



Amenities Guidelines

for Bus Stops and Passengers

October 2011



CHATHAM AREA TRANSIT

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Executive Summary

The public's first impression of CAT and its services is the bus stop. It is important that bus stops are easily identifiable, safe, accessible, and a comfortable place to wait for the bus. Although, there will always be underdeveloped bus stops that do not achieve the safety and accessibility standards outlined in the following pages, these guidelines provide a framework for maintaining and developing bus stops. They promote consistency for good design and the provision of bus stop amenities, making stops easier to identify and better matched to their use, location and potential for attracting riders. Through a series of development programs, CAT seeks to make bus stops a positive contribution to the community, streetscape, and a place where riders can obtain transit related information and are encouraged to use the provided services.

The guidelines identify and encourage partnerships with the community and property owners. CAT is working with communities to improve access to bus stops, including sidewalks, safe street crossings, accessible curb ramps, and bicycle lanes. The quality of the streetscape is critical to the success of the bus stop development program.

The purpose of this document is to:

- Identify the elements of the CAT bus stop;
- Establish guidelines for the design of bus stops and the placement of bus stop amenities; and
- Describe the process for managing and developing bus stops at CAT.

This document will also act as the basis for Capital Improvement Plan development to justify and support project goals.

The Bus Stops Guidelines document contains four major sections, each of which is summarized below.

Introduction: This section looks at the various goals that govern the development and implementation of bus stop projects within CAT. The section also provides a snapshot of the current on-street inventory throughout the system and looks at some of the challenges that CAT is being faced with. The section concludes by identifying the short and long-term goals of the Bus Stops Section.

The Bus Stop: This section looks at the guidelines maintained by CAT to maximize the effectiveness of its bus service. This section defines preferred designs for bus stop location, layout, amenities and applying transit-preferential street treatments.

Program Partnerships: Bus stops as public spaces are as much a part of a community as streets, pathways, parks and plazas. This section explores ways in which CAT encourages jurisdictions, neighborhood associations and citizens to recognize the value bus stops play in the community and looks for ways to build partnerships with these entities to enhance bus stops.

Bus Stop Development Projects: CAT initiates capital projects to make significant improvements to route efficiency, on-street and bus stop safety, accessibility and comfort. This section describes some projects CAT is currently implementing, which provide and / or improve amenities within existing transit service

Bus Stops Guidelines

I. Introduction

The public's first impression of CAT and its services is the bus stop. It is important that bus stops are easily identifiable, safe, accessible, and comfortable for passengers waiting for the bus. These guidelines provide a framework for maintaining and developing bus stops. Establishing guidelines promotes consistency for good design and the provision of bus stop amenities, making stops easier to identify and better matched to their use, location and for attracting potential riders. Through a series of development programs, CAT seeks to make bus stops a positive contribution to the community streetscape and a place where riders can obtain transit related information and are encouraged to use the services. The guidelines identify and encourage partnerships with the community and property owners. CAT is working with communities to improve access to bus stops, including sidewalks, accessible curb ramps, safe street crossings, and bicycle lanes. The quality of the streetscape is critical to the success of the bus stop development program.

The purpose of this document is threefold: 1) to identify the elements of the CAT bus stop, 2) to establish guidelines for the design and placement of bus stops and amenities, and 3) to illustrate the process for managing and developing bus stops at CAT. Through detailed text and diagrams, this document provides the tools needed to plan bus stops and associated amenities within the CAT service area.

Bus Stops Program Goals:

- A basic bus stop should consist of an accessible, paved area with easily identifiable signage. Bus stop shelters and other amenities shall be provided in accord with bus stop development criteria;
- Bus stops should be placed to assure customer convenience and provide for the safety of pedestrians and vehicles.;
- Bus stops shall be visible, near crosswalks, and well lit;
- Bus stops should be clearly and consistently identifiable with up-to-date service information for riders at the bus stop;
- CAT should encourage community input for bus stop installations and changes, and respond promptly to inquiries and complaints from customers and bus stop neighbors;
- The design of bus stops shall be sensitive to the community setting and may incorporate features that identify the stop with the community, (such as art, bus stop naming, or a community bulletin board);
- Where reasonable, bus stops should be accessible. Americans with Disabilities Act (ADA) considerations will be given top priority in the siting and design of new and modifications to existing bus stops;
- Bus stops shall be located in close proximity of institutions, large employers, and community centers. Stops shall also aim to accommodate those clients with special needs;
- Bus stops will be spaced to maximize efficient operations and to establish an ideal maximum walking distance of a quarter mile radius, for medium-high density areas, for riders to walk to the bus stop;

- CAT will work with local jurisdictions, communities, and land developers to construct sidewalk connections to bus stops, advocate for safe and comfortable street crossings, and improve the overall pedestrian environment near bus stops. Regional planning targets, new or sustained transit service and bus stop investments will be used to encourage those improvements;
- Bus stops shall be well maintained and free of trash and vandalism. CAT will seek partnerships that share responsibility for maintaining bus stops;
- Damaged or worn out bus stop features shall be repaired or replaced in a timely manner; and
- CAT will seek to offset the cost of installing and maintaining bus stop amenities through various community partnerships and opportunities, such as a bus shelter and bus bench advertising program. Community partnerships will require CAT Board approval and the support of the City of Savannah and Chatham County.

II. Bus Stops Program Status Report

A. Bus Stops Statistics Snapshot

General Information <ul style="list-style-type: none"> • Jurisdictions in the service area • Bus Stops • Major transfer points¹ 	 3 1745 20
Bus Stop Elements and Amenities	
Poles <ul style="list-style-type: none"> • Poles with Signage² • Historic Orange Poles • Other markers (i.e. utility poles) 	 1638 (approximately 94% of stops) 121 107
Bus Shelters <ul style="list-style-type: none"> • Standard (existing green shelters) • Sombrero 	 144 (8% of stops) 128 16
Trash receptacles	128
Benches <ul style="list-style-type: none"> • Basic (used in shelters) • Premium (stand alone mesh) • Premium (stand alone wooden) 	 137 undetermined undetermined
Lighting <ul style="list-style-type: none"> • Shelters mounted (Solar LED) 	 Less than 10%

B. Limitations

Not all CAT bus stops are consistent with the goals listed in the preceding section. In some instances bus stops are defined by the underdeveloped corridors or roads they serve. Where roadways lack underground drainage and pedestrian systems or are constrained by natural terrain, CAT cannot effectively improve impacted bus stops without making significant street and sidewalk enhancements, removing or reducing the number of stops or moving service. These issues may be best addressed by a coordinated effort between CAT and the jurisdictions charged with maintaining and upgrading the roadway system.

- Approximately 75% of CAT bus stops suffer from lack of pavement or have interrupted or no sidewalk connection to a community pedestrian network. Crosswalks may be few and far between.
- Using the boarding criteria described in Section III of this document, approximately 92% of current stops do not have shelters, though some may have other forms of shelter from buildings, bridges or awnings.

¹ This includes major transfer points, where two or more routes meet.

² Currently, CAT uses green rectangle shaped signs on steel poles. This figure represents current sign practices, and historic orange oval signs and orange markings on utility poles.

- Not all bus stops are easily identifiable due to: 1) inconsistent placement, 2) incomplete customer information on bus stop signs, 3) signs that blend into the streetscape, and/or 4) one-sided signs.
- CAT cleans and maintains bus stops and shelters, including trash receptacles, on a regular basis. Please refer to the *Passenger Amenities Bus Stop and Shelter Maintenance Program* for detailed maintenance schedule.

Bus stop inconsistencies, as measured against the guidelines contained in this report, will be identified and serve as the basis for development of a capital improvement program that can be considered as funding and opportunities present themselves

CAT will also be working with Chatham County, City of Savannah, and other jurisdictions to identify deficiencies in the pedestrian network that make it difficult and unsafe to access bus stops. Intergovernmental agreements must be developed to promote joint development of bus stops and the pedestrian network.

C. Priorities

The following are bus stop management priorities, which are either reflected in current programs or anticipated in future programs:

- Improve underdeveloped stops where 1) supporting infrastructure exists, 2) it is physically feasible, and 3) it is fiscally responsible. Improvements start with pavement and access upgrades, followed by shelters and other customer amenities.
- Improve customer information through expansion of existing methods and implementation of innovative new methods. Examples include shelter and pole-mounted printed information and electronic modes.
- Replace all bus stop signage with signs that are readily distinguished, even in active streetscapes, and to be equally identified from both directions. Locate bus stops, signs and amenities consistent with guidelines and equitably among all communities served by CAT.
- Maintain Historic Orange Bus Stop signs while reconfiguring information kiosks around those existing (orange) poles (See Figure 4).
- Evaluate all sites for bus stop amenities placement. Place shelters where it is feasible, where existing protection is unavailable (i.e., no awnings, etc.), and according to CAT guidelines.
- Work with jurisdictions to identify deficiencies in the pedestrian network. Establish priorities based on pedestrian safety and existing and potential transit use. Develop strategies to work with property owners to improve the pedestrian connectivity to bus stops, where viable.
- Pursue agreements with jurisdictions and public utility agencies to facilitate placement of shelters, benches, lighting and trash receptacles.
- Find revenue-generating opportunities through the use of ad shelters, ad benches, and similar programs.
- Maintain and expand public outreach programs and find more effective ways to solicit process and respond to community and customer input.
- Improve operating efficiencies through bus stop spacing that is consistent with these guidelines.

III. The Bus Stop

It is nearly impossible to force every bus stop to conform to the same standards. However, CAT maintains guidelines to maximize the effectiveness of its bus service and communicate the CAT brand. These guidelines define preferred designs for bus stop locations, layout, amenities and applying transit-preferential street treatments. The most important of many considerations are listed in this document.

A. Stop Location and Spacing (New Stops, Moves, and Consolidations)

Approach

Stop location and spacing will always depend on individual site circumstances. However, one must weigh the options and choose based on well-understood criteria. Generally, CAT expects that riders are willing to walk up to a quarter-mile to reach the stop.

When determining new bus stop locations, CAT will proceed with the guidelines established herein. For those existing stops that do not fit into the criteria listed below, there should be compelling reason(s) to retain it (e.g., if significant investment has already been made at the stop, or if there is heavy use by riders who are elderly or disabled and a new location would clearly degrade service for those riders). Bus stops are designed to function for at least 5-10 years.

This recommended bus stop spacing should serve as a guide. The addition or subtraction of bus stop locations need to take into consideration the existing transit network, trip generators, land uses, and pedestrian infrastructure. As a rule, bus stops need to have adequate sidewalk connections and roadway crossing amenities (i.e. marked crosswalks, median islands, curb ramps, pedestrian signals, etc.). It is important to emphasize that these are general guidelines and should not be construed as absolutes.

Tools

Choices for stop location will determine access to: pedestrian crossings, transfer lines, major transit generators, and general neighborhood employment and activity areas.

Preferences

Preferred bus stop locations are determined in the following sequence:

- Transfer Locations: All intersections where two or more bus lines meet, Streetcar, and DOT;
- Designated Crossings: Stops signalized intersections with safe pedestrian crossings;
- Other Major Stops: Major activity centers transit trip generators, such as hospitals, universities, major retail and employment centers. Typically located at the intersection closest with the crosswalk, when available.
- Locations based on stop spacing:
 - *Central Business District (CBD)* and environs. Bus stops can be placed approximately every 440 feet (9 to 12 per mile or one every 1 to 2 blocks);
 - *Urbanized fringe* (fully developed areas with mixed apartments, single-family housing, or no open space other than parks, squares, and schools) approximately every 700 feet (7 to 8 per mile or every 2 to 3 blocks);

- *Suburban areas* (mostly single-family housing with pockets of open space and undeveloped land) every 1,250 feet (4 to 5 per mile) as needed in open areas;
- *Rural areas* (mostly large lot single-family housing and low impact uses): approximately every three-quarters (3/4) of a mile to one (1) mile or as needed based on above considerations. Additionally, flag stops are recognized in these areas.

Bus stop spacing will continue to be governed by a combination of density and parameters such as neighborhood demographics, available alternatives, safety, public input and efficient bus operations. It is intended that this process be objective, but also flexible enough to respond to unique needs and circumstances.

As programs or requests for modifications to bus stops, these spacing criteria will be considered. Even key bus stops may require adjustment (e.g., nearside to farside placement). Long-term user and operating benefits will be weighed against project costs and neighborhood/rider objections to proposed changes.

Considerations

The following is a checklist of the most important considerations:

- *Safety*
 - Waiting, boarding and alighting must be safe
 - Access to a safe street crossing/crosswalk
 - Provide adequate sight distance, i.e., provide visibility between bus driver and waiting riders
 - Provide a safe location for operational movements
- *Service quality tradeoffs – fewer stops mean the following*
 - Faster service
 - More potential for amenities at each stop
 - May require a longer walk from/to origin/destination
 - More ridership at existing stops
- *Stops must be suitable for bus operations*
 - Safe access into and out of bus stop location (no parking)
 - Provide bus operators with adequate view of street and pedestrian areas
 - Provide adequate sight distance for autos before bus stop, so drivers are aware the bus is stopped
- *Possible impacts on traffic safety and traffic delay*
- *Input and review by the public and by neighborhood and business associations*
- *Pedestrian safety to and from the stop and at the bus stop*

Accessible for all

- Minimize slope
- If necessary, construct five by eight foot (5' x 8') concrete pad at stop
- Check for curb ramps at intersection and on surrounding streets
- *Maximize accessibility to neighborhood or major generators*
 - Preference for intersections at those streets that connect into surrounding neighborhoods
 - At major transit generators, locate the stop near pedestrian access to the generator, preferably at signal
 - Look at pedestrian pathways (formal and informal), not just streets
- *Stops should be paired, inbound and outbound, at same intersection when possible*
- *Ensure compatibility with adjacent properties*
- *Do not move existing stops for trash, noise, and/or nuisance. Instead, seek ways to address the problem directly.*

Diagram 1

Initially, plan stops at safe crossings, transfer points, and major transit generators

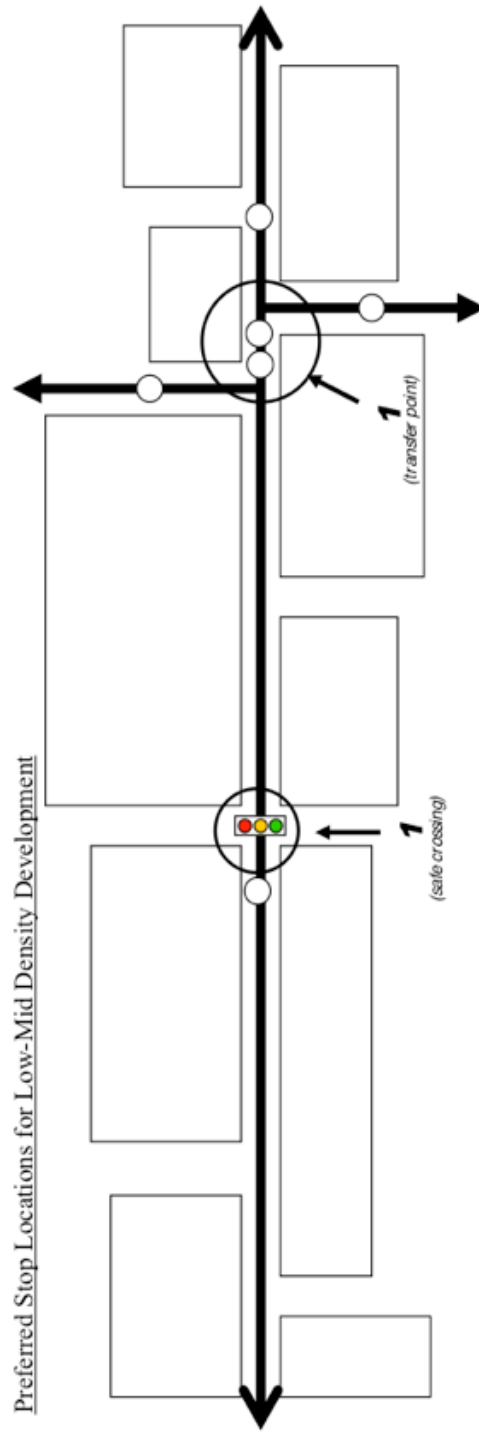
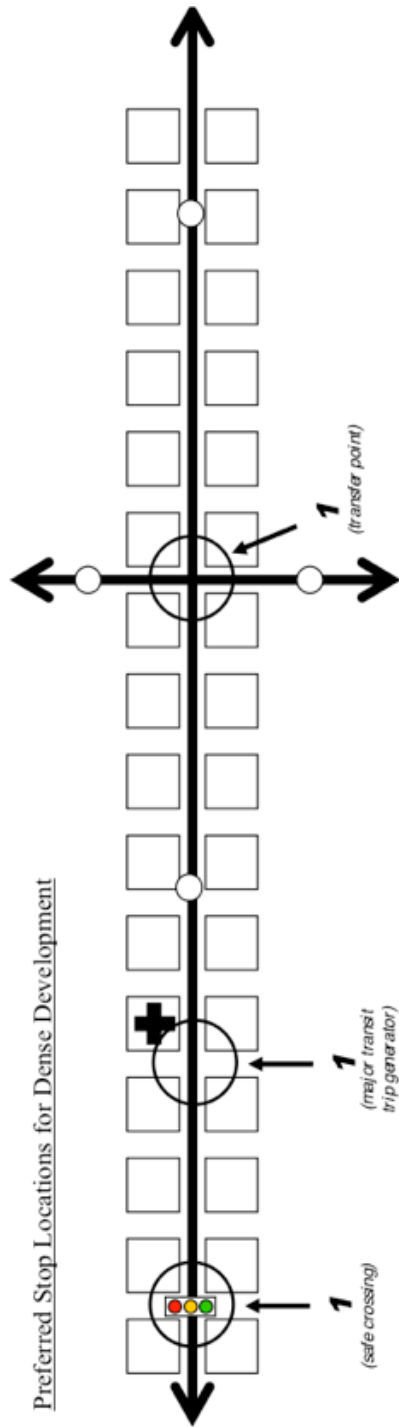
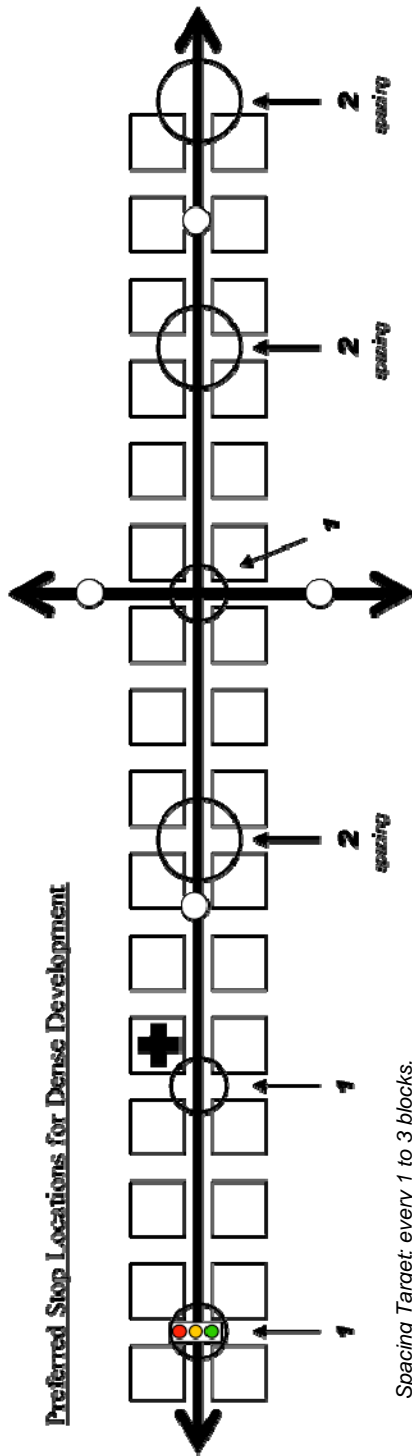
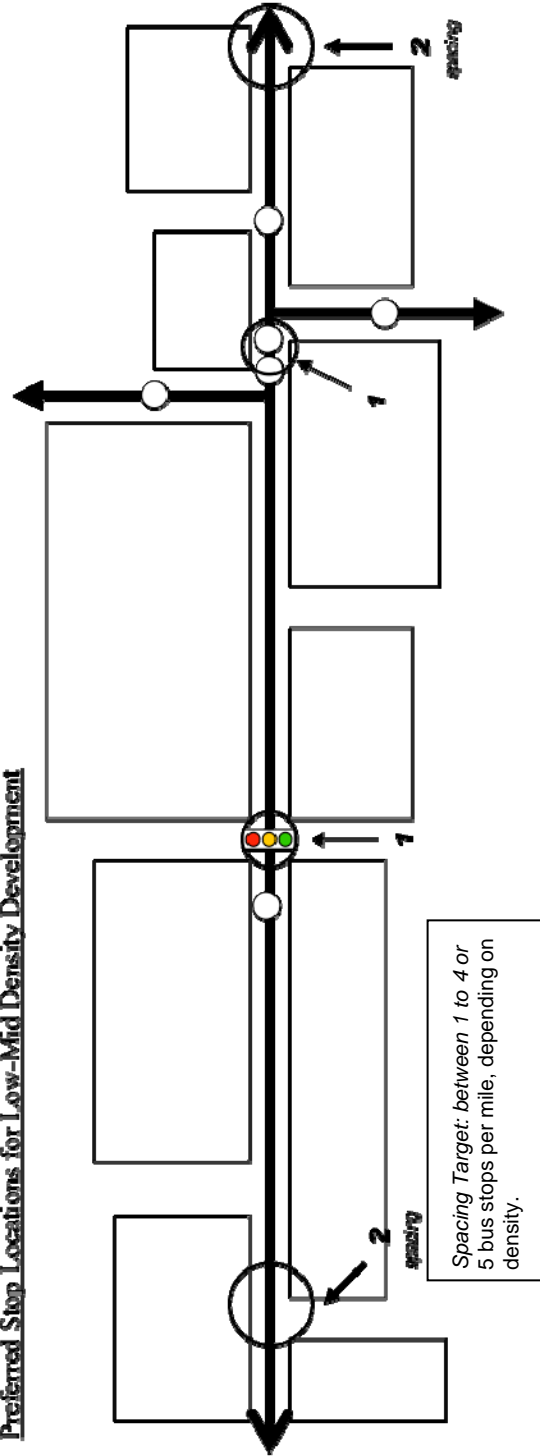


Diagram 2

Then plan stops at intersections that are spaced appropriately between the initial stops.



Preferred Stop Locations for Low-Mid Density Development



B. Stop Placement

Approach

Stops are placed at locations:

- That are safe for passengers and vehicles;
- That may be easily accessed by the surrounding neighborhood, major transit generators and/or intersecting transit services; and
- That improve safety, convenience and/or reduced trip times.

Tools

The placement of the bus stop in relation to intersection: farside; nearside; midblock; off-street.

Preferences

Situation	Preferred Placement
Any signalized intersection where bus can stop out of travel lane	Farside
If bus turns at intersection	
Intersection with many right turns	
Complex intersections with multi-phase signals or dual turn lanes	
If nearside curb extension prevents autos from trying to turn right in front of bus	Nearside
If two or more consecutive stops have signals	Alternate nearside and farside (starting nearside) to maximize advantage from timed signals
If obvious, heavy single-direction transfer activity	One nearside; one farside to eliminate crossing required to transfer
If blocks are too long to have all stops at intersections	Midblock*
Major transit generators not served by stops at intersections	
Midblock pedestrian-crossing defined by refuge island and/or striping	
Transit center	Off-street
Major transit generator that cannot be served by on-street stop, or where ridership gain will far outweigh inconvenience to passengers already on-board	
*Midblock bus stops are generally less desirable than stops at intersections, however they must be considered when suitable nearside and farside options are unavailable.	

Stops are at intersections because of:

- minimized walking distance between destinations and bus stops;
- increased safety for pedestrians, operations, and general traffic; and
- increased accessibility for riders.

Placing stops farside of the intersection is preferred in most cases for signalized intersections because they result in:

- Fewer traffic delays and improved operator safety when the bus clears the intersection, increasing traffic flow and line of sight;
- Increased sight distances for pedestrians and drivers;
- Operations conflict reduction;
- Increased operations maneuverability;
- Prioritized signal treatments; and
- Minimized parking restrictions.

Considerations

- Every site will present a unique set of issues. The following is a checklist of the most important considerations:
- *Safety*
 - Waiting, boarding and alighting must be safe
 - Steer riders toward safe street crossings
 - Watch for other pedestrians
 - Consider impacts on other traffic
 - Provide adequate sight distance, i.e., provide visibility for bus driver and waiting riders
- *Travel time delays*
 - Farside allows signal treatments to work most effectively
 - Alternate placement nearside-farside if signals occur at every stop
- *Service quality tradeoffs – fewer stops mean:*
 - Faster and more efficient service
 - More potential for amenities at each stop
 - Longer walk distance to stops for some
- *Stops must be suitable for bus operations*
- *Impacts on traffic*
- *Accessible for all*
 - Slope – no more than 2% for level surfaces, 8% for ramps
 - If necessary, construct 5' x 8' concrete pad at stop
 - Check for curb ramps at intersection and on surrounding streets
 - Direct routes and comfortable, safe walking environment to stop
- *Ensure compatibility with adjacent properties*

- Stop Elements, Amenities, and Customer Information

Approach

Use elements that clearly define the bus stop for patrons, operators, pedestrians, cyclists, and motorists. Provide amenities that will invite ridership by making riders comfortable and confident in the service. Do this in locations and at a level that is appropriate to the ridership and budget. Place amenities and elements of stops in configurations that maximize:

1. Safety
2. Visibility
3. Comfort

Customer information is designed to:

Show the way – Provide easy identification of every bus stop. This is achieved through colors, shapes, and symbols that are consistent but applicable within the streetscape.

Provide basic service information – Provide basic route information on every bus stop sign that includes the route number, direction of travel, major stops along the way.

Provide expanded information at targeted stops – Use visual and tactile tools, provide more detailed schedule information and maps at targeted stops.

Tools

Bus stop elements:

Pole and bus stop sign – *Required*, identifies the bus stop. CAT bus stop signs are used at all district bus stops. At new or relocated stops, CAT signage is placed on dedicated CAT poles whenever possible.

Poles should be placed two and a half feet (2.5') from the curb with informational signs flag-mounted away from the street. Farside pole and sign placements should be a minimum of 50' clear of existing pedestrian crossings. Nearside pole and sign placements at signalized or controlled intersections should be setback 15' to 25' from pedestrian crossings. Additional allowances must be considered when posted speeds are above 30 mph. Bus stops placed at marked crossings that are not at controlled intersections must be placed in advance of the crossing (one foot (1-ft) per posted MPH recommended) when multiple lanes are present. Nearside pole and sign placements at uncontrolled intersections may be placed as close as one foot (1-ft) from an unmarked crossing. Pole placement must be carefully planned to ensure that all bus stop elements work as designed, that all bus operators know exactly where to stop, and that all patrons know exactly where to board. Proper placement and installation is critical to bus stop operation. Shapes and colors of CAT signs and poles will help identify the bus stop.

ADA landing pad – *Preferred*. Pursued at new and existing stops, stops with moderate or better ridership and stops with any lift activity; preferred at all bus stops.

CAT defines an ADA landing pad as a clear, level landing area a minimum of 5'x 8' (10' x 8' is ideal) located adjacent to the CAT bus stop sign. At new construction sites CAT requires ADA pads to be a minimum of 8' x 8'. Construction of ADA pads is pursued at locations where a connection to a pedestrian pathway is possible.

Rear landing pad – *Preferred*. In addition to an ADA accessible landing pad to access the front door of buses, CAT prefers to have an additional landing pad at the rear door. The rear door landing pad should be considered when more than eight (8) daily passenger alightings exist in addition to criteria that warrants an ADA landing pad.

Rear landing pads must be accompanied by a front door ADA landing area. This landing area should also be clear of obstacles and at least 4'x 6'. At new construction sites a rear landing pad should always be pursued, but is not required.

Bus zone – *When necessary*. At bus stops where accessibility improvements are planned, and parking is available, bus zones, no parking areas (NPAs) or other parking control options should be placed. CAT cannot guarantee bus stop accessibility unless the bus has a clear path to the curb. For additional information, please see Section III, Part E Roadway Treatments.

Bus stop amenities:

Shelter – *Optional*. CAT continues to use ridership figures as the primary criterion for determining shelter placement warrants. Yet several additional criteria are also considered when ridership figures do not support shelter placement.

- Preferred for stops with 50 or more boardings per weekday;
- Infrequent service – minimum of 35 daily boardings on routes where peak headways are greater than seventeen minutes;
- Lift usage – minimum of 15 weekday boardings and 4% lift usage;
- Proximity to senior housing and a minimum of 20 daily boardings;
- Shelters funded and maintained by others;
- Development of large new activity centers adjacent to transit where ridership is projected to meet criteria;
- Consolidated bus stops – combined ridership totals increase likelihood of shelter placement; and
- Other applicable circumstances warranting a shelter.

If a bus stop meets CAT's shelter criteria it may be considered for bus shelter placement. Meeting these criteria does not guarantee shelter installation. Existing site conditions and pedestrian infrastructure, public right-of-way availability, accessibility and safety issues, and other concerns must be reviewed and addressed before future bus shelter placements are confirmed.

Bus shelter placement and orientation should maintain the following layout guidelines:

- Five feet (5') of pedestrian passby, including clearance between poles, hydrants and other obstacles;
- ADA landing pad adjacent to sign and outside of shelter;
- Clear pathway from the ADA waiting area inside the shelter to the ADA landing pad; and
- Clear pathway from the rear door landing area to the pedestrian path.

A variety of bus shelter shapes and sizes are available to address site restrictions and opportunities, and ridership needs. Please see Table 2 for descriptions.

Shelter Type	Dimensions (in feet)	Location
A	13' EURO Advertising bus SHELTER with integrated gutter, drain and leaf catcher, wide roof option, clear acrylic ROOF PANELS, Back-to-back illuminated Advertising KIOSK, aluminum support POSTS, 3/8" glass walls, 88" extruded aluminum framed recycle slat bench with metal bench with anti-vagrant bars	Major Transfer Centre (Location) Location where routes travel inbound and outbound and passenger connect with majority of buses in the system. This would be our future Transit Centre
B	Solar Bus Shelter Lighting A specially manufactured, vandal resistant, flexible solar panel is attached to the roof of the shelter which harnesses the sun's energy throughout the day, this energy is stored by the long life AGM batteries. At dusk the innovative Energy Management System (EMS) releases the stored energy and uses it to power high intensity Light Emitting Diodes (LED's).	Location of shelter(s) where multiple routes connect and passengers can transfer to other routes
C	10' GDOT approved shelter	Location of Shelter(s) where a single route services
D	Relocated 'Sombrero Style' Shelters If applicable, Adopt-a-Shelter sponsored shelters	Location where a bench(es) is located. Wherever a new bench is installed, a tree will be planted.
E	Relocated 'Sombrero Style' Shelters If applicable, Adopt-a-Shelter sponsored shelters	Location consisting of a pole and signage

Seating – Optional. Since CAT has several seating options, bench placement can be considered at any stop where:

- Accessibility is provided;
- Placement does not compromise safety (it is too close to the street, causes a tripping hazard, etc.);
- Placement does not compromise accessibility (bench partially blocks the sidewalk, infringes on ADA facilities and/or requirements, or rear landing pad, etc.); and
- Bench placement advertising is allowed.

Benches can generally be sited like bus shelters; however, they should not be placed closer than three and half feet (3.5') from the curb or six feet (6') from the curb when a travel lane exists immediately adjacent to the curb. The same clearance requirements placed on shelters apply here. Benches should be oriented towards the street or the direction of the approaching bus. Table 3 describes current seating options.

Table 3. Seating Types

Seat Type	Length (in feet)	Criteria for Placement	Notes
Shelter Bench	5' 6"	Contained in Shelter Type A locations	Placed in CAT shelters.
Premium Bench	6	Shelter Types D and E 6' perforated metal bench with back and anti-vagrant bars-also available in 4' and 8' lengths	Often placed in business and retail districts where shelters are not appropriate.
Ad Bench	~6.0	Will be considered at any stop lacking amenities if in a safe location.	Placed for ad exposure or at CAT's request.

Trash Receptacle – *Optional.* Trash receptacles are only placed at sheltered bus stops. Factors such as high ridership, transfer locations, and places where the potential for accumulating trash is apparent, influence the decision to place cans. However, expansion of the program is limited due to maintenance liabilities and public misuse. Placement must not infringe upon the ADA pad or pedestrian pathway. It must not compromise direct access between the ADA waiting area and the ADA landing pad or access between either ADA area and the sidewalk.

Lighting – *Optional.* Currently, several options exist. The existing environment usually dictates which option to use. CAT pursues both overhead lighting oriented towards the bus stop boarding area and solar bus shelter lighting. The current goal is to provide one and a half to two feet (1.5' - 2') candles of light around the bus stop area.

On-street Customer information:

Customers want to know when their bus is coming, and if there are any delays or disruptions in service. They also want to be oriented to the system, with clearly marked, visible information available at shelters, stops, stations, and on/aboard vehicles, to confirm that they are at the right location to board the right vehicle, and on the right route to their destination(s).

Transit Tracker by Phone/PDA – *Required.* CAT's *Where's My Bus?* Transit Tracker uses satellite technology to track buses, providing customers real-time arrival information at all stops, by phone. Customers can call the CAT information line 912-233-5767 to get system and route updates 24 hours a day, 7 days a week.

Printed Information – *Optional.* Printed route and service information is provided at heavily used stops and transfer points. Additionally, CAT schedules are distributed at transit generators, community centers, and major employers.

Table 4. Customer Information Tools

Information Tools	Function	Where
Stop design consistency, unique shape and color of sign & pole	Identification	All stops

Bus stop sign	Basic service information and orientation	All stops
Information units	Schedule, route map	Stops with bus shelters or on CAT poles (at locations with high ridership, transfer points, transit centers, transit generators and in some cases to promote new service).
Transit Tracker	Automated bus arrival times	Currently by phone. Will be available at the future CAT transit facility.

What CAT wants to accomplish:

CAT places bus stop elements, amenities, and customer information to:

- Provide safe, level landing pads for front and rear doors (front door pad must be ADA compliant);
- Make waiting customers visible to the bus operator and vice versa;
- Minimize maneuvering difficulty for riders with wheelchairs and other ADA mobility devices;
- Make all components of the transit experience as comfortable and convenient as possible;
- Maintain clear and accessible through-path on sidewalk;
- Provide a clear and consistent on-street image;
- Ensure that CAT poles and signs are readily visible to patrons, pedestrians, bus operators, and motorists;
- Provide basic information to orient bus patrons; and
- Provide targeted information that enhances the riding experience.

Considerations

Every site will present a unique list of issues. The following is a checklist of the most important considerations:

For elements and amenities:

- *Safety*
 - Waiting, boarding and alighting must be safe
 - Provide adequate sight distance, i.e., provide visibility between bus driver and waiting riders
- *Visibility of passengers to operators, and vice versa*
- *Accessible for all*
 - Minimize slope
 - Minimum 5' x 8' ADA concrete pad at stop
- *Stops must be suitable for bus operations*
- *Ridership and lift usage*
- *Applicable land uses, such as hospitals and senior housing, can lower minimum criteria for amenities*
- *Clear sight lines for pedestrians and general traffic*
- *Ensure compatibility with adjacent properties*
- *Avoid private property when possible*
- *Consider possible partnerships with private landowners and businesses (e.g., awnings, Adopt-A-Stop, etc.) when needed*
- *Minimize conflict with trees and other nearby features*
- *Cost*
 - Initial capital and installation cost
 - Long-term maintenance cost
 - Replacement cost
- For customer information, also consider
 - *Patron usage*
 - *Transfer locations*
 - *Service frequency*
 - *Schedule reliability*
 - *Special needs*
 - *Stop location on route*

Table 5. Bus Stop Classification

Stop Type ↓	Use/Stop Type Designation Criteria	CAT Managed Bus Stop Features	Externally Managed Features
		Any Combination of Stated Features	
Level -1 (under-developed)	Poor, or lack of, supporting land uses; few or no boarding rides; closely spaced with another stop	No pavement; inadequate shoulder; visibility blocked; poor lighting; insufficient ADA clearances; undue exposure to weather/ traffic; shared pole; one sided visibility	No clear, safe pedestrian access; no logical, safe street crossing; unsafe topography; standing water; unpleasant site conditions
Level 0 (basic)	All stops meeting spacing/siting criteria	Pavement meets ADA clearances; bus stop sign on dedicated pole	Safe street crossing (corner, ADA ramps); sidewalk or safe shoulder access
Level 1	High use stops; significant employer program participant; apartments; institutions; hospitals; shopping centers; major business; minor park & ride lots (shared use); stops with significant usage by riders who are disabled or elderly	Preceding features plus: Standard (B or C) shelter (larger if justified); lighting (utility pole or shelter); free standing bench; pad for rear door, when physically possible	Preceding features plus: sidewalk connections; curb extensions; crosswalks
Level 2	Major stops; transit station; major park & ride lots; all transfer points; stops with active lift or ramp usage	Preceding features plus: Shelter Type A; trash receptacle; bike rack; public telephone (dial out only); free standing bench; art work	Preceding features plus: art enhancements (CAT or community); community bulletin board; newspaper vending bins

D. Bus Stop Layouts and Design

In the past, bus stops were designed on a stop-by-stop basis leading to a wide variety of layouts and an inconsistent message to CAT patrons and operators. Successful bus stops are designed to link to other transportation modes, existing or planned. Accommodating sidewalk systems is critical to assuring the safe and accessible transport of CAT patrons between the origin/destination and the bus stop.

Stop elements for consideration:

CAT pole and bus stop sign – *Required*. The pole/sign is the cornerstone of all bus stops. Its placement must be considered carefully.

Bus stop landing area – An ADA landing area is required by federal and state law for all newly constructed stops. Optimally, CAT will provide a safe landing area for all bus doors. The ADA landing area must be placed adjacent to the bus stop sign whenever possible.

Bus zone or no parking area – *Required* where parking might otherwise block the bus's ability to pull to the curb. The bus must get to the curb to provide accessible entry. Eliminating parking at the stop accomplishes that goal. Curb extensions and other expensive solutions are discussed in Section III, Part E Roadway Treatments.

Bus shelter and shelter pad – *Optional*. Shelter from the elements makes the transit experience more pleasant. The shelter's placement and its orientation to other elements are critical.

Trash Receptacle – *Optional*. Placement is often an afterthought. When placement is planned, trash receptacles should be incorporated into the bus stop design.

Additional Stop elements for consideration:

- Curb ramps – The following layouts assume curb ramps are present. If they are missing, CAT or the local jurisdiction will install at least one when constructing other improvements;
- Lights and other amenities – Great enhancements, but not covered in these diagrams. These are optional elements;
- Bus zone and no parking area signage – Every jurisdiction does it differently. One to four (1-4) poles are possible;
- Service information – Important, but not critical to stop layout because the information is usually attached to a bus shelter or bus stop pole; and
- Trees, fire hydrants, mailboxes, driveways, power poles, etc. – Continue to be accommodated on a stop-by-stop basis.

Standard clearance requirements at *all* stops:

- Sidewalk clearance – Maintain minimum five feet (5') of sidewalk clearance;
- Accessible pathway – Minimum 5-foot (5') wide path between shelter and any utility objects;
- Road clearance – Minimum two-foot (2') clearance between shelter and edge of curb (extra care must be taken because newer vehicles have longer tail-swing);
- Building clearance – Minimum 12" from buildings, fences, and other structures to allow room for maintenance; and
- ADA landing area – Minimum 5' x 8' "clear and level surface" at curb for lift or ramp operation.

Requirements for *all* stops with shelters:

- ADA waiting area in shelters – Minimum two and a half feet to four feet (2.5' – 4') space must be kept clear for mandatory waiting area to accommodate mobility devices;
- Visibility – Shelters must not block motorists' or pedestrians' lines of sight ; and
- Relation to bus stop – Shelter should be within a compact space, close to landing area for access to bus (generally within 25").

E. Roadway Treatments

Approach

Change management or structure of roadway to improve transit efficiency and accessibility. Focus on locations or corridors with the highest delays and/or those that create the most variability in on-time performance. Consider ridership and lift usage at stops.

Tools

1. Bus zones or other parking restrictions

A bus stop is not considered accessible unless the bus can reach the curb. Bus zones, no parking areas (NPAs), and other parking restrictions are often necessary to assure access. Bus zones or NPAs are required when:

- It is determined that a stop must be accessible;
- Parking is allowed at the stop;
- There is not justification for a curb extension, stop move or stop deletion; and
- Buses lay over.

Nearside (NS) Bus Zones - preferred length is 90' measured from the bus stop sign. In extreme circumstances NS bus zones can be shortened to 60', however buses may not be able to clear the travel lane. At signalized intersections the bus should stop a minimum of 15' from the pedestrian crossing so that approaching drivers will be able to see pedestrians using the crosswalk. The area between crosswalk and bus stop must also prohibit parking.

Farside (FS) Bus Zones – preferred length is 90' measured from the crosswalk. In all instances the rear of the bus must clear the crosswalk. Farside zones can be shortened to 60', however buses may not be able to clear the travel lane. Bus stops with multiple routes require longer zones. When 2 buses must be accommodated frequently zones should be 100' long. Each additional bus requires another 50' in length.

Midblock (AT or OP) Bus Zones – preferred length is 100' measured from the bus stop sign. A minimum length for midblock zones is determined on a site-by-site basis. These zones are infrequently used, but are found on "super-blocks" often opposite of "T" intersections in high-density areas and along mid- and lower density area roadways with few intersections.

Bus zones must be clearly marked – since parking control is provided by jurisdictions, so is the signage and marking requirements, resulting in several variations. Generally bus zones are marked by a front zone sign/pole, and a rear zone sign/pole. At farside zones, bus stop markers are often used to indicate where the bus should stop (to allow enough space to pullout). An NPA sign/pole may be added at the front of a bus zone to clearly define ambiguous frontage (i.e., between a zone and a driveway, or a zone and a fire hydrant). The City of Savannah applies yellow tape to the curb tops in bus zones to further define the space.

2. Curb extensions incorporating transit stops

Curb extensions are a popular roadway treatment often used in streetscape improvement plans. For best effect, extensions are placed along a corridor in series of two (2) or four (4) to an intersection. Under this scenario the extensions improve pedestrian connections by shortening street crossing distances, and enhancing sight angles for pedestrians and motorists.

For transit, curb extensions have several benefits, such as:

- Providing buses with access to the curb from the travel lane without deviation (no pulling in or merging) thereby reducing dwell time;
- Reducing nearside stop turning conflicts on two-lane roads by blocking through traffic;
- Providing patron waiting and boarding areas separate from pedestrian movements on sidewalks;
- Providing room for stop amenities or other streetscape features; and
- Visually designate a street as a pedestrian friendly transit corridor.

Designing/building curb extensions that work well with transit is not an easy task. Designers must account for competing cross slopes of the existing roadway and sidewalks, drainage and relocating sewer grates. As a result, designers are challenged to provide a landing area that allows low floor bus ramps to deploy at an ADA acceptable slope.

Following are the general requirements for transit stop curb extensions:

- Transit curb extensions should be paired with a pedestrian or transit curb extension across the travel street;
- Curb extensions must be clearly marked and designated to improve visibility to motorists;
- Extensions should provide a minimum 32' of curb line that is free of ramps, wings, and curb returns. At farside extensions, the bus must be clear of the crosswalk, requiring a minimum of 42' of clear curb line;
- A six by eight foot (6' x 8') clear space must be defined at front and rear door locations;
- Bus shelters, poles, trees, benches, trash receptacles, and other amenities must be placed a minimum of three and a half feet (3.5') clear of the curb face;
- The placement of hydrants, bicycle racks, artwork, drinking fountains, non transit signs and poles, and other street furniture must be carefully considered and coordinated with CAT. There is significant potential for conflict with transit operations when too many items are placed on an extension;
- The incorporation of storm water planters in curb extensions is a relatively new phenomenon that is best suited for non-transit extensions. However, if requested, CAT would work with applicable jurisdictions to incorporate storm water planters in curb extensions, following best management practices; and
- Placement of curb extensions, whether nearside, farside, at signalized or non-signalized intersections must be made on a case-by-case basis. Generally, nearside curb extensions are preferred at non-signalized intersections.

3. Bus pullouts and bus pads

A bus pullout's primary function is to move buses out of the travel lanes where they might impede traffic flow. Although there are scenarios where this is a valuable function, CAT does not actively pursue the placement of bus pullouts at regular bus stops because it reduces the efficiency of transit service. CAT will consider accepting pullouts:

- At bus layovers (when buses park for several minutes); and
- At selected bus stops on roads with at least two (2) of the following:
 - Posted speed limit at or above 40 mph;
 - Ridership above 35 daily boardings (or six (6) daily lift boardings); and
 - Potential safety issues.

Concrete bus pads are often incorporated in pullout designs but are also used at curbside bus stops. Bus pads are considered on a case-by-case basis but are generally found at stops with frequent service, significant ridership, or where heavy bus braking and acceleration is necessary.

4. "Except Bus" signage, queue jump signals and bus only lanes

These treatments should be pursued on major truck routes, cross-town routes or any high frequency bus routes with significant traffic delays during peak periods.

- "Except Bus" signage is the most common treatment where a nearside bus stop at a signalized intersection uses a right turn pocket.;
- Queue jump signals are used in conjunction with an "except bus" queue jump lane (especially when there is no farside lane) to provide safe merging into traffic lane; and
- Bus only lanes provide exclusive right-of-way to bypass congestion, but are only used when adequate right-of-way is available.

Preferences

Each treatment has differing effectiveness based on the individual circumstances. Detailed analysis of such issues as traffic volume, ridership, safety, right-of-way, and delay to transit are required.

Considerations

Every site will present a unique list of issues. The following serves as a checklist for important considerations:

- *Pedestrian safety*
- *Traffic safety*
- *Transit operation safety*
- *Schedule reliability*
- *Transit travel time and speeds*
- *Impact on traffic*
- *Costs/Benefits*

F. Bus Stop Access

It is essential that bus riders have safe access to their bus stop. Walking on narrow roadway shoulders, through mud or puddles, or through ditches is unacceptable to most bus riders and is often unsafe. CAT does not hold responsibility for construction or maintenance of sidewalks or curb ramps, but CAT can leverage their construction through partnerships with jurisdictions

and property owners or solicitation of regional funding for their construction. The pedestrian network is not only essential for transit access, but benefits the community and the region by encouraging walking for local travel.

CAT must work with Chatham County, City of Savannah, and local jurisdictions to identify deficiencies in the pedestrian network and assigning priorities for a pedestrian network development program. Some key considerations would include:

- Direct, paved, ADA compliant walk connections between any moderate-to-dense neighborhood or business center and transit stops. These should be on at least one side of the street;
- Pedestrian connections should be continuous, with safely designed crosswalks to connect across roadways;
- Designated and protected pedestrian crosswalks across arterial streets, no further apart than three (3) blocks;
- Limited curb cuts;
- Sidewalk networks should be well lit, including driveways and streets, particularly at street crossings;
- ADA compliant curb ramps;
- Sidewalks in good condition and free of trip hazards, preferably with a planted buffer (minimum of two feet (2')) or furnishing zone between the sidewalk and roadway; and
- Sidewalks and bus stops should be coordinated to provide ADA clearances and amenities of mutual benefit to both pedestrians and bus riders.

CAT will support efforts to secure funding for pedestrian network development including Federal programs and their local allocation, designation of improvement districts or assignment of local Traffic Impact Fees (TIF) or other local tax mechanisms when and where permitted.

IV. Public Involvement and Input

A. Citizen Involvement

Bus stops as public spaces are as much a part of the community as streets, pathways, parks and plazas. CAT encourages communities and citizens to recognize their value and to build a sense of ownership.

Adopt-A-Shelter – A business, church, community organization or similar could agree to sponsor a shelter and/or its amenities. If this is an avenue that CAT explores, such shelters would be limited in their locations and would be exempt in the Historic District and along certain highways.

B. Public Notification of Impending Changes

Before stops or shelters are removed the affected stops should be posted with an informational flier for a minimum of two (2) weeks to alert customers and allow for rider comment. This does not apply if shelters or stops must be removed immediately due to safety concerns.

Before a stop is permanently added, letters are sent to adjacent property owners and occupants notifying them of the impending change as soon as possible, preferably at least two weeks in advance. While CAT has the jurisdiction to place stops in the public-right-of-way, we invite property owner input prior to changes.

C. Common Public Complaints and Responses

Stop Move / Removal

Most CAT stops are located legally within the public-right-of-way on public property. As a public transit agency CAT's job is to serve everyone and provide the best service possible. The placement, movement, or removal of a bus stop is an extremely complex and costly process that involves a variety of safety and technical considerations. It requires a great deal of input and cooperation from several internal and external stakeholders. It is not a decision that is made lightly.

CAT cannot move a bus stop unless there is a major safety concern, or there is an opportunity to improve the safety, accessibility, or amenities at a new location that has been evaluated and confirmed by our planners. In response to nuisance issues like littering or rude behavior, we try to work with adjacent property owners to reduce the issues they're facing. CAT's goal is to solve challenges, not shift them between locations.

Trash Receptacle Requests

Trash receptacles shall only be placed at bus stops with existing shelters. However, if an adjacent business owner is willing to adopt the can (and empty it weekly, or as needed) we may consider a partnership.

If the stop does have a shelter, CAT will review the prospect of adding a trash receptacle with the available budget. Therefore, CAT's primary focus will be to forge partnerships with the community to reduce litter at or around bus stop locations. Another compelling factor for installing trash receptacles at bus stop shelters is for those stops along routes with consistently high ridership

CAT maintains trash receptacles on all of our buses to encourage proper waste disposal for customers during boarding or disembarking in an effort to keep our buses and our communities clean. Further, CAT shelters are cleaned weekly, including removing waste from receptacles.

At bus stops without shelters, trash receptacle placements are pursued only when an adjacent business is able to maintain the trash receptacle through the CAT Adopt-A-Stop program.

Amenity Requests

Refer to amenity placement guidelines.

D. Development Review

1. Background

CAT, or their representative, should be conducting development review on transit-adjacent development. This review process has fostered strong relationships with local jurisdictions, while helping to facilitate better designs for new development. The review process enables CAT to be involved early enough in the process to influence the land use and infrastructure designs proposed. Including transit improvements as part of new development mitigates transportation impacts and allows the cost of these amenities to be shared by developers. In the end, these partnerships stretch resources and create a more comprehensive transit system and transportation network.

2. Improving stop placement

With an emphasis on bus stop improvement and support, CAT will primarily review development projects located directly on transit routes. For significant projects, stop spacing, location and usage along the adjacent route segment are analyzed to determine whether stop relocation or adjustment would facilitate: a) better access to transit, b) patron and pedestrian safety, c) transit operational efficiency, or d) traffic safety. If appropriate, modifications to roadway and frontage design, signalization, pedestrian pathways, and street or parking lot crossings will be considered. For Major Development projects, CAT shall be involved in the review process and the will require transit sign off at stops along the development projects area of influence.

3. Private sector purchasing amenities, adopting stops

Depending on the size and nature of the development or development action, CAT may request improvements to adjacent bus stops. If frontage improvements are planned, CAT will request the addition of an ADA landing pad and a rear door-landing pad at stops that lack them. If ridership potential exists, CAT may request that a developer provide a bus shelter, a bench or other amenities as warranted. In some instances, developers may want to provide a bus shelter where only limited ridership is projected (e.g., to satisfy a condition of approval or to receive an exemption from certain approval conditions). In this scenario, CAT asks developers to take an active role in caring for the stop by adopting the shelter, sponsoring a trash receptacle, or agreeing to regularly clean the stop.

4. Private sector designed transit stops and plazas

Some jurisdictions are asking developers and their architects to incorporate transit stops into their projects' designs. Building and frontage themes are replicated at the bus stop, creating transit plazas that visually relate to the project. Awnings, columns, pedestals, shelters, benches and public art provided by developers are not standard CAT issue, therefore, their care becomes the individual property owner's responsibility. However, CAT would provide and maintain signage and customer information.

E. Public Partnerships

1. **CAT partners to improve other jurisdictions projects**

CAT Project Planning staff is available to provide support for jurisdictional planning efforts that have transportation elements related to transit. Examples include: long range transportation plans, corridor plans; streetscape, traffic calming, or street right-of-way improvement plans and transportation plan updates. These are a just a few examples of planning and implementation efforts that can benefit from CAT's input. Jurisdictional plans that recognize, coordinate with, or incorporate CAT service and capital improvement plans will likely result in better transportation and transit outcomes.

2. **Jurisdictions partner with CAT to improve transit projects**

CAT is a necessary partner in both the formulation and execution of these plans. Jurisdictions and CAT must work together to define transit priority corridors, traffic management tools and streetscape improvements that will encourage walking, biking, and taking transit and reduce people's reliance on the single-occupant vehicle. This partnership is also critical to encourage land uses along transit corridors (Transit Oriented Development or TOD) that take advantage of the public investment in transit services. Project Planning also invites key jurisdictional staff to be part of CAT project teams. Their support and input is critical to the success of CAT projects as well. The cooperation amongst jurisdictional partners influence key planning decisions, facilitates key design elements, promotes simplified permitting, and improves interagency communication.

3. **Improving coordination through IGAs and MOUs**

Intergovernmental Agreements (IGA) and Memorandums of Understanding (MOU) are documents that recognize project and program partnerships. CAT, Chatham County, and the City of Savannah shall develop these type documents in a support of improving CAT's ability to provide accessibility and comfort to neighborhood bus stops. CAT will pursue such agreements with its regional partners to make better and more efficient use of available funding, and to provide timely, coordinated projects.

V. Bus Stop and Shelter Amenity Implementation

Next Steps

Now that CAT has developed standards for our Passenger Amenities Guidelines, CAT is developing a strategic plan for implementation. A strategic implementation plan will ensure that CAT is adhering to the goals established in the Passenger Amenities Guidelines to provide our riders with a safe, reliable, and comfortable transit system.

Implementation has three basic time components:

- Immediate - within the next two (2) years;
- Short-Term – within the next two (2) to five (5) years; and
- Long-term – five (5) and beyond.

It should be noted that transit is not a stationary service and must adapt to the environment in which we operate. This requires not only that our Passenger Amenities Guidelines be reviewed and updated regularly, but that our implementation strategies are reviewed regularly and are in accord with the overall Vision of CAT.

Immediate

In order to provide passenger amenities that are modern and responsive to CAT riders mobility needs, the following strategies need to be implemented within the next 12 months:

- Determine the locations for the next 1-50 shelters;
- Determine the shelter type and applicable amenities for the next 1-50 shelters (See Figure 1);
- Install the next 1-50 shelters;
- Determine the locations for the next 51-100 shelters;
- Determine the shelter type and applicable amenities for the next 51-100 shelters (See Figure 1);
- Relocate existing 'Sombrero-style' shelters and their amenities to existing low-density and rural bus stop locations (See Figure 2)
- Relocate existing shelters and their amenities into the Central Business District (CBD) for use at existing stops without shelters (See Figure 3);
- Refurbish Historic Orange Bus Stop signs with kiosk (see Figure 4); and
- Develop Time Tables for Major Transit Stops.

Short Term

In order to maintain the standards established in the immediate phase of implementation, CAT must evaluate bus stops and passenger amenities to ensure that our riders needs are met by:

- Install the next 51-100 shelters;
- Determine the locations for the 101-150 shelters;

- Install the next 101-150 shelters;
- Install information kiosks downtown (see Figure 5);
- Review and update Passenger Amenities Guidelines;
- Review and update Bus Stop and Shelter Maintenance Program; and
- Review, update, and potentially expand Major Transit Stop Time Tables.

Long Term

In order to sustain the momentum and maintain our commitment to enhancing the mobility experience for our riders, CAT shall:

- Review and update strategic implantation plan and policies;
- Review and update Passenger Amenities Guidelines;
- Review and update Bus Stop and Shelter Maintenance Program; and
- Review, update, and potentially expand Major Transit Stop Time Tables.

Now that CAT has developed a Passenger Amenities Guidelines policy, and a Bus Stop and Shelter Maintenance Program, as well as the strategic implantation plan and review process, CAT is positioned to remain responsive to our riders and to our community.

Figure 1 – CAT Transit Shelter



Amenities:

- Distinctive profile and rooflines for a modern look, reflective of Intermodal Transit Facility
- Integrated roof gutter option
- Models available with or without ad displays
- Available in custom herringbone or standard perforated metal walls
- Unique custom glass treatments available
- Available in lengths from 8' to 24'
- Solar lighting and low draw LED illumination options

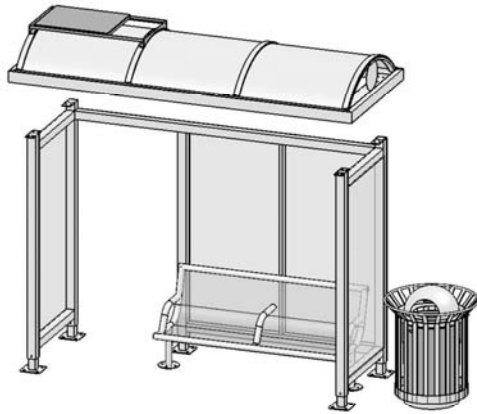
Figure 2 – ‘Sombrero-style’ Shelter



Standard Amenities:

- Bus Stop Sign
- Equipped with awning and seating
- Trash Receptacle

Figure 3 – CAT Solar Shelter



Standard Amenities:

- Equipped with Solar Lighting
- 5'6" Bench
- 20 Gallon Trash Receptacle
- As new shelters come online, these shelters will be relocated into the Historic District

Figure 4 – Historic Bus Stop Kiosk



Historic Orange Bus Stop Signs will be reconfigured with rotating transit tubes that will display route information.

Figure 5 – Information Kiosk



- Information kiosks will be displayed throughout downtown