CapMetro

SERVICE STANDARDS & GUIDELINES

2026



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GLOSSARY

Americans with Disabilities Act (ADA) Compliance: The Americans with Disabilities Act (ADA) of 1990 and subsequent amendments mandates equal access to all public transportation services, regardless of mobility status. The ADA requires that fixed-route transit be accessible and compliance to these mandates often deals with the characteristics of transit equipment, service and boarding areas. For more detailed information and backing on ADA requirements, please visit the link at the top of the paragraph.

Double Track: Portion of a rail line with two parallel lines of track, typically allowing trains to travel in opposite directions simultaneously without interfering with one another.

Evaluation: An assessment of service at a specific point in time to determine its performance.

Fixed Route: A transit route with a fixed schedule and designated stops for picking up and dropping off riders.

Frequency: How often (in minutes) a bus passes by a bus stop during an hour.

Key Performance Indicators (KPIs): Data points used to measure outcomes determined to be important to the success of transit.

Monitoring: Keeping an eye on route performance over time to assess when changes might need to be made.

Performance: How well or poorly a transit route carries out its function.

Public Rights-of-Way Accessibility Guidelines (PROWAG): Recommended guidelines for designing and constructing facilities within the public rights of way, most recently updated in 2013, as a best practice for accessibility issues in the public right of way not covered by the Department of Justice's currently adopted standards.

Public Transit or Public Transportation: A transportation system that is available for use by the general public that moves groups of people. As opposed to a private vehicle that generally carries fewer people and has limited access.

Riders per Hour: how many individual passenger boardings occur for every hour a bus or train operates.

Reporting: The process for giving an account of the process and results of an evaluation or monitoring.

Schedule: The schedule is how the span and frequency operate throughout the day. Most often, this lays out each trip and the expected time of service from the start of the line, at timepoints, and at the end of the line. A schedule helps riders plan when they would need to reach a stop in order to use transit service.

Service Area: The area in which CapMetro is authorized to operate transit service. This includes cities and communities that have authorized a 1-cent sales tax to fund transit. The CapMetro service area includes Austin, Jonestown, Lago Vista, Leander, Manor, Point Venture, San Leanna and parts of Travis and Williamson Counties.

Service Change: Adjustments to CapMetro services made at regular intervals throughout the year based on analysis of performance measures, community and operator feedback and available resources.

Service Types: Groups or categories of similar types of transit services according to their form or function used to manage and monitor service effectively. For CapMetro this includes High Capacity, Frequent, Local, Community, Commuter, and more.

Shared Mobility: Refers to short-term rental mobility options that can be shared like bikeshare or scooters or micromobility devices that use and share the public right-of-way, such as skateboards.

Single Track: Portion of a rail line where trains traveling in both directions share a single line of track.

Span: The number of hours in a day that revenue service is provided. Time starts when the first bus arrives at its first timepoint to when the last departs from its last timepoint.

Standard: A point of reference or benchmark used to compare how a transit service performs. If something “meets the standard” it has an acceptable level of performance.

Stop and Station Amenities: Equipment to improve the experience of a rider when they reach a transit stop and wait for the bus or train. Items like shelter, seating, lighting, waste receptacles and more can improve the comfort, accessibility and ability for riders to use the transit system. Guidance and descriptions of the amenities can be found in the Stop and Station Amenities chapter.

Stop and Station Types: Groups or categories of transit stops or stations according to their characteristics including number of average daily riders and the service types that use the stop, i.e. CapMetro Rapid.

Texas Accessibility Standards 2012 (TAS): Technical requirements for accessibility to sites, facilities, buildings, and elements for people with disabilities. It applies during design, construction, additions to, and alterations of sites, facilities, buildings and elements to the extent required by the Texas Department of Licensing and Regulation under the authority of Texas Government Code, Chapter 469. The standards are intended to be consistent to the 2010 Standards for Accessible Design

Transit Demand: Refers to the level of desire and need for public transportation services within a given area or population. It represents the quantity and frequency of individuals who choose or require the use of buses or trains to travel from one location to another. Transit demand is influenced by various factors, including population density, travel patterns, urbanization, land use, accessibility, and the availability and quality of public and private transportation options.

Understanding transit demand is crucial for transportation planners and authorities to effectively design, optimize, and meet the transportation needs of communities.

Transit Service: A system or network that supplies public transportation in the form of rides to and from different locations provided by a transit agency.

Transit Stop or Station: A location marked with site specific signs, indicating where buses or trains will stop to pick up and drop off riders at designated times.

Transportation Criteria Manual (TCM): The City of Austin created this manual codified through Rule No. R161-25.15. This republication was enacted on October 29, 2025 and updated on March 20, 2026. The TCM serves as a foundation or starting point for the design requirements for transportation infrastructure. It includes standards and criteria for planning, design and coordination of applicable facilities within the city of Austin. The intent of the TCM is to apply a consistent approach to street design. CapMetro has worked with the City to develop sections of this manual as it relates to transit and building supportive infrastructure within the right-of-way. CapMetro follows TCM guidance where applicable and works with other jurisdictions directly to coordinate on design, permitting and implementation. For more information on the TCM, visit the link at the beginning of this paragraph. The TCM is updated relatively frequently and therefore should be referenced for the latest information as needed.

Underserved Transit Area - An area with demonstrated unmet transit needs resulting from gaps in service coverage, frequency, span of service, connectivity, or access to key destinations.

ABOUT THIS DOCUMENT

CapMetro connects the people, jobs and communities of Central Texas by providing quality transportation choices. The CapMetro Service Standards & Guidelines provide a framework for how the agency designs and monitors transit service, as well as the process for making changes. The document is divided into five main sections.



The **Service Guidelines & Best Practices** section defines the different types of transit service and a set of principles for how they should be designed.



The **Service Standards** section provides guidance on how CapMetro measures service performance and determines if changes are needed. Standards help ensure that CapMetro is meeting the expectations of the guidelines moving forward.



The **Service Changes** section describes the steps and timeline for evaluating and making changes to service, especially when a service is not meeting the standards.



The **Transit Stop & Station Design Guidelines** section facilitates the proper siting, design and management of either existing or proposed stops and stations throughout the CapMetro service area.



The **Transit Stop & Station Amenities** section details the standard amenities assigned to transit stops and stations throughout the CapMetro service area and establishes a consistent framework to distribute amenities fairly.

The Service Standards and Guidelines document is required by Federal Transit Administration (FTA) Circular 4702.1B to comply with Title VI of the Civil Rights Act. The standards outlined in this document are used to monitor service and report to the FTA during the triennial FTA audit.

In addition to being used for federal compliance, the document provides CapMetro staff with tools to effectively design, measure, and evaluate transit service. The clear documentation of how CapMetro makes decisions about its transit service provides transparency amongst CapMetro staff, Board Members, Member Cities, and the public.

CapMetro staff conducts a review of the Service Standards & Guidelines at least every 3 years. The revised document is submitted to the CapMetro Board of Directors for approval. An overview of the engagement process for the update to this document can be found online here.

Other Reference Documents Not Covered

There are policies and standards not covered in the Service Standards and Guidelines. The following documents provide more detailed information:

- **CapMetro Facility Design Guidelines** – Provides design standards for CapMetro facilities.
- **Bus Stop and Transit Amenity Design Standards and Specifications Manual** – Provides engineering-level drawings and technical specifications used for transit stops and transit amenity infrastructure within the public right-of-way.
- **Transit Development Guidelines** – Provides a roadmap for developers to work with CapMetro, from design conception through the site development review process.
- **Red Line Trail Study** – The study identified feasible opportunities and recommendations for incorporating the Red Line Trail within CapMetro's rail right-of-way.

01

Introduction

ABOUT CAPMETRO

Each department within CapMetro works together to plan and operate transit service, ensure efficient use of funding, manage accessibility, safety, vehicles and capital investments, engage with the community and more. Different departments have different roles and levels of involvement when it comes to the development of the **Service Standards & Guidelines** or in supporting adherence to these guidelines after their adoption.

CapMetro's Strategic Plan

Strategic Plan 2030 is CapMetro's organizational blueprint for the next five years. It identifies the results CapMetro will achieve during that time and the actions needed to achieve them. The **Service Standards and Guidelines** are a key tool that will be used to work toward CapMetro's strategic **mission** and **critical results.**

Our Mission

CapMetro's mission is to empower, enhance, and serve the region and its communities through the responsible delivery of high-quality public transportation.

CapMetro has adopted four Critical Results to guide the choices agency leaders make, the resources the agency allocates, and how CapMetro characterizes success for the next five years. Each result has a set of measures that will be used to assess progress and impact. The critical results include **Reliable and Secure Service, Increased Ridership, Fiscal Responsibility, and Regional Significance.**

Critical Results



Reliable and Secure Service

Enhance service quality through reliability and security improvements



Increased Ridership

Increase ridership in the region



Fiscal Responsibility

Ensure fiscal responsibility guides all the organization's activities



Regional Significance

Work to make CapMetro a significant and integral component of transportation in the region

The **Service Standards & Guidelines** serve as a channel for advancing each of the critical results, through providing metrics to measure the reliability, ridership, productivity, and cost effectiveness of CapMetro services. The guidelines also provide a roadmap for developing, implementing and modifying transit service throughout the Central Texas region.

Regional Coordination

Central Texas is a growing region with transportation needs that go beyond the larger metropolitan areas, and the CapMetro service area. In 2013, CapMetro and Capital Area Rural Transportation System (CARTS), the regional rural transit provider for areas of Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Llano, Lee, Travis and Williamson Counties, created the Office of Mobility Management (OMM). The OMM focuses on closing gaps in transit service by working directly with customers in need and coordinating with local jurisdictions and service providers. The OMM strives to integrate the regional network of transit services in the Central Texas region. It is dedicated to meeting the transportation needs of senior adults, people with disabilities, and veterans while addressing gap areas. The OMM also provides information to customers with travel requirements that cross jurisdictional, agency and service provider boundaries.

CapMetro adopted a Service Expansion Policy in June 2008 that was later revised in April 2014 and reaffirmed by the Board of Directors in November 2022 to provide guidance when there is a desire to add new or continue existing transit service outside the CapMetro service area. It defines approaches for service to jurisdictions within the region that are not currently served by CapMetro.

This policy also defines the process for distributing federal transit funding in the region (Section 5307 Funds) and implementing transit services. Jurisdictions within the urbanized area, but outside the CapMetro service area, can participate. The program requires cities to first complete a Transit Development Plan (TDP) to identify transit service needs and assist in developing transit alternatives and financing. CapMetro coordinates with the cities of Buda, Hutto, Georgetown, Round Rock and Pflugerville as well as Travis County on updates to the required TDPs. In addition, CapMetro works directly with a number of these jurisdictions to provide transit services through an Interlocal Agreement (ILA) process.

CAPMETRO SERVICE TYPES

Future Services

This update to the **Service Standards & Guidelines** references future new modes of transit service, including Light Rail, which CapMetro will operate in the future with the implementation of **Project Connect** investments. However, this document does not set performance standards for these services yet.

CapMetro will update its guidelines to include standards for new service types as they are implemented so that initial performance data can be used to set realistic thresholds.

While all transit services are designed to connect riders to different destinations across the service area, different transit services are a better fit for specific markets. All transit services function as part of the network, and different routes each have their own function within the network. This means that CapMetro's services have unique rail and demand response/microtransit services.

Similar services were grouped into categories called service types. Service types allow each route's performance to be evaluated relative to routes serving a similar purpose or with similar fundamental characteristics. Specific performance metrics for each route type are described in the **Service Standards** portion of the document. Routes can move between categories with changes over time. These service types are referenced throughout the document where detailed guidelines and standards for service quality and effectiveness are provided.

Fixed Route Service

Fixed route service is defined as any service that operates with defined schedules, times and stops. This includes bus and rail service.

Commuter Rail

CapMetro operates commuter rail service between Leander and Downtown Austin. Known as "the Red Line" (Route 550), the rail line runs roughly 32 miles and serves 10 stations. The Red Line is a high-capacity transit service designed to carry passengers longer distances on a dedicated right-of-way.

Light Rail

Austin's planned light rail will operate in its own dedicated right-of-way at street level in the city's core. Austin Light Rail will serve 15 stations from Lamar Blvd & 38th Street to Congress Avenue & Oltorf Street and E. Riverside Dr & Yellow Jacket Ln.

Rapid

CapMetro Rapid lines are high-capacity bus service designed to carry more passengers per hour at a higher frequency. Stops are spaced further apart and are distinct from other routes in the system, with stations that can accommodate more people. Rapid routes are often implemented along highly traveled regional corridors where ridership is historically high.

Frequent

Bus routes that arrive every 15 minutes or more often throughout the day on weekdays. This consistency allows passengers to use CapMetro spontaneously without needing to consult a specific timetable or schedule.

UT Shuttles

UT Shuttles are residential and on-campus shuttles serving the University of Texas. This service is made possible through an Interlocal Agreement between CapMetro and the University of Texas to provide tailored transportation for its students, staff, and faculty, and thus, frequency, span and days of operation are dependent on the UT academic calendar. Transit Plan 2035 recommends that Frequent routes replace most UT Shuttles and this category will be reevaluated during the next SSG update.

Local

Bus routes that typically operate every 30 minutes on weekdays, serving major destinations including downtown Austin, universities, shopping centers and transit centers.

Commuter

Routes that have limited stops and/or limited times for service primarily designed to transport passengers between residential areas and employment centers over longer distances. These services provide express or limited stop service for commuters at peak times on weekdays. These routes connect outlying areas to downtown and University of Texas.

Community

Community Routes are community-focused services designed to address identified specific mobility needs of the community and provide access to essential destinations. Developed through community input and service planning analysis, these routes offer customized operating schedules, frequencies and service spans that reflect the unique needs of the communities they serve.

Late Night

Night Owl service is a specialized late-night service that operates from approximately midnight until 3 a.m. to provide safe transportation after regular bus services and the Red Line have stopped operating. These routes connect downtown to surrounding neighborhoods and key locations like the airport.

Demand Response Service

CapMetro Access

CapMetro Access is a demand response, shared-ride service for people whose disabilities prevent them from riding our other bus and rail services. This type of service, also called complementary ADA paratransit, is required to operate within three quarters of a mile of all non-commuter fixed route services. Access service complies with the Americans with Disabilities Act of 1990 (ADA). For more information on the Access service area boundary, the Access Rider Guide, and Access eligibility, visit CapMetro Access service information.

Pickup by CapMetro

Pickup is a microtransit service available in limited areas, referred to as Pickup zones. When in a Pickup Zone, customers can use the Pickup App or call to arrange on-demand transit service to bus stops, appointments, grocery or drugstores and anywhere within the zone. CapMetro currently operates 12 Pickup zones throughout the service area. The standards for measuring Pickup zone performance are detailed in **Chapter 3 Service Standards**.

CapMetro Bikeshare

CapMetro Bikeshare is a public dock-based, electric-assist bike amenity designed to help customers connect easily to transit. With convenient stations near neighborhoods, job centers and transit stops, Bikeshare provides a reliable first- and last-mile option that makes it easier to complete trips without a car. Implementation of Bikeshare stations is guided by the Bikeshare Expansion Plan, which outlines system priorities. Metrics used to evaluate Bikeshare are summarized in **Chapter 3 Service Standards.**

Commuter Services and Programs

CapMetro Vanpool

CapMetro's Vanpool program allows groups of 4 or more commuters to share a leased vehicle for their trip to and from work. Groups with an origin or destination in the CapMetro service area are eligible to receive a 50% subsidy applied toward the monthly rental fare, which includes the vehicle, insurance, maintenance and 24/7 roadside assistance.

Guaranteed Ride Home Program

Riders who take Commuter services such as Express, Vanpool or Rail are eligible to utilize the Guaranteed Ride Home program, which provides reimbursement for registered customers who need to take a rideshare or taxi home in the case of an emergency.

02

Guidelines for Designing a Good Transit System

This section contains the CapMetro **Service Guidelines & Best Practices**, which describe strategies for how to design, implement and modify CapMetro transit services. This section provides an overview of industry-wide principles for designing a transit network that meets the community's needs and is easy to navigate for its riders.

Guidelines in this document are included for both Rail and Bus (fixed-route transit), as well as some demand response services, such as Pickup and Bikeshare. While much of the section details strategic best practices for staff, the core purpose of the guidelines is the matching of service types to the specific communities served. Allocating the appropriate amount of service is key to ensuring transit is both convenient for riders and a sustainable use of community resources.

TRANSIT SYSTEM DESIGN GUIDELINES

When designing a transit system, it is important to consider where people live and the major travel destinations that attract the community. To be an efficient steward of public dollars, CapMetro considers the purpose of each transit business line and how it will function as part of the whole system. This means consideration of how each route, bikeshare station or microtransit zone supports the entire transit network, and whom each mode best serves to understand the unique needs of how transit can move and connect the community to the places people want to go.

The sections that follow will provide information on the principles and guidelines that support the design of a robust transit system.

Transit modes should work together.

A truly holistic transit system meets transit demand in many different ways. No single mode can serve every trip, every rider or every geography equally well. The goal is seamless movement of people throughout the Central Texas region, regardless of mode.

Fixed-route service, including Local Bus, Rapid routes, Commuter Rail and light rail, forms the backbone of the network. Where demand is consistent and dense enough, fixed-route service delivers the highest capacity at the lowest per-rider cost, making it the preferred choice whenever conditions support it. However, fixed-route alone leaves gaps, particularly in lower-density areas where a longer walk or bicycle ride is required for riders to access a traditional stop. The first and last mile connection is one of transit's most persistent challenges; a rider may be able to reach their initial bus stop easily, but getting from the stop to their final destination — or from home to the nearest route — is often where their journey breaks down. This is where Pickup and Bikeshare services can step in.

Pickup helps solve this issue by providing curb-to-curb on-demand service within a defined zone that may otherwise be inefficient to replicate with a fixed schedule, and Bikeshare service can help connect transit to people walking and bicycling. A strategically placed Bikeshare station, or placement of a Pickup zone near a transit hub, bridges the gap to ensure customers have access to the larger transit system.

Transit and land use are fundamentally connected.

Transportation and the ways communities have developed have been intricately linked throughout history. In Central Texas, people historically traveled by streetcars and railroads until personal vehicles became the most prominent mode. Widespread car use has caused the key destinations within the region to move further away from the center of cities and beyond walkable distances. Across the country, the reliance on

personal vehicles has demonstrated how transportation options impact development and, in turn, how that pattern of development leads people to choose their mode of transportation. For transit to provide the most benefit, it must be well suited to the development pattern of the area it serves.

These guidelines identify key characteristics of the built environment that relate to transit demand, including density, demographic characteristics of the residents, the connectivity of the street grid, existing transportation networks, and the location of major activity centers that are common destinations within a community. Different levels of density and types of land use will correspond to the types of services that can be offered in a particular area.

Transit is best supported by mixed uses and density.

Routes are more efficient when they serve areas of high transit demand, or areas where people live (i.e., residential density), and work (i.e., employment density). While density of jobs or residents are good indicators of transit demand, a mix of land use in the same areas can produce even more demand than either alone. Mixed-use areas create a steady demand for transit throughout the day and evening.

Other transit-supportive land uses include commercial and institutional areas, which attract large numbers of employees, patrons and guests.

Transit Oriented Development in Austin

CapMetro has also been involved in planning for Transit Oriented Development by advocating for mixed-use development near transit and supporting zoning that permits this type of development.

CapMetro has been leading Transit Oriented Development efforts, working in collaboration with local jurisdictions to ensure that high-capacity transit investments are supported by development that not only increases transit ridership, but also provides access and space for people who need it most in our community.



High Density Urban Core



Lower Density Neighborhood

Transit should serve well-defined markets.

CapMetro's transit service strives to serve and connect multiple destinations using network design best practices. The most effective transit routes should be designed to serve areas with high ridership potential and provide access to key destinations. The strongest destinations for transit have intense activity throughout many times of the day; sometimes, activity centers and corridors with high ridership potential may be suitable as connection points for several transit services, such as downtown Austin or the Drag on Gudalupe Street near the University of Texas.

Well-defined markets may include:

- Large/high-density housing complexes
- Medical destinations (hospitals, doctor's offices, dialysis centers)
- Groceries and retail (Walmart, H-E-B, etc.)
- Social services providers (workforce solutions, social security offices, disability services, etc.)
- Sporting arenas and event centers (Q2 Stadium, Moody Center, Exposition Center)
- Shopping/entertainment districts (Downtown, the Domain)
- Colleges and universities (Austin Community College, the University of Texas, St. Edwards University, Huston-Tillotson University, etc.)
- Employment centers (office buildings, major retailers)

To better understand travel trends and how riders are using transit services in Central Texas, CapMetro conducts an Origin and Destination Rider Survey every 5 years. This survey is generally conducted during the spring and collects thousands of responses from riders about where their trip begins and ends, how frequently they ride and other questions. The most recent results of this data-driven market study were completed in Summer 2023.

CapMetro partners with other jurisdictions to design and construct transit supportive infrastructure.

Because CapMetro operates its services within the public right-of-way, the agency must coordinate with partner jurisdictions when implementing transit supportive infrastructure across the service area. Because most CapMetro services operate within the City of Austin, regular coordination with city departments is needed on projects that enhance bus travel times and improve first- and last-mile access to transit. This coordination frequently results in improved or new infrastructure that not only supports transit but also supports the City's mobility and active transportation goals.

The transit network should be supported by infrastructure.

Transit moves people, but it's important for it to be safe, comfortable and convenient to use as well. Transit service should be supported by well-connected streets and sidewalks, which make using transit easier and safer. Areas with poor street network connectivity, poor pedestrian access, physical barriers and frontage roads may be unsafe for transit riders and require more time and resources or a coordinated approach with agency partners to serve effectively.

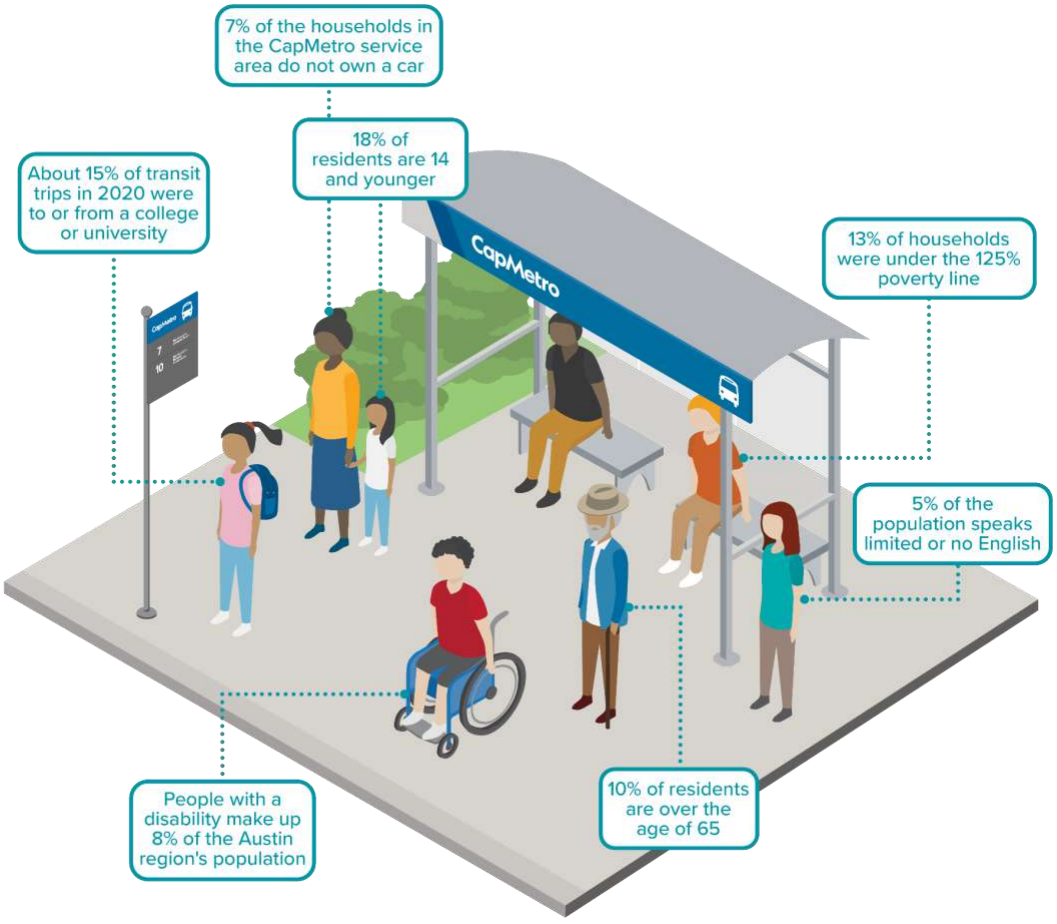
When streets and the surrounding environment are designed to support a variety of modes, more people choose to take transit. People may access transit in a variety of ways: walking, biking, using CapMetro Bikeshare or Pickup, scootering, ridesharing or parking at a Park and Ride. These are often referred to as the first- and last-mile connections to transit.

Where possible, transit-supportive street design choices such as transit priority lanes, traffic calming measures, safe bicycle facilities, wide sidewalks or shared-use paths, can help transit vehicles run more efficiently while also keeping drivers, cyclists and pedestrians safer.

These efforts are just as important to the success of the CapMetro system as its routes and schedules are. When done right, they can enhance current users' experience and attract new riders. As Central Texas continues to experience growth, ensuring transit access across the area is a key to continued economic growth and prosperity. CapMetro will continue to work closely with member jurisdictions, partner agencies and communities to promote regional connectivity.

Transit should prioritize serving the people who are most likely to use it.

Some people are more likely to ride transit than others, as seen in data that shows that a higher proportion of their demographic group uses the service. These groups include people and families who don't own a car, people with disabilities, students, youth, seniors, limited-English speaking populations and low-income populations. More priority needs to be given to these groups when making decisions about where transit service is placed and frequency of service to ensure optimal conditions are provided for transit service to succeed.



FIXED ROUTE BUS DESIGN GUIDELINES

“Good” routes can look different depending on their function within the network, but they all serve their purpose efficiently and reliably for riders. They should be relatively simple for both existing and new riders to understand and should be coordinated with the larger system of routes to facilitate easy transfers.

Routes can serve different purposes, such as maximizing ridership or increasing coverage.

Making changes to individual routes or a portion of a route is rarely done in isolation, and involves thorough analysis, evaluation and community input to identify any changes. Individual routes can also serve different purposes within a transit network. As discussed previously, some routes are designed to serve areas of high ridership potential while others focus more on providing service to a specific area or neighborhood. Most transit systems have a balance of these types of routes in their network.

Areas with a higher density of people and jobs and destinations that are easily accessible within a short walking distance of each other are well-suited to providing high frequency and direct routes that can attract many riders. Routes in these areas usually run on more direct corridors, with fewer deviations or “branches”, and they tend to have stops spaced farther apart. These characteristics mean that ridership-focused routes often have higher average speeds and may have transit priority treatments to improve reliability, making them more efficient. However, because they often run primarily on major arterial streets, riders may have to walk farther distances from their home or place of work to get to the bus stops.

Other areas are more spread out and have a lower concentration of people and jobs, but it is still important to find the most effective way to serve these areas with transit. Routes in these areas are often referred to as coverage-focused routes and are generally less direct, often traveling on more neighborhood roads to expand the geographic reach of the transit network. These routes have more stops, which typically means a shorter walk from homes and destinations. This type of route typically has a longer travel time and can require the customer to wait longer for the next bus due to more stops along the route and a less direct path. Generally, depending on how often the bus comes, these routes may require a high amount of operator and vehicle resources, making them more costly to operate more frequently.

Even though the measures of success can be different for these distinct types of routes, the methods for making adjustments to help them meet their standards are often similar. The Service Changes & Evaluation section describes the process for evaluating routes based on different factors and common actions taken to make adjustments to help a route improve, such as seeing if the stops are closer together than expected or if there’s a way to improve speed along the route. CapMetro uses this knowledge to match the appropriate transit service with the demand for transit in a given area.

Simple routes are better than complex ones.

A simple transit route design and simple schedules will attract more riders than a complex transit system. For people to use transit, they must be able to understand it, and simpler services are easier for riders to rely on. Transit agencies typically try to keep their systems simple where possible to help ensure that riders can get where they want to go when they want to without frustration or problems. Overall, transit systems with simpler route design can more quickly attract new riders and are better able to serve occasional riders.

When a more complex route is warranted, it should fit within the context of the surrounding network.

Routes should operate along a direct path.

Routes should be designed to operate as directly as possible to keep travel time lower while maintaining access to key destinations.

The fewer turns a route makes, the easier it is for riders to understand. Conversely, circuitous paths are disorienting and difficult to remember, which can impact the reliability of the route. CapMetro designs routes so that they do not deviate from the most direct path unless there is a compelling reason, such as serving major activity centers or providing coverage to areas with limited access.

Routes should be symmetrical and predictable.

Wherever possible, routes should operate along the same path in both directions to make it easy for riders to know how to get back to where they came from.

Due to one-way streets, such as in the downtown area, it may be necessary to operate a route on two parallel streets. In such cases, efforts should be made to limit the distance between stop pairs.

There are a limited number of cases where a route might vary from this.

A route might take a different path for a few trips when one portion of the route has a much stronger demand for service than another or in the case of a major attraction that has limited hours. For example, Route 4 extends past its typical endpoint a few trips each day to serve Austin High School. This type of route deviation is called a “school tripper.”

Routes should have appropriate start and end points.

The ideal start and end of a route should be at a transit center or activity center. When not feasible, CapMetro starts and ends routes at terminals including charging facilities for buses or a key destination that can provide strong ridership to “anchor” the route, such as grocery stores. When this kind of location does not exist, the end of line should be selected based on safety and security, restroom availability for operators and the potential impacts on adjacent land uses.

Routes should be planned within the context of the network.

Transit service planning doesn’t happen in a vacuum. When changes are needed for a particular route or when a new service is being planned, the impact on other routes and the overall transit system should be assessed.

Routes should complement other routes to provide coverage across the service area while maximizing ridership and avoiding duplicative service.

CapMetro coordinates where routes go, how often the bus comes and how the schedules line up as necessary to create a smooth rider experience.

Routes should be well coordinated.

Where different routes connect or operate along the same street, schedules should be coordinated to the greatest extent possible to provide short wait times between transfers.

Routes should be appropriately spaced.

Parallel routes operating closely together have the potential to compete for and confuse riders. Appropriate route spacing attempts to balance the tradeoff between how far someone needs to travel to reach transit service and the efficiency of the service. Where the walking environment is difficult to navigate, such as near high traffic streets or areas without comfortable, safe and connected sidewalks, asking someone to go farther to reach the service may deter them from riding. However, routes that are too close together can be an inefficient way to use limited resources, making it more difficult to provide better frequency and coverage to the service area.

Special conditions may exist that require routes to operate closer to one another, such as terrain, barriers or the street network's design. Routes of different service types may even overlap in some places to expand overall transit access in high-activity areas or corridors, such as the local underlying Route 1 that stops more frequently than the high-capacity Rapid 801 service that runs on many of the same streets with more limited stops.

Routes should be an appropriate length.

Routes should be an appropriate length to maximize ridership potential and minimize operational issues. Appropriate route lengths will vary based on context, but typically a route's length influences its performance. For example, if a route is too long, traffic can cause a delay that builds along the route. This can impact route reliability; it may show up at the stop too early or late and cause someone to miss their bus. A route that is too short may be difficult to schedule efficiently, making it difficult to give it an intuitive frequency (i.e. 15, 30, or 60 minutes). There are however additional factors that impact route lengths; currently, downtown Austin lacks space for vehicles to wait to start their next trip, which limits CapMetro from starting and ending routes downtown and may require lengthier alignments.

Fast routes are better than slow.

Virtually all passengers prefer to get places faster rather than slower. Service can be made faster by making it more direct, spacing fixed route stops appropriately and implementing transit priority measures.

Fixed route stop spacing should balance speed and access.

When stops are spaced too far apart, riders are forced to walk long distances to where they want to go, and fewer riders may be willing to take the service if they cannot get on or off near their desired destination. However, when stops are spaced too closely together, service is slow, meaning it takes a lot longer for someone to be able to reach their destination without providing a significant increase in access. Typically, consistently spacing stops between 1,300 and 2,650 feet (approximately 1/4 to 1/2 mile) can help to provide a high level of access while maintaining speed.

Appropriate stop spacing also varies by route type. **Detailed stop spacing standards** can be found in **Chapter 5, the Stop and Station Design Guidelines.**

Transit priority treatments can increase the speed of bus transit.

There are a variety of treatments that can be used to make buses more competitive with personal vehicles and help riders get to where they want to go quickly and reliably. Transit agencies across the country, including CapMetro, have implemented many of these treatments and tools, which vary in cost and offer a

range of benefits to the speed and reliability of transit. Generally, these treatments help buses get around general traffic and congestion. Some of these treatments include:

- **Dedicated transit lanes,** including fully dedicated lanes, bus and right-turn-only lanes, peak-only bus lanes, and curbside lanes.
- **Intersection treatments,** including queue jumps, transit signal priority, and other signal adjustments.

High-ridership segments of routes that experience the most delay and variability in travel time should be prioritized for improvements to speed up buses and make them more reliable for riders. CapMetro Rapid service is a form of Bus Rapid Transit and should also be considered for treatments that support enhancing travel time reliability and making the service more visible to riders.

These are a few of the ways CapMetro coordinates with other jurisdictions to speed up transit vehicles. One example of this is CapMetro's coordination with the City of Austin on transit enhancements, as outlined in the Transit Enhancement Infrastructure Report.

Schedules should be predictable and easy to remember.

CapMetro designs schedules on repeating patterns, making them easier for people to remember.

At CapMetro, a route's frequency is often associated with its service type; Local service typically runs every 30 minutes, and Frequent routes run every 15 minutes. When a route's frequency must differ from its assigned service type due to limited resources, schedulers will prioritize the shortest frequency that our resources allow. For example, a CapMetro route that experiences significant congestion during a peak period may run at a 16-minute frequency for a couple hours instead of 15 minutes, to ensure riders get the highest frequency possible within scheduling constraints. When scheduling changes like this occur, it is communicated to the public and the Board of Directors during the service change process, as described in **Chapter 4 Service Changes.**

Helpful Definitions

Span: The number of hours in a day that revenue service is provided. Time starts when the first bus arrives at its first timepoint to when the last departs from its last timepoint.

Frequency: How often (in minutes) a bus passes by a bus stop during an hour.

Schedule: The schedule is how the span and frequency operate throughout the day. Most often, this lays out each trip and the expected time of service from the start of the line, at timepoints, and at the end of the line. A schedule helps riders plan when they would need to reach a stop in order to use transit service.

Timepoints should be used to keep routes running on time without sacrificing the rider experience.

Part of the route planning process involves determining which bus stops along a route are noted in the schedule as having a set departure time. Bus stops with these scheduled times are called timepoints. Timepoints are stops along the route that help ensure buses remain evenly spaced and on schedule. Timepoints may also be used to communicate route schedules to the public. If a bus is

running ahead of schedule, the driver will stop and wait at the designated timepoint before departing at the scheduled time.

Typically, timepoints are spaced every 8-12 minutes along the route. However, on local or community routes, timepoints can be spaced as close as every 4-6 minutes.

Timepoints are typically located at bus stops that:

- Serve a large number of riders
- Are near major intersections
- Are major transfer points
- Have a safe place and enough space for the bus to layover

On routes that share a path, timepoint locations are ideally the same for both routes along the shared stretch.

COMMUTER RAIL DESIGN GUIDELINES

Commuter rail is a high-capacity transit service designed to move people longer distances with limited stops, typically between suburban or outlying areas, major destinations and the region's urban core. It is primarily used for daily travel like work or school, and special events.

Unlike light rail transit, CapMetro's commuter rail operates on heavy rail with diesel vehicles which is regulated by the Federal Railroad Administration (FRA) and may share tracks with freight rail along existing railroad tracks. Designing or modifying commuter rail service requires careful consideration due to the limited right-of-way in the corridor, the high cost for any infrastructure improvements, and Federal standards and guidelines associated with heavy rail.

The guidelines below detail some key considerations for CapMetro's existing and future commuter rail service.

CapMetro owns and operates a 162-mile heavy rail corridor stretching from Giddings to Llano, with mostly single-track operations. The freight on this rail moves millions of tons of aggregate each year and removes hundreds of thousands of trucks from area highways, supporting regional infrastructure and driving economic growth.

Within this corridor, CapMetro operates the 32-mile Red Line commuter rail between Downtown Austin, North Austin, and Leander. In the future, CapMetro plans to develop an additional passenger rail line on the northeastern portion of its freight rail system (the "Green Line") and continue improvements for both passenger and freight rail service.

Commuter rail should carry people between major opportunity centers.

Commuter rail is strongest at carrying people to and from their jobs, schools, or other major destinations, often for longer distances than other forms of transit. First-mile and last-mile connectivity is key, as rail customers typically walk, bike or roll farther to access the service or their destination compared to using a bus route (due to its limited stops and usage of railroad tracks).

As communities along the corridor develop and new destinations arise along the rail line, commutes can happen in both directions. This makes it more efficient for the rail line.

Commuter rail should be planned with surrounding land use in mind.

Rail can move a lot of people very quickly and is most successful when the rail line is planned in a way where many people can access the rail line and its destinations. Just like other types of fixed route transit, commuter rail works better when there is higher density around stations and a direct, dedicated right of way.

In areas that are not yet dense, Park and Ride facilities and future transit-oriented development can help increase usage.

Commuter rail should move people quickly.

As a high-capacity form of transit, commuter rail should operate in a way that moves lots of people quickly, often competing with point-to-point automobile travel. Dedicated right-of-way allows rail to bypass most traffic congestion and offers faster and more reliable travel times (compared to most bus or automobile commutes).

Although new stations add customers by making new areas accessible to the line, each station also adds travel time. Adding too many stations can cause people not to ride due to extended travel times, which could lead to less riders using the service.

Investments in infrastructure that support speed and reliability can increase the quality of service, and thus, its usage (such as double-tracking rail segments and improving technology).

Commuter rail should be designed to limit conflicts with other modes wherever possible.

A higher level of safety is achieved when there are fewer opportunities for the rail to conflict with automobiles, buses, pedestrians and bikes. Commuter rail crossings should be limited, wherever possible, while also maintaining sufficient access for the rail to operate and for people to access rail stations.

Limiting railroad crossings also provides substantial operational benefit. When the rail must go through an intersection and the crossing arms come down, it can slow down both vehicular traffic, buses, and the rail.

Commuter rail adjustments should consider freight service, which operates within CapMetro's 32 miles of commuter right-of-way and provides significant regional economic benefit. Double tracking or other infrastructure improvements can benefit commuter rail and freight service by limiting conflicts and allowing for additional flexibility in schedules.

Commuter rail should be designed with operations and maintenance space in mind.

All transit services are required to have a place where vehicles go to be maintained when they are done providing service for the day. In the case of commuter rail, trains would be serviced in a rail yard.

Rail yards must connect with existing or extended railroad tracks and require a significant amount of infrastructure and land to ensure rail cars can be serviced or stored in a particular location. Development or growth of an operations and maintenance facility is a key consideration when considering a new or extended commuter rail system.

Commuter rail infill stations should be carefully considered and evaluated due to potential impacts on the schedule and system.

New stations can serve additional customers by making new areas accessible to the line. A wide variety of factors should be considered regarding potential locations, such as, but not limited to:

- Transportation connections (connectivity to streets and trails, to existing and planned transit and proximity to major activity hubs)
- Land use potential (transit-supportive land uses, development pipeline and development potential)
- Constructability and impacts (travel time impacts, traffic impacts and constructability)
- Demand or ridership potential (existing transit need and transit propensity)
- Public requests for stations and community feedback

New stations add travel time, which impacts the schedule and system. Adding too many stations could cause people not to ride due to extended travel times. Even one additional station may require lowering the frequency or investing in additional technology or infrastructure improvements (due to track configurations).

Each potential station must be carefully considered and further studied due to potential impacts and high investment costs.

More information on Rail stations is also included in Chapter 6, the Stop and Station Design guidelines.

FUTURE LIGHT RAIL

Light rail transit[1,2] (LRT) is an electric-powered rail system that operates at high frequency and serves shorter, urban trips with closer stop spacing than commuter rail. LRT is considered high-capacity transit and is designed to move large numbers of people efficiently through dense, active corridors. Unlike commuter rail, light rail typically operates in closer proximity to city streets and surrounding land uses, with a combination of dedicated right-of-way and shared or semi-exclusive alignments.

In the future, CapMetro will operate Austin Light Rail. Visit Austin Transit Partnership's news page for updates on Austin Light Rail's plans for the future LRT system.

PARATRANSIT REQUIREMENTS

Paratransit is a federally required service that operates in coordination with fixed route service. Legal guidelines for this service are well-documented in 49 CFR 37 and 38 and FTA circular 4710.1, which details guidance for how transit agencies can comply with the Americans with Disabilities Act. This guidance dictates that transit agencies must monitor and report on their paratransit service using certain metrics, such as trip length, missed trips and on-time performance.

For the purposes of this document, we've listed some high-level principles for how CapMetro's paratransit service, CapMetro Access, is designed and works in coordination with other CapMetro services.

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[1] Source: https://policy.tti.tamu.edu/strategy/light-rail-transit

[2] Source: https://nacto.org/wp-content/uploads/lrtserviceguidelines_vta.pdf

Paratransit is required to operate within three quarters of a mile of fixed route service.

Paratransit is required to operate anywhere CapMetro has fixed route service within three-quarters of a mile on each side of each fixed route. This does not apply to CapMetro commuter rail, Express or flyer services.

The paratransit service also operates at the same times as fixed route service, so the paratransit boundaries expand during peak times (when most fixed route is operating) and contract as fixed route services end their service for the day. Additionally, this means that changes to the fixed route system can impact the paratransit service area boundary, particularly if the service change to a bus route includes extension of a route to an area with no existing service, or removal of a fixed route segment.

To see the CapMetro Access service area boundary by timeframe, click here.

Paratransit service must provide service that is comparable to what is provided on fixed route service.

Paratransit service is required under the Americans with Disabilities Act of 1990 to be comparable to the level of service provided on fixed-route transit for eligible riders who cannot use regular bus or rail service because of a disability and how they function with their disability.

This means transit agencies must provide service within the same general areas and during similar days and hours that fixed-route service operates. Comparable service also includes similar response times, fares within allowable limits and trip access without unreasonable restrictions or priorities. More information on CapMetro Access is available at: CapMetro Access service information

Paratransit service is provided to customers who are eligible.

Paratransit service is available to customers who are determined eligible based on their inability to independently use fixed-route transit because of a disability or functional limitation. Eligibility is established through an application and assessment process conducted by CapMetro.

The ADA allows CapMetro to grant conditional eligibility for CapMetro Access. This means customers can qualify for paratransit in specific conditions (e.g., during extreme weather, or due to extenuating circumstances in the built environment) but can use fixed-route buses under other circumstances.

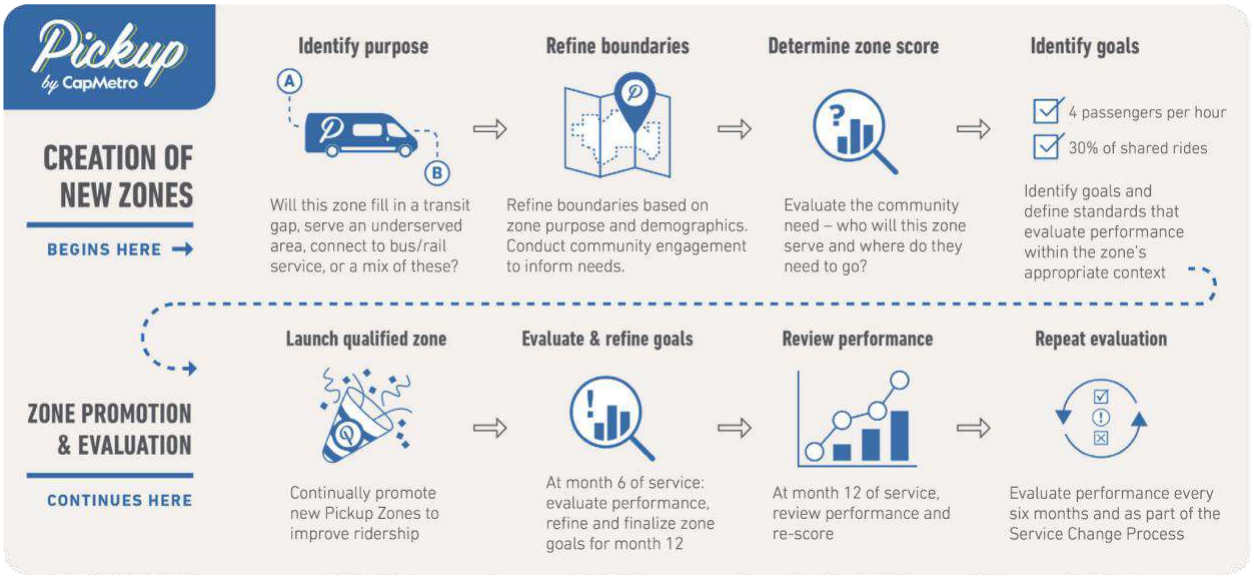
More information on CapMetro Access eligibility is available at: CapMetro Access eligibility information

PICKUP ZONE DESIGN GUIDELINES

Creation of a new Pickup zone requires thoughtful consideration of how the new zone will integrate into the larger transit network, which key destinations need to be included in the zone, whether a transit gap exists, ridership potential, communities served by the zone, existing natural and manmade boundaries, such as rivers or highways and zone size. In addition, the process of creating a new Pickup zone and refining proposed boundaries should include a significant public engagement effort designed to uniquely tailor each zone to meet the localized need of the community.

The guidelines for development of a Pickup zone are discussed below in this chapter, and the standards used to measure success of each zone are included in **Chapter 3 Service Standards.**

Figure 1: Overview of Pickup Zone Creation, Promotion, and Evaluation



Pickup zones can be implemented in areas where it is difficult to operate fixed route bus service.

Pickup zones should be focused in areas where traditional bus service is difficult to provide efficiently or effectively. On-demand microtransit service typically costs more per rider because smaller vehicles carry fewer passengers and operate on flexible routes that provide direct trips rather than serving common bus stops along a set path. Because of this, fixed-route service is generally more cost-effective[3] and financially sustainable than Pickup and should remain the preferred option where ridership demand and operating conditions support it.

[3] While fixed route service is generally more cost effective than microtransit due to the number of people that can be carried at one time, there are conditions that may increase the cost of fixed route. For example, fixed route service requires capital investment into transit stop infrastructure, and it also requires complementary ADA paratransit service. The absence of either of these factors could mean microtransit is the more cost-effective choice. Development of new transit service is context-sensitive, and the cost-drivers for both fixed route and microtransit service should be considered before choosing the appropriate service.

Pickup can be a better fit in areas with conditions that limit the success of fixed-route service, such as low-density development that cannot sustain frequent bus service, land use patterns or street networks that make walking to bus stops difficult, and locations lacking sidewalks or infrastructure needed for safe, ADA-accessible bus stop access.

Pickup zones should be evaluated at least twice a year to assess performance. Pickup performs best and is most efficient when it complements the transportation network it serves. When ridership and demand for Pickup service increase beyond the operational capacity of the zone, it may be appropriate to reevaluate demand for additional transit service within the community. That could include adding a fixed-route service along higher-density corridors within the Pickup zone to reduce Pickup demand or transitioning to a fixed-route service as population and job density increases, and land uses and street grid design are reconfigured to support a larger population. **Chapter 4 Service Changes** details how zones are evaluated and changed.

Pickup zones should increase access to the transit system by connecting people to the larger transit network.

Pickup zones can help bridge the gap between a rider's home, workplace, neighborhood and nearby high-capacity transit services such as bus stops or rail stations. This first/last mile connection improves access to the broader transit system and expands mobility options without requiring fixed-route service on every street. First- and last-mile connections to high-capacity transit services often result in a high volume of morning and evening peak-hour passenger trips that begin or end at transit stops or rail stations. A zone's hour of operations should complement the span of the connecting transit service, particularly Rail, when reasonable.

Pickup zones should serve transit gaps and connect people to key destinations

Pickup should increase mobility in areas where there is minimal or no transit service by providing direct neighborhood trips to important local destinations. This point-to-point service helps meet daily travel needs where walking, rolling, biking or fixed-route transit is less practical. Pickup service should fill transit gaps in areas with moderate to high ridership potential that lack the density, development patterns, or demand to support full-scale fixed-route bus service.

A transit coverage gap often results from infrastructure challenges such as poor street or sidewalk connectivity natural barriers, or recent growth that is not yet large enough to support full scale bus service. Gaps in fixed route service can also signal gaps in accessible transportation. Paratransit operates within three-quarters of a mile of fixed-route alignments, so people who live outside that boundary have no paratransit option. Pickup's accessible, curb-to-curb demand response service can benefit these residents, as well as people with limited mobility, older adults, parents with young children and people with disabilities.

Pickup zones should be designed to maximize access to local destinations for people and families who rely on transit for daily activities but live within a transit service gap. Each zone should include a range of destinations that meet the daily needs of all riders, such as grocery stores, retail centers, employment sites, schools, healthcare, social service agencies, libraries and other community resources.

CapMetro relies on our member cities to co-create transit service that serves their communities.

Pickup zones serve communities throughout the Central Texas region. CapMetro's regional member cities play a key role in designing, modifying, and defining Pickup metrics to evaluate success. For Pickup zones located in regional member cities, such as Pickup Lago Vista, Pickup Leander, and Pickup Manor, transit service works best when CapMetro coordinates hand-in-hand with our regional member cities and community stakeholders.

Pickup zones should be a manageable size to ensure quality customer service

Pickup zones should be designed to operate as effectively as possible to minimize travel time while maintaining access to key destinations. Establishing appropriately sized zones helps balance demand with available vehicles and improves on-time performance. When a zone becomes too large, vehicles must travel longer distances and serve more requests, which can lead to longer wait times and reduced efficiency. Since each zone is tailored to the unique demographic and land use characteristics of the communities they serve, Pickup zone sizes vary across the service area based on population density, land use density and street grid connectivity. Pickup zones within denser areas will be around 3 square miles or less. Pickup zones in rural or disconnected areas may be larger, with 6 square miles as the maximum zone size that should be pursued.

Natural and manmade boundaries can affect zone boundaries. Major highways or congested roads frequently create inefficiencies when intersecting through a zone and should be avoided when possible. Large greenbelts or long railroad lines with no vehicle crossings should not bisect a zone if it significantly increases travel time or distance.

Zone size defines key operational and service attributes including fleet size, service span, trip lengths, travel times and customer wait time. Since Pickup zones serve different purposes and operate in unique contexts throughout the region, Pickup zones may be evaluated using a range of service standards based on the Pickup zone size and design characteristics.

CapMetro works closely with Member Cities to design and build an active transportation, multi-modal system that meets the goals of CapMetro's Strategic Plan 2030 and the strategic mobility plans of its Member Cities, including **the Austin Strategic Mobility Plan and. Learn more about City of Austin active transportation planning and design efforts at the links below:**

- **Transportation Criteria Manual Interim Standard Details for Bus Stops**
- **Bicycle Plan**
- **Sidewalk & Shared Streets Plan**
- **Urban Trail Plan**

ACTIVE TRANSPORTATION GUIDELINES

Every transit trip involves additional modes of travel – walking, biking, or rolling – to access a transit stop or station. This first and last mile connection is essential to enable people to leave their front door, utilize transit, and access their end destination. Active transportation infrastructure like accessible sidewalks, shared use paths, trails, and bicycle lanes can help grow transit ridership. Though an individual may walk a ¼ mile (5-minute walk) to a ½ mile (10-minute walk) to reach their nearest stop that same person can access a greater number of routes through a one- to- three-mile-long bicycle, shared use path, or trail connection. The FTA defines the catchment area around transit stops to be a ½ mile radius for pedestrians and three-mile radius for bicyclists (FTA Policy Statement[4]). CapMetro accommodates multimodal travel by integrating bicycle lanes and shared use paths at bus stops to allow for safe and comfortable travel between modes; coordinating on planning, designing and building trails along CapMetro Right of Way; operating and maintaining long-term, bicycle storage at 7 transit centers across the system; and by operating and maintaining the CapMetro Bikeshare system.

More information on Bicycle Parking Amenities at Transit Stops can be found in Chapter 6, Transit Stop and Station Amenities.

[4] https://www.govinfo.gov/content/pkg/FR-2009-11-13/pdf/E9-27240.pdf

CAPMETRO BIKESHARE

In 2022, the City of Austin and CapMetro agreed to a 10-year expansion project of the public bikeshare system. The Bikeshare Expansion Plan helps identify opportunities for new Bikeshare station locations based on the following principles:

Bikeshare Stations should be easily accessible and convenient.

Stations should be easily accessible for customers to access and return bikes in all seasons and weather conditions. Bikeshare Stations should be safe. The safety of each station location should be considered in terms of adjacent traffic, lighting, surrounding land uses and bicycle infrastructure. Stations should only be placed in the roadway right-of-way on local streets with low traffic speeds. Stations should be located near crosswalks and intersections.

Bikeshare Stations should be appropriate for operations.

Stations should be accessible to CapMetro Bikeshare staff to ensure routine maintenance and rebalancing. Stations should ideally be located adjacent to a loading zone, where bicycles can be rolled to and from a rebalancing van easily. This ensures staff can safely perform their basic job functions.

Bikeshare Stations should be technically sound.

Station locations should meet CapMetro Bikeshare's technical requirements for drainage, service access, and lighting/utility connections.

View CapMetro's Bikeshare Technical Requirements here.

Bikeshare stations should consider the urban context.

When possible, stations should be located near bicycle infrastructure or along streets that are reasonably appropriate for biking. Station locations should also consider proximity to the location of entrances to buildings and other popular destinations like parks and trails.

Bikeshare Stations should be paired with transit.

Because bikeshare functions as a first and last mile solution, stations should be located within approximately 750ft feet of a transit station or stop and be clearly visible to people walking and biking. Bikeshare stations should be located near high-frequency train stations and bus stops and connected to another bikeshare station no more than one-half mile away. Stations should be highly visible and riders should be guided by wayfinding where possible.

Bikeshare Stations should be predictable and consistent.

Bikeshare stations should be placed in consistent locations and at predictable intervals that are appropriate for the station market type as defined in the Bikeshare Expansion Plan:

- **Core** — Dense, walkable, transit-rich destinations with high Bikeshare demand.
- **Moderate** — Transit-connected growth areas with moderate demand and mixed user types.
- **Emerging** — Developing areas with future demand potential and infrastructure barriers.

Minimum distance and clustering standards vary for each market type. In dense areas (Core Market), stations should not be more than a three-to-five-minute walk from one station to the next; because of strong network effects, a higher density of stations will in turn generate greater demand for bikeshare. In Moderate and Emerging markets, the system can be less dense; in these markets, land-uses, operational resources, and availability of bicycle infrastructure may limit Bikeshare station density.

Information about Bikeshare station placement and market typologies is available in the Bikeshare Expansion Plan.

03

Service Standards

To ensure that CapMetro provides transit service that meets the needs of riders and follows the Service Guidelines & Best Practices identified above, the agency continuously compares its services to set performance standards. This chapter describes how to measure the success of CapMetro services, when it might be warranted to take corrective actions to address any issues that arise, and what types of metrics are used. The Service Standards are meant to be an input or consideration for decision-making that supports a data-driven process for tracking when a service is underperforming, and action should be taken.

PRINCIPLES FOR SERVICE STANDARDS

Service standards in this chapter are organized around **five principles** that apply across all transit modes — bus, rail, demand response, and Bikeshare. These principles fall into two categories.

- **Service Quality** captures what riders experience directly: whether the service shows up when expected, whether the service is comfortable, accessible and easy to use, and whether it is safe. CapMetro evaluates service quality using both quantitative indicators and qualitative information, such as feedback from riders and operators, to assess how well service is meeting community needs.
- **Service Effectiveness** captures how well the agency deploys its resources: whether service is distributed fairly across the communities it serves, and whether public investment is producing strong outcomes. Service effectiveness measures provide insight into how many people can benefit from CapMetro service relative to what that service costs to operate and maintain, helping the agency maximize high-quality service for as many people as possible in a fiscally responsible way.

While the specific metrics and performance thresholds differ by mode (what "on time" means for a bus route is not the same as what it means for an on-demand trip) the underlying principles are the same. This shared framework allows CapMetro to evaluate very different service types against a consistent set of principles to riders and the public.

Not all service standards take the same form. Some have defined quantitative targets — for example, fixed-route buses are expected to operate on time at least 80% of the time. Others do not have a single performance threshold but are still essential tools for agency decision-making. A metric comparing cost-effectiveness across two routes, for instance, may not have a pass/fail standard, but it gives planners a consistent basis for prioritizing improvements and allocating resources. Both types of standards are included in this chapter, and both carry weight in how CapMetro evaluates and improves its services.

Below, the five key principles are summarized:



Transit should be convenient and reliable for riders.

Riders depend on transit to get to work, medical appointments, school and daily errands — which means the service has to show up when and where it is supposed to. CapMetro evaluates convenience and reliability through metrics like on-time performance, service availability and frequency. When service is consistently late, unavailable, or infrequent, it erodes rider trust and undermines the value of the entire network.



Taking transit should be a comfortable, accessible experience.

The quality of the transit journey itself shapes whether people choose to keep riding. Crowded vehicles, long waits and inadequate stop amenities all erode the quality of service even when a route is technically running on time. CapMetro measures in-service comfort through indicators like vehicle load and overcrowding, seat availability and wait times. Stops and stations that have the right amenities in the right places, such as shelters, seating and lighting, help make transit a reasonable choice for everyday use.



People should feel safe using transit.

Transit moves people, but it's important for it to be safe, comfortable and convenient to use. In terms of vehicle safety, the bus and train are statistically two of the safest modes of transportation. Prioritizing connectivity and accessibility in the design of transit facilities and their surrounding infrastructure can also enhance the physical safety of riders throughout the stages of their trip. Lighting and visibility are considered as part of the design of amenities and placement of stops. Determined minimum setbacks from the curb are also important to protecting pedestrians and waiting passengers from vehicle traffic and may be supplemented by bollards or other barriers.

Additionally, CapMetro's public safety program combines mental health-first community intervention and outreach techniques with customer support and traditional law enforcement presence, comprising a range of safety resources that can be accessed based on the needs of given situations.



Transit resources should be allocated equitably and accurately.

Public transit is a public good, and the communities that need transit most should be prioritized for service. CapMetro evaluates equity in resource allocation by examining how service is distributed across geographies, demographics and times of day — and whether that distribution reflects actual need. Equitable allocation means making considerations for where service goes and where infrastructure upgrades are prioritized.

As required by the FTA Title VI Circular and CapMetro Board Policy, CapMetro evaluates equity in transit planning by examining how service is distributed to ensure that service design and operations practices do not result in discrimination on the basis of race, color or national origin.



CapMetro should be good stewards of their limited resources.

Operating a transit network requires significant public investment, and that investment should produce meaningful, measurable outcomes for riders and the community. CapMetro assesses stewardship through productivity measures, cost-effectiveness analyses, and the overall return on service investment across all modes. Strong stewardship means continuously asking whether resources are being used in the way that delivers the greatest benefit to the most people.

SUMMARY OF STANDARDS

The following table summarizes the service standards that guide CapMetro's operations across all modes. Some standards apply to every service the agency operates, while others are more specific to a particular mode and reflect the unique characteristics of that service. Together, these standards form the foundation for how CapMetro evaluates and improves service quality for all riders.

	Service Quality			Service Effectiveness	
	Transit should be convenient and reliable for riders.	**Taking transit should be a comfortable, accessible experience.**	**People should feel safe using transit.**	**Transit resources should be allocated equitably and accurately.**	**CapMetro should be good stewards of their limited resources.**
Standards that Apply to All Modes		✓ Federal and Local Accessibility Requirements	✓ Incidents of Service Interruption ✓ Crime and Public Safety	✓ Federal Title VI Requirements	✓ Cost Effectiveness
Bus and Rail Standards*	✓ On-Time Performance ✓ Travel Time Reliability ✓ Frequency and Span	✓ Overcrowding and Load Maximums		✓ Service Availability ✓ Vehicle Assignments ✓ Transit Amenities Distribution **(See Chapter 6)** ✓ Service Change Analyses (**See Chapter 4)**	✓ Productivity
Pickup Standards	✓ On-Time Performance	✓ Shared Rides ✓ Service Reliability		✓ Service Change Analyses (**See Chapter 4)** ✓ Access-User Trips	✓ Productivity

Figure 2: Service Standards Principles and Metrics Used by Transit Mode

Upcoming Standards for Austin Light Rail

CapMetro does not yet operate light rail services. Operational standards are being developed and are expected to be included in subsequent updates of the Service Standards and Guidelines as Austin Light Rail is implemented into revenue service.

RESPONDING TO UNMET STANDARDS

This chapter describes actions that can be taken when a service does not meet the expected level of performance. These actions fall under the following types of changes:



Reallocate

Resource adjustments that respond to overcrowding, reliability issues or unmet demand — such as increasing vehicles on a route, rebalancing bikeshare stations or expanding a demand response zone's service hours or fleet size.



Optimize

A change to the frequency, span, alignment or configuration of a service to better match demand — such as adjusting a bus route path, modifying a demand response zone boundary or relocating a bikeshare station.



Expand

Adding new service capacity to the network — such as introducing a new fixed route, launching a new demand response zone, or adding bikeshare stations in an underserved area.



Reduce

Removing or contracting services — such as eliminating an underperforming route, closing a demand response zone or removing bikeshare stations with consistently low ridership.



Adjust

Infrastructure or amenity changes resulting from one of the actions above — such as stop placement, shelter installation, dock configuration or wayfinding updates.

The Service Change Process and how CapMetro decides to take action and implement changes to address underperforming routes is discussed in **Chapter 4 – Service Changes.**

SERVICE STANDARDS BY MODE



Multimodal



Bus



Commuter Rail



Pickup



Bikeshare

Standards that Apply to All Transit Modes

This document organizes service standards by mode to provide clarity and allow readers to easily understand how performance is measured across different parts of CapMetro's system. While many standards are specific to a particular mode and reflect its unique operational characteristics, others apply universally across all services — particularly those rooted in federal reporting requirements, public safety and general cost effectiveness.

Federal and Local Accessibility Requirements

CapMetro always strives to improve accessibility across services. CapMetro reviews all designs against US Access Board's 2010 Standards for Accessible Design, Texas Accessibility Standards (TAS), and Public Rights-of-Way Accessibility Guidelines (PROWAG) to ensure compliance and that individuals with disabilities are able to safely access CapMetro services.

Federal law requires that all public transit services be fully accessible to riders regardless of ability. The Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act, and FTA Circular 4710.1 apply to CapMetro as a whole and establish a baseline obligation that extends across every service the agency operates.

The agency reports certain standards to the FTA every three years as part of an analysis that ensures CapMetro is in compliance with ADA standards. Because the FTA Circular 4710.1 establishes a wide range of accessibility requirements, they are not all covered in this document. However, the standards most relevant to service delivery are summarized in this section.

Regardless of mode, CapMetro is required to ensure that riders with disabilities are not discriminated against, that reasonable modifications to policy are made upon request, that information is available in accessible formats, that staff are trained to assist riders with disabilities, and that service animals are permitted on all vehicles and at all facilities.

All CapMetro transit vehicles—buses, Pickup and Access vehicles, and rail cars—must be fully accessible to ensure that people with limited mobility can board and alight safely. An accessible vehicle includes securement systems for wheelchairs and other mobility devices, priority seating with posted signage and boarding devices such as ramps, and lifts.

The facilities and environments surrounding stops and stations are also important — waiting areas must be spacious enough to accommodate riders using mobility aids, and wayfinding features such as tactile warnings and accessible signage must be present for riders who are blind or have limited sight. Additional information about the design and placement of accessible transit stops and stations can be found in **Chapter 5 Stop and Station Design Guidelines.**

Federal Title VI Requirements

Title VI of the Civil Rights Act requires all transit agencies that receive federal financial assistance to operate without discriminating on the basis of race, color or national origin. Agencies must ensure that

no one is excluded from participation, denied benefits or subjected to discrimination in their transit services, programs or activities.

To ensure compliance with this law, the FTA requires transit agencies to track and report several service standards for fixed route operations. Under FTA Circular 4702.1B, Title VI Requirements and Guidelines, the agency reports these standards to the FTA every three years as part of an analysis that ensures CapMetro's resources are distributed equitably. The standards monitored include on-time performance, vehicle frequency, vehicle load, service availability, vehicle assignments and transit amenity policies. All of these standards are detailed in this chapter, with the exception of CapMetro's transit amenities policies, which can be found in **Chapter 6 Transit Amenities.**

These reporting requirements apply to CapMetro's fixed route services (bus and rail) while Bikeshare and Pickup, which operate under different service models, have fewer federal reporting requirements, but are still required to comply with Title VI of the Civil Rights Act.

Regardless of federal requirements, impacts to vulnerable populations are a key consideration in the planning process for all transit modes. For more information about how planning decisions are implemented through the service change process or information about how Title VI Service Equity Analyses are completed, see **Chapter 4 Service Changes.**

Safety

Incidents of Service Interruption

While many service interruptions are outside of CapMetro's control, certain mechanical failures can be prevented through ensuring vehicles are kept in a good state of repair. Vehicles and transit equipment are regularly rehabilitated or replaced based on their age in terms of years and/or mileage.

Sometimes buses experience unexpected mechanical failures or incidents while in service that require a road call, which can result in a bus being towed back to the yard for maintenance. Though rarer, trains may have mechanical issues or incidents that require a trip back to the operations and maintenance facility. There are a variety of other reasons a service might experience an interruption, including a crash or collision, a passenger becoming ill on the vehicle, electronic issues or security needs requiring action or a change in vehicle. For Bikeshare services, bikes must be taken out of service for repairs due to mechanical issues like flat tires, issues with electric batteries or docking station issues.

Because service interruptions can impact the passenger experience, they are regularly monitored and evaluated by the Operations team so they can be addressed as needed.

Crime and Public Safety Incidents

CapMetro's Public Safety Program takes a multifaceted approach to public safety across its system, built around teams that are designed to deliver the right response at the right time, whether that means assistance, intervention or enforcement. This strategy includes three key teams: Public Safety Ambassadors, Community Intervention Specialists, and the CapMetro Transit Police Department.

Public Safety Ambassadors serve as front-line customer service representatives, trained to respond to immediate safety concerns, provide directions and connect riders with appropriate resources.

Ambassadors are considered the "eyes and ears on the ground," handling disruptive but nonviolent safety concerns across the system. When more comprehensive assistance is needed, Community Intervention Specialists step in, bridging gaps in support and providing specialized assistance for individuals experiencing homelessness or facing challenges related to mental health or substance use.

The CapMetro Transit Police Department works alongside both teams to provide an appropriate and effective response to the needs of the transit system. Transit Police officers are trained in crisis intervention and people-centric policing, and function as CapMetro representatives while also coordinating with local agencies when law enforcement is needed.

Each of these teams collect data regarding public safety incidents, allowing CapMetro staff to track where crime or public disruptions are occurring repeatedly, how often incidents occur and how public safety incidents increase or decrease over time. Customer reports also indicate how safe customers feel on board or at transit stops and facilities.

Cost Effectiveness

Several factors influence the cost of running transit service, including the number of vehicles, hours of operation, operator wages, vehicle maintenance and repairs and fuel. Measuring a route’s operating cost per rider can help us compare how many people are using it to how much it costs to run. In general, the ratio of riders to operating costs improves when transit service is more efficient, because it can carry people farther and faster in the same amount of time. Standards related to measurement of cost efficiency (such as productivity) are detailed for each mode.

What can be done if the standard is not being met?

Like productivity measures, cost effectiveness is maximized when transit service matches patterns of demand. Cost-saving measures often take the form of service reductions. Decreasing the number of trips a route or rail line makes each day can reduce costs, but this also requires reducing its frequency, span or both. Reducing deviations and making routes more direct can also help them run more efficiently. For Pickup zones, the size of the zone may be reduced to limit the amount of demand in the area and reduce the number of vehicles needed to operate the zone. Maximizing cost-effectiveness for Bikeshare service may look like operating fewer stations or bikes, or infrastructure upgrades that improve long-term utility costs and efficiency.

Fixed Route

Fixed-route transportation includes Bus or Rail vehicles that serve customers on a predetermined route and schedule, with printed or posted timetables and designated stops where riders are picked up and dropped off. Unlike demand-responsive transit, fixed-route vehicles only stop to pick up and drop off passengers at these specific designated locations or stops. Fixed-route services at CapMetro include Bus, Commuter Rail and the future Austin Light Rail.

Bus

CapMetro Bus provides a wide range of bus service, including multiple different routes across the Central Texas region as of June 2026. Standards specific to CapMetro bus service are detailed below.

On-Time Performance

> **On-time performance standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Travel time is one of the most important factors for evaluating service quality from a rider's perspective. A rider's trip starts before they get on the bus. It also includes the time it takes them to travel to the bus stop or rail station, the time spent waiting for the bus or train, and sometimes the time waiting to make a connection to another route. When buses or trains depart later than scheduled, this adds additional time to a trip. When a vehicle departs before scheduled, a rider may be forced to wait for the next one even if they have arrived on time. An unreliable or unpredictable transit service can be extremely frustrating for riders, making it difficult to use.

There are a variety of reasons why buses will get off schedule from time to time, but there must be a balance between riders' needs and the realities of operating in an environment with many factors that could delay operation. For a service to be considered "on time," it should not depart early, as that element is usually within the control of CapMetro.

CapMetro measures on-time performance (OTP) based on scheduled departures. A vehicle is considered on time if it departs a stop no earlier than 30 seconds before the scheduled time and no later than five and a half minutes after the scheduled time. Any departure 30 seconds before the scheduled departure time is counted as early, or 5.5 minutes after the scheduled departure time is counted as late.[5]

[5] When on-time performance is calculated, certain exceptions may be made to understand the on-time performance of the route as a whole. For example, on-time performance during an extreme weather event causing delays throughout the service area may be excluded when developing monthly on-time performance reports. Other on-time performance exceptions may be ongoing, such as excluding timepoints affected by long term detours or not counting early arrivals against commuter routes operating in "drop-off only" mode to optimize arrival times.

The applicable OTP standard for each fixed-route mode of service mode shall be established annually and documented in the fiscal year agency scorecard. The agency scorecard serves as the official source of the current OTP standard.

The Planning Department shall monitor OTP using the OTP standard contained in the agency scorecard at the time of the evaluation. Any updates to the OTP standard adopted through the annual agency scorecard process shall automatically supersede prior standards for purposes of performance monitoring and Title VI analyses.

For purposes of consistency and regulatory compliance, all OTP monitoring shall be conducted using the OTP standard that was in effect during the period being evaluated.

Service Type	On-Time Window	On-Time Standard
Rapid	-0.5 to +5.5 minutes	See Agency Scorecard
Frequent		
UT Shuttle		
Local		
Commuter Bus		
Community		
Late Night		

On-time performance is reported to the FTA as part of the Service Monitoring process, and the data is publicly available and updated monthly on CapMetro's performance dashboards online.

What can be done if the standard is not being met?

Routes with trips that are consistently leaving earlier or later than the on-time window should be examined to determine the reasons behind the issue. Some common issues include buses getting stuck in traffic, construction along the route and issues with the schedule, such as having too much or not enough slack in the schedule at timepoints. On-time issues should be prioritized for review during the service change process based on the severity and longevity of the issue, or how far from the standard it is and how long the issue has been occurring. Once issues are identified, staff can adjust schedules, tweak frequencies, or make infrastructure adjustments in the field to ensure the bus can run its route as reliably as possible.

Travel Time Reliability

Like on-time performance, the travel speed of a transit route has a direct impact on its usefulness and its operating cost; slower service requires more vehicles to deliver a given frequency. Maintaining similar average operating speeds to other modes of transportation ensures a competitive transit service that riders can rely on to meet daily needs.

Travel time standards determine scheduled speed, which is in turn used to build route schedules. When actual speeds do not meet the standard for scheduled speeds, routes will struggle to run on time. As discussed in the above Guidelines, transit speed can be slower when:

- Lots of riders are using the service: more people getting on and off the bus than normal can slow down transit and cause it to get behind schedule.
- High levels of traffic congestion: Sitting in traffic and at lights slows down service, which can cost more money to provide the same level of service over time as traffic conditions worsen.

A travel time reliability ratio compares the travel time variability, or how different the travel time across a section of a route can be at a given time of any day, relative to the minimum variability seen. Travel time variability is summarized at a segment level and is useful for understanding how travel times change throughout the day in different areas of the transit system. This is a way to measure the reliability of travel time when taking transit.

Local jurisdictions are an important partner in transit priority infrastructure.

As the Central Texas region experiences population and employment growth, traffic congestion increases as well. This causes bus routes to become slower, requiring more trips and vehicles to meet the same level of service for riders. Over time,

these issues can become detrimental to the health of the route and make it more costly to run. CapMetro and the jurisdictions within its service area are partners and are working together to

implement solutions. For example, the City of Austin and CapMetro are collaborating to determine the areas with transit speed and reliability issues to prioritize the

path forward for larger capital projects to support transit priority. Please see the **ATX Transit Enhancements Report** for more information.

A high travel time reliability ratio indicates that a segment has very different travel times throughout the day, making service less predictable for riders. CapMetro reviews route segments with a high travel time reliability ratio to identify areas where intervention may be warranted to improve transit service quality.

What can be done if issues are identified?

Because some routes partly overlap, varying amounts of service are provided along their different segments. Because of this, scheduled speed should be evaluated for each unique route segment and not at the route level. However, riders expect a certain service quality, especially for High-Capacity routes, so it is especially important to make these services competitive in speed. Rapid routes should be prioritized for improvements to speed up buses to make the service visible, emphasizing transit on key city corridors and ensuring that the service remains reliable for riders.

There are many ways to speed up transit which vary in cost and effectiveness. The ATX Transit Enhancement Toolkit outlines many options that can be explored to help a route when it is slow, including intersection treatments such as a queue jump or transit signal priority, moving near-side stops to the far-side of the intersection or adding transit priority infrastructure like contraflow bus lanes

or curbside lanes. CapMetro will also coordinate with other jurisdictions that advance similar transit-supportive infrastructure efforts.

Frequency and Span

> **Frequency standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Frequency describes how often the bus comes, and span describes the hours each day that the service is running. Service spans and frequencies should be matched to the needs of the community. More service will be provided where there are a high number of transit customers (i.e., ridership) and less service where there are a lower number of transit customers to use resources efficiently. As the frequency of a route decreases, it becomes more difficult for a customer to plan around, so all CapMetro fixed route service maintains at least a 60-minute frequency. Because riders often use more than one route to complete a trip, it is beneficial to standardize spans and frequencies among routes of the same type.

Deviations from the Standards

Service standards establish target frequencies and spans of service that guide service planning and investment decisions. During the service change process, however, minor adjustments may be made to proposed service levels to reflect operational realities, available resources, traffic conditions, construction impacts, or evolving customer demand.

These refinements are intended to improve reliability and service delivery while maintaining consistency with the intent of the adopted standards. As a result, some routes or service periods may operate at frequencies that vary slightly from established targets or have modest adjustments to the span of service. Additional trips may also be added to address specific capacity needs or improve customer access during particular times of day. See **Chapter 4 – Service Changes** to read more detail about the service change process and incorporation of minor service adjustments.

The service spans and frequencies listed below are typical levels for each service type. More or less service in terms of span or frequency may be warranted on a case-by-case basis.

For purposes of service monitoring, CapMetro will use scheduled headways, unless more than 5% of service does not operate on a route for at least a week during the month which we planned to pull ridership data. In that case, CapMetro will use actual headway operated.

Rapid

Rapid	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	5AM – 12:30AM	15	10	10	10	20	20
Saturday	6AM - 12AM	15	15	15	15	20	20
Sunday	6AM – 11:30PM	15	15	15	15	20	20

Frequent

Frequent	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	5AM – 12AM	30	15	15	15	30	30
Saturday	6AM – 12AM	30	30	30	30	30	30
Sunday	6AM – 11PM	30	30	30	30	30	30

UT Shuttles

For UT Shuttle Service, typical service span and frequency are shown below for Fall and Spring semesters. Span and frequency differ based on school session and the academic calendar.

UT Shuttles	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	7AM – 10PM	--	20	20	20	20	30
Saturday	--	--	--	--	--	--	--
Sunday	3PM – 10PM	--	--	--	60	60	30

Local

Typical frequencies for Local routes are shown in the table below; however, more or less service in terms of span or frequency may be warranted on a case-by-case basis.

Local	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	5AM – 11PM	30	30	30	30	30	30
Saturday	6AM – 11PM	30	30	30	30	30	30
Sunday	6AM – 11PM	30	30	30	30	30	30

Commuter Bus

Some Commuter Bus routes operate very limited trips; for example, one trip to Downtown in the morning, and a return trip in the afternoon.

When the headways for a route are more than 60 minutes or highly irregular, CapMetro will review the percentage of trips operated instead of headways for the purposes of service monitoring.

Commuter Bus	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	6AM – 9AM 3PM – 7PM	--	30	--	30	--	--
Saturday	--	--	--	--	--	--	--
Sunday	--	--	--	--	--	--	--

*Minimum span shown. Some Commuter Bus routes may operate throughout the day.

Community

Community route frequencies are often irregular; some routes may run only one day of the week and trips may be very limited. Community routes may also be operated by CapMetro demand response drivers and vehicles.

For the purposes of service monitoring and due to the irregularity of community route frequencies, CapMetro will review the % of trips operated instead of headways.

Community	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	***Irregular***	***Irregular***					
Saturday							
Sunday							

Late Night

Late night routes, also referred to as Night Owl routes, operate in the late evening after other routes have stopped operating. They typically operate every 30 minutes.

Light Night	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday	12AM – 3:30AM	--	--	--	--	--	30
Saturday	12AM – 3:30AM	--	--	--	--	--	30
Sunday	--	--	--	--	--	--	--

Overcrowding and Load Maximums

> **Overcrowding standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Maintaining a reasonable passenger load on vehicles is another goal that helps CapMetro provide high-quality and comfortable service that meets the needs of riders. Typically, riders can expect to have a place to sit when they get on the bus, but that is not always possible. During peak periods in most large urban areas, there are bus lines that require some riders to stand for at least some portion of the trip. If a rider is able and the travel distance is not too long, standing on transit vehicles is considered an acceptable part of using the service. Some routes and riders do travel longer distances; for commuter services where longer distances are expected, the standard is that loads should not normally require a rider to stand.

Overcrowding is measured by the number of people on board compared to the capacity of the vehicle. Assigning appropriate vehicles by service type can help prevent overcrowding.

In addition, a trip exceeds overcrowding standards when average capacity exceeds the number of people in the table below, or when standing loads last for 20 minutes or more on a trip.

Possible Vehicle	Peak Max Load
60' bus	110 people
40' bus	80 people
35' bus	60 people
45' Over the Road Coach	57 people

What can be done if the standard is not being met?

Consistent overcrowding on a transit vehicle may indicate the need for improvements to the frequency of the service or an increase in the capacity of the vehicles used to run the service. When a trip routinely exceeds the maximum rider or load threshold, adjustments should be studied and implemented as part of the service change process. Shorter-term measures include assigning larger vehicles to the route where possible or the addition of "Run as Directed" (RAD) buses for portions of the route to provide temporary additional capacity.

Longer-term adjustments include adding vehicles to the service and increasing service frequency for all or a portion of it. Short-turning trips for buses, or "trippers," provide additional bus service on a specific segment of a route with capacity issues. Trippers should include clear communication about start and end points to avoid any potential customer confusion.

Service Availability

> **Service availability standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

CapMetro measures service availability to identify the parts of the service area that have enough population density to support transit service, and to determine how well the transit service provided in those areas is distributed.

CapMetro's service availability standard defines the transit-supportive service area as locations within the CapMetro service area with at least 16 people per acre (10,240 people/sq mile). The service availability standard measures the total number of residents in the transit-supportive service area that can access transit stops within a 5-minute walk or roll (1/4 mile). The target indicates that 95% of residents living within a transit-supportive area should have access to at least one transit stop within .25 miles of their residence.

Service Area Definition	Density Threshold	Walk/Roll Distance from Transit Stop or Station	Target Percent of Residents
Transit-Supportive Area	16 people/acre (10,240 people/sq mi)	0.25 miles	95%

What can be done if the standard is not being met?

As discussed in the System Design Guidelines, land use and transit are fundamentally connected and transit routes are more efficient when they serve areas where more people live and work.

There are two main factors that can influence service availability findings:

1. An increase or decrease in transit coverage (e.g., removing a transit stop or route)
2. An increase or decrease in population density (e.g., more people moving into or out of an area)

Typically, CapMetro reviews the provision of transit service in the service area by conducting what is often referred to as a market analysis. This analysis is completed during a service plan to determine if the transit service being provided matches the transit demand. During this process, CapMetro reviews opportunities to fill gaps where additional service is needed or where transit stops and stations are too far apart or close together. Solutions that address these issues can impact service availability results.

Although calculating service availability is closely tied to population density, the factors that influence population density and housing supply in the service area occur over the longer term and should be looked at comprehensively. CapMetro has been involved in planning for transit-oriented development by advocating for mixed-use, affordable development near transit and supporting zoning that permits this type of land use and will continue to collaborate with jurisdictions to encourage transit-supportive development in the service area.

For purposes of service monitoring, all fixed route services (Bus and Rail) are included in the Service Availability analysis.

Vehicle Assignments

> **Vehicle assignment standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Vehicle assignment refers to the process by which transit vehicles are allocated to routes throughout the CapMetro network. Several factors are considered when determining the type of vehicle most appropriate for a route, including:

- Service Type – Generally, a fixed route bus service will require a 35' or 40' bus. Due to passenger loads, Rapid routes may be assigned a 60' bus [6]. However, there are occasionally exceptions to this rule to meet community or operational needs. For example, express routes require a 45' Over the Road Coach (ORC). These vehicle types offer seating more suited for long-distance travel.
- Ridership and Vehicle Capacity – Vehicle assignments match ridership data and a vehicle's capacity to the customer loads on a route.
- Street Configuration – Vehicle assignments are also informed by operational and safety issues, such as turning movements and feedback from customers and operations staff.
- Compliance with Grant Awards – CapMetro is a proud recipient of discretionary federal grant funding, and as a result, must align vehicle assignments with what was outlined in the original grant application.

For the purposes of service monitoring, vehicle assignments that do not align with the table below are only counted as incorrect if the capacity of the vehicle decreases with the alternate assignment **and** there has been a pattern of overcrowding on that particular route. For example, assigning a 35' bus to a route that typically requires a 40' bus may be acceptable if the route has particularly low ridership and no pattern of overcrowding.

Service Type	Vehicle Type	Appropriate Assignment Rate
Rapid	60' or 40' bus	80%
Frequent	35' or 40' bus	
UT Shuttles	35' or 40' bus	
Local	35' or 40' bus	
Commuter Bus	45' Over the Road Coach*	
Community	40' bus, 35' bus, Cutaway Vehicles	
Late Night	40' bus	

[6] CapMetro is currently retiring 60' buses and fewer 60' buses will be available to assign to Rapid Lines.

These vehicles offer seating more suited for long-distance travel. ORCs cannot be used for interlining due to their size.

What can be done if the standard is not being met?

Vehicle assignment accuracy can be impacted by vehicle and mechanic availability. If vehicle allocation becomes a concern, CapMetro may hire additional mechanics or procure additional vehicles as budget constraints allow.

Productivity

The productivity of a route can be measured in several ways. CapMetro analyzes productivity based on ridership and hours of service, or revenue hours:

- Riders per revenue hour – the number of **boardings** divided by the total number of hours the vehicles on a route are in service

The standards below can provide insight on how many people are using CapMetro routes compared to how much it costs to run them on an hourly basis. Using ratios allows CapMetro to make comparisons between unique routes and understand which routes are using resources most effectively over time.

Service Type	Productivity Standard
Rapid	20 riders/ hour
Frequent	15 riders/ hour
UT Shuttles	15 riders/ hour
Local	10 riders/hour
Commuter Bus	6 riders/hour
Community	4 riders/hour
Late Night	6 riders/hour

What can be done if the standard is not being met?

Routes are more productive when their level of service matches the level of demand for transit. If a route continually shows low productivity, that may be a sign that the route should be evaluated for improvements or reallocation of its resources.

Operating fewer vehicles on the route at a lower frequency can decrease the cost of a less productive route and allow those resources to be reallocated to another route that is experiencing overcrowding or has the demand to support more frequent trips. Low productivity routes may also serve lower demand areas or lack strong anchoring destinations. Routes that are less direct and more circuitous may have to travel farther while attracting fewer riders, making them less productive as well.

Commuter Rail

CapMetro's Red Line is a commuter rail service running 32 miles along existing freight tracks to connect Downtown Austin with Leander, currently serving 10 stations. Standards for CapMetro commuter rail are detailed below.

On-Time Performance

> **On-time performance standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Since Rail operates in a fixed guideway, it is generally not impacted by traffic conditions. As a result, Rail lines have a higher on-time performance standard compared to Bus, which competes with other traffic and unexpected conditions in the roadway.

CapMetro measures on-time performance (OTP) based on scheduled departures. A train is considered on time if it departs a stop no earlier than 30 seconds before the scheduled time and no later than seven minutes after the scheduled departure time. Any departure before 30 seconds is counted as early, and anything after seven minutes is counted as late.[7]

The applicable OTP standard for each fixed-route mode of service mode shall be established annually and documented in the fiscal year agency scorecard. The agency scorecard serves as the official source of the current OTP standard.

The Planning Department will monitor OTP using the OTP standard contained in the agency scorecard in effect at the time of the evaluation. Any updates to the OTP standard adopted through the annual agency scorecard process shall automatically supersede prior standards for purposes of service monitoring and Title VI analyses until a new OTP standard is established through a future KPI process.

For purposes of consistency and regulatory compliance, all OTP monitoring shall be conducted using the OTP standard that was in effect during the period being evaluated.

Service Type	On-Time Window	On-Time Standard
Commuter Rail	-0.5 to 7 Minutes	See Agency Scorecard

[7] When on-time performance is calculated, certain exceptions may be made to understand the on-time performance of the route as a whole. For example, on-time performance during an extreme weather event causing delays throughout the service area may be excluded when developing monthly on-time performance reports. Other on-time performance exceptions may be ongoing, such as excluding timepoints affected by long term detours or not counting early arrivals against commuter routes operating in "drop-off only" mode to optimize arrival times.

What can be done if the standard is not being met?

CapMetro will investigate OTP issues on a case-by-case basis. Due to its largely single-track configuration and shared operations with freight, the Red Line has limited scheduling flexibility. CapMetro is investing in infrastructural and operational improvements to the corridor that will support its reliability, and eventually, improved frequency.

Frequency and Span

> **Frequency standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

The service spans and frequencies listed here are typical levels for each service type. More or less service in terms of span or frequency may be warranted on a case-by-case basis.

For the purposes of service monitoring, CapMetro will evaluate frequency at the Downtown station since frequency at outer stations can vary due to required freight operations.

Commuter Rail	Span	Frequency (minutes)					
		Early AM	AM Peak	Midday	PM Peak	Evening	Late Night
Weekday[8]	6AM – 8:30PM	40	40	60	40	--	--
Saturday	10AM – 1AM	40	40	40	40	40	40
Sunday	--	--	--	--	--	--	--

Overcrowding and Load Maximums

> **Overcrowding standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Maintaining a reasonable passenger load on trains helps CapMetro provide high-quality and comfortable service that meets the needs of riders. Typically, riders can expect to have a place to sit when they board, but that is not always possible. During peak periods, rail lines may require some riders to stand for at least a portion of their journey. If a rider is able and the travel distance is not too long, standing on rail vehicles is an acceptable part of using the service.

Overcrowding standards for Commuter Rail are measured using FTA guidance from the Core Capacity Grant program. Based on the combined capacity of seats and standing area on the train (including flip up seats), the maximum number of people on a Red Line train should be no more than

[8] Fridays or special events may include additional evening or late-night service beyond the frequency levels outlined in this document.

200 people (100 per car), and overcrowding occurs when there are more than 160 people on the train (80 per car) (80% of the maximum capacity).

A trip exceeds overcrowding standards when average capacity exceeds the number of people in the table below, or when standing loads last for 20 minutes or more on a trip.

Possible Vehicle	Total Capacity	Overcrowding Threshold (Greater than 80% Capacity)
DMU	200 people (108 seated + 92 standing)	160 people

What can be done if the standard is not being met?

Consistent overcrowding on a rail line may indicate the need for improvements to service. When a trip routinely exceeds the passenger load threshold, frequency or schedule adjustments should be evaluated.

Vehicle Assignments

> **Vehicle assignment standards are federally required for fixed route service monitoring.** For more information, view the Federal Transit Administration's guidance in Circular 4702.1b.

Vehicle assignment refers to the process by which transit vehicles are allocated to routes throughout the CapMetro network. For Commuter Rail service, there is only one type of vehicle, a diesel multiple unit (DMU), so the expected assignment rate is 100%.

Service Type	Vehicle Type	Appropriate Assignment Rate
Commuter Rail	DMU	100%

Demand Response

Demand response transit (DRT) is a non-fixed route, flexible transit service that provides curb-to-curb, door-to-door, or hand-to-hand pickups and drop-offs upon a customer's request. Demand response services at CapMetro include Pickup, Bikeshare, and Access. Though not federally required, this chapter includes standards for Pickup to guide decisions about CapMetro's Pickup service, as well as an overview of Bikeshare evaluation metrics. More detailed information about Bikeshare Performance Monitoring is included in **Appendix A**, **Bikeshare Performance Monitoring,** and CapMetro Access standards are not covered at length in this document.

Pickup

Pickup is an on-demand, curb-to-curb transit shared ride service that takes multiple riders heading in the same direction and books them into a shared vehicle. Pickup service operates within defined, limited areas called Pickup zones, and all Pickup trips must begin and end within the Pickup zone boundary. Customers can use the Pickup app on their smartphone or call to request a trip. Using the Pickup app, customers can select their origin and destination, get matched with a nearby Pickup vehicle, book a trip and track their ride in real-time.

Pickup is a transit service that is designed to meet the unique transportation needs of the communities it serves. Pickup zones serve different purposes and service characteristics such as fleet size, service span and zone size vary from zone to zone. Service standards establish targets and metrics that guide service planning and investment decisions. Due to the inherent variability of Pickup zones across the region, Pickup service standards may include a range of acceptable targets that can be tailored to measure success based on the specific characteristics of each Pickup zone. When a standard established in this document conflicts with the purpose or unique characteristics of an established Pickup zone, that standard may be adjusted or substituted for another metric. These adjustments are intended to accurately evaluate service performance while maintaining consistency with the intent of the adopted standards**.**

Standards to measure the success of Pickup service are detailed below.

On Time Performance

In contrast to fixed route service which adheres to a defined schedule, on-demand services such as Pickup can provide a more convenient and flexible option with real-time trip requests. Rather than walking to a bus stop, Pickup customers request a trip as needed from their home or place of work from anywhere within the zone, receive an estimated vehicle arrival time, and track the vehicle's arrival using the Pickup app. CapMetro customers rely on Pickup to access the larger transit network, attend school, or arrive to work on time. While Pickup vehicle arrival times fluctuate throughout the day based on demand, traffic conditions and other external factors, customer expectations should be based on the initial quoted arrival time.

For a Pickup trip to be considered on time, Pickup vehicles must arrive within 5 minutes of the estimated arrival time quoted at the time of booking. Pickup's on-time performance standard calculates the percentage of trips that arrive within 5 minutes or less of the quoted arrival time.

Zones that fall below the guideline should be examined for traffic obstacles, construction, oversized zone, or zone-design issues. If the vehicle does not arrive within 5 minutes or less from quoted arrival time, the trip is counted as late.

The applicable OTP standard for Pickup shall be established annually and documented in the fiscal year agency scorecard. The agency scorecard serves as the official source of the current OTP standard.

Service Type	Arrival Time Window	On-Time Standard
Pickup	0-5 minutes	See Agency Scorecard

Productivity

The productivity of a Pickup zone is based on ridership and hours of service, or revenue hours:

- Riders per service hour – the number of **riders** divided by the total number of hours the vehicles in a Pickup zone are in service

The standards below can provide insight on how many people are using Pickup compared to how much it costs to run them on an hourly basis. Using ratios allows CapMetro to make comparisons between zones and understand which zones are using resources most effectively over time. Productivity also indicates which Pickup zones have capacity for increased ridership. Pickup productivity is classified as low, medium, or high.

Zones with low productivity may indicate a lack of demand or a need to reevaluate the number of vehicles assigned to the zone. Zones with medium productivity indicate operational efficiency and potential capacity to increase ridership through zone adjustments or promoting the service. Zones with high productivity indicate strong demand and appropriately balanced resources. Some zones may be designed to expand transit service within a large, low-density community or to cover a transit gap, which may naturally result in fewer riders per hour than dense urban zones. In those instances, medium productivity may be the best indicator of success and performance.

Service Type	Range	Productivity Standard
Pickup	Low	0 – 2.5 riders per hour
	Medium	2.6 – 3.5 riders per hour
	High	3.5 or more riders per hour

Accessible Trips

Pickup is designed to serve everyone in a zone with fully accessible vehicles and curb-to-curb service. Some Pickup zones are entirely within the CapMetro Access boundary, while other zones are completely outside the Access boundary.

The ADA Paratransit Trip Shifting standard applies to zones fully or partially within the CapMetro Access boundary and measures the number of trips taken by Access-eligible clients using Pickup

service. Ideally, the creation of Pickup service zone would shift trips from Access, which has a higher cost per rider than Pickup to improve cost efficiency while providing better same-day service to Access customers. This increases the sustainability of the entire system while providing a better level of service to our ADA customers. While Pickup provides same-day booking options, the Access service area is significantly larger than any Pickup zone boundary, and Access customers may be unable to shift a trip to Pickup if the origin or destination is outside the zone. In these instances, Pickup can serve as an option for localized neighborhood transportation for ADA paratransit customers.

- % of ADA Paratransit Trip Shifting - the number of **trips taken by Access customers** divided by the **total number of trips**

Service Type	Zone Type	ADA Paratransit Trip Shifting
Pickup	Partially served by Access	5% of trips
	Fully served by Access	10% of trips

Service Reliability

Pickup zones are reliable when customers can count on Pickup to take them where they need to go. Matching transit resources to meet demand is key to ensuring on-demand service is reliable. Measuring unmet demand helps CapMetro provide high-quality service that meets the needs of riders. Typically, Pickup customers can expect to receive an assigned vehicle when they submit a ride request. During peak periods in some zones, riders may be unable to consistently book a trip due to unavailable seats, requiring some customers to find other transportation or not take the trip at all. While Pickup riders expect some degree of variable wait times, particularly during morning and evening peak travel periods, consistently high ratios of unmet demand within a zone indicate customer demand is outpacing vehicle capacity and the service is unable to reliably meet customer need.

- Service reliability – the number of **trip requests met with "seat unavailable"** divided by the **total number of trip requests** in the zone

If a zone is consistently not meeting the service reliability standard, it may indicate that the zone requires additional vehicles during peak hours to meet demand. Unmet demand may also indicate the need to explore additional transit service options to complement Pickup and meet high customer demand, such as fixed route bus service or implementing creative operational solutions, such as partnering with a third-party to provide overflow demand-response service.

Service Type	Service Reliability Standard
Pickup	≤1.9% of trip requests met with "seat unavailable"

Shared Rides

Pickup combines trips to facilitate “shared ride” transit, allowing more people to travel using fewer vehicles. A higher percentage of shared rides allows more service to be utilized with fewer resources and indicates operational efficiency and service effectiveness. Shared rides may be less common in lower-density zones or in areas that serve more residential land uses, or it may indicate an opportunity to reallocate a zone’s assigned vehicle to another service during off-peak hours. High ratios of shared rides indicate denser urban zones that may serve a mix of land uses or zones that serve as first- and last-mile connections to transit during peak commuter hours.

- Shared rides – the percentage of **trips shared with other customers** divided by the **total number of trips** in the zone

Service Type	Shared Rides Standard
Pickup	≥40% of total trips are shared rides

Bikeshare

Bikeshare stations are docked bicycle racks where riders can access public bikes. Placing bikeshare stations near stops provides a first- and last-mile option for riders by connecting bikeshare to transit services.

To measure the success of Bikeshare, several Key Performance Indicators (KPIs) are evaluated on a regular basis and examined over time. The tracking of KPIs allows CapMetro to better align Bikeshare with its other modes, more quickly identify operational issues, and measure the overall return on program investments. Bikeshare success is measured in three different ways: system performance, station performance, and overall goal attainment.

A full list of all Bikeshare KPIs is available in **Appendix A, Bikeshare Performance Monitoring.** An overview of Bikeshare Performance Monitoring is provided below.

System Performance

Bikeshare System Performance metrics monitor overall system health. These are metrics that would be monitored on a frequent and ongoing basis by the CapMetro Bikeshare operations team.

Station Performance

Bikeshare Station Performance metrics were developed to identify issues at stations regarding ridership and reliability.

Goal Attainment

Bikeshare Goal Attainment metrics help staff evaluate the long-term attainment of CapMetro Bikeshare's guiding principles:



A. BIKESHARE, AS PART OF AUSTIN'S PUBLIC TRANSIT NETWORK, CONNECTS PEOPLE TO WHERE THEY WANT TO GO.

Bikeshare fills transportation gaps, expanding mobility for the public and connecting riders to and from other CapMetro services.



B. BIKESHARE IS A TOOL TO REDUCE INEQUALITIES IN TRANSPORTATION.

Bikeshare helps more people move without a car, notably striving to help vulnerable and marginalized communities.



C. BIKESHARE PROVIDES AN ACCESSIBLE AND AFFORDABLE TRANSPORTATION OPTION.

The system's design, footprint, and user experience reflect the needs of all Austinites. CapMetro Bikeshare's many pass types ensure all users can access the system at a fair price.

D. BIKESHARE SUPPORTS COMMUNITY WELLBEING.

Bikeshare makes Austin a healthier and more resilient community in a few ways. The program promotes physical activity and the use of public recreation resources. It also supports wellbeing by providing residents access to jobs and opportunities.

E. BIKESHARE IS A GOOD STEWARD OF PUBLIC FUNDS.

CapMetro Bikeshare is a financially sustainable operation. CapMetro Bikeshare expansion learns from experience and makes sensible system development and expansion decisions. As the system grows and matures, revenue generation is balanced with providing greater geographic coverage.

04

Service Changes

This section overviews the process through which CapMetro makes changes to its service and the evaluation and analysis that helps inform those changes.

WHEN AND WHY SERVICE CHANGES OCCUR

CapMetro is continuously assessing service performance and feedback to make improvements for customers and the community. There are several recurring planning efforts undertaken by staff and approved by the CapMetro Board of Directors, each at different points in time and with varying levels of detail.

Each of the following service evaluations could result in service changes, which would be implemented through the tri-annual service change process.

- **Every 5-10 years: Service Plan*** – Entails analysis of demographic, land use, development and transit ridership patterns across Central Texas and evaluation of CapMetro services as a holistic network. Explores issues and opportunities for potentially larger changes to routes or groups of routes based on bigger changes happening over a longer time period. The last update was completed in 2025.
- **Every 5 years: Origin & Destination Study** – Involves surveying riders on vehicles to collect information on how and why people are using CapMetro services. Findings from this study help guide service planning and proposed changes. The most recent survey was completed in Summer 2023.
- **Three times per year: Service Changes*** – Regular evaluation of CapMetro service can determine what service changes are proposed and implemented at designated Service Change periods, typically in January, June and August.
- **Multiple times per year: Special Events** – Austin City Limits, SXSW and holidays require careful planning for changes in service. There are staff dedicated to this work at CapMetro.
- **As needed: Stop and Station Placement Evaluation** – Stops and stations may be constructed, relocated, or closed as part of the Service Change process. See **Chapter 5 Transit Stop & Station Design Guidelines** document for information.

**Approved by CapMetro Board of Directors*

Because the Austin region is growing so rapidly, the landscape of where people live, work and want to go is changing often. New developments, increased cost of living, shifting residential, emerging employment hubs, changing traffic conditions and infrastructure enhancements are all factors that can impact CapMetro service. Staff consider these changes when reviewing route performance and may make adjustments to routes so that they best serve the community.

CapMetro is continuously monitoring data and customer reports to ensure that service is running smoothly.

Outside of these specific processes outlined in this document, CapMetro also has specific teams that meet biweekly throughout the year to closely monitor the transit service. One team is called the Continuous Customer Experience Improvement Team, which reviews metrics such as On-Time Performance issues and Overcrowding on a regular and frequent basis.

Most Common Reasons for Service Changes

- Implementation of service plan recommendations
- Results from the evaluation of services that need improvements or corrective actions to meet the service standards
- Input from CapMetro employees, particularly operators who are most familiar with route issues and customer pain points
- Service Planning staff recommendations to explore better operating alternatives

Other common reasons include:

- Providing improved service to riders that heavily rely on transit
- Seasonal school schedules (University of Texas, Austin Community College, etc.)
- Requests from the public, especially similar requests from multiple riders
- Requests from community institutions such as employers, educational and medical facilities, social service providers or developers
- Regular reviews of the effectiveness and quality of service that identify the need for a service change
- New common destinations, developments or streets that create transit demand

Responding to Requests for Service Changes

CapMetro frequently receives requests to create new services or bring back old services. Given the limited funding for operating transit service, it is very difficult for CapMetro to act upon and implement every request. CapMetro aims to provide a high quality, efficient and useful transit service, while balancing the needs of the residents in the service area and being good stewards of taxpayer dollars. These Service Standards & Guidelines provide a basis from which to review service requests received and to evaluate what can be done given the amount of funding available.

Underperforming Service and When to Take Action

As discussed in the **Service Standards**, there are multiple actions that can be taken when a service is not meeting the standard. These actions fall under the following types of changes:



Reallocate

Resource adjustments that respond to overcrowding, reliability issues, or unmet demand — such as increasing vehicles on a route, rebalancing bikeshare stations, or expanding a microtransit zone's service hours or fleet size.



Optimize

A change to the frequency, span, alignment, or configuration of a service to better match demand — such as adjusting a bus route's path, modifying a microtransit zone boundary, or relocating a bikeshare station.



Expand

Adding new service capacity to the network — such as introducing a new fixed route, launching a new microtransit zone, or adding bikeshare stations in an underserved area.



Reduce

Removing or contracting service — such as eliminating an underperforming route, closing a microtransit zone, or removing bikeshare stations with consistently low ridership.



Adjust

Infrastructure or amenity changes resulting from one of the actions above — such as stop placement, shelter installation, dock configuration, or wayfinding updates.

Elimination of Existing Service

If service elimination is under consideration, careful investigation is done to maintain service for populations who rely on transit. For under-performing routes that provide service to historically underserved communities, such as people and families who don’t own a car, people with disabilities, students, youth, seniors, limited-English speaking populations and low-income populations, **an additional 12 months should be allotted to meet targets** after a service change has been made before elimination is reconsidered.

If a Pickup zone consistently underperforms, the first option is to examine all potential actions to improve service as outlined in the actions above, as well as conduct a marketing and community engagement campaign to promote the service. If the Pickup zone continues to underperform for 12 months after a service change and community engagement campaign, the zone is eligible for removal. Some Pickup zones were established to fill a gap in transit service, and CapMetro should carefully weigh the impact of introducing or reestablishing a transit gap within a community.

Evaluating New Services

Within the first year of implementation of a major change, services may be adjusted to help the service run more efficiently, but service should not be modified in significant ways. Riders often take some time to adjust to the new and changed services and it takes time for that market to develop. Typically, transit agencies will allow for some form of a “ramping up” period to allow for routes to be given time to mature before their performance is evaluated against the same standards as mature routes. During this period, performance of new or changed service will be observed but not altered, because no service will be viewed by the public as dependable if it is too frequently changed.

After the first year, CapMetro expects that a fixed-route service will meet 60% of the minimum thresholds described in the **Service Standards.** After 24 months of a service being introduced or since the last major change, a route should have a mature market and be expected to meet the standards. For a route that is underperforming but within 10% of its target and has shown growth over the previous 6 months, the service should be given six additional months to meet targets before a service change is studied.

New Pickup service is evaluated through a similar lens as fixed-route service. New Pickup zones or significant adjustments to existing Pickup zones are significant financial commitments that require thoughtful consideration before moving forward. New Pickup zones and significant changes to existing zones must be identified in the board-adopted Service Plan before implementation to ensure any additional investments in on-demand service complement the larger transit network and to ensure the long-term sustainability of the proposed new service.

Converting Service from Fixed Route to Pickup

Fixed route services are designed to meet transit needs in an area. Over time, changing development patterns or demographic shifts may result in a fixed route service that no longer serves the needs or demand of that particular area. When a fixed route service consistently fails to meet established performance standards, the first step is to explore and potentially implement corrective actions. The evaluation includes:

- Determine and address the root cause of the low-performing fixed route
- Adjust or optimize the route to improve performance
- Reallocate resources
- Evaluate whether Pickup service could replace the underperforming fixed route.

Converting an underperforming fixed route to a Pickup zone may be a feasible option if the proposed conversion is cost-effective, serves a transit gap, connects customers to the larger transit network, and minimizes impacts to transit-dependent riders.

The primary factor is cost effectiveness; Pickup service has a significantly higher cost per rider than fixed route service. If the proposed conversion results in overall cost savings to CapMetro, savings may be reinvested in other fixed route service improvements, such as increasing frequency or span across the network. If the proposed conversion is significantly more expensive to implement than fixed route service, it may be worthwhile to continue operating fixed route to maintain transit coverage.

Another consideration is whether Pickup’s service span will meet the needs of transit-dependent customers in an area. Pickup typically operates from 7 a.m. to 7 p.m. on weekdays, with Saturday service in some zones. Pickup does not typically operate in the evening, late night, early morning or on Sundays. If fixed route ridership generally aligns with Pickup’s established service characteristics, it may be a good fit for that community.

Finally, removing an established fixed route service may result in a reduction of the established ¾ of a mile ADA paratransit boundary. Reducing or adjusting this boundary can significantly impact CapMetro Access customers who rely on ADA paratransit in that area for their daily travel needs beyond local neighborhood trips. While Pickup is a fully accessible curb-to-curb transit option, it cannot deliver the same level of door-to-door or hand-to-hand mobility assistance that CapMetro Access provides.

Converting Service from Pickup to Fixed Route

The inverse of those factors applies when considering whether to convert Pickup to fixed route service. Pickup zones are often introduced in lower-density, suburban areas that are experiencing rapid growth. Changing development patterns can result in a Pickup service that increases transit demand beyond the operational and design capacity of the established zone. As communities become denser, development patterns may change to include more sidewalks, street grid connectivity, and land use mix. This combination of increased transit demand and changing built environment indicates it may be appropriate to evaluate the need for higher-capacity transit service within the community. This could include adding a fixed-route service along higher-density corridors within the Pickup zone to reduce Pickup demand, with a long-term goal to fully replace Pickup with fixed-route over time.

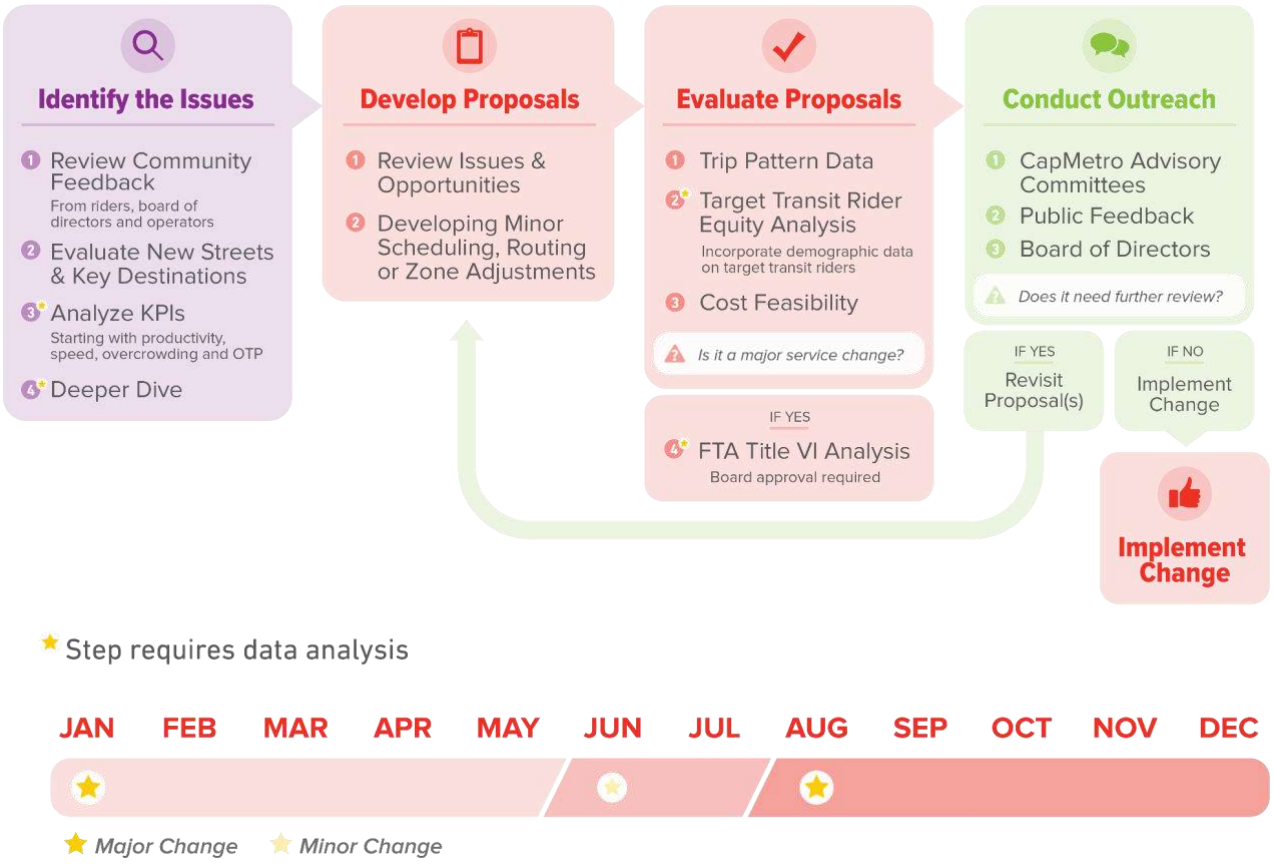
Fixed route is significantly more cost effective, efficient, and less resource intensive than on-demand service. If an area has significant unmet transit demand that would require a large increase in Pickup resources to meet the needs of a community, it may be cost effective to introduce a new fixed-route service while maintaining some level of existing Pickup service to begin the process of converting the zone. As part of service planning, CapMetro evaluates a number of factors such as the cost of both Pickup and fixed-route service, transit demand, ADA paratransit boundary impacts, vehicle requirements, and more.

SERVICE CHANGE PROCESS

Service changes provide an opportunity to modify CapMetro service to better suit riders' needs. They can encompass changes to route alignments and schedules as well as physical amenities like bus stops and other facilities. Pickup zones generally adhere to the same service change process as all other modes. Service changes occur three times per year: in January, June, and August. This schedule keeps changes predictable for both riders and operators and coincides with academic calendars, although extenuating circumstances may create the need for adjustments at other times.

The service change process allows CapMetro to adjust existing services, implement new services, and if necessary, realign, consolidate or discontinue consistently unproductive route segments or scheduled trips. Service changes are important to ensure that CapMetro routes are doing what they need to do to meet the community's needs.

A service change is not an individual change in bus stop placement or configuration, which may occur as needed throughout the year. More information about this process can be found in **Chapter 5 Transit Stop and Station Design Guidelines.**



Identify the Issues

Service evaluation is an opportunity to review issues and opportunities for CapMetro routes, which are informed by the following factors:

Review Community Feedback

CapMetro begins the service change process by reviewing information to understand what, if any, routes are not performing as expected, and who is being impacted by underperforming routes or service. Staff across departments are collecting constant feedback from riders and operators, which is documented and used to identify issues and opportunities for individual and groups of routes throughout the year. Planning staff prioritize comments from vulnerable communities in the Austin area, such as people and families without access to a car, low-income residents, seniors, individuals with disabilities, youth, people with limited English proficiency, and historically underserved communities. Riders who share comments with customer service, attend board meetings, and participate in outreach activities bring valuable insight to the service planning process from the perspective of those who use services every day. Regional member city stakeholders highlight the day-to-day transit needs of their residents in the context of their community's overall development. Operators who have day-to-day experience with CapMetro routes also provide suggestions to help service run more efficiently. Feedback from these sources as well as CapMetro leadership is documented and considered when planning staff evaluates a route for potential improvements.

Evaluate New Streets & Key Destinations

The service evaluation process is also an opportunity for CapMetro to adjust service based on changes within the environment. Streets that are built or improved may provide a chance to straighten a bus route's alignment or alter Pickup boundaries to provide access to an important destination. New developments or key destinations such as a new medical clinic, affordable housing development, grocery store, or retail center may also warrant adjustments to nearby service. Long-term construction efforts can also require realignments or schedule changes to minimize impact to the customer experience.

Analyze KPIs

Many of the KPIs described in the **Service Standards** are data inputs that can show when a fixed-route, commuter rail, Pickup or Bikeshare service may need to be adjusted so it is more reliable or effective. As part of the service change process, CapMetro staff evaluate the performance of existing services by examining KPIs and comparing performance to the Service Standards described in the previous chapter. These standards serve as benchmarks for understanding how far off a service's performance may be from what is expected.

Deeper Dive

Once staff identifies services that are not meeting minimum standards, they will conduct further study to understand the underlying cause and significance of the issue. Analysis at this stage aims to understand where the problem is, how far off it is from the standard and how long it has been persisting. For example, data inputs such as On-Time Performance, Travel Time Reliability, Overcrowding, Productivity, Cost Effectiveness, and Passenger Hours of Delay may be reviewed for specific fixed-route segments, stops, Pickup zones, and times of day. Ridership, on-time performance, and vehicle capacity data for specific segments or stops along a route may be used to understand the geographic scope of an issue. Variance across different times of day may also show different needs at peak periods. Performance and cost data from recent evaluations may also be used to compare performance over time to understand when the problem began or whether it has a seasonal cause.

Develop Proposals

Findings from the service evaluation are used to develop a proposal describing prospective changes and their reasoning. Suggested changes may include adjustments to a service's schedule, alignment, boundary or the schedule or alignment of an adjacent route. Changes are informed by the analysis done during the service evaluation, as well as answers to questions like the following:

- Would the change duplicate other service?
- Is the change feasible? (e.g., is there enough room for the bus to make a required turn or park during a layover?)
- Is the proposed Pickup zone change identified as a need in the adopted Service Plan?
- Does the change require allocating more vehicles to a route or Pickup zone?
- Does the change require operating outside the CapMetro service area?
- Does the change impact the CapMetro Access service area boundary?

These considerations help CapMetro staff weigh the prospective changes in the context of available resources. The resulting proposal(s) documents these changes, how they would be implemented and their justification.

Developing Minor Scheduling, Routing or Zone Adjustments

Specific schedule adjustments are determined further in the service change process to more accurately respond to evolving traffic conditions and construction in the region. This timing makes sure the schedule best serves customers, more closely reflects available resources and improves on-time performance. Once available, additional details on all proposed minor schedule adjustments for each service change are shared on our webpage and in the subsequent informational materials. The following is a summary of the type of potential minor schedule adjustments that may be evaluated.

- **Scheduled Time with Potential Minor Frequency Adjustments:** May adjust the scheduled time to respond to traffic conditions or operational needs. Based on existing resources, may result in minor frequency adjustments for specific periods of the day (typically a few minutes within a limited window).
- **Additional Trips:** May add individual scheduled trip(s) in response to passenger demand and need.
- **Minor Routing Adjustments and Updated Bus Stops:** May include minor routing and/or minor bus stop location adjustments.
- **Minor Pickup Zone Boundary Adjustments:** May include minor zone boundary adjustments to Pickup zones in response to community feedback and/or operational needs. Minor Pickup zone boundary adjustments are changes that do not significantly impact the zone's total size, vehicle allocation, ridership, travel time or customer experience. Pickup is a resource-intensive service with a higher cost per rider than fixed route, so all adjustments, including minor zone boundary adjustments, must be carefully considered and evaluated through the service change process for potential long-term impacts on the service.

Evaluate Proposals

After drafting a service change proposal or multiple proposal options, staff may consider additional data to verify the intended changes will be beneficial to the community.

Trip Pattern Data

Does the proposed change improve a section of a route that has high ridership activity or connects key origins and destinations? Would it add service in an area with many potential riders?

Target Transit Rider Equity Analysis

Would the proposed change impact service on a section of the service used by historically underserved communities, such as people and families who don't own a car, people with disabilities, students, youth, seniors, limited-English speaking populations or low-income populations?

Cost Feasibility

How much money is available to make the proposed change? What is the cost of the proposed change in terms of budget, available staff and vehicles?

Once the proposal or proposals have been examined through these lenses and finalized, they can move through the engagement process.

Compliance with Title VI Analysis for Major Service Changes

All service change proposals undergo the above analysis and review before they are finalized. However, some changes have a larger impact on the community than others and require an additional element of analysis to meet FTA guidelines. The Service Equity Analysis is an additional analysis defined in the CapMetro Major Change, Disparate Impact, and Disproportionate Burden Title VI policy and is meant to ensure that members of marginalized populations are not subject to disparate impacts or disproportionate burdens because of a potential CapMetro service change.

A major service change requiring a Service Equity Analysis is one that meets one of the following criteria:

- The establishment of a new fixed-route bus route
- The elimination of any fixed-route bus or rail route in its entirety
- A geographic change on a given transit route of 25% or more of its annual revenue miles
- A change of 25% or greater in the number of annual revenue hours provided; or
- Six months prior to the opening of any new fixed-guideway project (e.g. BRT line or rail line), regardless of whether the amount of service being changed meets the requirements above

A major change is not:

- Temporary additions to service lasting less than 12 months
- Route renumbering with no underlying change
- Schedule or service adjustments required by a third party that operates or controls the same right-of-way (such as road closure)
- New fixed-route bus or rail "Break in period" prior to the commencement of revenue service, lasting less than 12 months
- Any change to Pickup or Bikeshare service
- Emergency service adjustments associated with weather or other emergency conditions
- Service changes that result from circumstances beyond the control of CapMetro (such as construction)

The service equity analysis is completed by comparing the existing service with the proposed new service and examining the magnitude of the change. The analysis then identifies how these changes would be experienced by minority riders compared to non-minority riders. A disparate impact may be identified when:

- The adverse impacts experienced by minority riders are expected to be more than 2% greater than the adverse impacts experienced by non-minority riders
- The benefits associated with service changes accrue to non-minority riders at a rate that is more than 2% greater than benefits received by minority riders.

If the analysis results in either of the above scenarios, the proposed service change will undergo further review to evaluate whether the proposed change has a substantial legitimate justification and whether there are comparable effective alternatives that would avoid or reduce the disparate impact. If appropriate, the proposal may be revised, or mitigation measures will be developed and incorporated into the proposal before it moves forward.

The results of any Title VI Service Equity Analyses will be presented to the Board along with the additional data analysis and customer feedback contained in all service change proposals.

Note: *The Title VI analysis that is conducted during a service change process is different from FTA Title VI Service Monitoring. See Title VI Monitoring Fact Sheet for more details on that process.*

Conduct Outreach

Before finalizing a service change, proposals are vetted through several outreach efforts. The Customer Service Advisory Committee (CSAC) and the Access Advisory Committee, both of which are comprised of community members appointed by the CapMetro Board of Directors, are presented with all service change proposals and their underlying analysis, justification and expected impacts.

Other potential outreach efforts include informing Neighborhood Associations, who may be invited to public meetings to discuss the proposed changes. Presentations to elected officials and governing bodies of partner jurisdictions are available when requested so they can answer questions that may arise from constituents. One-on-one presentations can be scheduled to various elected officials who represent the neighborhoods to explain the service changes.

If the outreach process brings forward any changes, proposals will be revised by planning staff, who will conduct the same evaluation analysis described above. This stage of the process can be iterative, with additional adjustments to the proposed changes made as new information or perspectives are considered. Once the proposed service change is finalized, it is presented to the CapMetro Board of Directors for approval.

Implement Changes

There are many steps to implementing service changes. First, CapMetro will ensure that the changes are understood by existing customers by conducting at-stop or on-board outreach at high-volume stops near the neighborhoods and transfer stations impacted. All marketing materials for the services impacted will also be updated. Online engagement, at-stop signage, and targeted messaging through CapMetro's Apps as well as on-bus printed materials and signs, mailers and social media can be used to inform riders of the upcoming service changes.

CapMetro staff is also responsible for implementing the behind-the-scenes logistics that are required when a route changes. Updated schedule information is finalized so that the new or changed service integrates

with the rest of the network seamlessly, and vehicle operators are trained so that they can answer any questions from customers.

05

Transit Stop and Station Design Guidelines

ABOUT CHAPTERS 5 AND 6

Transit stops and stations are the “front door” of transit systems. Their location, design and maintenance influence how riders experience transit. The following two chapters can be used in tandem to provide guidance for CapMetro and their partners to ensure transit is a safe, comfortable and convenient experience for customers.

Chapter 5 - Transit Stop & Station Design Guidelines is a tool to help CapMetro and other municipal and community partners deliver transportation choices that connect people, jobs and the community in a convenient, consistent and safe manner. The intent of these guidelines is to facilitate the proper siting, design and management of either existing or proposed stops and stations throughout the CapMetro service area.

Chapter 6 – Transit Stop and Station Amenities details the standard amenities assigned to transit stops and stations throughout the CapMetro service area based on the ridership and level of service at each transit stop type. The chapter also establishes a consistent framework to distribute amenities fairly by prioritizing stops and stations for amenity improvements using clear, community-centered criteria.

Why It’s Important

In addition to being critical sustainable infrastructure that can enhance environmental conditions and improve resiliency, well-designed transit stops and stations enhance the transit experience, decrease perceived wait times for transit services and can increase ridership. CapMetro acknowledges that stop and station design and available amenities have an impact on people’s lives and their likelihood to use public transit. This document creates a path to improving how customers experience their transit system.



Who Should Use These Guidelines



The information in these guidelines will be useful to anyone involved in the planning, design, construction, maintenance and/or use of stops and stations: community members, transit staff, planners at the municipal, county and state levels, as well as developers and private landowners.

The content in this chapter is not intended to be strict standards, but instead to provide guidance and inform design decisions within the real-world context or needs of a specific location. Providing this guidance is meant to support the work of CapMetro, and flexibility is key as the street and right-of-way, or land in which a road is built, is unique in each context. Potential impacts must be considered when designing a stop or station and implementing the processes outlined in this chapter.

All stops and stations and any pertinent features should comply with Public Rights-of-Way Accessibility Guidelines (PROWAG) provisions and Texas Accessibility Standards (TAS). PROWAG adheres to standards set by the Americans with Disabilities Act (ADA), and while PROWAG are not governing standards, they do provide guidance for creating accessible right-of-way, where ADA does not provide standards. In that sense, PROWAG goes beyond meeting ADA regulations. TAS closely mirrors ADA standards but should also be reviewed to ensure compliance in areas where it diverges from ADA.

This document incorporates the latest regulatory standards from ADA, PROWAG and TAS and best practices as of May 2026. When regulatory standards or guidelines are updated, the latest guidance and this document should be reviewed regularly and updated as needed to reflect these changes.

GUIDELINES FOR DESIGNING GOOD TRANSIT STOPS

A high-quality transit stop is one that is well connected to the neighborhood or community it serves, accommodates the needs of all transit riders freely and comfortably, increases the safety of those waiting for the bus or train and enables efficient operations. Stop and station design should be guided by the following principles:



Locate Stops and Stations in Convenient and Comfortable Locations

Stops and stations should be located in places that are convenient to where people are traveling to and from, including near where housing or jobs are concentrated and key destinations such as social services or shopping.



Locate Stops and Stations in Safe Locations

Stops and stations should be located where customers feel comfortable, which is a location with enough people, activity and/or lights to not feel isolated. In addition, the location of the stop itself should be well lit and should provide adequate space for waiting riders to sit or stand, with considerations for other people using the street or sidewalk.



Make Stops and Stations Visible and Easily Identifiable

Stops and stations should consistently be located in easily identifiable places, so they can be found without difficulty by riders and bus drivers alike. Stops and stations should follow CapMetro branding guidelines for the specific service type operating, so that they are a recognizable component of the transit infrastructure.



Make the Wait Comfortable

Providing amenities, such as benches, lighting, bike parking, waste receptacles, etc. at stops and stations makes it more comfortable for riders to wait for the bus. While it is not practical nor cost-effective to provide all amenities at all stops, more extensive amenities should be provided in areas where there is greater need. See Chapter 6 Stop and Station Amenities for more details on the process for distribution of amenities.



Provide Information on Available Services

Stops and stations should make it intuitive for riders to know when and where they're traveling. Signs should provide basic service information such as route numbers and destinations. Stops and stations with higher amounts of riders should have arrival time estimates and route information at the stop.



Integrate Stops into Street Design Processes

When new developments are constructed, the stops and stations should be designed as part of the overall project, rather than placed as an afterthought. Similarly, when roads and/or sidewalks are reconstructed, stops should be developed as part of the overall design and brought to current stop or station amenity level standards.



Provide Good Pedestrian and Bicycle Access to Stops and Stations

Stops and stations should be located at sites that provide safe, PROWAG and TAS-compliant pedestrian access to the surrounding area, especially to the other side of the street. This should include well-defined and contiguous sidewalks to and from the stop or station, protected crossings or stops strategically placed at signalized intersections, and adequate bicycle facilities to and from the stop or station.

Stop & Station Accessibility

When designing and placing transit stops, there are several important considerations to ensure people with all levels of mobility can access the service. Federal accessibility requirements for bus stops and rail stations in the public right-of-way are outlined by PROWAG, issued by the U.S. Access Board, and key elements related to the design of transit stops and stations are highlighted below.

Boarding and Alighting Areas

The waiting area at a transit stop should be an appropriate size to accommodate passengers with enough room for those using mobility aids such as a wheelchair to board, with space for wheelchair ramps to deploy. The slope of the landing pad should also comply with PROWAG regulations, ensuring a flat, level surface for customers to use.

Level Boarding

Level boarding means that the concrete at a stop or station is raised to be level with the entry to a transit vehicle. This is especially common for high-capacity transit stops, like Rapid and Rail stations. Where level boarding at a bus stop isn't possible, ramps or lifts on the transit vehicle bridge the gap between the curb and the vehicle floor.

Detectable Warning Strips

Detectable warning strips are installed in the pavement around a stop or station to indicate location of the curb, end of a rail platform, or transition between a bus stop and an integrated bicycle lane.

Tactile Wayfinding

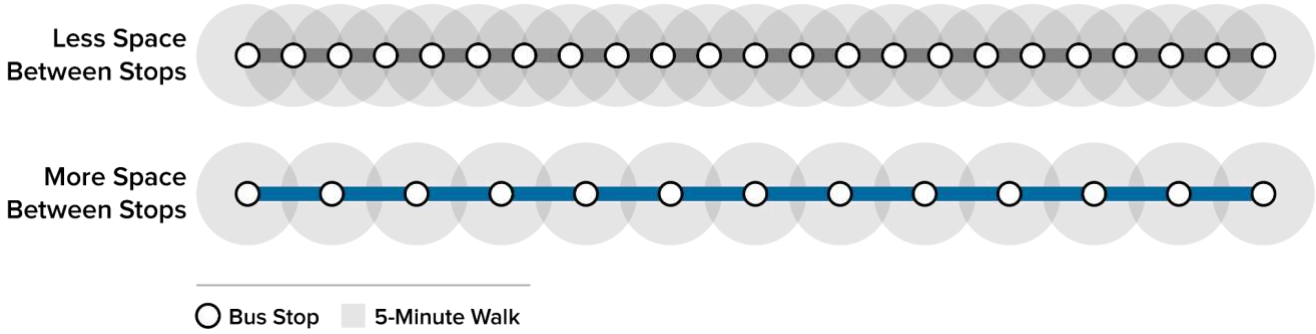
Tactile wayfinding is the use of touch-based cues, detectable surface features, tactile maps, Braille and raised-lettering on signage to support independent navigation, orientation, and access to transit facilities for people with vision-related disabilities.

Stop & Station Spacing

The distance between stops or stations significantly impacts bus and rail travel times. It can also both positively and negatively impact the willingness for customers to use transit and their experience while doing so. Transit service runs more efficiently when stops and stations are optimally spaced but must balance the need for rider access and service experience.

Stops or stations placed closer together provide customers with shorter walk times, but they also increase travel times and are a major reason that transit is slower than automobile travel. Each additional stop or station requires the bus to slow down, come to a complete stop and load and unload riders before speeding up and re-joining the flow of traffic. Most riders want transit service that balances convenience and speed, and the number and location of stops is a key component of determining that balance. Providing fewer, safer and more accessible stops and stations enhances rider experience over more stops that are less accessible.

Stop or station spacing is aligned with the type of service that is provided and the travel experience it aims to achieve. For example, CapMetro Rapid is a high-capacity bus service, and therefore has stations that are further apart between 2,650 to 4,000 feet or ½ to ¾ mile to provide a faster and more reliable service. Commuter rail is also a high-capacity service but has a more nuanced spacing standard which depends highly on surrounding land use and site availability and access. Commuter rail stop spacing should be placed as needed and prioritize fast and efficient service, while balancing access needs for commuters. Local service will have tighter stop spacing on average around 1,300 feet or ¼ mile. The table below shows the average stop and station spacing based on service type.



Service Type		Average Distance (ft)
High Capacity	Rail	As needed
	Rapid	2,650 – 4,000
Frequent		1,300 – 2,650
Local		~1,300
University Shuttles		As needed
Commuter		As needed
Community		As needed
Late Night		~1,300

Operational considerations for stop placement and access to destinations may influence spacing. In addition, several factors should be considered when weighing stop relocations and closures intended to better adhere to the average spacing. Walkshed analyses should inform impacts to stop access between existing and proposed stop locations.

Stop & Station Pairing

Riders need to be able to make a round-trip using transit. A stop or station needs to have a stop pair which allows for taking a transit route in both directions. Stop and station locations should be located within close vicinity to the stop for taking the same route back the other direction. This makes it simpler for riders to navigate the transit system and provides a similar level of access to a location when making a round trip. This makes transit service easier to use and more convenient. CapMetro staff may need to use professional judgment as certain land use or street context may prevent closely paired stops or stations.

Stop & Station Placement

Stop and station placement involves balancing customer safety, accessibility and operational efficiency. All stops and stations should be fully accessible with a concrete landing and access to a sidewalk or pathway that connects to an intersection. When siting a stop, considerations should be given to the location it is serving. For example, if the stop is near a grocery store, riders may be carrying heavy bags, so the stop should be placed as close to the entrance of the store as possible with clear and convenient access from the stop to the store entrance. Stops and stations should be placed at intersections to maximize pedestrian safety; however, infrastructure considerations can affect stop placement, including right-of-way availability, cost of installation and maintenance, potential future changes to a stop location, city, county, state or federal laws and regulations or other operational reasons.

Sidewalk

Sidewalks provide critical access for people walking and rolling to and from their transit stop and are a key part of the infrastructure that facilitates multimodal connectivity. At minimum, a sidewalk should be present on the same side of the street as the stop and continue through to the nearest intersections on either side of the transit stop.

Sidewalk connectivity and design are critical to stop access. Sidewalks must provide clear and unobstructed paths to transit and comply with PROWAG and TAS guidelines. Width and placement of sidewalks should align with the guidance from their corresponding jurisdiction. For areas under the jurisdiction of the City of Austin, guidance is found in the latest edition of the City of Austin Transportation Criteria Manual (TCM) in Sections 2 and 4, respectively.

Protected Crossings

Protected crossings provide a designated space for vulnerable road users to cross motor vehicle traffic. They are crucial for transit access because they keep people safe when crossing busy roads. They also make it easier and more comfortable for pedestrians and cyclists to use public transportation, encouraging more people to choose it as a convenient way to travel.

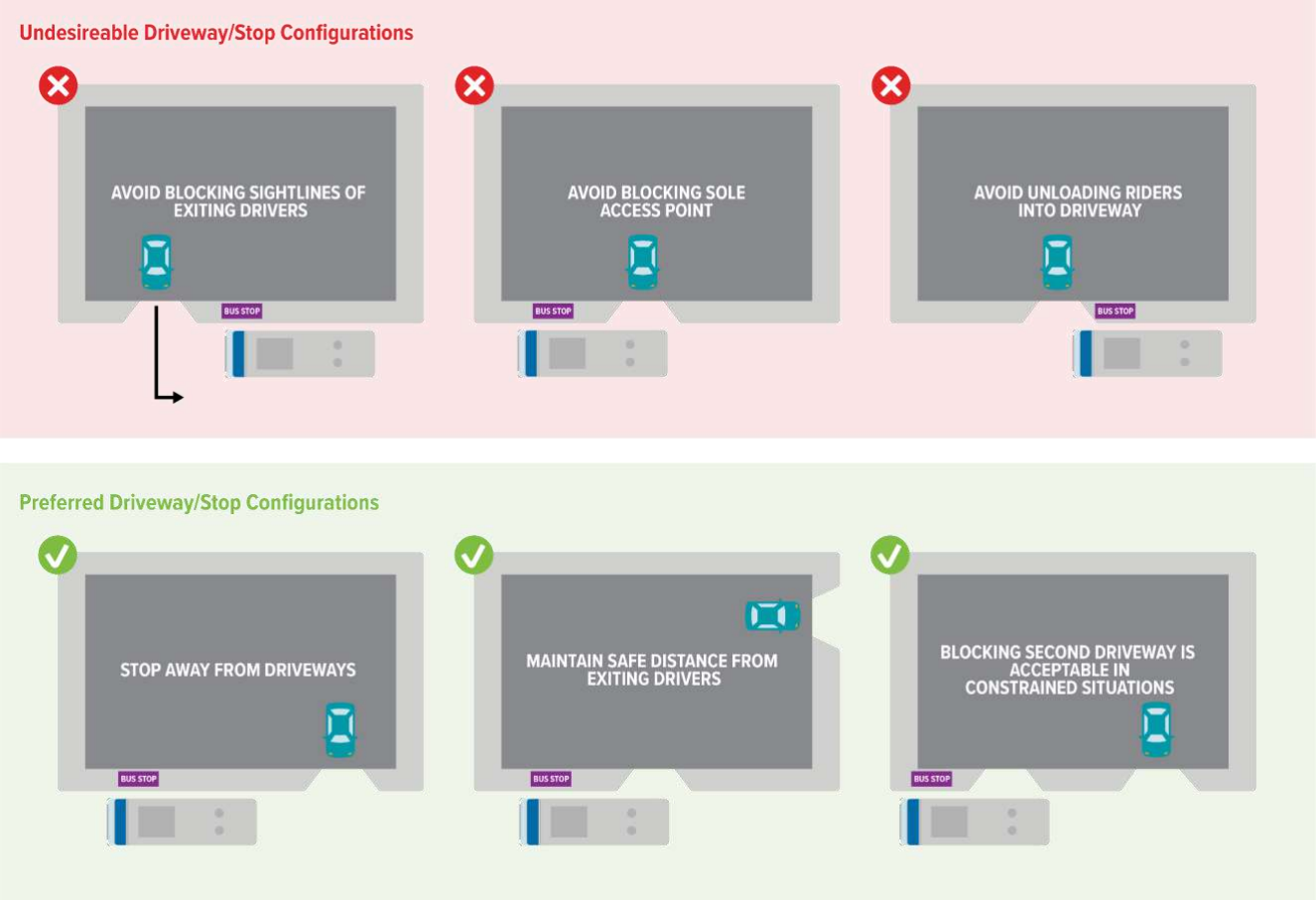
All protected crossings are designed in accordance with the guidance provided by the corresponding jurisdiction, and CapMetro requires all new transit stops to be placed within 100 feet of a protected pedestrian crossing. This practice aligns with Section 4.2 of the TCM, which recommends crossings within 100 feet of all transit stops. For older stops that may be further away from a protected crossing, CapMetro may move the transit stop closer to an existing crossing or coordinate with the City of Austin and other jurisdictions to add a new crossing.

Protected crossings include stop or signal-controlled intersections or mid-block crossings, with signalized pedestrian crossing islands, where needed. For stops at a midblock location, protected crossings should be considered based on context of the roadway. In addition, all pedestrian crossings must be compliant with the provisions of Section 4.2 of the TCM, including a maximum desirable distance between marked crossings based on street level. The City of Austin's Crossing Guidelines provides further recommendations of appropriate treatments for pedestrian crossings based on a street's number of lanes and median presence, annual average daily traffic and vehicle speeds or posted speed limits.

Driveways

Driveways and other curb cuts near transit stops or stations can pose safety hazards for customers getting on and off transit and for drivers of transit vehicles. There are six principles that guide the siting of stops in relation to driveways, illustrated below.

There may be locations where it is not possible to meet all six principles for driveway arrangements to create or preserve equal access to the transit stop. Safety and accessibility are the most important considerations when siting stops around driveways and curb cuts. In cases where stops are competing with driveways consistently along a corridor, driveway consolidation and access management, in coordination with municipal partner staff may be a beneficial solution.



Multimodal Access

All users should be able to get to transit using a variety of mode choices. Access to and from transit stops and stations should be well maintained and accommodate people who walk, bike, use wheelchairs or other mobility devices.

Section 6.2.3 of the TCM clearly states that a clear path of travel shall be provided for each mode, serve all users and provide a sense of comfort to and from the stop or station, and that priority shall be given to people walking and biking over motorized traffic.

The preferred configuration for rights-of-way where transit and bike networks overlap is a floating stop with raised or protected bike lanes. Section 6.2.3.1 of the TCM contains guidance and design details and must be followed for integrating bike facilities at the stop or station.

High Transfer Stops & Stations

A high transfer stop or station refers to a location where riders are often making a connection to another transit service. For example, a rider may get off the Rail Connector Route 465 at a bus stop at MLK Station to connect to the Red Line station. Where transfer activity between routes is significant, stops or stations should be located as close together as possible to provide a short walk and convenient transfer for customers. This may result in a near-side and far-side stop at the same corner of an intersection to mitigate the need to cross the street. CapMetro staff will use professional judgment to site stops and stations at high transfer locations based on the land use and operational context.

Locations at the Intersection

Determining where to locate stops and stations is one of the most important factors that makes transit run well. Transit stop placement involves balancing customer safety, accessibility, comfort and operational efficiency. A stop can be described in terms of its location along the block relative to the nearest intersection, and its configuration relative to the curb and the adjacent area. The dimensions included in this section are based on best practices but are subject to change based on site-specific constraints or opportunities. When placing a stop near an intersection, sometimes the placement may require that driveways need to be consolidated or closed to create room for transit vehicles to stop safely.

FAR-SIDE

Far-side stops are located past the intersection so vehicles move past the traffic signal and crosswalk before reaching the stop. This reduces delay by allowing the bus to resume its trip as soon as passengers have finished boarding, rather than having to then wait for a green light. Far-side bus stops are generally preferred as this placement increases visibility and reduces the chance of collisions between buses and right turning vehicles before the intersection.



NEAR-SIDE

Near-side stops are located before the intersection. These are not preferred, as vehicles may have to wait at a red light, which can impact speed and reliability. Other drivers may also try to merge in front of a stopped bus to make a right turn, which can create a safety concern or further delay the bus. To avoid this, near-side stops should be built to allow transit vehicles to stop as close to the intersection as possible, up to 10’ from the crosswalk. A near-side stop may be preferred if it is closest to the destination most riders are going to at the location.



MID-BLOCK

Mid-block stops are not located at an intersection. They are typically only placed near important destinations or where longer block lengths do not allow for optimal stop spacings. These stops should be accompanied by mid-block crossings protected by signalized pedestrian crossings, or pedestrian crossing islands, in coordination with the City of Austin or other service member jurisdictions.



Summary of Intersection Configuration Details

Stop Placement	Rear Buffer from Crosswalk (ft)	Stopping Area (ft)			Front Buffer from Crosswalk (ft)	Total Length (ft)		
		40' Bus	60' Bus	Two 40' buses*		40' Bus	60' Bus	Two 40' buses*
Far-side	20	45	70	105	N/A	65	90	105-125
Near-side	N/A	40	70	100	10	50	80	110
Mid-block	N/A	40	70	100	N/A	40	70	100

Values in table are approximate for planning purposes.

**Some stop locations may warrant space for multiple buses to dwell and serve the stop. These include stops with multiple routes in which at least one route is laying over for an extended period of time.*

The table below describes the tradeoffs of these stop placements as well as important considerations for CapMetro when they are implemented.

Stop Placement	Benefits	Considerations	Ideal Locations
Far-side	• Riders exiting the bus will cross behind the bus, which is safer. • When a stop is not in the travel lane, a bus can merge more easily back into a travel lane due to gaps created by the signal.	• Consider traffic signal priority to increase likelihood bus makes it through an intersection. • If the stop is part of a high transfer stop pair, near-side may be preferable.	• Consider at all stop locations, but especially those with high right turn volumes or where bus travel time delay occurs.
Near-side	• Not preferred, but may be best fit for places where transfer pairs would be improved, where space constraints limit far-side options or where it is closest to a destination many riders are going to.	• Near-side stops may obscure the sightlines between pedestrians and drivers turning right. • Near-side stops may impact vehicle operations and schedule reliability. • Minimize space that would be left in front of stopped vehicles, so drivers do not attempt to turn in front of them.	• High transfer locations. • Locations with high bus left turns or high turn volumes. • Locations where preferred far-side placement is not feasible.
Mid-block	• Allows a stop to be located directly in front of a high-demand destination even if not at an intersection. • Midblock stops allow buses to avoid complexity at intersections (turning vehicles, pedestrians, etc.). • Can be used to achieve desired spacing.	• Mid-block placements require crossing treatments. • Drivers may not expect a bus to stop midblock. • Walking distance for transfers may increase.	• Where spacing guidelines and destinations dictate.

Stop and Station Configurations

This section reviews the location of stops at the intersection, and the configuration of stops within the right-of-way. It also gives guidance on setbacks from the crosswalk, advantages and considerations for each stop location and configuration.

Bus Stop & Station Configurations

In-Lane Bus Stops & Stations

In-lane stops allow vehicles to stop in the travel lane. These stops do not require them to move into parking or bike lanes, reducing conflicts between pedestrians, cyclists and transit users. They help increase reliability and speed because buses do not have to wait to merge back into traffic and also provide more space to furnish amenities at the curb.

BUS BULB

A bus bulb is an extension of the curb into the parking lane which allows buses to stop against a curb without exiting the travel lane. Bus bulbs are typically used on lower speed roadways with speed limits less than 35 mph.



FLOATING

Floating bus stops are those on streets with dedicated bike facilities, which continue behind the waiting area of a bus stop. The preferred configuration includes separate spaces for the waiting area, bike lanes and the sidewalk, but if there is limited right-of-way available, sometimes these areas may share space. Floating stops should generally comply with the dimensions for bus bulbs.

Accessibility and universal design principles are important at these stops as they can be more difficult to understand for people with vision impairments due to the required crossing of bike facilities.



Out-of-Lane Bus Stops & Stations

Out-of-lane stops require transit vehicles to pull out of travel lanes to stop at the curb. These allow for continued traffic flow for other drivers but are generally less desirable as they may increase delays because buses need to merge back into traffic when departing the stop.

CURBSIDE

Curbside stops are the most common stop configuration. At these stops, the bus pulls out of the travel lane, fully or partially, to the curb to serve riders. While these stops are common, they are not recommended on streets with a bike lane, or high vehicle speeds with higher potential for people driving to sideswipe or rear-end buses.

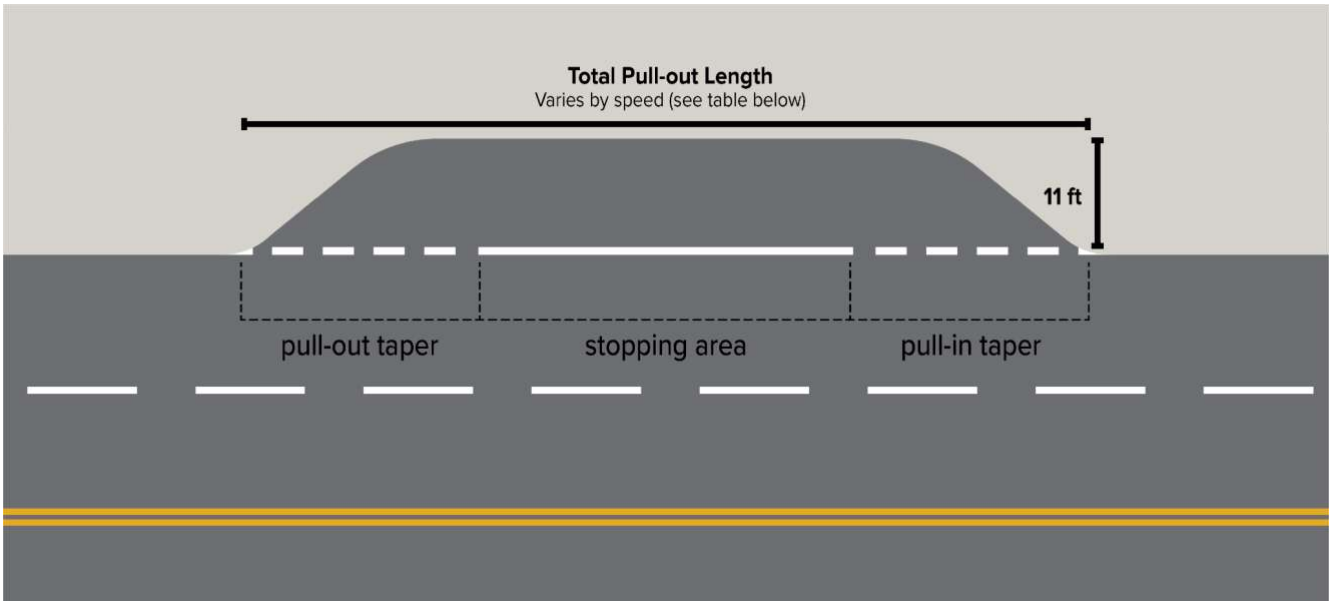


PULLOUT

Pullout stops for on street configurations, or bus bays for off street, refer to stops where vehicles pull entirely out of the travel lane into a bus-only pull-out space. Typically, this stop configuration is not used by CapMetro due to the difficulty in merging back into traffic and the resulting delay riders experience. However, these stops are typically found at select locations where having the bus exit the travel lane is desirable for safety or operational reasons. These can also be an appropriate option at locations where longer dwell time can be expected for operator breaks or at timepoints. Typical dimensions for pullouts are shown below.



PULLOUT BIRDSEYE



Values are approximate for planning purposes.

Bus Pull-out Dimensions

Design Speed	Entering Speed	Suggested Taper Length (ft.)	Minimum Deceleration Length (ft.)	Minimum Acceleration Length (ft.)
30 mph	20 mph	150	120	50
35 mph	25 mph	170	185	250
40 mph	30 mph	190	265	400
45 mph	35 mph	210	360	700
50 mph	40 mph	230	470	975

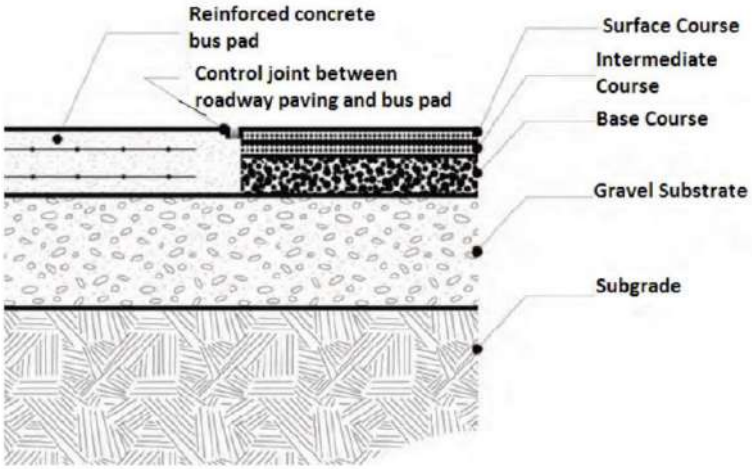
Source: Pace Transit, 2013.

The table below summarizes the key considerations for CapMetro when these stop configurations are chosen.

Stop Config.	Type	Benefits	Considerations	Ideal Locations
In-Lane Stops	Bus Bulb	• Bus bulb stops can reallocate right-of-way to provide more amenities such as shelters and seating, as well as reduce delay by allowing the bus to stop in-lane.	• Coordination may be needed if parking spaces will be lost when implemented (Austin Transportation Department, property owners, etc.).	• At any locations where the bus experiences delay due to having to merge back into traffic. • Where there is not enough right-of-way behind the existing curb to install amenities that the stop warrants.
	Floating	• Floating stops eliminate or mitigate the conflicts between pedestrians, transit riders and cyclists by providing separate space.	• Some locations may lack the right of way needed for separate space for each mode; constrained floating bus stops with shared boarding/bike space is an option.	• Any stop where a bike lane exists or is proposed.
Out of Lane Stops	Curbside	• Allowing the bus to pull out of traffic may be desirable at some locations for operational or safety reasons.	• May not be suitable for arterials that experience high amounts of traffic congestion or delay.	• Where there is not enough right-of-way to implement a full pullout stop.
	Pullout	• At timepoints or other places where the bus will need to wait longer than normal, pullouts help maintain general traffic flow.	• There is often delay associated with the bus merging back into traffic. • More right-of-way is required for pullout stops than curbside or floating stops.	• On high-speed roadways or at timepoints where it is desirable for safety reasons to allow the bus to pull out of traffic. • At locations where expected riders may benefit from this configuration (visually impaired or disabled people, senior centers, schools).

In-Street Bus Pads

Roadways should be designed to accommodate the wear and tear of constant vehicular traffic and passenger unloading, which can disrupt traffic flow and affect customer convenience and safety. It is important that “a transit stop’s road surface be durable enough to withstand heavier loads than average daily traffic under normal conditions” (SEPTA, 2012). **CapMetro recommends in-street bus pads when the volume of transit vehicles is at or above 6 transit vehicles per hour.**



Concrete Bus Pad Design (source: DVRPC, 2012)

Roadway pavement design must be assessed using the American Association of State Highway and Transportation Officials' (AASHTO) Guide for the Design of Pavement Structures and the local version of this standard should be used to determine appropriate design for a particular site.

Roadway design must also conform to both Texas Department of Transportation (TXDOT) and local jurisdictional pavement standards, in addition to particular soil and climate conditions. SEPTA discusses the basic steps for evaluating paving surface requirements for bus stop location (SEPTA, 2012).

As specified by SEPTA, "a reinforced concrete pad is recommended for bus stop areas, particularly in P&R or depot situations, where multiple routes and heavier loads can be expected. A concrete pad can be incorporated or retrofitted into the roadway design to provide a heavy-duty surface that will handle constant heavy vehicle stress; however local conditions must be evaluated to determine the best design for a particular site" (SEPTA, 2012).

The seam of the concrete bus pad should be placed on either side of a bicycle lane (if present), as seams and cracks pose a hazard to bicycle wheels, and stop amenities should not block boarding pads or walking path (NACTO, 2016).

Rail Station Configurations

Requirements for Operational Flexibility and Emergency Access

All rail stations should be designed from the outset with bus bridge operations in mind, recognizing that service disruptions — whether planned or emergency — are an inevitable part of running a transit system. This means providing adequate curb space, pull-out bays or dedicated bus staging areas near station entrances, so that replacement buses can load passengers efficiently without spilling into general traffic lanes or creating unsafe crowding on narrow sidewalks.

Circulation should be legible and intuitive, with clear wayfinding that can direct passengers from the rail platform to a temporary bus loading zone without requiring staff to physically shepherd every confused rider. At major transfer stations and terminals especially, the ability to simultaneously stage multiple buses should be a baseline design requirement.

Additionally, rail station design should include dedicated parking spaces for non-revenue fleet, such as maintenance or operations vehicles, as well as emergency services and Transit Police.

Commuter Rail Station Configurations

Each of the Red Line's existing commuter rail stations provide riders a place to safely get on or off the Red Line and connect to the area's walking network, trails, bus stops or a park-and-ride lot. There are usually one or two platforms at each station depending on the track configuration and operational requirements. Platform design including the width, length and layout will vary depending on the site needs. The configuration chosen depends on the right-of-way available, number of tracks, level of service provided, passenger capacity, vehicle size and capacity requirements, ADA and other contextual conditions.

CapMetro follows detailed guidance based on the technical requirements of commuter rail, and works closely with the public, officials and staff during planning and engineering phases to identify and analyze specific station locations. The types of commuter rail station configurations are outlined at a high level below.

CENTER PLATFORM

A center platform allows riders to access both the inbound and outbound trains from one platform when there are two tracks. This usually requires that riders cross the railroad in order to reach the platform unless there is an overpass or underpass. A benefit of this configuration is that riders do not need to decide between multiple platforms depending on which direction they are trying to ride. A disadvantage of this configuration is that it is difficult to handle a surge in riders due to limited space. A current example of this type of configuration is MLK Station on the Red Line.

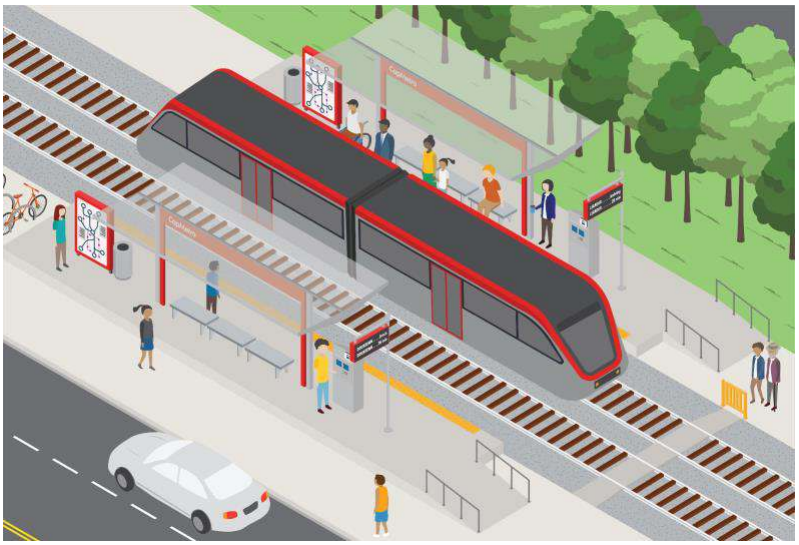




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SIDE PLATFORM

A side platform configuration typically has a platform for each track. If there are 2 tracks, a station will have 2 platforms, one on each side, where riders access the inbound and outbound trains from separate platforms. Riders will need to know which platform to use based on their direction of travel. This usually requires that riders cross the railroad in order to reach the opposite platform absent an overpass or underpass. Where a single track is present there is only one platform. A current example of this type of configuration is Lakeline Station on the Red Line, where there is a single track and a side platform.





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CENTER/SIDE PLATFORM

A center/side platform is a combination of the previous two configurations where there is both a center platform and a side platform, typically with one track in between platforms instead of two. A current example of this configuration is Downtown Station, which has a center platform that can be used for boarding and alighting for inbound and outbound trains, and a side platform for additional capacity for alighting in the future.





At-Grade Rail Crossings

CapMetro's commuter rail shares tracks with freight rail and the rail corridor runs outside of general traffic except where it crosses streets and highways. All grade crossings should have full road crossing gates with flashers and warning bells. Pedestrian or bicyclist crossings of the railroad tracks occur only at approved locations, almost always where roadways intersect the railroad tracks, or at pedestrian crossings adjacent to station platforms. Medians or a four-quadrant gate can be installed at crossings to prevent traffic from driving around the active gates. These treatments are installed for Quiet Zone compliance as these are crossings where locomotive horns are not required to be routinely sounded. The type of treatments is determined on an individual basis after reviewing train speed, visibility, vehicle and pedestrian activity and more. All rail crossings follow federal, state and local standards to ensure compliance and the safety of those crossing the railroad. CapMetro also shares additional rail guidelines with external partners to govern activities within the rail right-of-way (ROW).

Guidance

According to Section 6.2.3.4 of the TCM, Rail Crossings should:

- At-grade rail crossings shall conform to the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) standards and are subject to the required US DOT approval process.
- Slopes to at-grade crossings shall comply with grades to curb ramps and crossings shall be 12 ft. or 16 ft. wide depending on ridership and constructed of precast concrete panels.
- The crossing shall extend from the face of one platform to the face of the opposite platform at the same elevation as the top of rail.
- The platform shall be depressed to the crossing at a rate that does not exceed 8 in. rise for 16 ft. of run.
- Signalized crossings shall be provided at locations where two or more tracks are crossed; gates at crosswalks shall not be allowed at these locations.
- Cross track boarding is to be avoided and warning signals should be provided at all existing at-grade crossings.
- The number of at-grade crossings is based on the platform length and the maximum distance between at-grade crossings is 405 ft.

Rail with Trail: Design Guidelines

CapMetro has developed Design Guidelines for Rail-with-Trail projects within its rail right-of-way to establish consistent minimum standards for their design, construction, and maintenance. The guidelines are intended to ensure that trails are designed and operated in a way that supports the safe and efficient use of commuter and freight rail corridors while accommodating planned rail capacity expansions and existing freight obligations.

At the same time, Rail-with-Trail projects can provide significant community benefits, including improved access to transit and stations, safer pedestrian and bicycle crossings, reduced trespassing, dumping, and vandalism, greater public awareness of rail service, improved aesthetics, and additional transportation options.

Overall, the guidelines seek to balance CapMetro's responsibility to provide safe and reliable transportation with opportunities to create community assets that are compatible with active rail operations.

Read the full **Rail with Trail guidelines** here, or learn more about **CapMetro's Red Line Trail Study** here.

06

Transit Stop and Station Amenities

This chapter establishes CapMetro's framework for providing safe, accessible, comfortable and reliable transit stops and stations across the system. Transit facilities serve a wide range of riders, travel patterns and surrounding contexts, and therefore require a consistent yet flexible approach to amenity provision. The guidance in this chapter defines stop and station types, outlines the process for assigning amenity levels, and describes the amenities that support the customer experience at each facility type. By classifying stops and stations according to ridership and service characteristics, CapMetro can prioritize investments, improve fairness in amenity distribution and create a more intuitive and welcoming transit network. The chapter also provides detailed guidance for individual amenities and identifies considerations for implementation, maintenance and coordination among CapMetro, municipalities and development partners.

DEFINING STOP & STATION TYPES

Transit stops and station types are defined according to their operational, service, land use and utilization characteristics. All stops and stations are assigned a type and subsequent amenity level (Levels 1 – 4). These types provide CapMetro with a clear starting point and practical guidelines for the provision of amenities at stops and stations and a structured process to improve customer experience across the transit system. No matter how many customers use a stop or station on a given day, each requires certain key design elements to be safe, accessible, reliable and comfortable for riders. By formalizing the process for enhancing amenities at stops and stations, CapMetro sets clear goals for stop and station quality and ensures equitable distribution of amenities across the system.

Many transit agencies across the nation use ridership data such as boardings per day to determine the level of amenities to provide at a stop. This is a core defining feature of the stop and station type, however, CapMetro has also identified that the community prefers that stops where a rider might have to wait a long time should be prioritized for shelters. Therefore, a stop that has long wait times can qualify for a shelter, even if the ridership is lower than the threshold to qualify for a shelter. High-capacity services, which include Rapid and Rail lines, also qualify for a higher level of amenities by default. Level 4 stations are assigned the highest level of amenities since they have the highest volume of ridership and transfers and often have intermodal connections.

Assigning Amenities to Stop & Station Types

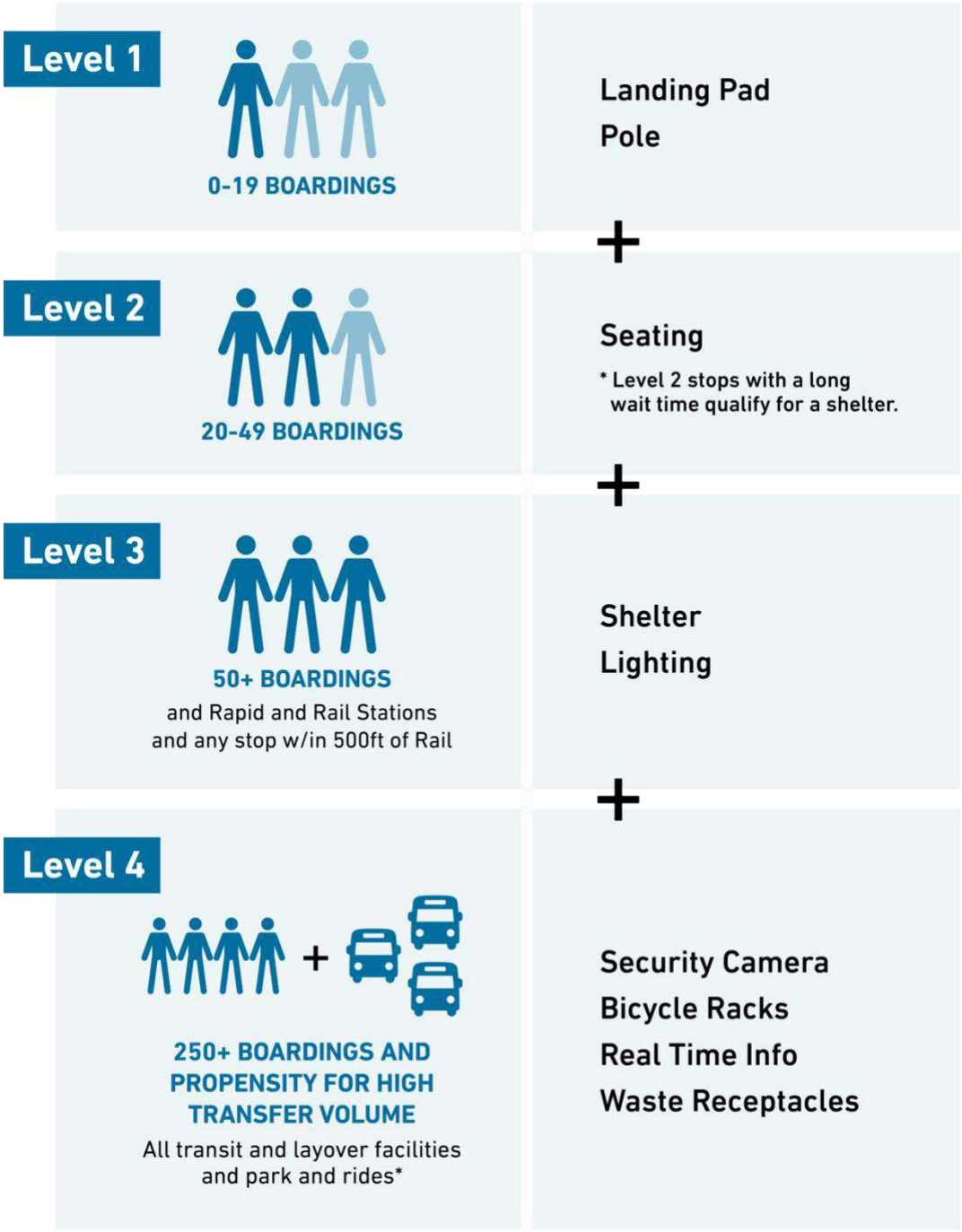
While each stop classification level is assigned standard amenities, there are times when CapMetro may be able to install more amenities as additional resources or funding becomes available. Thus, each amenity has its own section detailing when the amenity is **Standard** and when it would be considered priority given additional resources.

The process for distributing funds for amenity upgrades is detailed in the **Amenities Distribution Process** later in this chapter. Prioritizing locations to upgrade stop amenities, as well as determining and adhering to maintenance responsibilities, ensure that amenities effectively benefit customers in the long term.

STOP & STATION TYPES

The table below shows the standard amenities assigned to each stop and station type. CapMetro will consider the area constraints and fiscal constraints when placing amenities. Every reasonable effort should be made to meet the required amenities below, and reasons why any stop that does not meet required amenity levels should be documented.

Stops and stations are classified according to the following four types:



Level 1 Transit Stop

Average Daily Boardings: 0 – 19 riders per day

These stops serve the lowest daily ridership and provide the most basic level of amenities: a pole with signage that informs the customer about service provided at the stop, as well as an ADA-compliant bus pad.

Typically, Level 1 stops are installed when brand new service is implemented. The stop may warrant additional amenities as ridership develops at the stop.

Figure 3: Level 1 Transit Stop Illustration with Standard Amenities

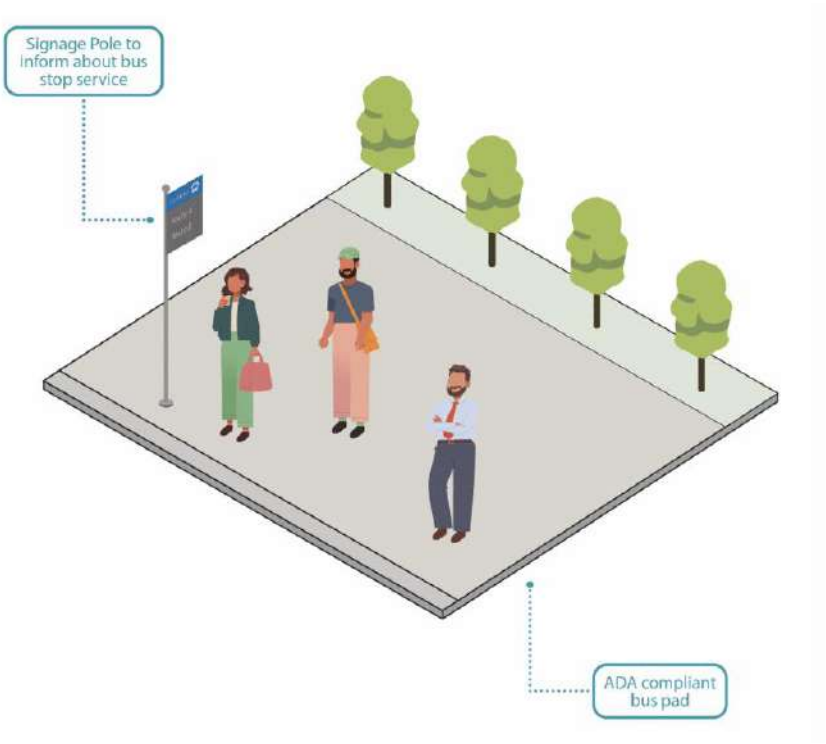


Table 1: Level 1 Standard and Optional Amenities

Standard	Optional
• Landing Pad or Platform • Sign and Pole	Bicycle Racks • Fare Machine • Heat Mitigation Infrastructure and Cool Design • Landscaping • Lighting • Real Time Information • Park & Rides • Public Art • Public W-Fi • Seating • Security Features • Shared Mobility • Shelter • Wheelchair Charging • Waste Receptacles • Wayfinding Materials

Level 2 Transit Stop

Average Daily Boardings: 20 – 49 riders per day

Level 2 stops serve a mid-level of daily riders or riders and provide seating in addition to the basic Level 1 amenities.

Level 2 Plus: Stops with moderate ridership may qualify for a shelter if customers have to wait a long time at the stop. Specifically, when the routes that serve a stop result in an average stop frequency that is more than 30 minutes, Level 2 stops qualify for shelter.

Figure 4: Level 2 Transit Stop Illustration with Standard Amenities

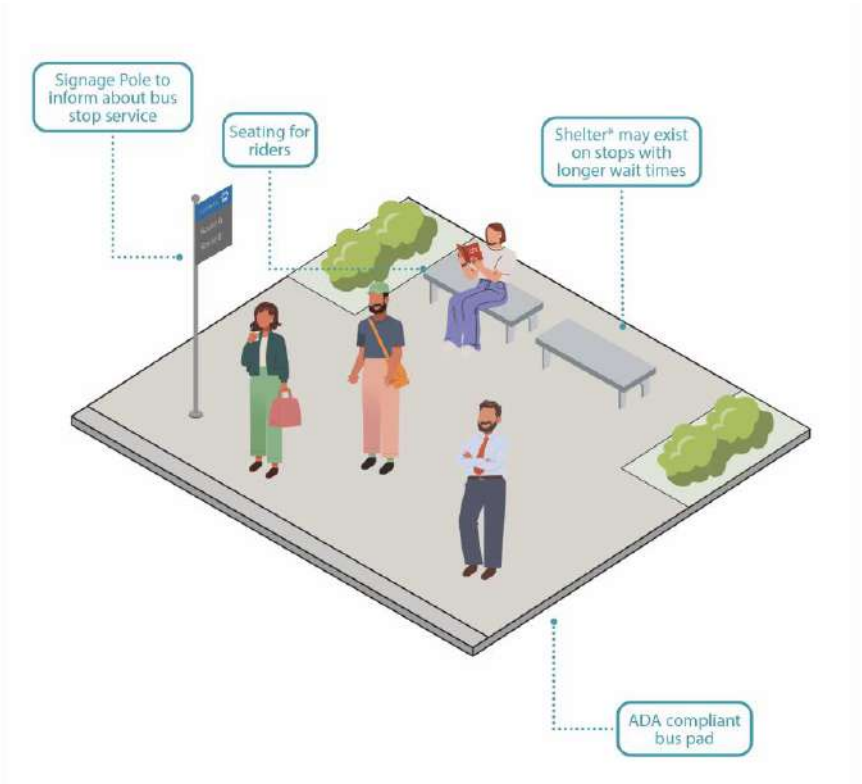


Table 2: Level 2 Standard and Optional Amenities

Standard	Optional
• Landing Pad or Platform • Seating • Sign and Pole • Shelter* (when long wait times are present)	Bicycle Racks • Fare Machine • Heat Mitigation Infrastructure and Cool Design • Landscaping • Lighting • Real Time Information • Park & Rides • Public Art • Public W-Fi • Security Features • Shared Mobility • Shelter • Wheelchair Charging • Waste Receptacles • Wayfinding Materials

Level 3 Transit Stop

Average Daily Boardings: 50+ riders per day

This level of transit stop or station serves a high level of daily riders. High-capacity transit service, such as a Rapid line or a Rail line, automatically qualifies a stop for Level 3 amenities. Bus stops within 500ft of any Rail station also automatically qualify for Level 3 amenities, due to the high propensity for transfers between bus and rail.

In addition to standard Level 1 and Level 2 amenities, stops that are classified as Level 3 qualify for shelters and lighting.

Figure 5: Level 3 Transit Stop Illustration with Standard Amenities

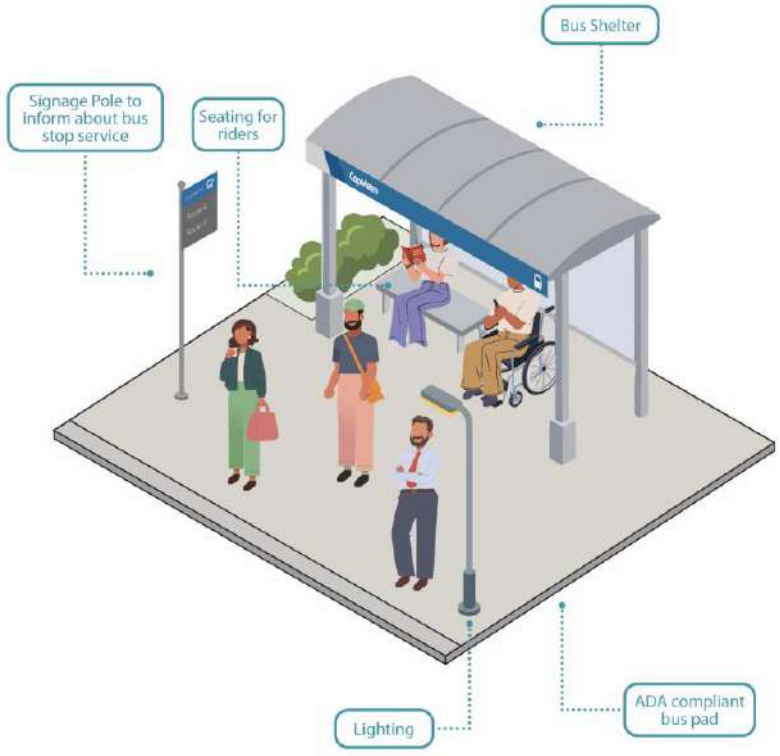


Table 3: Level 3 Standard and Optional Amenities

Standard	Optional
• Landing Pad or Platform • Lighting • Seating • Shelter • Sign and Pole	Bicycle Racks • Fare Machine • Heat Mitigation Infrastructure and Cool Design • Landscaping • Real Time Information • Park & Rides • Public Art • Public W-Fi • Security Features • Shared Mobility • Wheelchair Charging • Waste Receptacles • Wayfinding Materials

Level 4 Transit Stop

Average Daily Boardings: 250+ riders and Propensity for High Volumes of Ridership or Transfers. Level 4 stops are classified as any transit facility used for operation of CapMetro buses and/or trains to layover or terminate a transit line.

All transit centers and park and ride facilities are automatically classified as Level 4, as well as places where several routes or modes of transit converge and create the propensity for high volumes of riders and/or transfers.

Figure 6: Level 4 Transit Stop Illustration with Standard Amenities

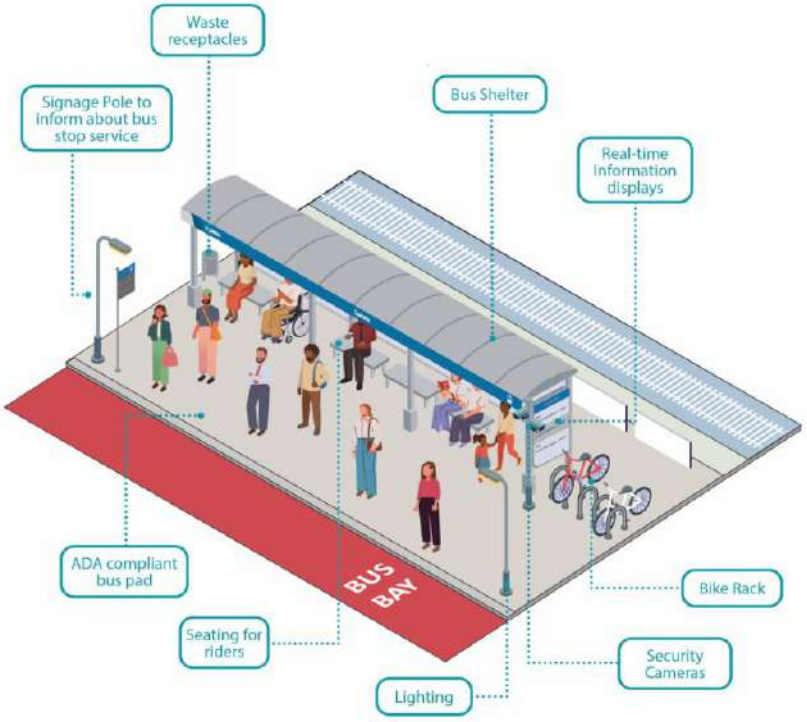


Table 4: Level 4 Standard and Optional Amenities

Standard	Optional
• Bicycle Racks • Landing Pad or Platform • Lighting • Real Time Info • Seating • Shelter • Sign and Pole • Security Camera • Waste Receptacles	Fare Machine • Heat Mitigation Infrastructure and Cool Design • Landscaping • Real Time Information • Park & Rides • Public Art • Public W-Fi • Security Attendant • Shared Mobility • Wheelchair Charging • Wayfinding Materials

Standard amenities at Level 4 stops include all Level 1, 2, and 3 amenities as well as bicycle racks, security cameras, real time information, and waste receptacles. All amenities should be thoughtfully planned and coordinated based on the anticipated ridership at the transit facility. For example, one large structure over all transit bays that provides shade over the entire passenger waiting area may make more sense than a shelter being installed at every single transit bay.

Transit Centers

Transit centers may be warranted when there are multiple routes, services and/or modes of transit coming together to serve one area, typically converging within 1/8th of a mile; creating a transit or multimodal transportation node, and generating transfers between modes. Specifically**, here are some conditions that could warrant strong consideration of a transit center facility:**

- **At least three bus routes are converging;**
- **At least 5** buses laying over, and/or;
- **Some converging routes are part of high-frequency network**
- **Average Daily Ridership – 450 or more**
- **Creating considerable transfer opportunities between routes or modes; and/or**
- Multiple bus routes are planned to converge with other high-capacity modes of transportation, particularly rail.

A transit center is **required** when a high-capacity mode, especially rail, is introduced along a corridor with multiple high-frequency bus routes, Rapid, and microtransit or Pickup service in high-density environments such as downtown. A transit center must be designed to accommodate additional trips that are introduced when rail is established in a new location. Due to the likelihood of transfers and pedestrian activity, a hub for transit amenities becomes a requirement for successful mode integration to support that level of activity. When high levels of transit service are concentrated in one area, transit centers should be designed with sensitivity to their surrounding context while still providing sufficient space for essential operational functions.

This includes bus layover areas, operator relief space, and designated areas for non-revenue agency or emergency vehicles, in addition to some customer amenities. The scale of these needs distinguishes transit centers from typical on-street stops or pull-outs; rather than brief stopping points, they are dedicated facilities where buses can enter, park and allow passengers to transfer between services within a defined, purpose-built space. Examples of Level 4 stops and stations include North Lamar Transit Center, Goodnight Ranch Park and Ride, Lakeline Station, Crestview Station, Eastside Bus Plaza, and future Austin Light Rail end-of-line stations.

Transit-Oriented Development and Placemaking

CapMetro, through largescale public transit investment, is a catalyst for high-quality **Transit-Oriented Development (TOD)** investment that enhances mobility options and connectivity, supports local and regional economic development goals, and builds complete communities.

For those interested in collaborating with CapMetro on a larger planned development, please review our Transit-Oriented Development (TOD) Guidebook, where we outline our TOD processes, including during CapMetro solicitations for TOD joint development partners on CapMetro-owned land, and through our unsolicited proposals process.

CapMetro also recognizes that concentrations of multiple transit services, lines and amenities help to create and promote **placemaking** opportunities at a smaller scale than larger TOD projects. Transit placemaking pairs functional transit stop design with elements that improve the passenger experience, such as seating, shading, wayfinding, public art, lighting and active spaces that feel safe and comfortable. This matters for development because it extends a project site's activity and visibility, supports ground-floor retail, and encourages pedestrian activity that drives higher property values and long-term investment returns, all while helping to grow and sustain transit ridership.

The Transit Development Guidelines have been created to help guide these efforts, particularly when working with developers on or near CapMetro land or assets. Member City staff, developers, and

interested community members can refer to the TDG document for details on how to work with CapMetro, including:

- Dimensions for transit elements such as Bus and Rapid shelters, bus pads, Rail station platforms, Bikeshare docks, and more;
- Relative cost estimates for various transit elements;
- Timelines for when to work with CapMetro in the development review process; and
- How to work with CapMetro to best integrate your project with our transit services.

We generally encourage developers and Member Cities to work with CapMetro early in the development process so we can best coordinate on transit integration.

To discuss a specific project that may impact CapMetro land or assets, please email Development@CapMetro.org.

STOP & STATION AMENITIES

This section goes into detail on guidance for siting each transit amenity along with the roles and responsibilities for partners in implementing each. CapMetro follows the guidance of each partnering jurisdiction where stop and station amenities are installed. Stops and stations located within the City of Austin must align with The City of Austin's Transportation Criteria Manual (TCM), which contains standards and guidelines related to transportation within the public right-of-way, including transit supportive infrastructure. At the time of publishing these guidelines, the latest TCM update was completed in March 2026.

CapMetro may set additional guidance including guidelines to support efficient transit operations or set the level of amenities that should be provided. For those stops within the City of Austin, the TCM provisions are applicable. The key provisions from the TCM are included under each amenity in the Guidance sections as well as any other applicable documentation. Other municipalities in the CapMetro service area may contain their own specific provisions to transit amenities, and CapMetro works directly on design, permitting and implementation with each jurisdiction.

Table 5: Full List of Amenities, Alphabetized

Amenity	Level 1	Level 2	Level 3	Level 4
Bicycle Racks	Optional	Optional	Optional	**Standard**
Fare Machine	N/A	N/A	Optional	Optional
Heat Mitigation Infrastructure	Optional	Optional	Optional	Optional
Landing Pad or Platform	**Standard**	**Standard**	**Standard**	**Standard**
Landscaping	Optional	Optional	Optional	Optional
Lighting	Optional	Optional	**Standard**	**Standard**
Real Time Info	Optional	Optional	Optional	**Standard**
Park and Rides	Optional	Optional	Optional	Optional
Public Art	Optional	Optional	Optional	Optional
Public WiFi	Optional	Optional	Optional	Optional
Seating	Optional	**Standard**	**Standard**	**Standard**
Security Booth/Attendant	Optional	Optional	Optional	Optional
Security Camera	Optional	Optional	Optional	**Standard**
Shared Mobility	Optional	Optional	Optional	Optional
Shelter	Optional	Optional	**Standard**	**Standard**
Sign and Pole	**Standard**	**Standard**	**Standard**	**Standard**
Wheelchair Charging	Optional	Optional	Optional	Optional
Waste Receptacles	Optional	Optional	Optional	**Standard**
Wayfinding	Optional	Optional	Optional	Optional

Bicycle Racks

Bicycle racks at bus stops provide additional support for customers accessing bus service. While there are a variety of bicycle rack styles, bicycle racks should permit the use of a high security lock (such as a U-lock), allow the frame and both wheels to be locked, and not damage the bicycle when locked. Within constrained areas, CapMetro will assess the stop area to determine if a bicycle rack can be accommodated.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Standard

Guidance

When siting bicycle racks, CapMetro should adhere to the following considerations:

- Bicycle racks should be installed in accordance with the guidance provided by the jurisdiction in which it is being installed.
- Bicycle racks must not interfere with walkways, accessible routes and bus door zones
- Bicycle racks should be placed in a highly visible, well-lit area
- Bicycle racks should be placed on a paved or concrete surface, not on grass or dirt
  According to Section 9.8.0 of the City of Austin TCM, all bicycle racks must meet the following criteria:
- Bicycle racks should provide enough space to accommodate two bicycles per "U" in a rack. The standard space is 2' wide, 6' long and 3' 4" tall. If larger bicycles are anticipated at a particular bicycle rack, the standard spacing should use the specific bicycle in mind as the standard design
- Minimum spacing of racks placed next to each other is 3' as shown in TCM figure 9-17
- Racks should be placed in the pedestrian or bicycle and street edge zone, or the tree and furniture zone. They should be outside of travel lanes, loading zones and bicycle lanes. Bicycle racks must also not obstruct a pedestrian path when bicycles are locked to them
- Bicycle racks may be installed parallel, perpendicular or at a 45–60-degree angle to the curb

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Install and maintain new bicycle racks at transit stops and stations
Developer	• Fund and install bicycle racks on development property and align with TCM standards • Coordinate with CapMetro for their installation

Fare Machine

Fare machines, also known as ticket vending machines (TVMs), are secure electronic kiosks that allow customers to purchase single fares. The installation of fare payment/purchase equipment at transit stations can improve customer convenience and reduce on-board cash transactions. Fare machines are typically installed only at rail stations.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
N/A	N/A	Optional	Optional

Guidance

Fare machines are installed in accordance with the guidance provided by the jurisdiction in which they are installed. According to the TCM in Section 6.3.5.6, fare kiosks should be placed in the Pedestrian Zone without impeding an unobstructed, accessible pedestrian route and should be placed in an accessible location that complies with the applicable provisions of PROWAG.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund, install and maintain fare machines at transit stops and stations
Municipal Staff	• Coordinate with CapMetro for utilities around installation of fare machines
Developer	• Coordinate with CapMetro for utilities around installation of fare machines

Heat Mitigation Infrastructure and Cool Design

Shade and relief from the heat is an important factor for riders during most months of the year in Central Texas. Shelters at transit stops are CapMetro's primary method of mitigating heat. However, alternative heat mitigation infrastructure may also be implemented during the process of placing a stop or development of other CapMetro facilities.

Transit stop placement should accommodate the most shade coverage feasible. Transit centers should be designed to minimize temperatures and exposure at the pedestrian level, with attention to placement, and additional heat mitigation measures when possible. Heat mitigation measures can include, but are not limited to:

- Sun screens integrated onto stop or station shelters
- Trees, landscaping, and native plants
- Structural shade from built environment
- Fabric shade shelters
- Cool pavements
- Design for ventilation and to minimize exposure
- Natural drainage, water quality features, and adjacent green infrastructure

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

Trees, landscaping, and other mitigation measures can provide cooling, shading and shelter, and have been shown to mitigate the negative impact of high temperatures on ridership more than typical bus stop

shelters in the CapMetro service area. Staff should consider taking advantage of existing street trees for shade when placing stops; however, staff must also consider solar power availability when placing shelters with solar-powered lighting.

Research on heat mitigation has produced evidence that street trees are slightly more effective at mitigating ridership decrease from high temperatures[9] and that street trees and shading are the amenities most perceived by riders to have cooling effects.

A combination of measures should be considered to provide the most protection for riders possible. Mitigation strategies may be unique to each site and careful review should be taken when siting stop or station locations or when retrofitting a site with heat mitigation.

Collaboration with partner organizations such as nonprofits has been one way to facilitate heat mitigation measures around transit stops and stations. All heat mitigation infrastructure should be installed in accordance with the guidance provided by the jurisdiction in which it is being installed.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	Funding and maintenance of structural shade at transit stops and facilities; heat-mitigated placement of stops
Municipal Staff	Coordination with CapMetro on heat-mitigating design of facilities and the public ROW, planting and maintenance of street trees
Developer	Coordination with CapMetro on heat-mitigating design in the site planning process, planting and maintenance of street trees

Landing Pad or Platform

Landing pads are areas where customers get off and on the bus. They offer space for bus drivers to deploy ramps, and where riders may queue in line to get on the bus. All stops must have landing pads provided and landing pads should cover all doors of the transit vehicle. Landing Pads must comply with the latest PROWAG provisions.

Platforms are the rail equivalent of a landing pad, where customers get off and on the train. The configuration and dimensions of a platform depends on the track location, right-of-way and passenger capacity. Station platform lengths shall be in accordance with ADA, Federal Railroad Association guidance, state, county and local requirements, as well as the appropriate environmental decision document.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Standard	Standard	Standard	Standard

[9] *Lanza K, Durand CP. Heat-Moderating Effects of Bus Stop Shelters and Tree Shade on Public Transport Ridership. International Journal of Environmental Research and Public Health. 2021; 18(2):463.*

Guidance

According to PROWAG, all new or upgraded bus stops are required to have a front landing pad that:

- Provides a clear length of 96 inches (8') minimum, measured perpendicular to the curb, and a clear width of 60 inches (5') minimum, measured parallel to the roadway
- Parallel to the roadway, the slope shall be the same as the roadway, to the maximum extent practicable
- Has a cross slope perpendicular to the roadway that does not exceed 1:48 (approx. 2%)

CapMetro exceeds PROWAG guidance and implements a 10'x30' (8.5"X25" min.) pad to allow space for the rear door, where context allows. Additionally, the 8'x5' clear area of the landing pad should be kept clear of any obstructions or other amenities to allow uninterrupted movement for all customers.

Tactile warning strips, also referred to as truncated domes in the engineering field, should be included along the entire edge of the boarding platform with a curb height of 9" and between transitions from bus platform to integrated bicycle infrastructure. Placement and use of tactile warning strips should follow PROWAG guidance.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Approving all landing pad and/or platform design, and locations from other agencies or developers • Design and construction of all landing pads or platforms at stops or stations associated with CapMetro capital projects
Municipal Staff	• Design and construction of all landing pads or platforms at stops along municipally-funded infrastructure projects • Coordinate with CapMetro for utilities around installation.
Developer	• Design and construction of all developer-initiated alterations of current or planned CapMetro stops and stations • Coordinate with CapMetro and municipal staff for utilities around installation.

Landscaping

Landscaping not only mitigates heat as described above, but it also improves the visual experience and the beauty and biodiversity of a space by incorporating green space in and around transit stops and stations. Landscaping can provide functional advantages like shading, heat reduction, shelter, and natural stormwater management as well as calming and emotional health benefits and making the environment more inviting and appealing.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

Landscaping should not impede an unobstructed pedestrian route and should be maintained to allow a shy zone buffer between the pedestrian realm and the transit stop. Landscaping species should be drought

resistant and appropriate for central Texas climates and adhere to municipal standards for specific species and watering regulations.

Green infrastructure is also a valuable stormwater management tool and can improve water quality, detain stormwater flows and reduce stormwater volumes. Landscaping specific to stormwater mitigation should follow municipal codes and should be carefully designed to not overflow near transit infrastructure, where such an instance may affect the customer experience and travel time of transit vehicles.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund, install and maintain landscaping within CapMetro stop or station areas • Coordinate with municipal staff on appropriate species and planting procedures • Coordinate with municipal staff for maintenance of landscaping in the ROW but outside of CapMetro stop or station areas
Municipal Staff	• Coordinate with CapMetro staff on appropriate species and planting procedures • Coordinate with CapMetro staff for maintenance of landscaping in the ROW but outside of CapMetro stop or station areas
Developer	• Coordinate with CapMetro and municipal staff on landscaping location, species and planting at development site

Lighting

Well-lit bus stops make riders and the surrounding community feel safer, more secure and more comfortable than transit stops or stations in poorly lit areas. Lighting also provides greater visibility for operators and riders at a stop. Transit stop placement should consider areas where pedestrian scale streetlights are present. If a shelter is being placed at a stop, solar lighting can be integrated into the shelter, except in cases where there may be significant solar obstruction.

While lighting is considered standard for Level 3 stops and stations, stops where customers request lighting may be prioritized, as customer feedback is the best indicator of where lighting is needed.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Standard	Standard

Guidance

Lighting should be installed in accordance with the guidance provided by the jurisdiction in which it is being installed. In Section 6.3.5.5 of the TCM, it states that pedestrian-scale lighting includes lamps less than 25' high. Other recommended characteristics of pedestrian scale lighting include:

- Spacing of 30m (approximately 98') intervals
- Lighting styles that complement the architectural style of adjacent developments
- Providing an average level of 1.3 to 2.6 f.c. (horizontal foot candles) or 13 to 26 lux, which is the typical light level around a building entrance
- Warm light, 3000 K or less
- Energy saving devices like long-lasting LEDs, solar power and daylight sensing equipment
- Use of BUG (backlight-uplight-glare) rated fixtures to reduce light pollution impacts

- Additional lighting from nearby streetlights and illuminated signage and fixtures

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund, install and maintain integrated bus shelter lighting and sign-mounted power lights at stops and stations
Municipal Staff	• Install and maintain overhead streetlamps at stops and stations • Coordinate with CapMetro for placement, installation, and utility coordination. • City of Austin coordination with CapMetro on recommendations and implementation of Citywide Lighting Plan
Developer	• Install and maintain adjacent lighting at stops and stations • Coordinate with CapMetro and municipal staff for placement, installation, and utility coordination.

Real Time Information

Real time information is digital signage that provides up-to-date information on bus arrival time, which is based on the actual location of the bus or train on the route. Real time information greatly enhances the rider experience and ease of use as it enables riders to spend less time waiting for transit and anticipate arrival times more accurately – even when the bus or train is delayed.

Real time information signage is standard at Level 4 stations.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Standard

Guidance

Real time information screens should be installed in accordance with the guidance provided by the jurisdiction in which it is being installed.

According to the TCM in Section 6.3.5.6, information technology devices should be placed in the Pedestrian Zone without impeding an unobstructed, accessible pedestrian route and should be placed in an accessible location that complies with the applicable provisions of PROWAG. For all stops or stations with real time information, a power connection must be provided.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	Fund, install and maintain real-time information displays at transit stops and stations
Municipal Staff	Coordinate with CapMetro for placement, installation, and utility coordination.
Developer	Coordinate with CapMetro and municipal staff for placement, installation, and utility coordination.

Park & Rides

Park & Rides are an important component of the transit system, concentrating transit demand and enabling transit services that maximize ridership, are more direct, reduce travel times, and are designed to transfer commuters from low-occupancy modes (personal cars) to high occupancy modes (rail, bus, vanpool and carpools).

CapMetro services 21 multi-modal park –and ride facilities, with small parking lots (under 200 spaces), mid-size parking lots (200-400 spaces), or large parking lots (400 or more spaces). The small park –and ride lots are related to rural or outlying suburban communities with bus (Jonestown, Lago Vista) or Express (Manor, Elgin) services. The mid-size parking lots are related to closer-in urban and suburban locales with Express, Rapid, and/or several bus routes (Oak Hill, Triangle, and North Lamar Transit Center). The large parking lots are related to suburban activity centers with Express and several bus routes (Pavilion, Tech Ridge) or related to suburban residential areas with Rail and bus services (Lakeline, Leander).

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

CapMetro will continue to evaluate opportunities for park and ride facilities in its service area and within the financial capacity constraints of the agency and its other transit services. The agency will investigate cost effective options to expand park and ride locations when warranted, provide new park and rides to expand regional transit opportunities, and partner with transportation agencies and municipalities on park and rides outside our service area.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	Identify location for Park and Ride, Lease spaces in an existing parking lot OR purchase property and construct Park and Ride, Maintain Park and Ride facilities
Municipal Staff	Provide assistance with access to Park and Ride facility including turn lanes, traffic signals, etc.
Developer	Set aside spaced for Park and Ride

Public Art

Public art improves the experience at transit stops and stations by offering interesting and engaging visuals while waiting for services. Public art fosters a sense of belonging and identity, which makes a space more comfortable. Integrating public art around transit stops benefits the transit network and surrounding community by offering opportunity for local artists, creating a sense of place and improving the rider experience.

The **CapMetro Art program** works to collaboratively educate, inform and engage central Texas residents about the value public transit brings to the community. The art and music program aims to strengthen community and culture by:

- Creating inviting public spaces that people want to revisit
- Supporting local artists through paid work
- Increasing the sense of home and belonging in central Texas neighborhoods
- Partnering with local agencies, non-profits and community organizations.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

If the public art project is led by CapMetro, then CapMetro staff is responsible for the entire project, including artist call for projects, bringing together a community-led judging panel to select the artist, and guiding the artist through the community engagement and project timeline.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	Project Management, artwork maintenance
Municipal Staff	Artwork maintenance only when the art is owned by COA
Developer	Set aside space for Public Art

Public Wi-Fi

Public Wi-Fi is an amenity commonly found in public places which allows people to access the internet on personal devices. Many transit riders use their personal devices to access the internet to find trip information, access tickets and receive alerts from CapMetro. Cities across the country have begun to implement public Wi-Fi as a public utility. It provides access to opportunities for underserved communities and provides everyday convenience for riders in a digital world.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

Wi-Fi equipment should be installed in a secure location, to prevent vandalism or unintentional damage during daily use, and should be built to standards that will protect it from the elements.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund install and maintain public Wi-Fi system at stop and station locations • Coordinate with municipalities on local public Wi-Fi programs to sync networks as needed as changes to public Wi-Fi best practice evolves
Municipal Staff	• Coordinate with CapMetro on future public Wi-Fi initiatives to explore opportunities for partnership and integration networks

Seating

A bench provides an opportunity for riders to pass time comfortably while they wait for the bus or train to arrive. Benches are required at all stop types except for Level 1 bus stops. For Level 1 bus stops, bench placement will be considered for stops that serve riders who benefit most from the amenity including the elderly and people with varying abilities (as detailed in the amenity distribution process). Lean rails may also be included at stops but are not a substitute for benches. Lean rails are a vertical structure about waist height which allow customers to lean on and rest while waiting for the bus to arrive. Lean rails take up less footprint than benches and can provide additional comfort for stops where right-of-way space is limited.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Standard	Standard	Standard

Guidance

Seating can include benches, leaning rails and low stone walls. Seating should be shielded from vehicular traffic.

- All seating is installed in accordance with the guidance provided by the jurisdiction in which it is being installed.
- Benches should be constructed with durable material and be resistant to vandalism and wear from weather exposure through design. Seating must also be ADA and TAS compliant in dimension.
- The recommended minimum length for benches of 6.5' or the equivalent of three seats. CapMetro may install benches that are shorter based on the use of the stop, or the space available in constrained locations. CapMetro will accommodate the most seating feasible based on the previous factors along with financial availability.
- Benches should include arms at either end to assist seniors and people with disabilities in standing.
- The recommended height of leaning rails of 2.5' above the stop location surface or slightly higher than seat height.

Section 6.3.5.3 of the TCM makes recommendations for seating considerations and characteristics:

- Seating should be installed at stops with high use by elderly people and children, as well as stops with longer wait times or a high volume of travelers
- Benches should prioritize visibility of people sitting

- Benches should be in the Tree and Furniture zone and maintain 2’ spacing from other street furniture and waste receptacles and 3’ from utility appurtenances or other amenities for appropriate access. Benches may alternatively be placed adjacent to building faces that abut the right-of-way line provided that clear width is maintained for the sidewalk
- Benches shall include space for wheelchair access adjacent to the bench. Reference the City of Austin Standard details for design of benches

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund and install only CapMetro Standard Benches attached to bus shelters • Maintain all bus stop seating
Municipal Staff	• May fund and install municipal or custom seating at bus stops where demand is high • Coordinate with CapMetro for placement and installation of bus stop seating
Developer	• Fund and install seating at stops and stations adjacent to property • Coordinate with CapMetro for their installation

Security Camera

Amenities such as security cameras and attendants provide greater sense of security for riders and provide tools for CapMetro to respond to incidents at transit facilities. This also enhances the perception of safety and may encourage new riders.

Where It’s Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Standard

Guidance

In accordance with the American Public Transit Association (APTA) Recommended Practice: **Bus Stop Design and Placement Security Considerations,** CapMetro completes a Crime Prevention Through Environmental Design (CPTED) survey to “identify and recommend the appropriate enhancements to implement crime prevention or homeland security measures.” The Recommended Practice “**Application of CPTED for Public Transit Facilities”** contains information about performing a CPTED survey and should be reviewed. Some considerations mentioned in the best practice paper include the following design interventions: natural surveillance, clear lines of sight, lighting, landscaping and access control.

In addition to CPTED, CapMetro may install security cameras where additional surveillance is needed. Guidance for implementation of security cameras is described below.

Security Cameras

Security cameras act as a deterring factor for criminal behavior and provide an avenue to enforce laws and regulations. Security cameras accompany locations where high-value assets are located, like fare machines. Security cameras are also an important asset at high ridership locations, so areas classified as Level 4 or high-capacity Level 3 transit stations are prioritized for security camera implementation (Rapid and Rail stations, and transit facilities or park and rides). In addition, security cameras require connection

to the electrical grid or solar power. Security cameras are placed based on CapMetro's crime data and customer reports to determine where cameras are needed.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund and install security features at stops and stations • Maintain CapMetro-installed security features
Municipal Staff	• Maintain municipal or custom security features • Coordinate with CapMetro for placement and installation
Developer	• Reserve space or provide conduit and connections for communication or utilities • Coordinate with CapMetro for their installation

Shared Mobility

Micromobility services offer transportation options for short-term rental from the public right-of-way and provide a first/last mile option for transit riders to access bus stops. Micromobility options may include electric scooters, or other small mobility devices that do not have a license plate. Micromobility providers are often regulated by municipalities but are owned and operated by private entities. Designating space for micromobility vehicles makes it easy for transit riders to end their trip near the bus stop while ensuring the vehicles do not interfere with surrounding walkways.

CapMetro also operates its own micromobility program: CapMetro Bikeshare. Guidelines for implementation and evaluation of Bikeshare are found in **Chapter 2 Guidelines for Designing a Good Transit System**, and **Appendix A: Bikeshare Performance Monitoring**.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

Section 9.9.0 of the TCM sets general guidelines for dockless mobility parking areas to match bicycle rack guidelines in Section 9.8.0, which are further discussed in the **Bicycle Rack** amenity section.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Allocate space for non-Bikeshare micromobility at stops and stations where appropriate
Municipal Staff	• Administer the Shared Micromobility Program which manages and provides permits to private shared micromobility providers
Developer	• Coordinate with CapMetro on integration of micromobility at stops and stations

Shelter

A shelter protects riders from the elements, both heat and rain, and helps identify the location of a stop. Shelters are also one of the most visible elements of CapMetro's transit network to the public, therefore adhering to shelter design guidance is important for network continuity. Shelters are required for Level 3 transit stops as well as Level 4 transit stations, and transit centers. While shelters are considered a valuable amenity for the transit stop types mentioned, site constraints may limit the possibility of shelter placement.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Standard	Standard

Guidance

All shelters are installed in accordance with the guidance provided by the jurisdiction in which it is being installed.

According to Section 6.3.5.2 of the TCM, shelters should not obstruct pedestrian through-paths and should be oriented towards the path to the landing pad. Passengers must be able to easily see transit vehicles that arrive, and operators must be able to easily see passengers. Shelters should have internal lighting or be in well-lit areas. The shelter should have perforated panels, glass or an open back wall to enhance visibility.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund and install CapMetro standard shelters based on the amenity distribution process • If shelter is being installed by a municipality or a developer or in private right-of-way, coordinate with the relevant parties for installation • Maintain all shelters within the bus stop network
Municipal Staff	• Coordinate with CapMetro for their installation
Developer	• Fund standard shelters based on the amenity distribution process at stops adjacent to property • Coordinate with CapMetro for their installation

Sign And Pole

Transit stop and station signs are the most basic element of a transit stop and are vital to the rider experience. They indicate where operators will stop and where riders will board and alight the vehicle. Signs are required at all stops and stations.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Standard	Standard	Standard	Standard

Guidance

Signage should contain route name, number, direction and destination, CapMetro customer service phone number, system logo and website address.

Every transit stop and station has a unique ID number that must be displayed, and include instructions on finding real time information through texting, the online trip planner or the transit planning app.

Signs must be ADA compliant. This includes signage in braille and with raised lettering for the stop ID number and the routes that serve the stop or station. Preferred sign location is 2’ set back from the curb edge and with 2’ clearance from the landing pad.

Transit signposts should also be distinguishable from other street signs at their base by a detectable indicator. This will help those using a cane to identify vertical elements with transit specific information for riders.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	Provide, install and maintain a sign at every transit stop and station
Municipal Staff	Coordinate with CapMetro for pole placement and installation in the public right-of-way
Developer	Coordinate with CapMetro for pole placement and installation in the private right-of-way

Wheelchair Charging

Wheelchair charging is a critical need for those using mobility devices to access transit. At the stop or station, a charging outlet provides reliability and convenience for riders, who may need to top off their device or charge it in order to make the final portion of their trip.

Where It’s Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

Charging outlets require an electric connection to the stop or station and should be a standard 120 volt outlet. They should be located in an accessible space, with clear access and maneuverability around the outlet. Outlets should be clearly labeled for wheelchair charging use, with informational signage to help other riders understand the priority of the use is for those using mobility devices. Outlets should also be located under a covered area.

The installation of wheelchair charging infrastructure is highly dependent on existing access to electric utility, and wheelchair charging infrastructure should primarily be considered in the case of new construction.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Install and maintain outlets • Install and maintain labeling of wheelchair charging and informational signage for other riders
Municipal Staff	• Coordinate with CapMetro for their installation as needed
Developer	• Coordinate with CapMetro for their installation as needed

Waste Receptacles

Waste receptacles offer convenience for waiting riders and help to reduce the amount of waste left on vehicles and the surrounding area. CapMetro provides two types of waste receptacles: regular waste and solar compacting. Waste receptacles are standard at stops and stations classified as Level 4. CapMetro will also consider adding recycling containers to Level 4 stops when installation and maintenance of the containers are feasible and cost-effective.

CapMetro periodically evaluates waste receptacle locations throughout the our system to ensure placement aligns with customer needs, site conditions, maintenance considerations, and overall system efficiency. Litter cans are only considered for removal when documented conditions demonstrate recurring issues such as illegal dumping, misuse, sanitation concerns, vandalism, accessibility impacts, or operational burdens that cannot be effectively addressed through routine servicing or other corrective measures. Each location is evaluated individually based on documented data and site conditions.

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Standard

Guidance

CapMetro works with other municipalities to locate waste receptacles or recycling as needed and in compliance with other local ordinances. According to the TCM section 6.5.3.4, waste receptacles should be placed at the far side of benches with at least a 2 ft. spacing from benches, wherever present near a transit stop.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund and install CapMetro standard waste receptacles at stops and stations • Maintain CapMetro-installed waste receptacles at appropriate intervals to ensure stops and stations remain comfortable for those waiting for transit
Municipal Staff	• May fund and install municipal or custom waste receptacles at stops and stations • Maintain municipal or custom waste receptacles at appropriate intervals to ensure stops and stations remain comfortable for those waiting for transit • Coordinate with CapMetro for placement and installation

Role	Responsibilities
Developer	• May fund and install waste receptacles at stops or stations adjacent to property • Coordinate with CapMetro for their installation

Wayfinding Materials

Wayfinding materials at a stop or station can include schedules, system and route maps and local area maps. These are important because:

- Schedule information at stops and stations helps reduce some of the uncertainty associated with taking the bus and provides information for people without access to CapMetro apps
- Transit system maps can assist customers in determining the best routing for their trip, including identifying transfer locations. System maps can also act as low-cost advertising and help potential customers understand how they can use transit services
- Local area maps provide neighborhood context for transit riders unfamiliar with a given location and can alert regular users to previously overlooked destinations and transfer opportunities

Where It's Standard

Level 1	Level 2	Level 3	Level 4
Optional	Optional	Optional	Optional

Guidance

The following guidelines are recommended for wayfinding materials:

- Placement of information in a predictable location like overhead or eye-level, placed at regular intervals and include context-specific information at key navigation points
- Include information that facilitates multi-modal options of travel, like locations of Bikeshare stations or regional transportation information
- Use easily understood units like walking time from the stop or station to the destination

CapMetro should collaborate with relevant stakeholders in the surrounding area of stops and stations to identify key, place-specific information to incorporate. Enhanced information should also be delivered in a way that is accessible and ADA compliant, leveraging technology in consideration of disabilities like visual impairment. Examples of this information technology includes tactile maps, detectable warnings and directional texture, infrared talking signs, GPS, mobile apps and smart pens. For more information on these accessible resources, projectaction.org provides more detailed information and other disability-specific wayfinding strategies.

Roles and Responsibilities

Role	Responsibilities
CapMetro Staff	• Fund, install and maintain printed bus schedules and system and route maps at stops or stations
Municipal Staff	• Coordinate with CapMetro for placement and installation of community centric wayfinding to be included at stops and stations

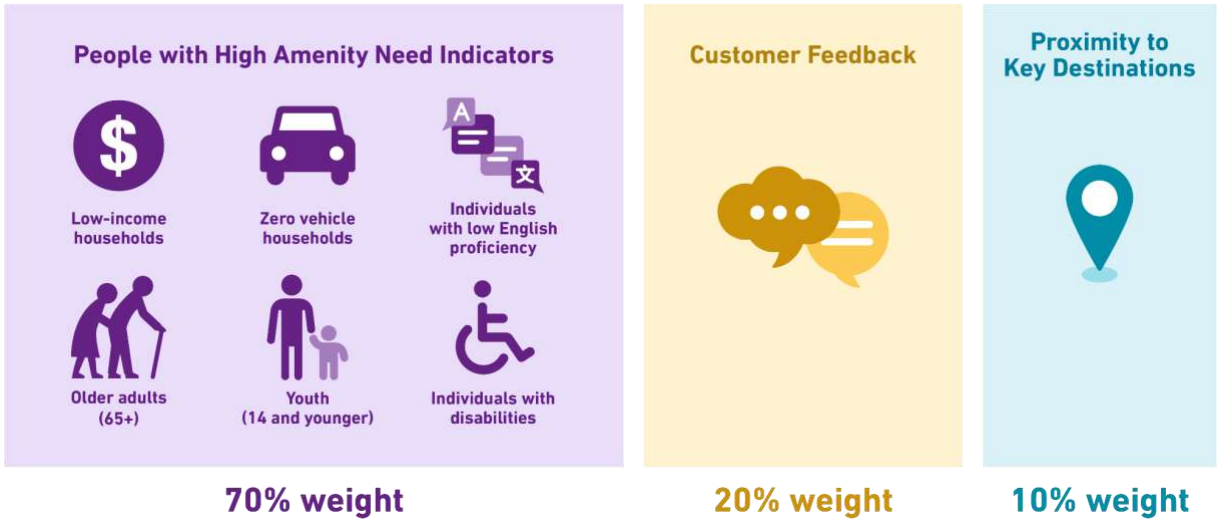
Role	Responsibilities
Developer	• Reserve space or provide conduit and connections for communication or utilities • Coordinate with CapMetro for installation

PRIORITIZING STOPS FOR AMENITY UPGRADES

The prioritization process for transit stop and station amenity updates and upgrades gives each stop a score based on a multi-criteria analysis of existing stop conditions and its surrounding characteristics. The approach includes both quantitative and qualitative data to incorporate statistics based on Census and local data, as well as community input to provide valuable context to transit stop needs and the degree of urgency. As a next step, CapMetro will develop a strategy for implementing transit stop improvements, including innovative financing options.

Amenity Distribution Methodology

The amenity distribution process prioritizes transit stops based on several indicators that address the following criteria:



Weighting of indicators is based on a prioritization of equity considerations when distributing bus stop amenity upgrades and funding. The most weight went to people who would benefit most from amenity enhancements, followed by whether the stop has received specific customer requests for amenity updates and by a stop's access to infrastructure and services. Please refer to the **Amenity Distribution Scoring Rubric** below for a summary of all indicators, their groups and those groups' weighting towards the final score.

Figure 7: Amenity Distribution Scoring Rubric

Category	Indicator	Possible Points	Overall Weight in Category
People with High Amenity Need Indicators	Low-income households	2	**70%**
	Zero vehicle households	2	
	Older adults (65+)	2	
	Youth (14 and younger)	2	
	Individuals with disabilities	2	
	Individuals with low English proficiency	2	
	Total	**14**	
Customer Feedback	Customer Feedback	2	**20%**
	Total	**2**	
Proximity to Key Destinations	Proximity to Key Destinations	**3**	**10%**
	Total	**3**	
	Grand Total	19	***100%***

People with High Amenity Need

The People With High Amenity Need category represents those who are more likely to rely on transit as their primary mode of transportation, making proper amenities at their transit stops a priority.

Each bus stop is assigned the census geography that it is within using a spatial join in GIS. All stop values are then compared to determine the average of the set of bus stops, as well as the 85th percentile value for each indicator. Each bus stop is then assigned the corresponding points based on how it compares to those values.

The table below presents criteria for bus stop scoring based on data that identifies transit reliant and historically underserved communities:

Data Source	Indicator	Points Criteria	Possible Points
Latest American Community Survey (ACS) 5-Year Census Data, or most applicable data source	Low-income households	2 points = 85th percentile or above 1 point = Above average 0 points = Average or lower	2
	Zero vehicle households		2
	Older adults (65+)		2
	Youth (14 and younger)		2
	Individuals with disabilities		2
	Individuals with low English proficiency		2

Customer Requests

The customer feedback indicator offers community input in the prioritization process for stop amenity distribution. The indicator will score stops by reviewing customer call reports that request amenities at bus stops. Bus stops with one amenity-related call receive 1 point, while bus stops with more than one amenity-related call receive 2 points.

Proximity to Key Destinations

Amenities should be prioritized at stops where **destinations warrant** additional shelter or seating. Key destinations types include but are not limited to the following:

- **Grocery Stores:** Amenities allow people to more comfortably use transit to access food.
- **Schools:** Amenities can make it more comfortable for youth and parents are waiting to catch the bus to and from school.
- **Medical Facilities:** People going to and from medical appointments are more likely to have limited mobility or capacity, and amenities can make it more comfortable for such riders to utilize transit.

Each destination within 500 feet of the bus stop in question would receive 1 point, for a total possibility of 3 points. The 500 ft radius is ideal to not double count destinations, which is more likely to happen with a larger radius.

Data Source	Indicator	Data Type	Points Criteria	Possible Points
City of Austin	Proximity to Key Destinations	Key Destination GIS layer	1 point for each destination type	3

Process Implementation

The Amenity Distribution categories work together to identify the amenity needs of all CapMetro transit stops and score the stops to determine which needs should be met with the resources available. This makes it easier for CapMetro to make cohesive decisions and be more transparent with the public.

Each stop is classified into types based on ridership and service type, as stated above. These are the following steps for amenity distribution process.

Step 1 – Identify Amenity Needs

A list of amenity needs is developed annually based upon ridership and the qualifying stop type as described at the beginning of this chapter. Using stop inventory data developed and maintained by the agency, CapMetro then identifies what amenities are missing from each stop based on the qualifying stop type

Step 2 – Prioritize Stops

All stops in the system are scored and prioritized based on the Amenity Distribution Process as described in detail in the Methodology section.

Step 3 – Allocate Resources

Based on resources, the top priority stops are identified and amenities are installed. To ensure resources are used efficiently, groups of stops for enhancements may be identified based on classification type or solely based on priority scoring. With around 2,500 transit stops, this process will take time and be repeated as more resources are available. CapMetro aims to bring stops up to the standards incrementally over time.

Stop Type Classification and an update to the stop prioritization scores should be completed on at least an annual basis to ensure that stop types are upgraded as needed, which could increase the expected amenities.



Removal of Amenities

When there is illegal or disruptive activity at a bus stop, it can cause a poor experience for customers. Every situation is unique, and CapMetro staff treat every stop as context sensitive.

Occasionally, amenities may be removed or stops may be closed due to security concerns or misuse. An amenity removal is always the last resort and will only occur after regular monitoring over time to determine that the issue at the stop is chronic and cannot be solved without CapMetro's alteration of the built environment at the stop. If such changes to a stop are needed, staff will implement public engagement measures to inform riders of the change and its rationale. Steps to inform the public could include meetings with community partners and stakeholders, at-stop signage, and digital communication about amenity removal or stop change.



Appendix A: Bikeshare Performance Monitoring

The following section proposes a performance monitoring program for CapMetro Bikeshare. The tracking of Key Performance Indicators (KPIs) will allow CapMetro to better align bikeshare with its other modes, more quickly identify operational issues, and measure the overall return on program investments. The performance monitoring recommendations are broken down into the following three categories:

- **System performance:** Metrics developed to monitor overall system health. These are metrics that would be monitored on a frequent and ongoing basis by the CapMetro Bikeshare operations team.
- **Station performance:** Metrics developed to identify issues at stations regarding ridership and reliability.
- **Goal Attainment:** Metrics evaluating the long-term attainment of CapMetro Bikeshare's guiding principles. These KPIs do not need to be tracked at the same frequency as station and system performance metrics.

Each metric is described in detail and includes information such as the metric's purpose, data sources, how the metric is calculated, data ownership, and the frequency of data reporting.

System Performance Metrics

Table 19 outlines the performance metrics designed to monitor the overall system performance and health of CapMetro Bikeshare. These metrics are general in nature and are intended to be tracked on a daily or monthly basis.

Table 9: **System Performance Metrics**

METRIC	PURPOSE	DATA SOURCES	CALCULATION	OWNER	FREQUENCY
Overall Trips	Measure of system productivity and reach	Raw trip data	Sum of all trips for reporting period	Bikeshare Operations	Daily
Trips per Bicycle per Day (TpB)	Measure of system productivity	Raw trip data	Sum of all trips for reporting period / (sum of dock days for reporting period x 0.5)	Bikeshare Operations	Daily
System Downtime	Measure of system productivity	Station capacity data	Aggregate minutes of downtime broken down into two categories – rebalancing event (station full or empty) and hardware failure	Bikeshare Operations	Daily
Operating Costs	Track budget adherence	Financial data	Tracking percent of operating expenditures to budget	Bikeshare Operations	Monthly
Direct Revenue	Measure of system sustainability	Financial data	Sum of all revenue sources including user fees, advertising, and sponsorship	Finance	Monthly
Unique Users	Measure change in membership base	Financial data	Number of active users each month	Bikeshare Operations	Monthly

Station Performance Metrics

Table 20 describes performance metrics to assess bikeshare station performance. By analyzing and comparing stations using these metrics, CapMetro Bikeshare can determine whether stations are underperforming or need increased capacity. Metrics such as a station's lost trip factor and station revenue offer detailed insights into the financial health of individual stations. Station performance metrics are intended to be tracked on a monthly basis to ensure overall system health.

Table 10: **Station Performance Metrics**

METRIC	PURPOSE	DATA SOURCES	CALCULATION	OWNER	FREQUENCY
Total station ridership	Measure of station productivity	Raw trip data	Total station trips per month	Bikeshare Operations	Monthly
Station Trips per Bicycle Per Day	Measure of station productivity	Raw trip data	Average daily ridership at station divided by number of active bicycles	Bikeshare Operations	Monthly
Station downtime	Measure of station productivity	Station downtime reports	Average daily time a station experiences a downtime event during reporting period	Bikeshare Operations	Monthly
Station lost trip factor	Approximates the number of riders effected by station downtime	Station downtime report and ridership data	(Average daily ridership at station ÷ average percent of daily uptime) – Average daily ridership	Bikeshare Operations	Monthly
Station revenue	Measure of station sustainability	Financial data	Total monthly revenue generated at each station	Finance	Monthly
Unique Users	Measure change in membership base	Financial data	Number of active users each month	Bikeshare Operations	Monthly

Attainment Metrics

Table 21 describes performance metrics which aim to assess the attainment of CapMetro Bikeshare's five guiding principles:



A. CapMetro Bikeshare, as part of Austin's public transit network, connects people to where they want to go.



B. CapMetro Bikeshare is a tool to reduce inequalities in transportation.



C. CapMetro Bikeshare provides an accessible and affordable transportation option.



D. CapMetro Bikeshare supports community wellbeing.



E. CapMetro Bikeshare is a good steward of public funds.

Attainment metrics are intended to be calculated annually, although some of the KPIs listed below are on the list of system performance metrics as well. The purpose of attainment metrics is to better quantify how bikeshare strategically is meeting CapMetro's goals. Note that not all these metrics can currently be calculated. The study team recommends adding a brief demographic survey as part of the sign-up process to better understand the program's rider base.

Table 11: **Attainment Metrics**

METRIC	PURPOSE	DATA SOURCES	CALCULATION	OWNER	FREQUENCY
A. CapMetro Bikeshare connects people where they want to go					
Access to transit	Measure of access to transit connections	CapMetro transit stop and station data	Percent of CapMetro Bikeshare stations within a quarter mile of a transit stop or station	Planning	Annual
Access to jobs	Measure of connectivity to destinations of interest	Longitudinal Employer-Household Dynamics (LEHD) Data	Number of jobs within a quarter mile of a CapMetro Bikeshare station	Planning (publicly available source)	Annual
Access to households	Measure of a system and station accessibility	American Community Survey (ACS) Data	Number of households within a quarter mile of a CapMetro Bikeshare station	Planning (publicly available source)	Annual
B. CapMetro Bikeshare is a tool to reduce inequities in transportation					
Rider demographics	Measure of system equity	Sign-up survey (currently source does not exist)	Percent of users that are minority or low-income based on sign-up survey	Planning (survey data)	Annual
Trips in equity focused areas	Measure of system equity	American Community Survey (ACS) Data	Trips originating or ending in block groups that are majority minority populations or have a poverty rate greater than 30 percent (30%)	Planning	Annual
Discount pass holders	Measure of system equity	User data	Percentage of riders under discounted pass programs (Student passes)	Bikeshare Operations	Annual
C. CapMetro Bikeshare provides an accessible and affordable transportation option					
Average cost per trip	Measure of system affordability	Raw trip data	Annual revenue generated from trips divided by annual rides.	Bikeshare Operations	Annual
Ridership among older adults	Measure of system accessibility	Sign-up survey (currently source does not exist)	Percentage of users that are over 55 years of age.	Planning (survey data)	Annual
Crash Incidents	Measure of system safety	Incident reports	Crashes per 10,000 rides per year	Bikeshare Operations	Annual
Membership Turnover	Measure of system sustainability and reach	Membership records	Percentage of existing registered users who fail to renew once their membership expires	Bikeshare Operations	Annual
D. CapMetro Bikeshare supports Community Wellbeing					
Annual miles biked using CapMetro Bikeshare	Measure of system's effect on environmental sustainability	Raw trip data	Sum of total miles biked across the entire system.	Bikeshare Operations	Annual
User satisfaction and wellbeing	Measure of user and community health and wellbeing.	Annual survey conducted on the CapMetro Bikeshare app	Percent of CapMetro Bikeshare users who report an increase in physical activity due to CapMetro Bikeshare	Planning (survey data)	Annual
E. CapMetro Bikeshare is a good steward of Public Funds					
Trips per Bicycle per Day (TpB)	Measure of system productivity	Raw trip data	Sum of all trips for reporting period / (sum of dock days * 0.5)	Bikeshare Operations	Annual
Cost recovery ratio	Measure of system sustainability	Financial data	Annual revenue / annual costs	Bikeshare Operations	Annual
Average annual operating costs per dock & per bike	Measure of system sustainability	Financial data	Total costs / total docks or total bicycles in operation	Bikeshare Operations	Annual