They primarily serve long trips of long duration or distance within metropolitan regions, as distinguished from local transit service and short-haul transit service.

Ridership - the number of people making one-way trips on a public transportation system in a given time period.

Route - the geographical path followed by a vehicle or traveler from start to finish of a given trip.

Segments - portions of routes delineated from others on the basis of such aspects as collection or delivery points, or the portion between these points.

Service Type - the delineation made between such types of service as local, limited, and regional.

Stop Spacing - the distance between consecutive transit stops.

Supporting Local - a service that carries fewer than 2000 passengers per day and does not specifically serve a Lifeline facility

Transfer - a passenger's change from one transit unit or mode to another unit or mode.

Transit-Dependent Riders - riders who either: (1) live in a household which have limited or no access to a car; (2) who have a physical or mental disability that prevents the operation of a motor vehicle.

Transit System - the facilities, equipment, personnel, and procedures needed to provide and maintain public transit service.

Travel Time - the time duration of a linked trip on transit, that is, from the point of origin to the final destination, including walking time at transfer points and trip ends.

Trip - a one-way movement of a person or vehicle between two points for a specific purpose; sometimes called a one-way unlinked passenger trip to distinguish it from a round trip.

20. APPENDIX 1: SUMMARY OF CHANGES FOR FY 2019

- Added standards for streetcar service throughout document where appropriate.
- Identified rail service as "Heavy Rail" to more clearly differentiate it from streetcar service throughout the document and the newly established Office of Light Rail.
- Replaced Service Type "Small Vehicle Service" with "Community Circulator".
- Load factor overloads for buses warranting potential corrective action plans has been changed from if overloads are observed for three consecutive days, to repeatedly during a mark-up period.
- Added description of Wi-Fi amenities for trains, buses, streetcars and stations.
- Revised Productivity Standard to reflect changes adopted by the Board.
- MARTA service area percentage of the population with no auto availability average has been updated to 13.8%.
- Median household income considered low-income updated to reflect current Census data from $27,562 to $31,375, which amounts to 125% of the Federal poverty level for a family of four.