Charleston Area Regional Transportation Authority

CARTA BOARD MEETING

October 20, 2021
1:00 PM

Barrett Lawrimore Conference Room
5790 Casper Padgett Way
North Charleston, SC 29406

AGENDA

1. Call to Order
2. Consideration of Board Minutes –September 15, 2021 Meeting
3. Financial Status Report – Robin Mitchum
4. Transit Design Guidelines - Presentation – Request for Approval – Amy Pettine, Nelson/Nygaard
5. Isle of Palms Beach Reach Shuttle - Discussion
6. Bus Wrap Advertising – Request for Approval
7. Armored Transport Services – Request for Approval
8. Project Updates – Ron Mitchum/Staff
    a) Service Planning Initiatives
    b) Electric Bus Master Plan
    c) CARTA On Demand
    d) Shelter Improvement Program
    e) Shipwatch Square Transit Center
    f) Solar Lighting
    g) Digital Signage
    h) Vanpool Program
    i) Lowcountry Rapid Transit
9. Ridership Report – Jon Dodson
10. Executive Director's Report – Ron Mitchum
11. Other Business, If Any
12. Public Comments, If Any
13. Board Comments, If Any

Next scheduled meeting will be held on November 17, 2021

CHARLESTON AREA REGIONAL TRANSPORTATION AUTHORITY (CARTA)
VIRTUAL BOARD OF DIRECTORS MEETING
September 15, 2021
Meeting Notes

The Charleston Area Regional Transportation Authority (CARTA) Board of Directors held a virtual Board of Directors meeting at 1:00 p.m. on Wednesday, September 15, 2021.

MEMBERSHIP: Mary Beth Berry; Ron Brinson; Mike Brown; Brenda Corley; Dwayne Green; Alfred Harrison; Will Haynie; John Labriola; James Lewis; Pat O'Neil; Teddie Pryor; Christie Rainwater; Dickie Schweers; Michael Seekings; Keith Summey; John Tecklenburg; Jimmy Ward; Robert Wehrman
MEMBERSHIP PRESENT: Dwayne Green; Will Haynie; James Lewis; Pat O'Neil; Michael Seekings; Robert Wehrman
PROXIES: Lynn Christian for Alfred Harrison; Jerry Lahm for Teddie Pryor; Kristen Wurster for Dickie Schweers; Robbie Somerville for John Tecklenburg; Ray Anderson for Keith Summey; Stephanie Tillerson for John Labriola
STAFF PRESENT: Ron Mitchum; Andrea Kozloski; Robin Mitchum; Jeff Burns; Sharon Hollis; Jon Dodson; John Lambert; Michelle Emerson; Daniel Brock; Kim Coleman
OTHERS PRESENT: David Bonner (Transdev); Jason Woznac (Transdev); Karen Campbell (Transdev); Jeff Webster (Rawle-Murdy Associates); Rachel Angelos (Rawle-Murdy Associates); Daniel Monroe (Rawle-Murdy Associates); Robert Flagler (Rawle-Murdy Associates); Scott Donahue (SDCOT); Doug Frate (SCDOT); Charles Drayton (City of North Charleston); Steve Dudash (Thomas & Hutton); Savannah Brennan (Charleston Moves); William Hamilton (Best Friends of Lowcountry Transit); Rose Stump (CAJM); Mary Neale Berkaw (CAJM); LuAnn Rosenzweig (CAJM); Arthur McFarland (Attorney); Cole Brame; Anne Jonas; Additional Interested Parties participated via virtual/conference call.

1. **Call to Order**
   Chairman Seekings called the virtual CARTA Board of Directors Meeting to order at 1:03 p.m. followed by a moment of silence and quorum determination.

2. **Consideration of Board Minutes: June 16, 2021 Meeting**

   Mr. Lewis made a motion to approve the June 16, 2021 Meeting Minutes as presented.
   Mr. Green seconded the motion. The motion was unanimously approved.

3. **Financial Status Report – Robin Mitchum**
   Robin Mitchum, Deputy Director of Finance and Administration, presented the financial status report for the period ending August 31, 2021. Ms. Mitchum noted that the agency remains in good shape and ended the month with an excess of revenues of $112,546. She reviewed the following activities for FY21 thus far:

   Revenues:
   - Farebox is the fares collected on the revenue vehicles.
   - HOP Lot Parking Fees are the parking fees received at the HOP lot.
   - Armad Hoffler Properties is a contract service for additional HOP route access for their residents.
   - Local contributions are funds received from local organizations for shelter construction.
   - The Federal revenue includes operating for the year-to-date. Federal revenue is recorded as eligible expenditures are incurred.
   - State Mass Transit Funds are the funds available and expended as match to the Federal 5307 operating funds.
   - Interest is interest received from the SC Department of Revenue. CARTA submits for reimbursement of the SC Fuel Excise Tax each month. SCDOR periodically pays interest earned on the funds they have held in the reimbursement process.
   - Insurance proceeds are a result of accidents.
   - Sale of Assets is the proceeds from the sale of two NABI buses, five 1996 New Flyer buses and one 1997 New Flyer bus.

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Expenditures:

- Staff Salaries & Benefits include the cost of retiree insurance.
- Supplies include office and facility maintenance supplies.
- Printing includes cost of printing route maps, brochures and passes.
- Automotive costs include the maintenance on the administrative vehicles and mileage reimbursements.
- Postage is postage meter refills used to mail passes.
- Dues/Memberships is CARTA's membership with Transportation Association of South Carolina (TASC).
- Office Equipment Rental includes the quarterly postage meter rental fee, the cost of the portable toilet rental for the HOP lot and the monthly battery lease for the electric buses.
- Office Equipment Maintenance (OEM) includes the FY21 portion of the Swiftly Transit Time & Insights, Cradlepoint NetCloud Essentials for mobile routers and Zscaler internet security renewal, in addition to other IT support.
- Rent includes the Ashley Phosphate Park & Ride lot, Dorchester Village Shopping Center Park & Ride lot, Leeds Avenue lot lease from SCE&G, SC Works Trident lease space and document storage.
- Communications is the cost of phone, internet and radio services at the facilities and on the buses.
- Utilities include electric and water at the SuperStop, Melnick Park & Ride, the Radio Shop at Leeds Avenue and the charging stations at Leeds Avenue.
- Custodial Services is the cost of janitorial services at the Melnick Park & Ride location and the SuperStop bus depot.
- Pilot Ride Program is customer transportation cost for same-day service through independent rideshare.
- Other Professional Services include pest control services and UST inspection services.
- Shared Contract Services (IGA & Management) is the extensive services BCDCOG provides to CARTA.
- Money Transport is the cost of the armored guard service, Brinks, to pick up and transport cash deposits to the bank.
- Security Services is contracted security service provided at the SuperStop by the City of North Charleston Police Department.
- Electric Bus Master Plan is the project to develop the necessary planning documents to transition CARTA's diesel bus fleet to all-electric buses.
- Vehicle Maintenance is the cost to maintain the fleet.
- Facility Repair & Maintenance is the cost to maintain the SuperStop facility.
- Operating Fees & Licenses include credit card transaction fees, storm water fees, solid waste user fees and vehicle title and registration fees.
- Insurance includes the cost of liability insurance provided by the Insurance Reserve Fund. The amount will increase and decrease as we add and remove items from the policy throughout the fiscal year but this is the bulk of the insurance expenditure for FY21.
- Interest is the interest accrued on the Melnick Park & Ride Loan.
- Non-Capitalized Assets include the purchase of additional driver and side shields on the buses, radio equipment, cameras, bike racks and security equipment.

Capital Expenditures:

- Rolling Stock is the purchase of two Alexander Dennis Enviro 200 buses and three Proterra Electric buses.
- Bus Shelter Construction/Bench is the purchase of shelters.
- Security/Cameras & Equipment is the purchase of cameras at facilities and on buses.
- Capital includes the purchase of a fork lift and digital signage for shelters and bus stops.
- ITS System is the purchase of the Syncromatics system.

Ms. Mitchum reviewed the HOP expenditures. As of August 31, 2021, total expenditures for the HOP program for FY21 is $243,043. The Board of Directors received the Financial Status Report and HOP Expenditures Report as information.

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4. **FY22 Budget – Request for Approval – Robin Mitchum**

Ms. Mitchum presented the FY22 Budget. She noted that the final adoption of the FY22 Budget was approved by all member governments. Ms. Mitchum stated that the budget will continue to be monitored to ensure that revenues and expenditures remain aligned and that revisions will be recommended as necessary. She addressed questions and comments. Chairman Seekings commended Mr. Mitchum and staff on the budget approval procedures, especially during these challenging times.

Mr. Lewis made a motion to approve the FY22 Budget as presented.
Mr. Green seconded the motion. The motion was unanimously approved

5. **Electrical Vehicle Infrastructure Construction RFP – Request for Approval**

Ron Mitchum, Executive Director, discussed the Electrical Bus Charging Infrastructure. He noted that a Request for Proposal was issued seeking qualified and licensed design-build firms for the development of detailed plans and construction for electric bus charging infrastructure at the CARTA Operations and Maintenance facility located on Leeds Avenue. Mr. Mitchum stated that one proposal was received from Proterra for the amount of $2,259,792. He explained that Proterra meets all of the requirements of the RFP and staff recommends that a contract be awarded to Proterra. Mr. Mitchum addressed questions and comments.

Mr. Lewis made a motion to approve the Electrical Vehicle Infrastructure Construction RPF as presented.
Mr. Green seconded the motion. The motion was unanimously approved.

6. **Leeds Avenue Facility Parking Expansion RFP – Request for Approval**

Mr. Mitchum discussed the Invitation for Bid seeking qualified construction firms for the construction of a parking lot located at the CARTA Operations and Maintenance facility. He noted that one proposal was received from Gulf Stream Construction Company, Inc. The base bid amount is $597,566 with a 10% contingency totaling $657,322. Mr. Mitchum stated that staff recommends that a contract be awarded to Gulf Stream Construction Company, Inc. He addressed questions and comments.

Mr. Lewis made a motion to approve the Leeds Avenue Facility Parking Expansion RFP as presented.
Mayor Haynie seconded the motion. The motion was unanimously approved.

7. **Discount Fare Policy – Discussion**

Mr. Mitchum discussed the Discount Fare Policy. He explained the Bulk Pass Sales Discount Schedule. Mr. Mitchum noted that CARTA may only sell fare media defined as tickets (Low Income and Tel-A-Ride tickets) to individuals, non-profit agencies and governmental agencies. He explained that in order to purchase Low Income or Tel-A-Ride tickets, non-profit agencies will need to provide CARTA with a copy of their 501(c)3 Certification. Governmental agencies will need to provide a letter on their respective letterhead stating that they are a governmental agency. Mr. Mitchum stated that CARTA is receiving requests for discounted fares from other non-profits that are not 501(c)3 organizations (such as Churches and other agencies who provide services to the homeless and low-income individuals). As a result, staff will conduct more research in order to find out if there is a need to modify the policy in order to provide other non-profit organizations that are not 501(c)3 agencies with discounted fares. Mr. Mitchum addressed questions and comments. The Board of Directors received the Discount Fare Policy as information and Chairman Seekings encouraged further research.

8. **Route 32 Service Change – Request for Approval**

Jon Dodson, Senior Transit Planner, discussed the Route 32-Northbridge service change recommendation. He explained that this request will allow bicycles on the buses between stops on either end of the bridge at no cost. In addition, it will allow passengers to ride for free between either side of the Northbridge with or without a bicycle. Mr.

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Dodson discussed the service changes in detail, stating that the proposed service changes would double the frequency on Route 32 Monday through Sunday with service occurring every 30 minutes Monday through Saturday and every hour on Sunday. He noted that staff requests Board approval of the recommended changes. Mr. Dodson addressed questions and comments. Chairman Seekings commended Mr. Mitchum and staff for making sure that public safety remains a high priority.

Mr. Green made a motion to approve the Route 32 Service Change as presented.
Ms. Wurster seconded the motion. The motion was unanimously approved.

9. Second Chance Bike Partnership – Request for Approval

Mr. Mitchum presented the Second Chance Bike Partnership. He explained that CARTA received a request from Second Chance Bikes to donate bicycles that have been abandoned on the bus and have expired the time limitation on the Lost & Found Policy. Mr. Mitchum noted that Second Chance Bikes is a non-profit organization that collects, repairs and distributes used bicycles to people who need affordable, reliable transportation. Their bicycles help people to obtain better employment opportunities, physical and mental health care, nutritious food and healthy recreation. In addition, Second Chance Bikes is requesting discounted bus passes to distribute to their free bike recipients so they have a way to pick up their bike. Second Chance Bikes is located in the Old Navy Base is and accessible via Route 104. Mr. Mitchum stated that staff requests approval of a partnership with Second Chance Bikes. He addressed questions and comments.

Mayor O'Neil made a motion to approve the Second Chance Bikes Partnership as presented.
Ms. Wurster seconded the motion. The motion was unanimously approved.

10. Project Updates – Ron Mitchum/Staff

Mr. Mitchum noted that a summary was distributed in the Board packet in advance of the meeting on the following projects: Stop/Shelter Design Guidelines; Service Planning Initiatives; Electric Bus Master Plan; CARTA OnDemand; Shelter Improvement Program; Shipwatch Square Transit Center; Solar Lighting; Digital Signage; VanPool Program; and Lowcountry Rapid Transit. He stated that if anyone has any questions regarding the project updates, to please contact him or staff members for further information. Sharon Hollis, Principal Planner, discussed the LCRT project in detail. She noted that 30% of design submittals, project scope, schedule and budget are being reviewed by the FTA Project Management Oversight Consultant (PMOC), which was assigned at the end of May. A Value Engineering Study was conducted and a risk workshop was held with the PMOC. She stated that key stakeholder coordination discussions are being finalized and monthly FTA coordination meetings are being held with the FTA PMOC. Ms. Hollis noted that the NEPA Documented Categorical Exclusion was approved by the FTA in July and a new maintenance facility/storage yard near the fairgrounds for LCRT buses has been included in the project. She updated the Board on the Transit Signal Prioritization project and the TOD Study. Ms. Hollis stated that stakeholder and neighborhood meetings are on-going and that Morgan Grimes, LCRT's Communication Specialist, has been visiting businesses along the corridor and reaching out to neighborhoods and community organizations. She has had direct communications with over 600 businesses and community members along the corridor and that number continues to grow. Ms. Grimes also held office hours throughout the month and will continue to do so this Fall. Mr. Mitchum and Ms. Hollis addressed questions and comments. The Board of Directors received the Project Updates as information.

11. Ridership Report – Jon Dodson

Mr. Dodson presented the Ridership Report as of August 2021. He stated that ridership from July 2021 to August 2021 is up 5%. Overall ridership comparing August 2020 to August 2021 increased by 31%. Overall ridership comparing August 2019 to August 2021 decreased by 41%. He noted that DASH ridership comparing August 2020 to August 2021 increased 128%. DASH ridership comparing August 2019 to August 2021 decreased 43%. Express ridership comparing August 2020 to August 2021 increased 68%. Express ridership comparing August 2019 to August 2021 decreased 52%.

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Mr. Dodson noted that the Route 203-MUSC shuttle had the highest riders per hour in the system at 24. Additionally, Routes 211-Meeting/King (20), 10-Rivers (13.3), 20-King (13.2) and 32-Northbridge (12.5) had the next highest riders per hour. Mr. Dodson addressed questions and comments. The Board of Directors received the Ridership Report as information.

12. Executive Director's Report – Ron Mitchum

Mr. Mitchum stated that the $1.2 trillion Infrastructure Bill continues to be monitored and he noted that it will result in additional funding for transit. He stated that the execution of construction contracts to try to obtain use of the lapsing FTA funds held by the SCDOT is in development. Mr. Mitchum updated the Board on the HOP Lot/Mt. Pleasant Street parcel noting that SB Friedman is working with the City and County regarding affordable housing and the parking lot. He stated that Bosch will cover the cost of the shelter and installation at their facility located on Dorchester Road. Mr. Mitchum encouraged Board Members' input regarding holding the next Board meeting in-person. The Board of Directors received the Executive Director's Report as information.

13. Other Business, If Any

There was no other business to discuss.

14. Public Comments, If Any

There was one public comment:

- William Hamilton, Executive Director of Best Friends of Lowcountry Transit, thanked the Board for approval of the proposed service changes for Route 32. He thanked the Board for supporting the Beach Reach Shuttle and commended mask compliance. Mr. Hamilton expressed his concerns regarding the length of time it is taking to build the LCRT.

15. Board Comments, If Any

- Mr. Green commended Keith Benjamin's service to CARTA and the City of Charleston.
- James Lewis commended the bus drivers' courtesy regarding mask compliance.
- Chairman Seekings thanked the Board for their continued service.

16. Adjourn

There being no further business before the Board, Chairman Seekings adjourned the meeting at 1:48 p.m.

Respectfully submitted,
Kim Coleman

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MEMORANDUM

TO: Board of Directors

FROM: Robin W. Mitchum, Deputy Director of Finance & Administration

SUBJECT: September 30, 2021 Financial Report Overview

DATE: October 11, 2021

Please find attached the September 30, 2021 Financial Report. Below is a brief overview of the activities for FY21.

Revenues

- Farebox is the fares collected on the revenue vehicles.
- HOP Lot Parking Fees is the parking fees received at the HOP lot.
- Armada Hoffler Properties is a contract service for additional HOP route access for their residents.
- Local contributions is funds received from local organizations for shelter construction.
- The Federal revenue includes operating for the year to date. Federal revenue is recorded as eligible expenditures are incurred.
- State Mass Transit Funds is the funds available and expended as match to the federal 5307 operating funds.
- Interest is interest received from SC Department of Revenue. CARTA submits for reimbursement of the SC Fuel Excise Tax each month. SCDOR periodically pays interest earned on the funds they have held in the reimbursement process.
- Insurance proceeds are a result of accidents.
- Sale of Assets is the proceeds from the sale of two NABI Buses, five 1996 New Flyer buses, and one 1997 New Flyer bus.

Expenditures

- Staff Salaries & Benefits includes the cost of retiree insurance.
- Supplies includes office and facility maintenance supplies.
- Printing includes costs of printing route maps, brochures, and passes.
- Automotive costs include the maintenance on the administrative vehicles and mileage reimbursements.
- Postage is postage meter refills used to mail passes.
- Dues/Memberships is CARTA's membership with Transportation Association of South Carolina (TASC).
- Office Equipment Rental includes the quarterly postage meter rental fee, the cost of the portable toilet rental for the HOP Lot, and the monthly battery lease for the electric buses.
- Office Equipment Maintenance (OEM) includes the FY21 portion of the Swiftly Transit Time and Insights, Cradlepoint NetCloud Essentials for mobile routers and Zscaler internet security renewal, in addition to other IT support.
- Rent includes the Ashley Phosphate Park & Ride Lot, Dorchester Village Shopping Center Park & Ride Lot, Leeds Avenue lot lease from SCE&G, SC Works Trident lease space, and document storage.
- Communications is the cost of phone, internet, and radio services at the facilities and on the buses.

- Utilities includes electric and water at the Superstop, Melnick Park and Ride, the Radio Shop at Leeds Avenue, and the charging stations at Leeds Avenue.
- Custodial services is the cost of janitorial services at the Melnick Park and Ride and the Super Stop bus depot.
- Pilot Ride Program is customer transportation cost for same day service through independent rideshare.
- Other Professional Services includes pest control services and UST inspection services.
- Shared Contract Services (IGA & Management) is the extensive services BCDCOG provides to CARTA.
- Money Transport is the cost of the armored guard service, Brinks, to pick up and transport cash deposits to the bank.
- Security Services is contracted security service provided at the Super Stop by the City of North Charleston Police Dept.
- Electric Bus Master Plan is the project to develop the necessary planning documents to transition CARTA's diesel bus fleet to all-electric buses.
- Vehicle Maintenance is the cost to maintain the fleet.
- Facility Repair & Maintenance is the cost to maintain the Superstop facility.
- Operating Fees & Licenses include credit card transaction fees, storm water fees, solid waste user fees and vehicle title & registration fees.
- Insurance includes the cost of liability insurance provided by the Insurance Reserve Fund.
- Interest is the interest accrued on the Melnick Park and Ride Loan.
- Non Capitalized assets include the purchase of additional driver and side shields on the buses, radio equipment, cameras, bike racks and security equipment.

Capital Expenditures

- Rolling Stock is the purchase of two Alexander Dennis Enviro 200 buses, three Proterra Electric Buses, and three New Flyer Buses.
- Bus Shelter Construction/Bench is the purchase of shelters.
- Security/Cameras & Equipment is the purchase of cameras at facilities and on buses.
- Capital includes is the purchase of a fork lift and digital signage for Shelters and bus stops.
- ITS System is the purchase of the Syncromatics system.

Overall, the agency ended the month with excess of revenues of $151,111.

If you have any questions, please contact me at 843-529-2126 or robinm@bcdcog.com.

Amount owed to Transdev as of 9/30/2021 is $1,287,425.38.

Amount expended on the HOP for FY21 as of 09/30/2021 is $246,043.

HOP Expenditures

Expenditures	Description	Total
Equipment Rental	Portable Toilet	807
Fuel	Diesel Fuel	13,001
Fixed Route	Transdev Service	232,235
TOTAL EXPENDITURES		**$246,043**

CARTA
Statement of Revenues & Expenditures
For the Month Ending September 30, 2021

Time elapsed:
100%

	Original FY21 Budget	Revision #1 FY21 Budget	Actual	% of Budget
Operating Revenues				
Farebox	1,873,328	1,358,019	1,308,701	96%
Passes	516,573	373,913	335,838	90%
HOP Lot Parking Fees	30,643	1,108	1,325	120%
COC Shuttle	420,859	392,022	397,029	101%
MUSC	741,699	704,942	721,914	102%
City of Charleston - DASH	609,992	640,492	609,992	95%
Armada Hoffler Properties	-	45,417	42,292	93%
Local Contributions	-	27,971	71,712	256%
Federal	12,295,361	10,390,305	10,217,514	98%
State Mass Transit Funds	570,953	951,588	1,043,587	110%
Sales Tax - Charleston County	5,667,195	6,790,679	8,068,322	119%
Advertising	700,000	622,230	639,237	103%
Interest	-	100	100	100%
Insurance Proceeds	-	29,804	88,630	297%
Sale of Assets	-	10,060	12,968	129%
Miscellaneous	-	2,962	3,204	108%
TOTAL OPERATING REVENUES	23,426,603	22,341,612	23,562,365	**105%**
Operating Expenditures				
Staff Salaries & Benefits	8,286	8,033	8,033	100%
Supplies	61,650	86,670	99,100	114%
Printing	47,500	32,500	21,228	65%
Marketing	10,000	5,000	-	0%
Automotive	650	1,000	404	40%
Postage	1,850	2,900	2,084	72%
Dues/Memberships	513	1,513	1,525	101%
Office Equipment Rental	263,955	107,877	107,505	100%
Office Equipment Maintenance	221,265	222,717	181,842	82%
Rent	33,200	33,200	29,631	89%
Communications	179,624	162,353	150,209	93%
Utilities	46,523	56,283	57,989	103%
Advertising	5,000	5,000	4,130	83%
Professional Services				
Auditing	24,300	22,000	22,000	100%
Legal	7,500	7,500	665	9%
Custodial	72,404	70,984	55,786	79%
Pilot Ride Program	80,000	40,000	931	2%
Other	96,820	51,120	3,980	8%
Contract Services				
Shared Services - IGA	2,302,387	2,524,780	2,443,078	97%
Shelter/Bench Contract Services	100,000	150,000	6,681	4%
Fixed Route	14,019,132	13,490,074	12,856,156	95%
Money Transport	7,500	7,500	5,663	76%
Security Services	-	96,191	90,875	94%

CARTA
Statement of Revenues & Expenditures
For the Month Ending September 30, 2021

Time elapsed:
100%

	Original FY21 Budget	Revision #1 FY21 Budget	Actual	% of Budget
Electric Bus Master Plan	-	200,000	82,049	41%
Vehicle Maintenance	250,000	200,000	171,836	86%
Facility Repair & Maintenance	21,375	14,950	7,987	53%
Operating Fees & Licenses	34,768	25,000	19,252	77%
Insurance	780,865	816,078	817,890	100%
Fuel	1,524,623	1,065,531	1,232,533	116%
Paratransit	2,907,056	2,587,469	2,271,345	88%
Miscellaneous	7,741	7,741	77	1%
Interest	60,116	60,116	60,116	100%
Non-Capitalized Assets	250,000	179,532	59,376	33%
Depreciation	-	-	2,539,298	N/A
TOTAL OPERATING EXPENDITURES	23,426,603	22,341,612	23,411,254	**105%**
Excess (Deficit) of Revenues Over (Under) Expenditures			151,111	
Capital Revenues				
Rolling Stock	10,279,699	5,319,710	3,588,764	
Bus Facilities/Charging Stations	405,500	-	-	
Bus Shelter Construction/Bench Install	-	159,622	166,421	
Security/ Cameras & Equipment	247,937	147,411	20,967	
Capital (IT, Facility Repairs/Maint)	56,012	145,796	120,355	
ITS System	1,300,000	-	-	
HOP Lot Construction	2,800,000	2,200,000	-	
Sales Tax - Charleston County	5,180,555	4,057,071	2,779,428	
TOTAL CAPITAL REVENUES	20,269,703	12,029,610	6,675,935	**55%**
Capital Expenditures				
Rolling Stock	12,895,746	8,175,334	5,908,428	
Bus Facilities/Charging Stations	1,769,019	180,000	-	
Bus Shelter Construction/Bench Install	200,000	200,000	351,269	
Land	600,000	600,000	-	
HOP Lot Construction / Leeds Ave.	2,800,000	2,200,000	-	
Security/ Cameras & Equipment	309,923	173,541	27,135	
Capital (IT, Facility Repairs/Maint)	70,015	175,735	197,835	
ITS System	1,625,000	325,000	191,268	
TOTAL CAPITAL EXPENDITURES	20,269,703	12,029,610	6,675,935	**55%**

CARTA
BALANCE SHEET
9/30/2021

ASSETS

ASSETS	
GENERAL OPERATING (BB&T)	4,672,489.01
PETTY CASH	180.00
ACCOUNTS RECEIVABLE	7,759,080.34
PREPAID EXPENSES	326,105.65
INVENTORY - FUEL	32,099.08
DEFERRED OUTFLOWS: ER CONTR	3,914.00
LAND	4,623,977.25
VEHICLES	38,546,412.76
EQUIPMENT	2,258,399.95
FAREBOXES	1,170,017.00
SHELTERS	4,032,368.56
BUS SIGNAGE	238,290.32
FACILITIES	9,365,139.27
PARK & RIDE FACILITY	155,251.20
ACCUMULATED DEPRECIATION	(30,432,274.12)
TOTAL ASSETS	42,751,450.27

LIABILITIES & EQUITY

LIABILITIES	
ACCOUNTS PAYABLE	2,381,239.73
NOTE PAYABLE - BB&T	1,678,039.30
ACCRUED INTEREST	36,847.90
OPEB LIABILITY	189,098.00
DEFERRED INFLOWS: OPEB ASSUMP	39,928.00
TOTAL LIABILITIES	4,325,152.93
EQUITY	
CURRENT YEAR FUND BALANCE	151,110.66
INVEST IN CAPITAL ASSETS	30,573,036.58
FUND BALANCE	7,702,150.10
TOTAL EQUITY	38,426,297.34
TOTAL LIABILITIES & FUND EQUITY	42,751,450.27

Transit and Bus Stop Design Guidelines

Background:
In the Fall of 2020, BCDCOG and CARTA entered into an agreement with the planning agency Nelson\Nygaard to develop Transit and Bus Stop Design Guidelines. These guidelines would be a tool to be used by municipalities, developers, the SCDOT, and the general public to help guide transit infrastructure investment and implementation. Specifically, these are to facilitate the proper siting, design, installation, and maintenance of both existing and proposed stops throughout the region.

A Technical Advisory Committee (TAC) was formed and compiled with staff level representatives from municipalities, the SCDOT, major employers, and advocacy groups to help ensure the development of a document that is practical and useful for all parties. The TAC met bimonthly for the duration of the project to confirm existing conditions, provide input on stop typologies and design standards, and review the guidelines document for legibility, accuracy, and usefulness. In addition, multiple stakeholder conversations occurred over the life of the development to ensure that the Guidelines were developed with constant feedback to better shape the final product.

The Guidelines include sections on Bus Stop Placement, Bus Stop Configuration, Bus Stop Typologies, Bus Stop Amenities, Bus Stop Modifications, Operational Considerations, and Implementation. Appendices detail our currently approved amenities and processes.

Nelson\Nygaard states that a high-quality transit stop is one that is well connected to the neighborhood and community it serves, accommodates the needs of transit passengers, increases safety, and permits for efficient operations. Design should fall under the following principles:

- Locate stops in convenient and comfortable locations
- Locate stops in safe locations
- Make stops visible and easily identifiable
- Provide amenities to make waits comfortable
- Provide information on available services
- Provide pedestrian and bicycle access
- Integrate stops into street design processes

These Guidelines take these design principles into account while providing a structured guide for coordination and cooperation on bus stop modifications, improvements, designs, and installations.

Recommended Action: Approve the adoption of the Transit and Bus Stop Design Guidelines.

Staff Contact: Jon Dodson, Senior Transit Planner, 529-0339, jond@bcdcog.com

BCDCOG

Transit and Bus Stop Design Guidelines

October 2021

BCDCOG
BERKELEY-CHARLESTON-DORCHESTER
COUNCIL OF GOVERNMENTS

CARTA

TRICOUNTY LINK
BERKELEY • CHARLESTON • DORCHESTER

NELSON NYGAARD

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1 INTRODUCTION

Bus stops are the "front door" of transit systems. Their location, design, and maintenance influence how riders experience transit. This document provides bus stop guidance for the Berkeley-Charleston-Dorchester region.

About the Transit and Bus Stop Design Guidelines

This document—the **Transit and Bus Stop Design Guidelines**—is a tool to help the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG), Charleston Area Regional Transportation Authority (CARTA), and TriCounty Link (TCL), and its regional partners deliver transportation choices that link people, jobs, and community conveniently, consistently, and safely. The intent of the Guidelines is to facilitate the proper siting, design, installation, and maintenance of either existing or proposed bus stops throughout the Tri-county Region. These guidelines were developed by BCDCOG for CARTA. As TCL service evolves into an urban area system, they can be applied.

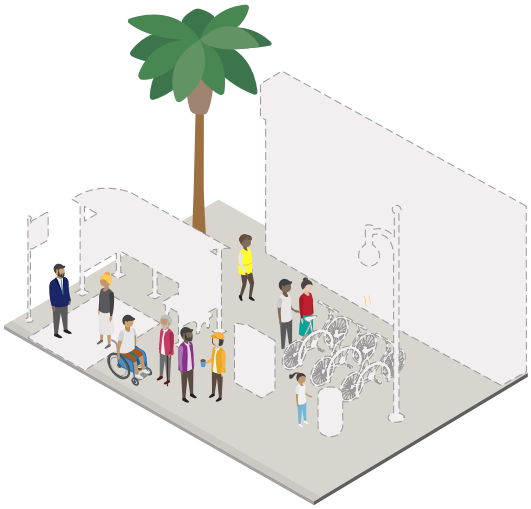
CARTA stop on Rivers Avenue at Remount Road

Why It's Important

Well-designed bus stops enhance the transit experience, decrease perceived wait times for transit services, and can contribute to increased ridership. Conversely, poorly designed bus stops can decrease customer satisfaction, make transit less attractive to potential new customers, and potentially make waiting at stops unsafe for riders.

Who Should Use these Guidelines

The information in these Guidelines will be of use to anyone involved in the planning, design, construction, maintenance, and/or use of bus stops: community members, transit staff, planners at the municipal, county, and state level, and developers and private landowners. More information on these audience types is available in the **How to Use this Guide** section.



No Two Transit Stops Are Identical

Every bus stop has unique site characteristics, which can make designing a consistent bus stop challenging. The Transit and Bus Stop Design Guidelines outline best practices for bus stop design and present clear and practical recommendations for processes such as choosing bus stop locations, placing amenities at bus stops, and prioritizing stop upgrades. These Guidelines are applicable to bus stops used by CARTA and TriCounty Link.

Guidance and Standards

Much of the content in this document is not intended to be strict standards, but rather to provide **guidance** and inform design decisions within the site context. Flexibility is central to the development of these guidelines, especially given the fact that the region is subject to earthquakes, hurricanes, and flooding. Site contexts and these potential impacts must be considered when designing a bus stop.

However, information pertaining to the Americans with Disabilities Act (ADA) for making bus stops accessible are **standards** that should be followed.

This document incorporates the latest mandates and best practices as of September 2021.

BCDCOG
BERKELEY-CHARLESTON-DORCHESTER
COUNCIL OF GOVERNMENTS

About BCDCOG

BCDCOG is an association of, by and for local governments that helps Berkeley, Charleston and Dorchester county leaders plan for common needs, cooperate for mutual benefit and coordinate for sound regional development, including oversight for two public transit programs—CARTA and TriCounty Link (TCL).

CARTA Approved and Funded Amenities

CARTA's over 860 stops vary in terms of their ridership, existing condition, and level of service. These guidelines include the process for CARTA to prioritize capital improvements at stops. Importantly, they also describe the approved amenities for CARTA stops that the agency could fund for stops. The amenities and the baseline capital costs for each that CARTA could cover are summarized below. These amenities are described in detail in Chapter 5 Bus Stop Amenities.

#	CARTA-Approved Amenity	Total Cost (see note)
1	Bus stop post and sign	$150
2	ADA-compliant landing pad	$4,825
3	Bike rack	$168
4	Solar shelter lighting	$1,550
5	Bench	$906 - $1,620
6	Trash can	$105 - $525
7	Shelter	$12,495
8	Digital signage (not pictured)	$8,515 - $9,315

Notes:

Minimum amenities at all CARTA bus stops are a bus stop post, sign, and ADA compliant landing pad. If a municipality calls for additional amenities, CARTA would pay for the baseline cost of those amenities. Any additional costs due to upgraded or additional amenities, including variations in paint schemes, must be borne by the relevant municipality requesting that upgraded amenity. Developers would cover all costs of any new stop or stop improvements, including the installation.

The costs above for bus stop capital items do not include engineering or install fees. Those additional fees are below:

- Engineering fees ranging from $10,000 to $20,000 per shelter/bench
- Shelter installation at approximately $6,500

- Bench installation at approximately $1,500
- Digital signage installation at approximately $750
- LED signage installation at approximately $1,100

In this Chapter

The rest of this chapter includes three sections: (1) structure of the guidelines, (2) design principles, and (3) how to use this guide.

CARTA Is Here to Help

CARTA receives requests year-round and implements modifications to bus stops on an as-needed and approved basis.

To make a bus stop-related request for CARTA, email Transit Planning at belenv@bcdcog.com or call BCDCOG at (843) 529-0400.

STRUCTURE OF THE GUIDELINES

The Guidelines include the following sections:

Chapter	What Questions It Answers
1 Introduction	▪ What are design guidelines? Who are they for?
2 Bus Stop Placement	▪ Where do bus stops go? What factors are important?
3 Bus Stop Configuration	▪ How can bus stops be configured in different roadway environments?
4 Bus Stop Typologies	▪ What are the different types of bus stops in the system? How do they differ in terms of their minimum, preferred, and optional amenities?
5 Bus Stop Amenities	▪ What amenities can be found at bus stops? How should they be placed?
6 Bus Stop Modifications	▪ What are the processes to request changes to a bus stop?
7 Operational Considerations	▪ What else should be considered when designing a bus stop?
8 Implementation	▪ How are bus stop investments prioritized? ▪ How much do bus stops cost? ▪ Who installs and maintains amenities?

DESIGN PRINCIPLES

A high-quality transit stop is one that is well connected to the neighborhood or community it serves, accommodates the needs of all transit passengers freely and comfortably, increases the safety of those boarding, alighting, waiting for, or riding the bus and permits efficient transit operations. Bus stop design should be guided by the following principles:

Locate Bus Stops in Convenient and Comfortable Locations

Bus stops should be located in places that are convenient to where people are traveling to and from, including concentrations of residences or jobs and major destinations such as social services or shopping destinations.

Locate Bus Stops in Safe Locations

Bus stops should be located where passengers 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 the stop should provide adequate space for waiting riders to sit or stand, away from other pedestrian flow and street traffic.

Make Bus Stops Visible and Easily Identifiable

Bus stops should be located in easily identifiable places, so they can be found without difficulty by riders and bus drivers alike. Stops should follow CARTA or TCL branding guidelines so that they are a recognizable component of the transit infrastructure.

Provide Amenities to Make the Wait Comfortable

Providing amenities, such as benches, lighting, bike facilities, trash cans, etc. at stops make waiting for the bus more comfortable. While it is not practical nor cost-effective to provide all amenities at all stops, more extensive amenities should be provided at high need locations.

Provide Information on Available Services

Bus stops should make it intuitive for riders to know when and where they're traveling. Bus stop signs should provide basic service information such as route number and destination. Higher volume stops should have schedule and route information at the stop.

Integrate Bus Stops into Street Design Processes

When new developments are constructed, the stops should be designed as part of the overall project, rather than placed as an afterthought. Similarly, when roads and/or sidewalks are reconstructed, bus stops should be developed as part of the overall design.

Provide Good Pedestrian and Bicycle Access to Bus Stops

Bus stops should be located at sites that provide safe, ADA-accessible pedestrian access to the surrounding area, especially to the other side of the street. This should include well-defined and contiguous pathways to and from the stop, as well as crosswalks. ADA compliance is a primary concern in the Tri-County Region. As pedestrian and bicycle infrastructure develops, the responsible agencies will need to encourage pedestrian pathways, especially pathways to/from high volume bus stops.

HOW TO USE THIS GUIDE

These Guidelines are designed for many different target audiences. BCDCOG partners with relevant parties for the design and placement of high-quality bus stops.

To help explain roles and responsibilities, this document organizes audiences into four categories: (1) community members, (2) BCDCOG staff, (3) agency at the city, county, and state level, and (4) developers and property owners.

Start Here: In Which Group Do You Belong?

COMMUNITY

Transit riders, residents, elected officials, employers

BCDCOG/CARTA STAFF

CARTA staff, TriCounty Link staff

OTHER AGENCY STAFF

Municipal, county, and state planners and engineers

DEVELOPERS

Developers and property owners

Community

For Information On:	Go To
Bus stop typologies and their minimum, preferred, and optional amenities	▪ Chapter 4 Bus Stop Typologies
ADA Accessibility Overview	▪ Chapter 5 Bus Stop Amenities ▪ Appendix D Bus Stop Accessibility and ADA Standards
Requesting Bus Stop Modifications	▪ Chapter 6 Bus Stop Modifications
Amenity Installation and Maintenance Responsibilities	▪ Chapter 8 Implementation
Temporary bus stop modifications during construction	▪ Chapter 6 Bus Stop Modifications, page 6-9 ("Modifications During Construction")

BCDCOG/CARTA Staff

For Information On:	Go To
Bus Stop Spacing and Placement Guidelines:	▪ Chapter 2 Bus Stop Spacing and Placement
Configurations for Different Roadway Contexts	▪ Chapter 3 Bus Stop Configurations
Bus stop typologies and their minimum, preferred, and optional amenities	▪ Chapter 4 Bus Stop Typologies
Guidance for the selection and placement of amenities for bus stops	▪ Chapter 5 Bus Stop Amenities ▪ Appendix G
ADA Accessibility Overview	▪ Chapter 5 Bus Stop Amenities ▪ Appendix D Bus Stop Accessibility and ADA Standards
Guidance for attaining encroachment permits, private property use agreements, and municipal review committees	▪ Chapter 6 Bus Stop Modifications, pages 6-10
Operational considerations for operators and bus stop placement	▪ Chapter 7 Operational Considerations
Prioritizing bus stop investments	▪ Chapter 8 Implementation
Amenity Installation and Maintenance Responsibilities and Amenity Cost Estimates	▪ Chapter 8 Implementation
Checklist for Bus Stop Inventory Field Visits	▪ Appendix B
Amenity Standards and Specifications	▪ Appendix E
Bus Stop Modifications Checklist	▪ Appendix F
Bus Stop Database	▪ Appendix H

Other Agency Staff

For Information On:	Go To
Bus stop typologies and their minimum, preferred, and optional amenities	▪ Chapter 4 Bus Stop Typologies
Bus Stop Spacing and Placement Guidelines	▪ Chapter 2 Bus Stop Spacing and Placement
Configurations for Different Roadway Contexts	▪ Chapter 3 Bus Stop Configurations
Requesting Bus Stop Modifications	▪ Chapter 6 Bus Stop Modifications
ADA Accessibility Overview	▪ Chapter 5 Bus Stop Amenities ▪ Appendix D Bus Stop Accessibility and ADA Standards

Developers

For Information On:	Go To
Checklist to begin with	▪ Appendix C Developer Checklist
Bus stop typologies and their minimum, preferred, and optional amenities:	▪ Chapter 4 Bus Stop Typologies
Guidance for attaining encroachment permits, private property use agreements, and municipal review committees	▪ Page 6-10 Encroachment Permits, Private Property Use Agreements, and Municipal Review Committees
Amenity Installation and Maintenance Responsibilities and Amenity Cost Estimates	▪ Chapter 8 Implementation
Amenity Standards and Specifications	▪ Appendix E
Temporary bus stop modifications during construction	▪ Page 6-9 Modifications During Construction

2 BUS STOP SPACING AND PLACEMENT

This chapter explains where bus stops should go, from the corridor to the site: How far apart should they be from one-another? Where, relative to the intersection? And what other factors are important?

The information in this chapter helps plan optimal bus stop locations for fixed-route service. It also ensures that enough space is allocated for bus stops at an early design stage. This is particularly relevant for planning entire corridors or multiple stops surrounding new developments. However, it can also be used for a single bus stop.

This chapter includes the following two sections:

- **Bus Stop Spacing** discusses the recommended distance between bus stops, as well as considerations for stop pairing and high transfer activity stops.
- **Bus Stop Placement** discusses factors to be considered in selecting new bus stop locations along a route.

BUS STOP SPACING

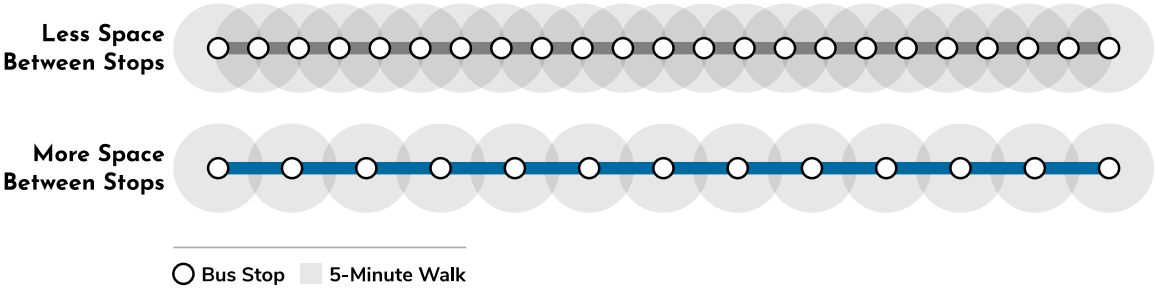
Key Takeaways

- Aim for stop spacing of 1,300 feet for local fixed routes.
- When possible, pair inbound and outbound bus stops, so that riders can get on and off the bus on opposite sides of the street, in same general area.
- In places with lots of transfers between routes, place bus stops as close to one another as possible, to make transfers easier for riders.

BCDCOG/CARTA Staff

The distance between stops significantly impacts travel times. More closely spaced stops provide customers with shorter walk times, but they also increase travel times and are the major reason that transit is slower than automobile travel. Each additional stop requires the bus to decelerate, come to a complete stop, load and unload riders, and then accelerate and re-merge into traffic. Most customers want transit service that balances convenience and speed, and the number and location of stops is a key component of determining that balance.

Figure 2-1 Too Closely Spaced Bus Stops Slow Service without Significantly Increasing Access to Transit



Spacing Guidelines

The ideal spacing of bus stops is based on the density of population and employment around a stop. In areas where there are more people living and working, bus stops should be closer together. The BCDCOG Spacing Guidelines below recommend an average stop spacing of 1,300 feet for local fixed routes. For express routes, stops are only placed at the route termini and, if applicable, a central point in downtown Charleston (e.g. the Visitors' Center).

Figure 2-2 presents guidelines for the space between stops and stops per mile for CARTA's fixed route bus service. Guidelines for maximum stops per mile and minimum spacing between stops are included for areas where walking conditions are poor or

there are other significant operating considerations limiting placement (see also Chapter 7 – Operational Considerations)

Figure 2-2 Recommended and Maximum Stop Spacing for Local Fixed Routes

Bus Stop Spacing Standard	Local Fixed Routes
Recommended Stops per Mile	4-6
Recommended Spacing between Stops	1,300 feet
Maximum Stops per Mile	8
Minimum Spacing between Stops	660 feet

These guidelines do not apply to express routes, whose stops are only placed at the route termini and, if applicable, a central point in downtown (e.g., the Visitors' Center).

In dense or sparse areas or corridors, a variation to the standard is warranted. CARTA staff use professional judgement for spacing, especially with placing at large attractors and trip generators. They work to adjust spacing to accommodate accessing key destinations, which might result in stop spacing that falls below the minimum guidelines.

Stop Pairing

Whenever possible, bus stop locations should be paired, so that customers board and alight on opposite sides of the same street in the same vicinity when making a round trip. This allows the transit service to be more intuitive and maximizes convenience for the greatest number of users.

Stops with High Transfer Activity

At locations where transfer activity between routes is heavy, bus stops for the intersecting routes should be located as close to each other as possible in order to shorten travel for passengers transferring between routes.

BUS STOP PLACEMENT

Key Takeaways

- When possible, make bus stops accessible by a sidewalk in good condition, between the bus stop and the nearest intersection.
- Bus stop placement should be responsive to major activity generators and should have a direct, accessible path to them.
- When possible, place bus stops on the far side of intersections.

BCDCOG/CARTA Staff

In addition to spacing, existing conditions such as roadway type, sidewalk conditions and land use affect where new or moved bus stops are placed and how they are designed. Additional considerations that impact the safety, convenience, and accessibility of a stop, such as placement relative to street intersections must also be considered. The following is an overview of several factors that influence the placement of bus stops.

Environmental Context

The environmental context of an area impacts bus stop placement. Environmental factors, such as surrounding land use, street network, and the infrastructure conditions surrounding a bus stop are often important considerations for placement and design of bus stops.

Land Use and Activity Generators

Placing bus stops near activity centers, such as shopping areas, civic buildings, schools, medical centers, or multi-unit residential complexes attracts ridership by enhancing the convenience of transit service.

In areas where there are several activity centers in close proximity, such as a block with several popular shopping destinations, bus stop placement will depend more on bus stop spacing and other factors. However, for major activity generators (industrial areas, the airport, malls, hospitals, etc.), the stop should be located close to the entrance of the destination.

Street Network

The functional class designation of a bus stop's roadway indicates the general characteristics of a roadway including its intended purpose and typical roadway speed. It can impact both design and operation of bus service and stops. For example, wider streets (often a higher functional class) may allow for curb extensions (also called bulb-

outs) at bus stops, which create more space for amenities and reduce the pedestrian crossing distance. However, wider streets also typically have higher speeds, which increase the sight distance needed for bus operators and make it harder for pedestrians to cross the roadway. As such, adjacent roadway speed and width should be considered when siting and designing a bus stop.

Driveways

Driveways and other curb cuts near bus stops can pose safety hazards for boarding and alighting passengers and transit vehicles. There are six principles that guide the siting of bus stops in relation to driveways,[1] enumerated as follows and illustrated in Figure 2-3 and Figure 2-4.

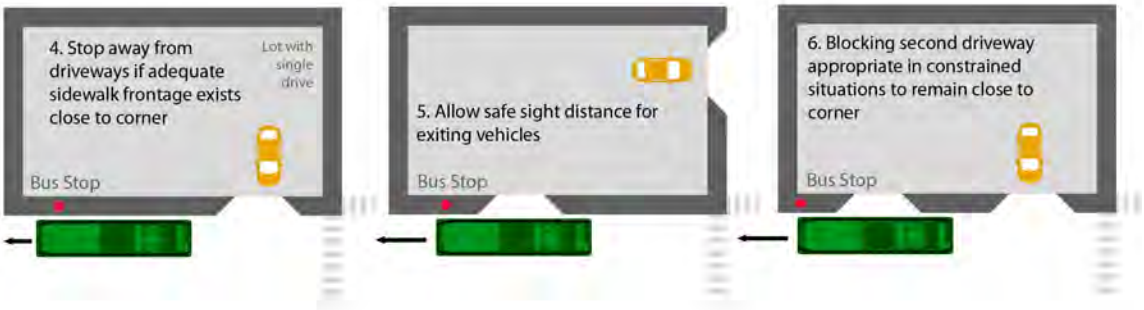
1. Avoid restricting sight distances for exiting vehicles.
2. Avoid blocking a driveway that provides the only access to a property
3. Avoid unloading passengers into driveways.
4. Stop on the far side of a driveway if there is adequate sidewalk length close to the intersection.
5. Allow for safe sight distances for exiting vehicles.
6. Where there are two driveways in a constrained location near an intersection and the best stop location is on the far side of the second driveway, a transit vehicle may block the second driveway.

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.

[1] These principles are adapted from MDOT MTA's Bus Stop Design Guide (2019).

Figure 2-3 Undesirable Driveway Arrangements

Figure 2-4 Acceptable Driveway Arrangements



Getting to and from the Bus Stop

Most people traveling to and from the bus stop are pedestrians or users of a wheeled mobility device, such as a wheelchair or bicycle. Therefore, the conditions of the sidewalk and connections with the surrounding area are important determinants of transit access and affect the prioritization of bus stop improvements.

At the least, a stop should be accessed by a sidewalk in good condition between the bus stop and the closest intersection. In addition, a safe, nearby street crossing with curb cuts for wheelchairs is required; almost all riders will need to make round trips using a pair of bus stops. For denser areas where it is likely that many people visit multiple destinations in a single bus trip, priority should be given to making sure that there is an accessible path throughout the area. For bus stops which serve mostly a single destination, the focus can be on a path between that destination and the bus stop.

Bicycling and transit can complement each other, and the reach of the transit service can be greatly extended by providing connections so that people can combine these two modes in a single trip. Particularly in more outlying locations where the transit network is less dense, people may be more likely to access the bus stop by bicycle. Generally, bicycle lanes and separated paths increase bicycle usage by making riders

safer and more comfortable. Wherever possible, bus stops should be placed close to this bicycle infrastructure, especially at places where a stop can facilitate bicycle connections to areas without transit service. In addition, some stops may warrant more bicycle parking. See Chapter 3 – Bus Stop Configuration for bus stop guidelines for designing bus stops that interact with on-street bicycle infrastructure.

Bus Stop Location Relative to Intersection

Bus stop position directly impacts the convenience and accessibility of the transit system. Determining the proper position of bus stops involves choosing between near-side, far-side and mid-block stops. While many other factors should be considered when choosing a bus stop position, including adjacent land use, space availability, and pedestrian access, the location of the stop relative to the intersection is an important consideration. If all other factors were similar, far-side stops would be preferable, since they encourage people to cross behind the bus and not in front. However, there are often complicating factors. The Bus Stop Configuration section (Chapter 3) of this document provides drawings for how bus stops should fit at each possible bus stop position.

Figure 2-5 Near-Side, Far-Side, and Mid-Block Bus Stops

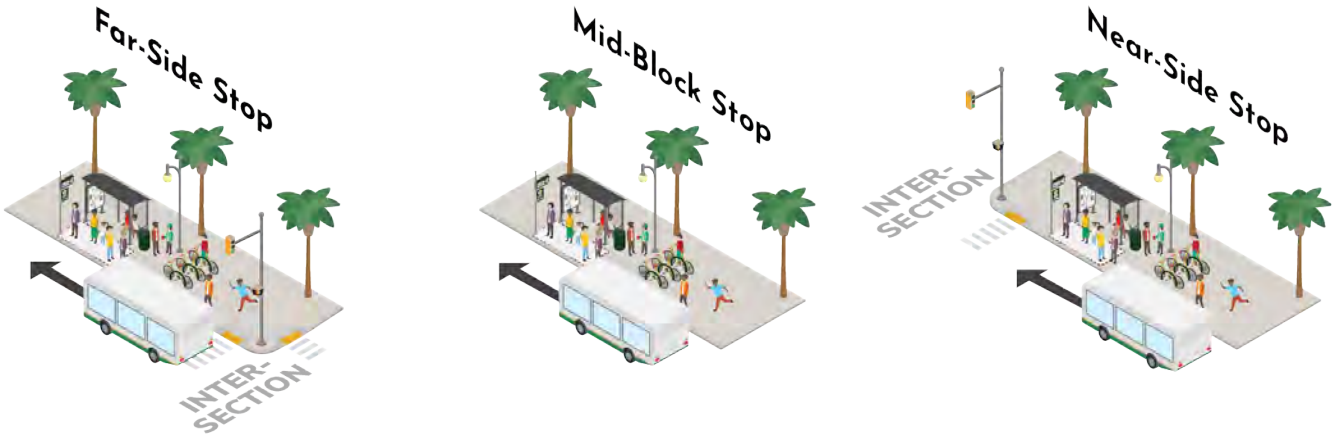


Figure 2-6 Near-Side Stop in Charleston

Near-Side

Near-side bus stops are located before an intersection, allowing passengers to load and unload while the vehicle is stopped at a red light or stop sign (see Figure 2-4). Near-side bus stops can minimize interference when traffic is heavy on the far-side of an intersection. At stop-controlled locations, near-side stops eliminate "double stopping," as passengers can board the bus during the stop. Additionally, at near-side stops, gaps in traffic flow are created for buses re-entering traffic at the intersection and passengers access the bus closest to the crosswalk.

The stop configuration can generate conflicts with right turning vehicles. Delays associated with loading and unloading passengers may lead to unsafe driving practices, where right turning vehicles drive around the bus to make a right turn in front of the bus. Additionally, buses serving near-side stops may restrict sight distances for crossing pedestrians and vehicles.

Far-Side

Far-side bus stops are located after an intersection, allowing the bus to travel through the intersection before stopping to load and unload passengers. When the bus pulls away from the stop to reenter traffic at an intersection controlled by a traffic signal, the signal generates gaps in traffic allowing buses to reenter the traffic lane. Far-side stops also require shorter deceleration distances and encourage pedestrians to cross behind the bus. Far-side bus stops support the use of a broad array of active transit signal priority treatments and take up the least amount of curbside space. Additionally, far-side stops provide additional right turn capacity at the intersection by eliminating bus blockage in the curb lane on the approach to the intersection.

However, during peak travel periods, when traffic is heavy and bus queuing is possible, intersections may be blocked by buses waiting to access a far-side bus stop. Queued buses may restrict sight distances for crossing pedestrians and vehicles. Additionally, stopping far-side after stopping for a red light may interfere with bus operations as well as general traffic flow.

Figure 2-7 Far-Side Stop Located at Calhoun Street at Meeting Street

Mid-Block

Mid-block bus stops are located between intersections. Mid-block stops minimize sight distance problems for vehicles and pedestrians. Additionally, passenger waiting areas located mid-block often experience less pedestrian congestion. However, mid-block stops require both deceleration and acceleration areas, requiring additional distances for no parking restrictions or increased turnout construction costs. Mid-block stops also increase walking distances for patrons crossing at intersections, or result in patrons illegally crossing the street mid-block.

Mid-block stops should generally be used under special circumstances, such as where large destinations justify high-volume access or when the distance between adjacent intersections exceeds stop spacing recommendations.

Figure 2-8 Mid-Block Stop on Sam Rittenhouse Boulevard (Driveway shown behind stop is not an intersecting street)

3 BUS STOP CONFIGURATIONS

This chapter provides technical guidance on bus stop configurations in different operating environments. The position of a bus stop relative to the travel lane affects how easily buses can reenter traffic flow and continue on their route.

It includes seven categories of configurations: (1) pull-out stops, (2) in-lane stops, (3) boarding bulb stops, (4) shared bus-bike lanes, (5) side boarding island stops, (6) shared cycle track stops, and (7) transfer centers.

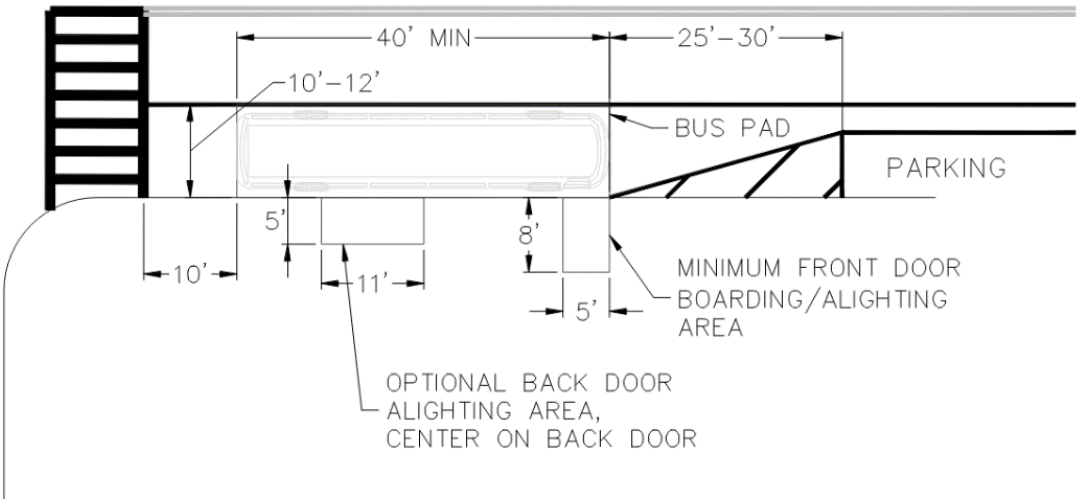
For pull-out, in-lane, and boarding bulb stops, placement specific guidance is also provided. As described in Chapter 2 – Bus Stop Spacing and Placement, bus stop position is the location of the bus stop relative to the intersection or within a block. Types of bus stop positions include far-side (just after an intersection), near-side (just prior to an intersection), mid-block (at least 200' away from any intersection).

The majority of CARTA buses are between 35' and 40'. As such, the dimensions shown below are designed for 40' buses. These dimensions are technical recommendations and their feasibility are subject to available right of way. Refer to Appendix D for more detail on ADA standards relevant to bus stop accessibility.

PULL-OUT STOPS

A pull-out bus stop is located in a curbside lane requiring the bus to merge out of and back into the travel lane in order to serve the stop. Pull-out stops are a low-cost option for bus stops on streets with curbside parking. Pull-out stops prioritize through-traffic, including through-moving transit and are most useful where flow is a priority or where in-lane stops would be problematic. Pull outs are designed to be long enough to accommodate 40' vehicles.

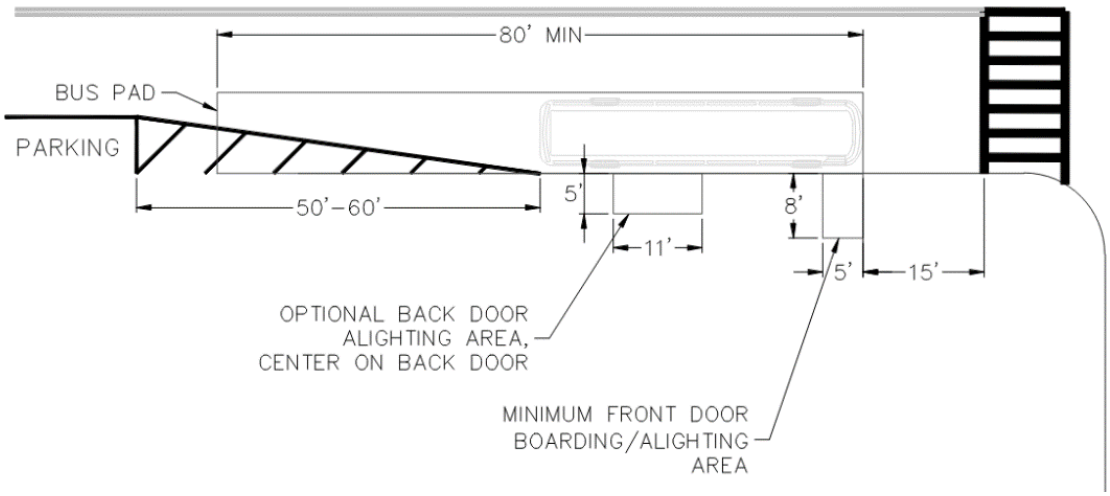
Far-Side Pull-out Stop



GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- Bus pads shall be a minimum of 8.5' wide.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.

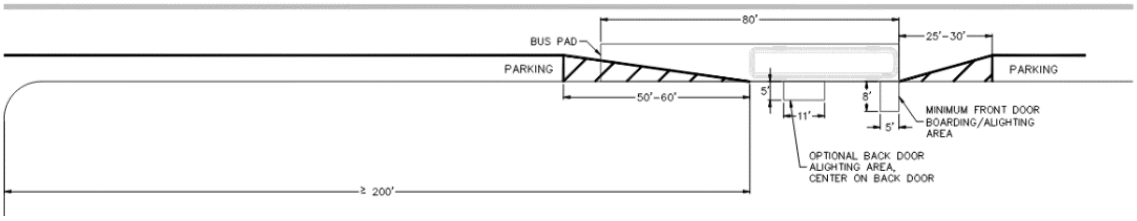
Near-Side Pull-Out Stop



GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- Bus pads shall be a minimum of 8.5' wide.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.

Mid-Block Pull-Out Stop



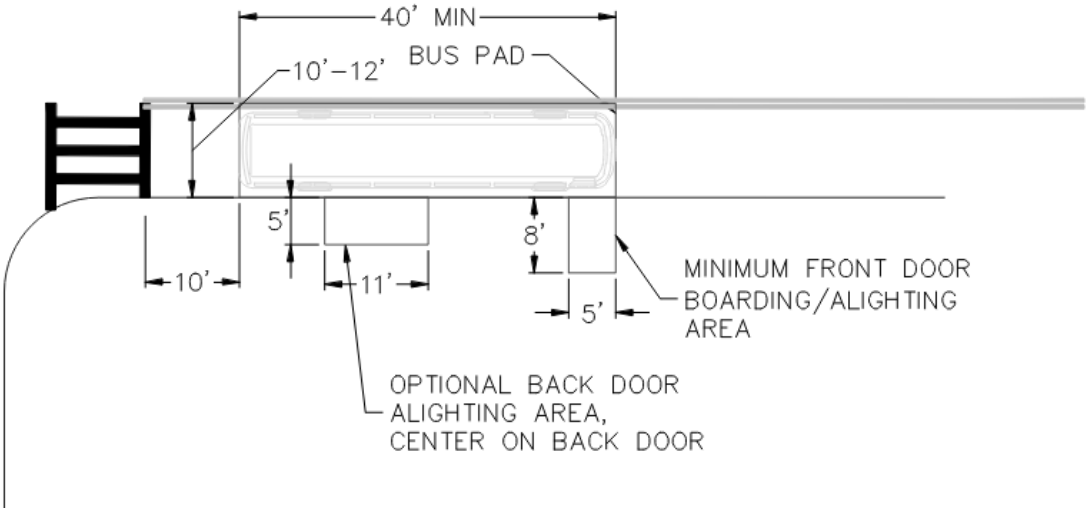
GENERAL GUIDELINES

- Bus pads shall be a minimum of 8.5' wide.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.

IN-LANE STOPS

In-lane bus stops are located in a travel lane, allowing the bus to serve the stop and continue the route without having to merge out and then back into the travel lane. In-lane stops are a low-cost option, requiring a minimum of a sign and ADA boarding area, while saving the bus time since it does not have to pull out into traffic. In-lane stops also result in a more compact bus stop zone as compared to pull-out stops, preserving parking and other curbside uses.

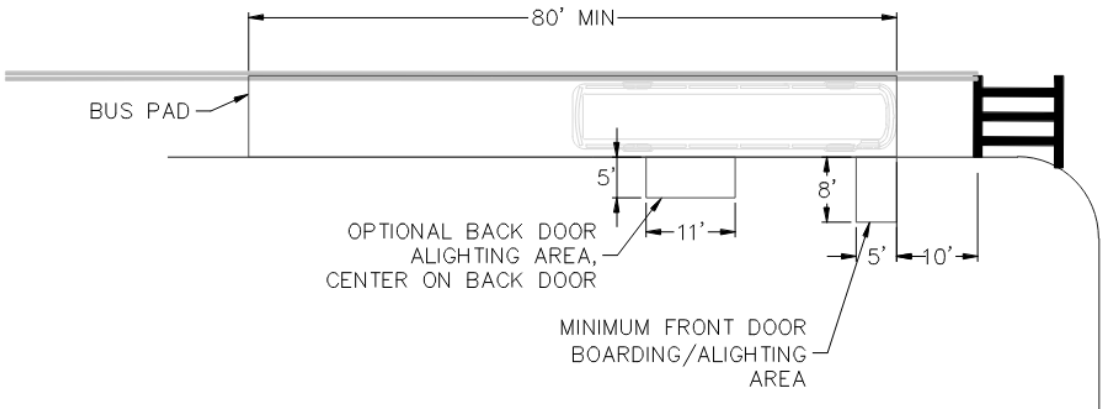
Far-Side In-Lane Stop



GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- Bus pads at in lane stops shall extend the full width of the lane.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.

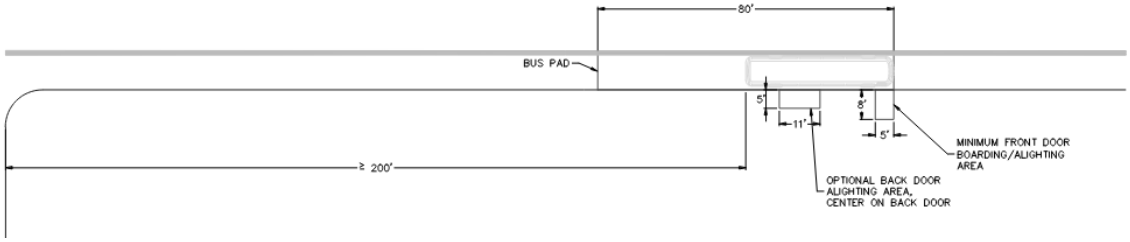
Near-Side In-Lane Stop



GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- Bus pads at in lane stops shall extend the full width of the lane.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.

Mid-Block In-Lane Stop



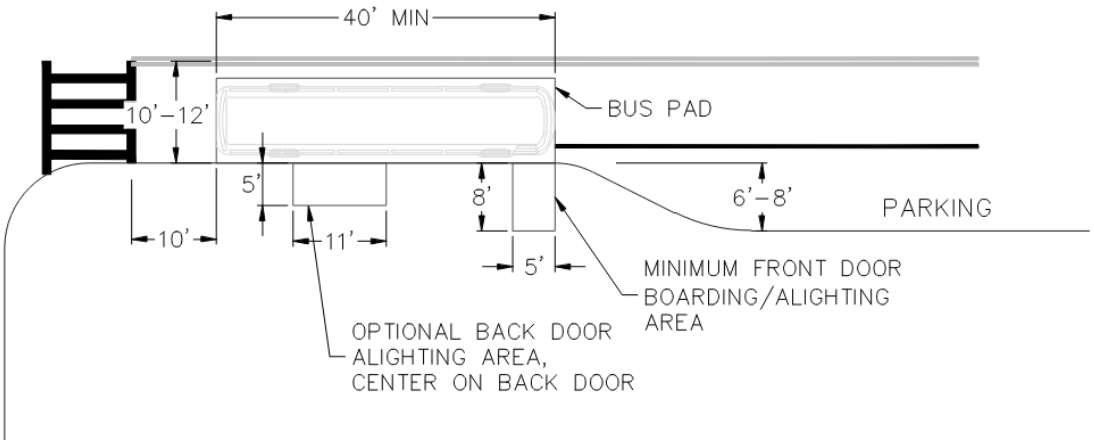
GENERAL GUIDELINES

- Bus pads at in lane stops shall extend the full width of the lane.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.

BOARDING BULB STOPS

Boarding bulb stops use curb extensions to align the transit stop with the parking lane, creating an in-lane stop. Boarding bulbs improve speed and reliability, provide more space for transit passenger amenities, and maintain clear pedestrian paths on the sidewalk. Curb extensions are most effective in dense urban environments with high pedestrian activity or areas where the sidewalk is too narrow to accommodate a bus stop. Boarding bulb stops also reduce the need to displace parking spaces since a bus serving a stop on a curb extension will stop in the traffic lane instead of traveling into the parking lane as they do at pull-out bus stops. Finally, boarding bulb stops work well in conjunction with crosswalks by reducing the crossing distance for pedestrians.

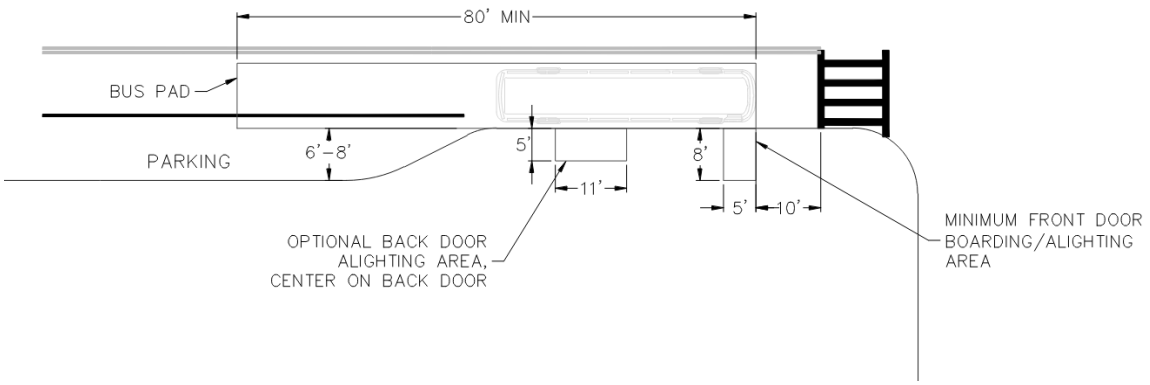
Far-Side Boarding Bulb Stop



GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- Bus pads at boarding bulb stops shall extend the full width of the lane.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.
- Bus bulbs shall be long enough to serve all doors of at least one design vehicle.
- Bus bulbs shall extend up to 2' from the edge of the travel lane. Bus bulbs typically extend out 6-8' from the curb.

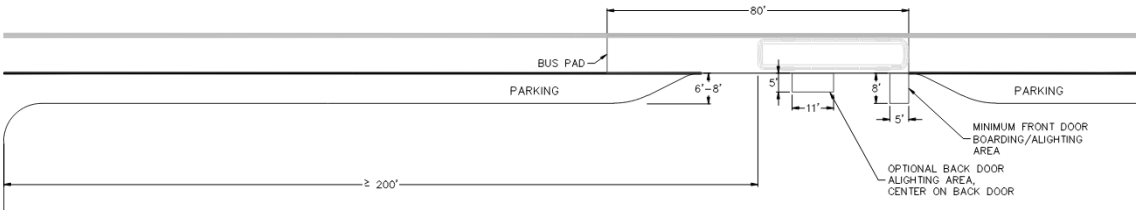
Near-Side Boarding Bulb Stop



GENERAL GUIDELINES

- Maintain a minimum of 10’ clear distance from crosswalk to bus dwelling location at all times.
- Bus pads at boarding bulb stops shall extend the full width of the lane.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.
- Bus bulbs shall be long enough to serve all doors of at least one design vehicle.
- Bus bulbs shall extend up to 2’ from the edge of the travel lane. Bus bulbs typically extend out 6-8’ from the curb.

Mid-Block Boarding Bulb Stop

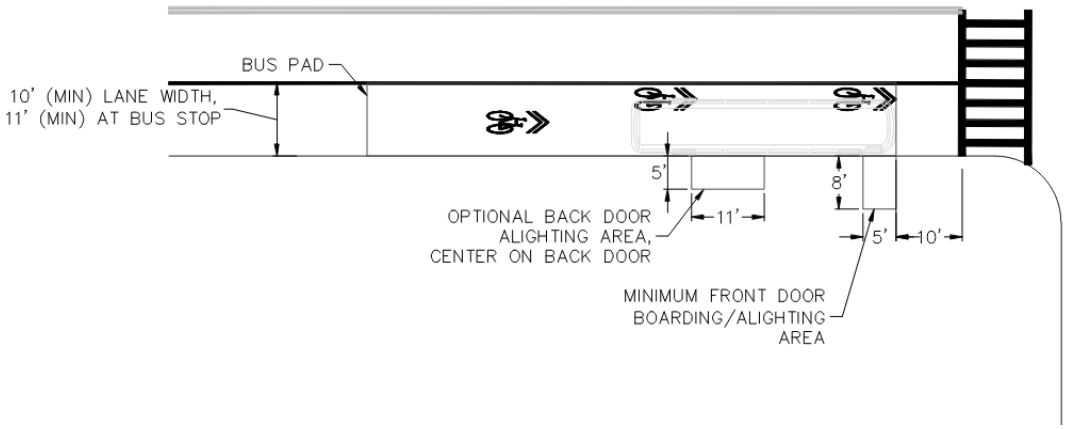


GENERAL GUIDELINES

- Bus pads at boarding bulb stops shall extend the full width of the lane.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.
- Bus bulbs shall be long enough to serve all doors of at least one design vehicle.
- Bus bulbs shall extend up to 2’ from the edge of the travel lane. Bus bulbs typically extend out 6-8’ from the curb.

SHARED BUS-BIKE LANES

Shared bus-bike lanes improve the speed, reliability, and efficiency of bus service and enhance safety for cyclists. Stops adjacent to a bus lane may have high passenger volumes, since typically bus lanes are used for corridors with heavy transit usage. Shared bus-bike lanes are applicable on curbside or offset bus lanes with no existing or planned dedicated bicycle facility.



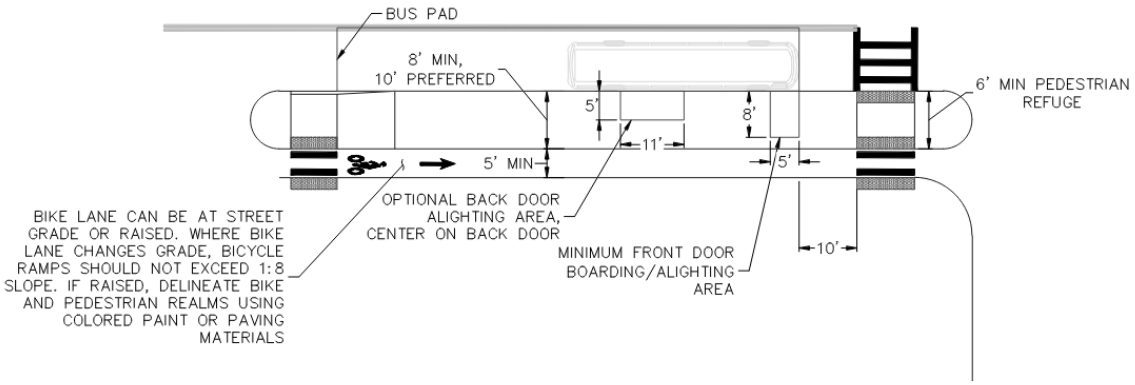
GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- In shared bus-bike lanes, bus pads shall extend the full width of the lane to provide a level surface to both buses and bikes.
- Bus pad lengths shall be 80' at near-side and mid-block stops and 40' at far-side stops.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.
- In shared bike-bus lanes, shared lane markings shall be placed in the center or left side of the lane. At bike/bus stops, shared lane markings shall be placed at the left side of the lane.

SIDE BOARDING ISLAND STOPS

Side boarding island stops, also referred to as floating stops, are designed to channelize a bike lane between the sidewalk and the bus stop boarding zone itself. Boarding islands eliminate the interaction between buses and bicycles at the curb, and allow the bus to stop in-lane while maintaining physical bike lane protection and providing separation to more users. Pedestrians crossing the bicycle lane should be channeled into clearly-marked crossings to reduce conflicts between bicycles and pedestrians.

While there are currently no examples of floating bus stops in the BCDCOG region, this type of bus stop facility is an emerging design.



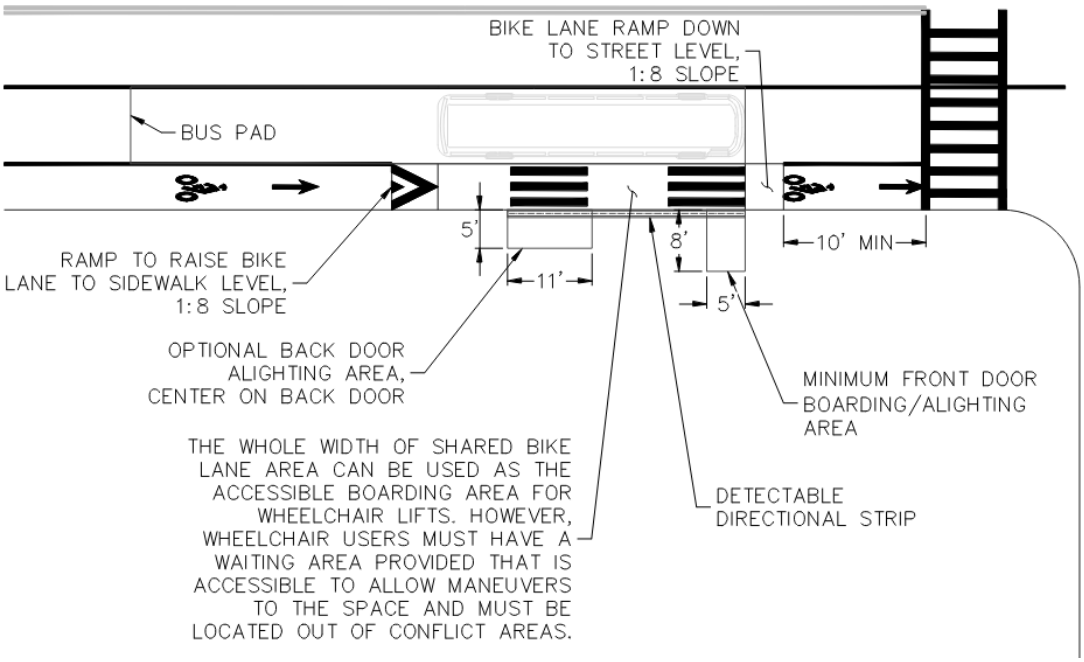
GENERAL GUIDELINES

- Maintain a minimum of 10' clear distance from crosswalk to bus dwelling location at all times.
- Bus pads shall be a minimum of 8.5' wide.
- Bus pad lengths shall be 80' at near-side and mid-block stops and 40' at far-side stops.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.
- Bus island shall be long enough to serve all doors of at least one design vehicle.

SHARED CYCLE TRACK STOPS

Shared Cycle Track stops are used when limited right-of-way precludes boarding islands on streets with standard bicycle lanes. In this configuration, a bike lane or protected bike lane rises and runs along the boarding area, along the curb, rather than wrapping behind the boarding area. Bicyclists can ride through the boarding area when no transit vehicles are present, but must yield the space to boarding and alighting passengers when a bus stops.

While there are currently no examples of shared cycle track stops in the BCDCOG region, this type of bus stop facility is an emerging design.



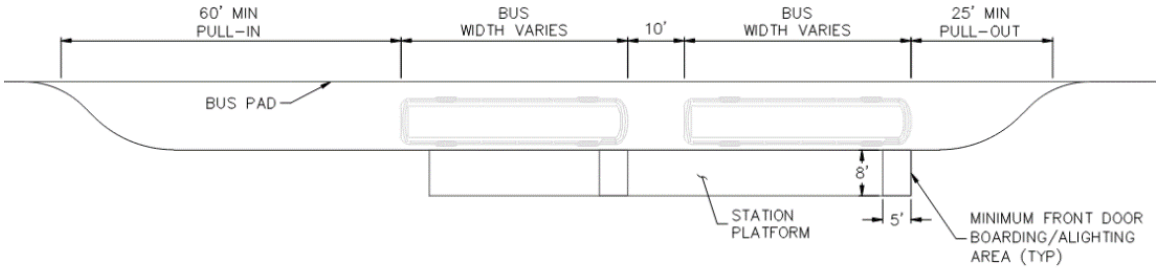
GENERAL GUIDELINES

- Maintain a minimum of 10’ clear distance from crosswalk to bus dwelling location at all times.
- Bus pads shall be a minimum of 8.5’ wide.
- Bus pad lengths shall be 80’ at near-side and mid-block stops and 40’ at far-side stops.
- Bus pads shall end before the crosswalk. If the bus pad must extend into the crosswalk, the bus pad shall extend across the full width of the crosswalk.
- Ensure bicyclists are in view of traffic at intersections.
- Maintain a 10’ distance between the bike ramp exiting the boarding platform and crosswalk.

TRANSFER CENTERS

Several of CARTA's stops that experience high ridership as well as a high volume of transfers are designated as Transfer Centers. Transfer Centers are often installed along the systems most frequent transit routes and should have design footprints that accommodate multiple buses at a time.

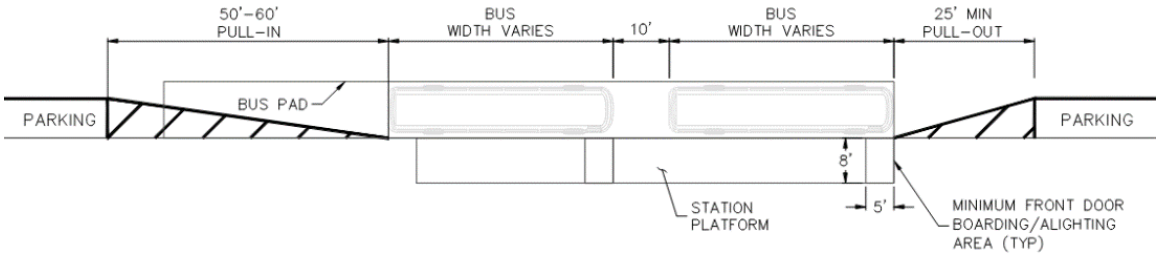
Pull-Out Transfer Center



GENERAL GUIDELINES

- All bus stops and transfer centers shall be long enough to accommodate the number and types of buses using it.
  - For each additional bus, add the length of bus plus 10' of clearance between the consecutive buses.
- Accommodations such as emergency call boxes, area maps, real-time information displays, shelters, benches, lighting, bicycle racks, and trash receptacles are preferred at transfer centers.

In-Lane Transfer Center

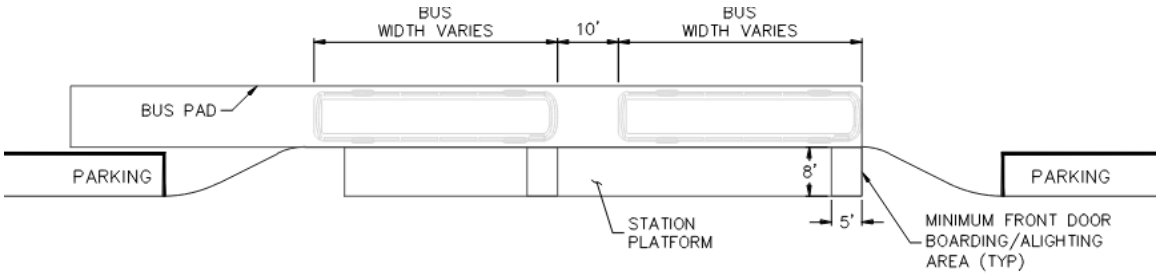


GENERAL GUIDELINES

- All bus stops and transfer centers shall be long enough to accommodate the number and types of buses using it.
  - For each additional bus, add the length of bus plus 10' of clearance between the consecutive buses.

- In-lane transfer centers should not be used as dwelling centers at the end of route lines.
- Accommodations such as emergency call boxes, area maps, real-time information displays, shelters, benches, lighting, bicycle racks, and trash receptacles are preferred at transfer centers.

Bulb-Out Transfer Center



GENERAL GUIDELINES

- All bus stops and transfer centers shall be long enough to accommodate the number and types of buses using it.
  - For each additional bus, add the length of bus plus 10' of clearance between the consecutive buses.
- Bulb out transfer centers should not be used as dwelling centers at end of route lines.
- Accommodations such as emergency call boxes, area maps, real-time information displays, shelters, benches, lighting, bicycle racks, and trash receptacles are preferred at transfer centers.

4 BUS STOP TYPOLOGIES

This chapter groups all CARTA and TCL bus stops into six "types" according to their context and usage. These types reflect the diversity of bus stops in the region, from standard stops to major urban transit centers.

One of the unique factors of the BCD region is the diversity of communities—rural, suburban, urban, and historic—creating a range of transit operating environments for both CARTA and TCL.

Together, the six types below form a bus stop "typology", which categorizes bus stops based on their operational characteristics, service levels, ridership, and surrounding land use contexts.

1. Transit Centers
2. Transfer Stops
3. Park & Rides
4. LCRT Stations
5. High Activity Stops
6. Standard Stops

These categories help determine which amenities are suitable at different stops. All stops will have required, preferred, and optional amenities based on their type:

Figure 4-1 provides a description of each bus stop type, examples for each, and how the types differ in terms of weekday ridership and frequency.

Figure 4-1 BCDCOG Typology Descriptions, Examples, and Characteristics

Stop Type	Description	Examples	CARTA Buses per Weekday
Transit Centers	Official CARTA transit centers	▪ N. Charleston Super Stop/Shipwatch Sq. ▪ Downtown Transit Center (including Transit Mall, Mary St. @ Meeting St., Visitors Center) ▪ Citadel Mall	~100 Buses every 6 min
Transfer Stops	Stops with transfer activity but are not official transit centers	▪ Calhoun St / Jonathan Lucas St (far side) ▪ Hungry Neck Blvd / Theater Dr (Mt. Pleasant Towne Centre) ▪ Calhoun St / St Philip St	60-90 Buses every 10 min
Park & Rides	Parking lots with connecting services to major activity centers	▪ Citadel Mall P&R ▪ Melnick P&R ▪ Wando Crossing P&R ▪ Walmart-Market at Oakland ▪ James Island Walmart ▪ Dorchester Village Shopping Center	15-60 Buses every 15-60 min
LCRT Stations	Future Lowcountry Rapid Transit Stations	▪ LCRT stations at Mall Drive, Hanahan Road, John Street, and others	Buses every 10 min
High Activity Stops	Stops where ridership, transfer activity, and/or proximity to a major activity center merit higher investment	▪ Medcom St/Trident Medical Center ▪ Waterfront Park ▪ King St/Mt Pleasant St (Joseph Floyd Manor)	30-50 Buses every 30 min
Standard Stops	The most typical stops often served by 1 route		<30 Buses every 30-60 min

TRANSIT CENTERS

Transit Centers are transit stops that experience very high ridership and a high number of transfers. They usually serve the system's most frequent bus routes. Since these stops have the region's highest level of ridership and service, they should provide a wide range of information and passenger amenities.

CARTA maintains 3 official transit centers: the North Charleston Super Stop, the Downtown Transit Center (including Transit Mall, Mary Street at Meeting Street, Visitors Center), and the Citadel Mall. The Shipwatch Square Center is planned to replace the North Charleston Super Stop.

Examples

Bus stop at Citadel Mall.

Mary Street Transit Center (Downtown Charleston).

North Charleston Super Stop.

Amenities

Required	Preferred	Optional
▪ Landing Pad ▪ Bus Stop Sign ▪ Shelter ▪ Lighting ▪ Real Time Information ▪ Enhanced Passenger Information ▪ Trash Can ▪ Bench	▪ Bike Rack	▪ Electric Bus Charger ▪ Fare Machine ▪ Car Parking

- Safety and Security Elements

TRANSFER STOPS

Transfer Stops have higher ridership and levels of bus service than most CARTA stops. They are characterized by serving more than 1 bus route. Transfer stops should provide high levels of passenger amenities and information to help riders navigate the bus system. Transfer stops can have extended boarding areas to accommodate multiple buses at the same time.

Transfer stops such as Calhoun Street at Jonathan Lucas Street (far side) and Hungry Neck Boulevard at Theater Drive (Mount Pleasant Towne Center) have significant transfer activity but are not official transit centers.

Example

Bus stop at Calhoun St / Jonathan Lucas St.

Amenities

Required	Preferred	Optional
▪ Landing Pad ▪ Bus Stop Sign ▪ Shelter ▪ Lighting ▪ Real Time Information ▪ Enhanced Passenger Information ▪ Trash Can ▪ Bench	▪ Bike Rack	▪ Fare Machine ▪ Safety and Security Elements

PARK & RIDES

Park & Ride stops are parking lots with connecting transit services that allow commuters heading to major activity centers to leave their vehicles and transfer to a bus for the remainder of their journey. CARTA and TriCounty Link operate 19 Park & Ride lots. Park & Ride stops have special amenity needs, such as the provision of parking and additional passenger information. The North Charleston Rivers Avenue Park & Ride is one example of the region's Park & Ride stops.

Example

North Charleston Rivers Avenue Park & Ride (2150 Melnick Dr, North Charleston, SC 29406)

Amenities

Required	Preferred	Optional
▪ Landing Pad ▪ Bus Stop Sign ▪ Shelter ▪ Lighting ▪ Real Time Information ▪ Enhanced Passenger Information ▪ Trash Can ▪ Bench ▪ Safety and Security Elements ▪ Bike Rack ▪ Car Parking		▪ Fare Machine ▪ Electric Bus Chargers

LCRT STATIONS

The Lowcountry Rapid Transit is a programmed Bus Rapid Transit line that will connect North Charleston and Charleston via US 78/US 52 (the Rivers Avenue corridor) from the Exchange Park Fairgrounds to the Charleston Peninsula/Medical District. LCRT stations will have special branding and many amenities. These station design guidelines are being developed as part of the separate LCRT study, and they will occupy their own bus stop type within the design guidelines. There are 20 LCRT stations planned for the corridor.

LCRT Station Architecture

LCRT Station Amenities

HIGH ACTIVITY STOPS

High activity stops have high existing or potential ridership due to proximity to major or transit-critical destinations. These include but are not limited to hospitals, transportation facilities, large residential developments, low-income housing, shopping centers, government buildings, colleges, and universities. Roughly 25 CARTA stops fall into the High Activity Stops type.

High activity stops have more minimum amenities due to their high ridership.

Example

Bus stop at Medcom St / Trident Medical Center.

Amenities

Required	Preferred	Optional
▪ Landing Pad ▪ Bus Stop Sign ▪ Lighting ▪ Real Time Information ▪ Enhanced Passenger Information ▪ Trash Can ▪ Bench	▪ Shelter ▪ Bike Rack	▪ Fare Machine ▪ Safety and Security Elements

STANDARD STOPS

The vast majority of CARTA stops (about 750) fall into the Standard Stops type. These stops, typically served by only 1 route, experience relatively lower ridership and bus service. Because they range widely in terms of curb condition, ADA compliance, and room available for investment, these stops have minimum requirements that require only ADA compliance and a bus stop sign. These stops have a longer list of preferred amenities that are recommended to be included where space and funding allow.

Example

Standard Stops with a variety of curb conditions, room available for improvements and investment, as well as ADA compliance.

Amenities

Required	Preferred	Optional
▪ Landing Pad ▪ Bus Stop Sign	▪ Shelter ▪ Lighting ▪ Enhanced Passenger Information ▪ Trash Can ▪ Bench	▪ Real Time Information ▪ Bike Rack ▪ Safety and Security Elements ▪ Fare Machine

SUMMARY OF BUS STOP AMENITIES BY TYPOLOGY

Figure 4-2 shows the required, preferred, and optional amenities for all bus stop types. Good faith efforts should be made to meet these requirements. Beyond **required** amenities**,** every effort should be made to include **preferred** amenities at stops, but they may not be feasible because of physical constraints or other factors. **Optional** amenities are the remaining amenities that may feasibly be included at a bus stop.

Figure 4-2 BCDCOG Bus Stop Types and Minimum, Preferred, and Optional Amenities

Amenity	Transit Centers	Transfer Stops	Park & Rides	LCRT Stations	High Activity Stops	Standard Stops
ADA compliance	**Required**	**Required**	**Required**	*	**Required**	**Required**
Bus stop sign	**Required**	**Required**	**Required**	*	**Required**	**Required**
Lighting	**Required**	**Required**	**Required**	*	**Required**	Preferred
Real-time information	**Required**	**Required**	**Required**	*	Preferred	*Optional*
Enhanced passenger information	**Required**	**Required**	**Required**	*	**Required**	Preferred
Trash can	**Required**	**Required**	**Required**	*	**Required**	Preferred
Bench	**Required**	**Required**	**Required**	*	**Required**	Preferred
Shelter	**Required**	Preferred	**Required**	*	Preferred	Preferred
Bike rack	Preferred	Preferred	**Required**	*	Preferred	*Optional*
Fare machine	*Optional*	*Optional*	*Optional*	*	*Optional*	*Optional*
Electric bus charger	*Optional*		*Optional*	*		
Safety and Security Elements	**Required**	*Optional*	**Required**	*	*Optional*	*Optional*
Car Parking	*Optional*		**Required**	*		

*LCRT station amenities are being determined through a separate study.

5 BUS STOP AMENITIES

Bus stop amenities are the elements available at a given bus stop, such as bus stop signs, maps, shelters, and benches. This chapter provides guidance on the bus stop amenities referenced in Chapter 4 – Bus Stop Typologies.

Amenities covered in this chapter include:

Landing pads

Bus stop signs

Lighting

Real-time information

Enhanced passenger information

Trash cans

Benches and seating

Shelters and shade

Bike racks

Fare machines

Overhead chargers for electric buses

Safety and Security Elements

Each category of amenity includes: (1) a description, (2) where they're required, preferred, or optional, (3) guidance, (4) roles and responsibilities, and (5) relevant appendices. Photos and diagrams are available when relevant.

One central consideration for bus stop amenities is compliance with the Americans with Disabilities Act (ADA). For more information on **ADA compliance**, see the callout box on the next page.

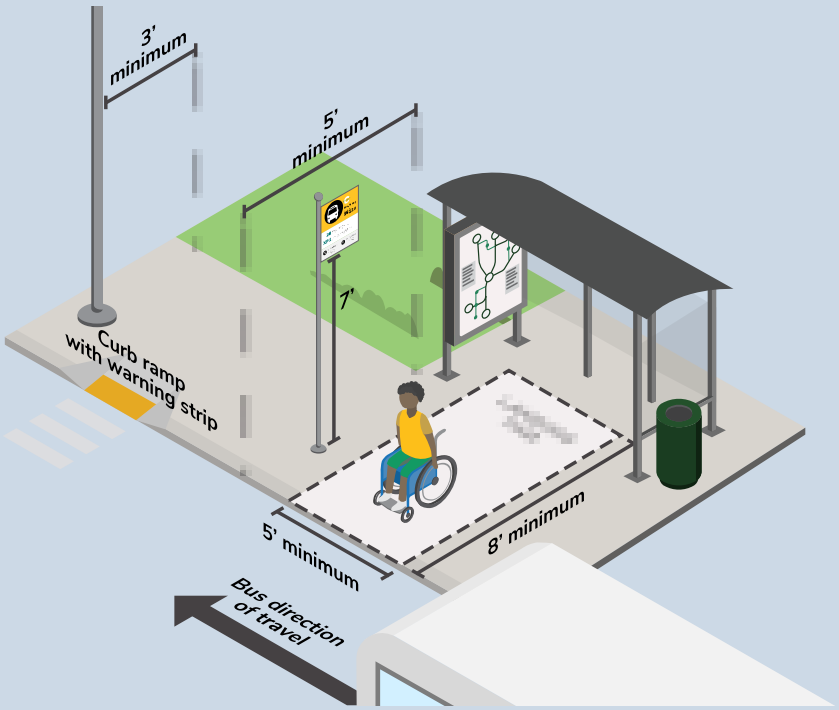
ADA Compliance

Access to bus stops is essential to the success of the transit network. Accessible boarding and alighting areas help to afford equal access to transit for all passengers, including those who use wheelchairs or other mobility devices. All bus stops being installed or upgraded must conform to the physical dimension requirements derived from the Americans with Disabilities Act of 1990 (ADA) and the Public Rights-of-Way Accessibility Guidelines (PROWAG), which are the primary federal guidelines for accessibility relating to transit facilities produced by the United States Access Board. Modifying existing stops to comply with ADA, though desirable from an accessibility perspective, is not required under ADA. Modification of existing stops can be difficult, especially if the stops are at sites with limited easement or not subject to CARTA's control, such as shopping malls, on state rights-of-way, or suburban subdivisions.

A bus stop area is a designated location indicated by a bus stop sign where the bus will stop to let passengers board and alight. Bus stop signage, landing pads, passenger waiting areas, benches, and shelters are subject to ADA requirements to ensure access for all users. Flag stop areas/zones are not considered a designated area and thus not subject to the requirements outlined.

Bus stops with any of the amenities included in this chapter must have a 3-foot wide path through the stop for pedestrians to bypass the stop. Additionally, a 3-foot wide path must be provided to access any of the bus stop elements provided, including shelters, information, and any interactive elements such as push buttons. ADA Compliance was identified as one of the largest areas of opportunity for improving bus stops in the Charleston region.

Figure 5-1 ADA Compliance at a Bus Stop



LANDING PADS

The landing pad, also known as the accessible boarding area, is the place where riders get on and off the bus from the front door, directly adjacent to the bus stop sign. This is also the space where bus drivers deploy the ramp for riders using mobility devices, such as a wheelchair.

Landing Pads are a Top Priority

The landing pad is the BCDCOG's top priority for compliance with ADA mandates. Other amenities listed in this chapter are important but should not displace investment in adequate landing pads.

Where They're Required

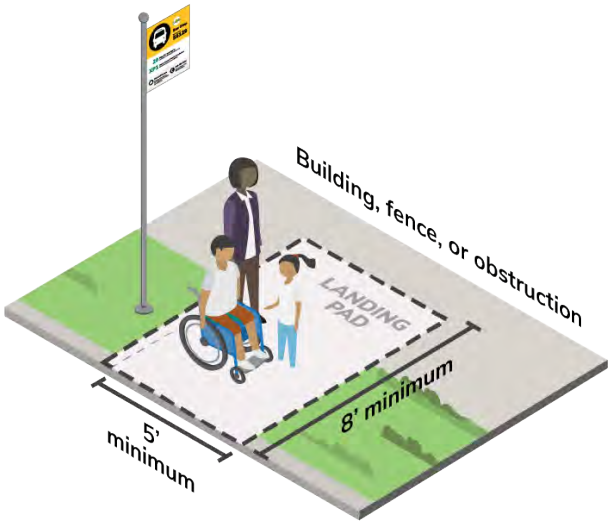
Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Required	TBD	Required	Required

Guidance

According to ADA Standards issued by the U.S. Department of Transportation (DOT), all new or upgraded bus stops are **required** to have a front landing pad that:

- Provides a firm, stable surface
- Provides a clear length of 96 inches (8 ft.) minimum, measured perpendicular to the curb, and a clear width of 60 inches (5 ft.) minimum, measured parallel to the roadway

Figure 5-2 ADA-Accessible Boarding Area (Landing Pad)



- Parallel to the roadway, has a slope that is 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%)

A rear accessible boarding area should also be provided at high ridership bus stops to accommodate boardings and alightings occurring at the rear door of the vehicle. Since the position of the rear door may vary somewhat on various bus types, the rear door clear zone is recommended to be 10' wide (parallel to the roadway), and 4' deep (perpendicular to the roadway). Finally, landing pads and clear zones should not be obstructed by any physical features such as utility poles, sign poles, trees, newspaper machines, etc.

For CARTA, **the standard depth for poured concrete or asphalt landing pads is 4".**

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Coordinate with dev/town planners to make sure all new/upgraded stops have landing pad and that they meet federal guidelines ▪ Does not own street and road right-of-way, except within certain Transit Centers ▪ Responsible for approving all landing pad designs ▪ Responsible for designing or constructing accessible landing pads and paths *[when appropriate]*
Other Agency Staff	▪ Responsible for designing or constructing accessible landing pads and paths *[when appropriate]* ▪ Coordinate with CARTA for their installation as outlined in Chapter 8 – Bus Stop Modifications
Developer	▪ Responsible for designing or constructing accessible landing pads and paths *[when appropriate]* ▪ Coordinate with CARTA for their installation as outlined in Chapter 8– Bus Stop Modifications

Relevant Appendices

- Appendix D – Bus Stop Accessibility and ADA Standards

BUS STOP SIGNS

Bus stop signs are the most basic element of a bus stop and are vital to the transit customer experience. As such, all bus stops served by CARTA must have consistently maintained bus stop signs, indicating where bus drivers will stop and where riders will board and alight the bus.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Required	TBD	Required	Required

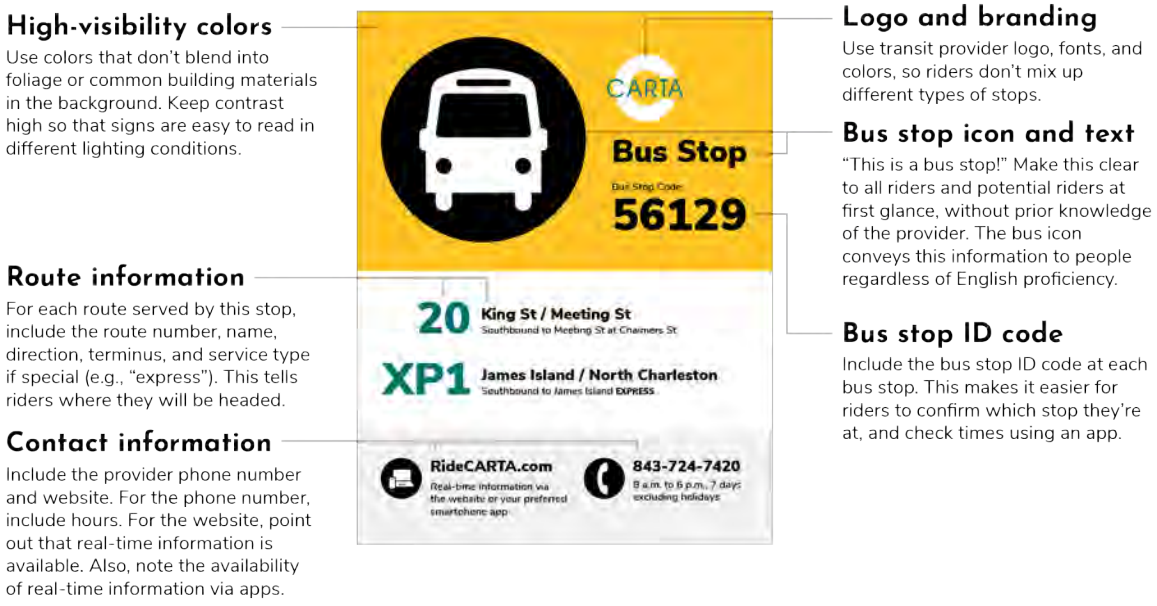
Guidance

This guidance covers: (1) elements and design, (2) placement, and (3) mounting.

Sign Elements and Design

Figure 5-3 shows a potential bus sign design for CARTA. It shows the information that should be visible on all CARTA bus stop signs: bus stop icon and text; route number(s), name(s), direction(s), terminus(es), and service type(s); contact information; transit provider logo and branding; and the bus stop ID code.

Figure 5-3 Bus Stop Sign Elements Mockup



Note: The above mockup is not intended to be an official sign redesign. It is shown only to convey the key elements that should be visible on all bus stop signs.

Sign Design and Accessibility (ADA)

Transit signs should have letter styles, design, and color choices that are unique to the transit system so that passengers can easily identify bus stops. Customer information on the signs, as discussed earlier, should be legible and clear for all users, including persons with disabilities. According to ADA requirements, letters and numbers should have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10 (Toolkit for the Assessment of Bus Stop Accessibility and Safety, TCRP Report 19, 1996). The characters and background of signs should be contrasting and should have a non-glare finish. When possible, double-sided signs should be used, so the sign is visible from both directions.

Sign Placement

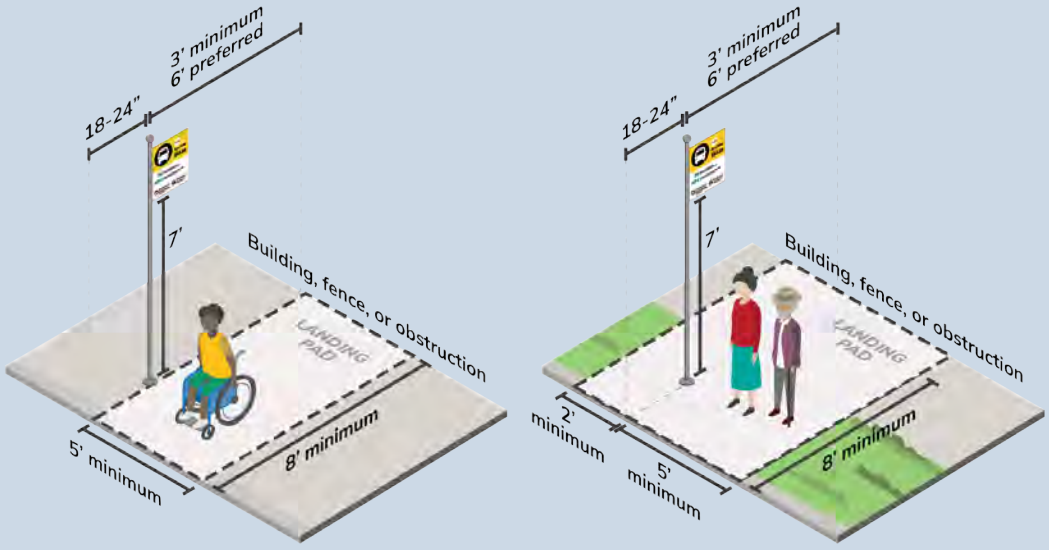
Bus stop signs should be placed where customers board at the front door of the bus, adjacent to the landing pad.

Sign Placement: Inside or Outside the Landing Pad

Figure 5-4 shows minimum dimensions for the placement of a sign with respect to the landing pad of the stop.

If the sign is placed outside the landing pad concrete, then the landing pad must be the standard 5' width, perpendicular to the street (left side of Figure 5-4). However, if the sign is placed *inside* the landing pad concrete, then the minimum landing pad width must be 2' wider (right side of Figure 5-4).

Figure 5-4 Bus Stop Sign Placement



Sign Mounting

Whenever possible, bus stop signs should be mounted on their own post or other approved standard post, such as a square post perforated by holes down its length, to make it easier to recognize for riders with visual disabilities to identify the bus stop. Bus stop sign poles can be installed in pavement or turf grass. BCDCOG recommends that bus stop sign posts be buried below grade a minimum of 2 feet, but signs can be surface mounted as needed.

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Provide, install, and maintain a bus stop sign at every bus stop
Other Agency Staff	▪ Coordinate with CARTA for pole placement and installation in the public right-of-way, as outlined in Chapter 6 – Bus Stop Modifications
Developer	▪ Coordinate with CARTA for pole placement and installation in the private right-of-way, as outlined in Chapter 6 – Bus Stop Modifications

Relevant Appendices

- Appendix D – Bus Stop Accessibility and ADA Standards

LIGHTING

Adequate lighting is important for passenger comfort and security, as well as to improve the visibility of waiting passengers to approaching bus drivers and other oncoming traffic.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Required	TBD	Required	Preferred

Guidance

Almost all bus stops are served after dark or during inclement weather and should ideally be located to take advantage of existing street lighting or other outside facility lighting. If that is not possible, lighting should be installed at the stop, either via mounted lights or within shelters.

When possible, efforts should be made to reduce the presence of shadows and dark enclosures in and around the bus stop

Once bus stop lighting is installed, it is important to ensure that all bus stop lights work. Members of the public may report damaged lighting and unsafe waiting conditions to CARTA.

Figure 5-5 Examples of Bus Stop Lighting (Charleston, SC and North Charleston, SC)

Solar lights and shelter lights installed at CARTA stops.

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund, install, and maintain integrated bus shelter lighting and sign-mounted solar power lights at bus stops
Other Agency Staff	▪ Install and maintain overhead street lamps at bus stops ▪ Coordinate with CARTA for placement and installation, as outlined in Chapter 6– Bus Stop Modifications
Developer	▪ Install and maintain adjacent lighting at bus stops ▪ Coordinate with CARTA for placement and installation, as outlined in Chapter 6 – Bus Stop Modifications

Relevant Appendices

- Appendix E –Solar Lighting Specifications

REAL-TIME INFORMATION

Real-time information (RTI) shows riders when a bus will reach a given stop, based on the actual vehicle's location. RTI enables riders to spend less time waiting for the bus and anticipate arrival times more accurately—even when a bus is delayed. Furthermore, when the underlying RTI data is open source, third-party developers can integrate it into websites and smartphone apps.

RTI can be available at bus stops in the form of digital signage (Figure 5-6). This is especially useful for riders who do not own a smartphone. However, riders who can access RTI through a smartphone app will nonetheless find it easier to check available options on a larger screen.

Real-Time Information Displays are Currently Being Expanded

Real-time information displays are not currently installed at any CARTA stops, but the agency is in the process of deploying the boards at select high-ridership locations.

Figure 5-6 Real-Time Arrival Information Board mounted to CARTA Bus Stop

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Preferred	TBD	Required	Optional

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund, install, and maintain real-time information displays at bus stops
Other Agency Staff	▪ Municipal planners approve shelters [where appropriate. See Page 6-10 (on Encroachment Permits, Private Property Use Agreements, and Municipal Review Committes for additional information on municipal review committees.]

Relevant Appendices

- Appendix D –Digital Sign Specifications

ENHANCED PASSENGER INFORMATION

Enhanced passenger information at stops includes schedules, system and route maps, and local area maps. These are important because:

- Schedule information at bus stops helps reduce some of the uncertainty associated with taking the bus.
- Transit system maps can assist passengers 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.

Community Input: More Passenger Information at Key Stops

Community input has revealed a preference for more system information, particularly at stops near major activity centers.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Required	TBD	Required	Preferred

Guidance

This section provides guidance on: (1) schedule information, (2) system and route maps, and (3) local area maps and information.

Schedule Information

CARTA should provide relevant route schedules at select bus stops. In the case of schedule changes, CARTA will place rider notices at the affected bus stops. Schedule information may be posted in bus shelters at transfer locations and at stops where it is likely that new, visiting, or occasional passengers are likely to interact with the transit network.

System and Route Maps

Most high ridership stops, especially stops that are major transfer locations, should have some form of a transit system map. CARTA will provide system-wide or route-specific maps at selected bus stops depending on the services available at a given stop. Maps should be prioritized at stops with high volumes of transfers and where new, visiting, or occasional passengers are likely to interact with the transit network.

Figure 5-7 Transit System Maps Installed at Bus Stops (Charleston, SC)

Local Area Maps and Information

Local area maps often highlight nearby transportation services, such as train stations, and other bus stops. Local area maps may also highlight tourist destinations, government offices, or information centers. Local governments may post area maps and information in bus shelters at transfer locations and at stops where it is likely that new, visiting, or occasional passengers are likely to interact with the transit network. Maps should be prioritized at stops with high volumes of transfers and where new, visiting, or occasional passengers are likely to interact with the transit network.

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund, install, and maintain printed bus schedules and system and route maps at bus stops
	▪ Fund, install, and maintain print local area maps and information at bus stops ▪ Coordinate with CARTA for placement and installation, as outlined in Chapter 6– Bus Stop Modifications

Other Agency Staff	

TRASH CANS

Trash receptacles provide a convenience for waiting riders and help to reduce the amount of trash left on buses and on the street.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Required	TBD	Required	Preferred

Guidance

Trash cans should be within easy reach of the bus stop waiting area but must not block accessible paths, landing pads, bus door opening zones, shelters, or posted information. Trash cans should be secured to the ground to prevent accidental tipping or unauthorized movement. Trash cans on the ground typically require a 2' by 2' footprint.

Trash receptacle design should be consistent with the design of the other bus stop amenities. There are multiple types of trash cans in use across bus stops in the region. CARTA installs two types of receptacles: landscape trash receptacles, which are attached to signposts, and shelter trash receptacles. The Town of Mount Pleasant and the City of Charleston use streetscape trash cans to service bus stops.

Figure 5-8 Trash Can at a CARTA Bus Stop

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund and install CARTA Standard Trash Receptacles at bus stops ▪ Maintain CARTA-installed trash receptacles at appropriate intervals to ensure bus stops remain comfortable for those waiting for the bus

Other Agency Staff	▪ May fund and install municipal or custom trash receptacles at bus stops ▪ Maintain municipal or custom trash receptacles at appropriate intervals to ensure bus stops remain comfortable for those waiting for the bus ▪ Coordinate with CARTA for placement and installation, as outlined in Chapter 6 – Bus Stop Modifications

Relevant Appendices

- Appendix E – Trash Receptacle Specifications

BENCHES AND SEATING

Providing seating at bus stops significantly enhances the experience of waiting for a bus. Benches are the most typical type of seating, but alternatives such as low walls, leaning rails or bollards can also be used. Seating also presents an opportunity to integrate art or advertising into bus stop design.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Required	Required	TBD	Required	Preferred

Guidance

All benches and leaning rails installed by CARTA or local governments must meet ADA requirements. Benches must not block accessible paths and landing pads, bus door opening zones, shelters or posted information.

Benches should provide a level of comfort appropriate for the typical wait and constructed of materials that will not be excessively hot in direct sunlight. Seating exposed to the elements can sometimes be placed under trees or near buildings to provide shade. Seating should be secured to a poured foundation and incorporated within shelters when possible. **The standard depth for poured concrete or asphalt foundations beneath benches is 4".**

CARTA encourages local governments and private entities to install benches at bus stops to increase passenger comfort, especially at stops with long wait times and at stops frequented by older adults, people with disabilities, and children.

Figure 5-9 CARTA-Approved Bus Stop Benches in the Charleston region

Figure 5-10 CARTA-Approved Leaning Rail Design(Source: BASCO)

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund and install only CARTA Standard Benches attached to bus shelters ▪ Maintain all bus stop seating
Other Agency Staff	▪ May fund and install municipal or custom seating at bus stops ▪ Coordinate with CARTA for placement and installation of bus stop seating, as outlined in Chapter 6 – Bus Stop Modifications

Relevant Appendices

- Appendix E – Bench Specifications and Leaning Rail Specifications

SHELTERS AND SHADE

Bus shelters protect transit riders from the elements, provide seating for waiting passengers, and help to identify stop locations. Aside from buses, they are one of the most visible elements of a transit system. As such, attractive and well-designed shelters can help enhance public perceptions of transit and function as advertisements for available services. Similar to benches, shelters also present an opportunity to integrate art or advertising into bus stop design.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Preferred	Required	TBD	Preferred	Preferred

Guidance

Shelters

A number of different shelters are currently in use in the BCDCOG region, including the CARTA standard shelter and standard shelters unique to municipalities. Shelter specifications are not consistent across the system due to various municipal and historic district regulations. Appendix E – Shelter Specifications describes the specific requirements and specifications related to shelters in the historic district of Charleston and all relevant municipalities.

Figure 5-11 Standard CARTA Shelter

CARTA pays for the baseline costs of its approved shelter described in Appendix E – Shelter Specifications. All costs above the baseline costs of the approved shelter design must be borne by the entity requesting or requiring the shelter.

Additionally, all shelter guidelines discussed in Appendix E exist in addition to ADA guidelines. Shelters must not block accessible paths and landing pads, bus door opening zones, shelters or posted information. All shelters must meet Federal ADA requirements. A clear path to access the shelter, minimum 3' wide, must be available to provide access for pedestrian and people using mobility devices.

All proposed shelter locations must be evaluated by CARTA to ensure installation feasibility and accessibility, for each shelter type requires different minimum site envelopes. All shelters must be constructed to be durable and easy to maintain. Shelters must be built on and secured to a reinforced concrete foundation; CARTA requires that the poured foundation for its standard shelter be 8" deep reinforced concrete. Poured foundations for historic shelters must be 12" deep reinforced concrete. Poured foundations for custom shelters must be 4" deep with an 18" edge around the perimeter, and they must also include a "turn down" edge and 4 12" x 30" depth footers of reinforced concrete. Bus shelters should provide a clear line of sight to approaching buses and ensure that waiting passengers are visible to bus operators and other street users.

Shade

Amenities that offer shade from the sun but not shelter include building overhangs, awnings, and trees. Addition shade options include cantilever shade structures like "shade sails" which provide shade over areas that require unobstructed spaces. CARTA does not currently fund, install or maintain shade structures other than the CARTA standard shelter. Local governments or private entities interested in providing alternative shade structures must coordinate with CARTA staff to evaluate implementation and feasibility.

Figure 5-12 Shade Sails at Avondale Park & Ride (Avondale, Arizona)

Figure 5-13 Building Overhang used for Shade at North Charleston Super Stop)

Roles and Responsibilities

Role	Responsibilities and Considerations
Community	▪ Members of the public may report damaged shelters to CARTA. ▪ Residents, businesses, property owners, and civic groups may take an active role in keeping shelters clean through the Adopt-A-Stop Program. ▪ Members of the public may request a shelter at a stop.
BCDCOG/CARTA Staff	▪ Fund and install CARTA standard shelters at locations chosen using the Shelter Scoring Criteria described in Chapter 8 – Implementation. ▪ If shelter is being installed by a local government, a developer or in private right-of-way, coordinate with the relevant parties for installation as outlined in Chapter 6 – Bus Stop Modifications ▪ Maintain all shelters within the bus stop network
Other Agency Staff	▪ Fund and install upgrade shelters ▪ Coordinate with CARTA for their installation as outlined in Chapter 6 – Bus Stop Modifications
Developer	▪ Fund and install CARTA approved and upgraded shelters ▪ Coordinate with CARTA for their installation as outlined in Chapter 6 – Bus Stop Modifications

Relevant Appendices

- Appendix E –Shelter Specifications

BICYCLE RACKS

Bicycle racks help to provide an additional way for passengers to access bus service. At most bus stops in the BCDCOG region, outdoor unsheltered bike racks are an appropriate solution for short-term bike parking. Short-term bike parking serves those who leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Unsheltered bicycle racks provide a high level of convenience by being readily visible and moderate level of security.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Preferred	Preferred	Required	TBD	Preferred	Optional

Guidance

Unsheltered bike racks are a common and affordable way to provide short-term parking. While there is a large range of bike storage solutions, "inverted-u" racks with a square tube are CARTA's approved design for outdoor, unsheltered bike racks at bus stations. "Inverted-u" designs make for easy bike parking by giving bikes full support and multiple locking points for a u-style bike lock, in accordance with the guidelines of the Association of Pedestrian and Bicycle Professionals.

Figure 5-14 Square Tube Bicycle Racks at Bus Stop (North Charleston, SC)

Specifications related to the CARTA approved bicycle rack are available in Appendix E. Bicycle racks at bus stops may be installed and maintained by CARTA, local governments or private entities. SCDOT does not install or maintain bike racks at transit stops. Both CARTA and the City of Charleston use square tube "inverted-u" racks as their standard bike rack.

Bicycle racks should be within easy reach of the bus stop waiting area but must not block accessible paths and landing pads, bus door opening zones, shelters or posted information. They should be sited in areas with adequate lighting to discourage theft.

Bicycle racks should be affixed to a paved surface. For CARTA, **the standard depth for poured concrete or asphalt bicycle rack foundations is 4".** If multiple bicycle racks are installed, they must be placed at least 3 feet apart to allow convenient access. Where multiple rows of racks are installed to form a "bicycle parking lot," there should be 4 feet between each row, measured from tire to tire.

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund and install CARTA standard bike racks at high need locations ▪ If a bike rack is being installed by a local government, a developer, or by CARTA in private right-of-way, coordinate with the relevant parties for installation as outlined in Chapter 6 – Bus Stop Modifications ▪ Maintain CARTA-installed racks within the bus stop network
Other Agency Staff	▪ Fund and install municipal bike racks ▪ Coordinate with CARTA for their installation as outlined in Chapter 6 – Bus Stop Modifications
Developer	▪ Fund and install bike racks ▪ Coordinate with CARTA for their installation as outlined in Chapter 6 – Bus Stop Modifications

Relevant Appendices

- Appendix E –Standard Bike Rack Specifications

FARE MACHINES

Fare machines, also known as ticket vending machines (TVMs) are secure electronic kiosks that allow passengers to purchase single fares and passes. The installation of fare payment/purchase equipment at bus stops can improve customer convenience and service reliability by reducing on-board cash transactions and bus stop dwell times.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Optional	Optional	Optional	TBD	Optional	Optional

Guidance

There are currently no fare machines at transit stops within the BCDCOG region. To be effective, fare payment equipment should be located in close proximity to the bus boarding areas and instructional signage must be provided. Fare machines must not block accessible paths and landing pads, bus door opening zones, shelters, or posted information.

Fare machines must incorporate braille or other tactile labels for buttons and keys and audible instructions for how to use the machine. Operable parts of fare machines must be placed at a height between 34 and 48 inches to accommodate passengers using mobility devices.

Off-board fare payment vending machines typically require a 10' by 10' footprint for two machines and should be semi-enclosed for protection from the elements. Additionally, fare payment equipment requires both power and communication connections as well as video surveillance. It is increasingly feasible to have these machines be solar-powered with wireless communications.

Figure 5-15 Off-Board Payment Equipment (New York, NY)

Roles and Responsibilities

Role	Responsibilities and Considerations
BCDCOG/CARTA Staff	▪ Fund, install, and maintain fare machines at select transit stops ▪ Coordinate with utility providers for electric and internet connections ▪ Coordinate with public or private partners for equipment installation as outlined in Chapter 6 – Bus Stop Modifications

ELECTRIC BUS CHARGERS

As many transit fleets convert to electric vehicles, agencies increasingly have the need to install on-street chargers to charge electric buses during layover periods. After receiving several discretionary grants and matching funds from BCDCOG, CARTA has a CIP in place to replace its fixed route transit bus fleet with battery electric buses and will have 28 in service by the end of 2022. CARTA is developing an Electric Bus Master Plan to identify charging infrastructure needs and placement. CARTA's Shipwatch Square transit center in North Charleston is planned to have overhead bus chargers.

The overhead chargers require an adjacent power cabinet that transforms the power, as well as the charge pole, a roughly 17' high structure that brings the power to the electrical port in the roof of the vehicle. Overhead chargers are suitable in layover locations where agencies store vehicles in between runs (this includes transit centers and Park & Rides), and they typically require a 5' by 5' area on the sidewalk for the power cabinet and a 3' by 3' area on the sidewalk for mounting the charge pole.

Figure 5-16 Example Overhead Charger Built by ABB

The power cabinet is in the background to the left of the vehicle.

SAFETY AND SECURITY ELEMENTS

In addition to lighting, elements video surveillance can contribute to making bus stops feel more safe and secure.

Where They're Required

Transit Center	Transfer Stop	Park & Ride	LCRT Station	High Activity Stop	Standard Stop
Required	Optional	Required	TBD	Optional	Optional

Guidance

A key consideration for implementing video surveillance at stops is the supporting infrastructure, which would require at least a power source. Consideration also should be given to connectivity to monitoring systems. Alternatively, the use of CCTV by businesses proximate to bus stops or shelters should be considered.

The use of communication systems at bus stops may enhance security. If cell phones are prevalent in a system, then a security program advising whom to call to report suspicious activity or actual criminal events could benefit passengers. Additionally, improving stops design to avoid blind spots and improve visibility can also help make waiting for the bus feel safer.

6 BUS STOP MODIFICATIONS

This chapter explains how bus stop modifications take place. It focuses on when modifications typically occur, and what the process is.

CARTA attempts to locate bus stops where they will be most convenient, accessible, and safe. Nonetheless, sometimes changes are necessary.

Bus stop modifications may originate through a CARTA analysis of local conditions using the guidelines in this section, or by request from elected officials, community organizations, transit riders, or property owners.

Changing a bus stop can be a complex process that involves access, safety, and operational efficiency. It also requires analysis and coordination among stakeholders. Ultimately, factors related to access, safety, and security for people who use the street may take priority and override the concerns of property owners when determining transit stop locations.

The modifications listed in this chapter include: (1) modifying amenities at an existing bus stop, (2) adding bus stops, (3) relocating bus stops, (4) removing bus stops, and (5) modifications during construction. This chapter also covers different types of encroachment permits involved in bus stop modifications.

CARTA Is Here to Help

CARTA receives requests year-round and implements modifications to bus stops on an as-needed and approved basis.

To make a bus stop-related request for CARTA, email Transit Planning at belenv@bcdcog.com or call BCDCOG at (843) 529-0400.

MODIFYING AMENITIES AT AN EXISTING BUS STOP

ADD, REMOVE, MOVE, OR OTHERWISE CHANGE AMENITIES—SUCH AS SEATING, LIGHTING, OR A SHELTER—AT A BUS STOP THAT ALREADY EXISTS.

When Might this Happen?

- A member of the public or a property developer requests a modification to amenities at an existing bus stop. Any member of the public can make such a request.
- CARTA determines through a planning effort that modifying amenities at existing bus stops is desired.
- SCDOT or a local municipality or county requests a modification to amenities at an existing bus stop based on state or local planning efforts, or as part of a roadway project.

What's the Process?

Step	Community	BCDCOG/ CARTA Staff	Other Agency Staff	Developers
Send a request for modifications to amenities at an existing bus stop (or stops). The request can come from a community member, property developer, municipality, county, SCDOT, or CARTA.	✓	✓	✓	✓
Use the Bus Stop Amenities Scoring process (see Chapter 8) to determine whether it is appropriate to make the requested modifications.		✓		
If the modification request is approved, CARTA staff will manage implementation.		✓		

ADDING BUS STOPS

ADD A NEW BUS STOP TO AN EXISTING BUS ROUTE.

Today, CARTA bus stops are generally spaced at appropriate distances to balance access and efficiency. While it is neither feasible nor efficient for every origin and destination point in the transit network to have a bus stop directly in front of it, there are instances where CARTA might consider adding a new stop to a bus route.

When Might this Happen?

- A member of the public or a property developer requests a modification to amenities at an existing bus stop. Any member of the public can make such a request.
- CARTA determines through a planning effort that modifying amenities at existing bus stops is desired.
- SCDOT or a local municipality or county requests a modification to amenities at an existing bus stop based on state or local planning efforts, or as part of a roadway project.

What's the Process?

Step	Community	BCDCOG/ CARTA Staff	Other Agency Staff	Developers
Send a request for bus stop addition. The request can come from a community member, property developer, municipality, county, SCDOT, or CARTA.	✓	✓	✓	✓
Evaluate a potential new location for an existing stop based on access, safety, and operational efficiency factors (see below call out box and Chapter 2 – Bus Stop Placement)		✓		
If the addition request is approved, CARTA staff will manage implementation.		✓		

All new stops must improve the transit network as a whole by strategically improving access to bus routes while maintaining operational efficiencies that enable passengers to reach their destinations quickly and reliably.

New Bus Stops: What Does CARTA Take into Account?

CARTA considers the following factors related to access, safety, and operational efficiency, when evaluating proposed new bus stop locations.

ACCESS

- Transit need, defined by demographics, socioeconomics, and other criteria;
- Access to (and at) the proposed stop in compliance with the Americans with Disabilities Act (ADA), including the boarding and alighting area, sidewalks, curb ramps, and pedestrian crossings;
- Equity, as defined and measured by Title VI of the Civil Rights Act of 1964;
- Amenities, including the feasibility of installing seating or a shelter;
- Block lengths, street connectivity, presence of controlled pedestrian crossings, and topography around the proposed stop;
- Curb space uses (i.e. loading, parking) and available curb space for buses to dwell.

SAFETY

- Lighting, visibility, and protection from vehicle traffic for waiting passengers;
- Presence of controlled pedestrian crossings;
- Ease of bus movement in and out of the proposed stop;
- Volumes and movements of traffic other than transit.

OPERATIONAL EFFICIENCY

- Routes that would serve the proposed stop, including their service type (Fixed, Commuter, DASH, Neighborhood Circulator) and their frequency of service;
- Land uses surrounding the proposed stop and their suitability for transit service;
- Spacing between adjacent stops and compliance with the Bus Stop Spacing Guidelines (See Chapter 2 – Bus Stop Placement)
- Travel time and dwell time effects on bus operations and passengers' trips;
- Potential ridership, primarily in the form of passengers who currently do not have adequate access to the transit network.

RELOCATING BUS STOPS

MOVE THE LOCATION OF AN EXISTING BUS STOP.

Most CARTA stops are located within the public right-of-way on public property. CARTA strives to provide safe, efficient, reliable transportation to as many people as possible. The relocation of a bus stop is a complex and costly process that involves a variety of safety and operational considerations, requiring input and cooperation from internal and external stakeholders. Relocating a bus stop is a decision that should not be made lightly.

When Might this Happen?

- CARTA determines that there is a major safety concern at an existing bus stop that is best resolved through relocation (based on the factors listed under "Safety" on the previous page.)
- CARTA determines through a planning effort that there is an opportunity to improve the safety, accessibility, or operational efficiency of a bus stop or route by relocating an existing bus stop.
- SCDOT or a local municipality or county requests the relocation of an existing bus stop based on state or local planning efforts, or as part of a roadway project.
- A property developer requests the relocation of an existing bus stop to provide more convenient access to residents, visitors or employees.

What's the Process?

Step	Community	BCDCOG/ CARTA Staff	Other Agency Staff	Developers
Send a request for relocating an existing bus stop (or stops). The request can come from a community member, property developer, municipality, county, SCDOT, or CARTA.	✓	✓	✓	✓
Evaluate a potential new location for an existing stop based on access, safety, and operational efficiency factors.		✓		
If relocation request is approved, CARTA will coordinate.		✓		

REMOVING BUS STOPS

REMOVE A SINGLE BUS STOP OR SEVERAL BUS STOPS ON A STREET SEGMENT OR ROUTE.

When Might this Happen?

- CARTA determines through a planning effort that one or several bus stops should be removed or consolidated to increase the operational efficiency of a bus route.
- CARTA permanently discontinues a bus service.

What's the Process?

Step	Community	BCDCOG/ CARTA Staff	Other Agency Staff	Developers
Analyze the stop or stops for safety, accessibility, transfer points, trip generators, ridership, and spacing guidelines (see Chapter 2- Bus Stop Placement)		✓		
Post a rider notice to notify transit users and the surrounding community of the proposed stop removal 15 days before stop is removed. See figure on next page for an example rider notice.		✓		
Remove bus stop.		✓		

Figure 6-1 Example Rider Notice at Modified Bus Stop

Stop Removal or Relocation: What Does CARTA Take into Account?

CARTA considers the following factors related to access, safety, location, ridership and trip generation when evaluating removing or relocating bus stops:

SAFETY/ACCESSIBILITY

It is vitally important that passengers only access the bus network where it is safe to do so. Because street infrastructure is the responsibility of the state, county, and/or local jurisdictions' departments of transportation, CARTA can make only minor accessibility improvements at bus stops. Bus stops without a safe waiting area, sidewalks, crosswalks, or lighting may be relocated to safer and more accessible locations.

For example, a stop on St. Andrews Boulevard at Sycamore Avenue was shifted from near-side to far-side to be located adjacent to a crosswalk that allows riders to more safely cross St. Andrews Boulevard (Figure 6-2 shows the stop before it was relocated. The crosswalk is visible in the left of the image).

Figure 6-2 Stop at St Andrews Blvd / Sycamore Ave Before Relocating for Safety and Access Reasons

TRANSFER POINTS

For the transit network to operate efficiently and effectively, passengers must be able to connect between services. Bus stops should be maintained at locations where passengers can connect to Tri-County Link and other transit providers. Bus stops may be retained at transfer points even if they do not meet spacing guidelines.

RIDERSHIP

Because CARTA has limited resources it is sometimes necessary to discontinue service to bus stops that are used by only a small number of passengers. Stops with less than five boardings and alightings per day may be considered for removal if it is not needed to meet the Bus Stop Spacing Guidelines in Chapter 2.

A bus stop with more than 100 boardings and alightings per day is a useful stop that should be retained. However, even stops that have more than 100 passengers a day may be removed when they are close to another stop, adjacent to a stop that functions as a transfer point, or adjacent to a stop with greater capacity for waiting passengers or amenities such as a bus shelter.

TRIP GENERATORS AND SPECIAL CONSIDERATIONS

Many origins and destinations in the transit network are very important to serve as directly as possible. Before removing a stop, consideration is given to nearby schools and universities, healthcare facilities, services and dense housing for people with disabilities and older adults, large employers, community centers, and other major points of interest. Bus stops near some trip generators may be retained even if they do not meet spacing guidelines.

MODIFICATIONS DURING CONSTRUCTION

Construction and maintenance near bus stops, whether related to public infrastructure or private development, is inevitable. It is vital that state and local government agencies and private developers coordinate with CARTA to ensure that passengers can safely access the transit network during periods of construction or maintenance.

Requirements for construction and maintenance near bus stops:

- In accordance with SCDOT Complete Streets regulations, work zone traffic control plans must address all modes of travel that are currently accommodated within the limits of the construction project. This may require appropriate design features to adequately maintain existing accommodations during construction.[1]
- Traffic control devices, including variable message signs, must not interfere with accessible paths to bus stops. If a traffic control device must block access to a bus stop, then an accessible temporary bus stop must be established during construction.
- Where an alternative route to an existing bus stop cannot be provided, work zone traffic control plans[2] must include a temporary bus stop. Temporary bus stops must be accessible to passengers with disabilities, with accessible boarding and alighting and waiting areas, and signage and notice must be provided to passengers.
  - A temporary bus stop should be signed by posting a temporary bus stop sign provided by CARTA
  - Local government agencies and private developers may mount a temporary bus stop sign on a temporary support they provide during construction.

Guidelines for construction and maintenance near bus stops:

- CARTA should be involved in the planning of traffic control during construction. CARTA seeks to minimize delay for passengers when creating detours, but street closures are not within its jurisdiction.
- Pedestrian routes during construction should be located on the same side of the street as the construction activity to reduce pedestrian crossings.

[1] Source: SCDOT http://info2.scdot.org/SCDOTPress/PublishingImages/DD%2028%20Complete%20Streets.pdf

[2] Detailed here: https://www.scdot.org/inside/pdfs/WZTCM/Work_Zone_Traffic_Control_Manual.pdf

ENCROACHMENT PERMITS, PRIVATE PROPERTY USE AGREEMENTS, AND MUNICIPAL REVIEW COMMITTEES

If a bus stop is approved to be moved or added according to the above guidelines, CARTA may have to obtain an encroachment permit, private property use agreement, and/or approval by municipal review. A bus stop modification may be subject to one or more of the following requirements. CARTA is available to assist with directing any relevant parties to the correct and relevant permitting websites described below:

Private Property Use Agreement

If a change will impact private property—e.g., a bus stop landing pad and shelter will encroach onto the land of a privately owned commercial site—CARTA will seek an Agreement with the property owner to either own or lease the land that the bus stop will occupy. CARTA, the property owner, the engineering firm CARTA hires to design and build the bus stop, and the municipality where the change is taking place will work together to obtain a permit to make the change.

If a change will impact public property, CARTA must obtain permits from the affected agency or municipality. All possible agencies and municipalities are listed below:

SCDOT Encroachment Permit

As of 2021, approximately three-quarters of CARTA bus stops are located on state roads. In the event that a stop is added or moved on a SCDOT road, and the stop involves a major capital improvement, CARTA must obtain an Encroachment Permit from SCDOT. The Encroachment Permit form and drawings are submitted for review to SCDOT, which reviews the submission for safety concerns, site visibility issues and traffic controls. Following rounds of review and changes, SCDOT will issue an Encroachment Permit. Guidelines and checklists for obtaining an Encroachment Permit from SCDOT are available online at https://www.scdot.org/business/permits.aspx. SCDOT maintains a "Street Finder" to help determine if a road is under municipal or SCDOT jurisdiction: https://ris.scdot.org/RoadwayInformationStreetFinder.aspx.

County of Charleston Encroachment Permit

Most CARTA bus stops are located in Charleston County. Where bus stops are sited to encroach on Charleston County public property, an encroachment permit is needed. Following rounds of reviews and changes to an application for an encroachment permit, the Charleston County Department of Public Works will issue an encroachment permit.

Application and instructions for an encroachment permit in Charleston County are available online: https://www.charlestoncounty.org/departments/public-works/index.php

City of Charleston Design Review Committee

As of 2021, approximately 375 of CARTA's stops are located in the City of Charleston (see Figure 6-3 and Figure). The Design Review Committee (DRC) is special to the City of Charleston. DRC has approved the new and historical shelter design used at CARTA bus stops (see Appendix E – Shelter Specifications) and is tasked with approving any major elements of a bus stop improvement located south of Line Street (the historic district) within the City of Charleston. Following rounds of review and changes, DRC will issue a final approval. DRC processes and procedures are available online: https://www.charleston-sc.gov/DocumentCenter/View/1336/DRC-process-and-application-form?bidId=.

Town of Mt. Pleasant Design Review Team

As of 2021, approximately 85 of CARTA's stops are located in Mt. Pleasant (see Figure 6-3 and Figure). Mt. Pleasant's Design Review Team (DRT) is charged with reviewing CARTA's bus stop site plans. DRT is tasked with approving any site plans for modified bus stops. Following rounds of review and changes, DRT will issue a final approval. DRT processes and procedures are available online: http://www.tompsc.com/1170/Development-Review-Team.

Town of James Island Encroachment Permit

An application is required when any type of work is proposed within a Town of James Island right-of-way or easement. The Town of James Island Encroachment Permit application is available online: https://www.jamesislandsc.us/Data/Sites/1/media/public-works-forms/encroachment-permit-application.pdf

City of North Charleston Permit

As of 2021, approximately 345 of CARTA's stops are located in North Charleston (see Figure 6-3 and Figure 6-4). If a site plan is along a North Charleston street, CARTA must work with the City to obtain an encroachment permit. Following rounds of review and changes to CARTA's site plan, the City will issue an Encroachment Permit. City of North Charleston encroachment permit processes and procedures are available online: https://www.northcharleston.org/business/construction-and-development/permits/encroachment-permit/.

Figure 6-3 Bus Stops by Municipality

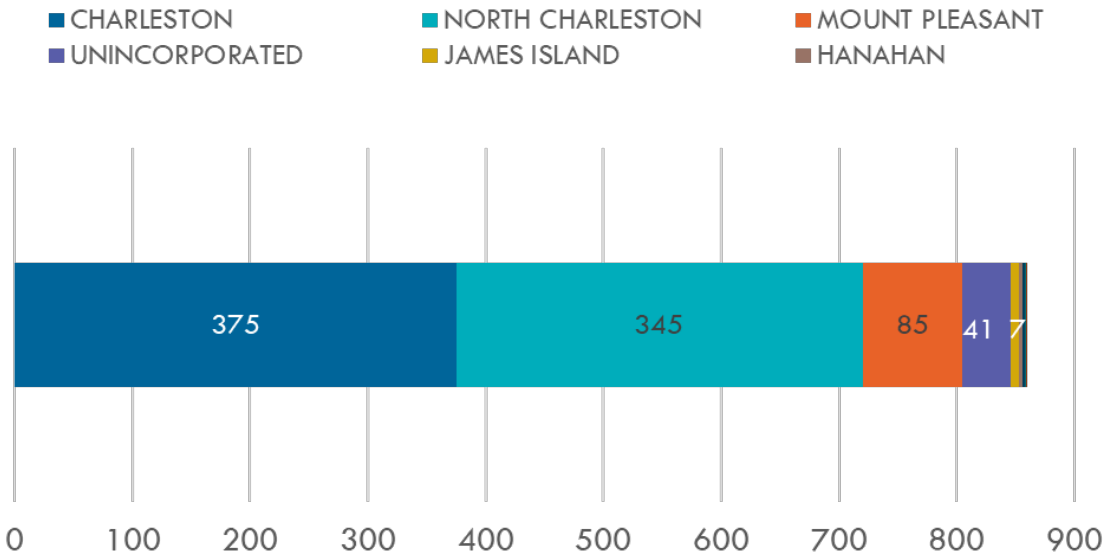
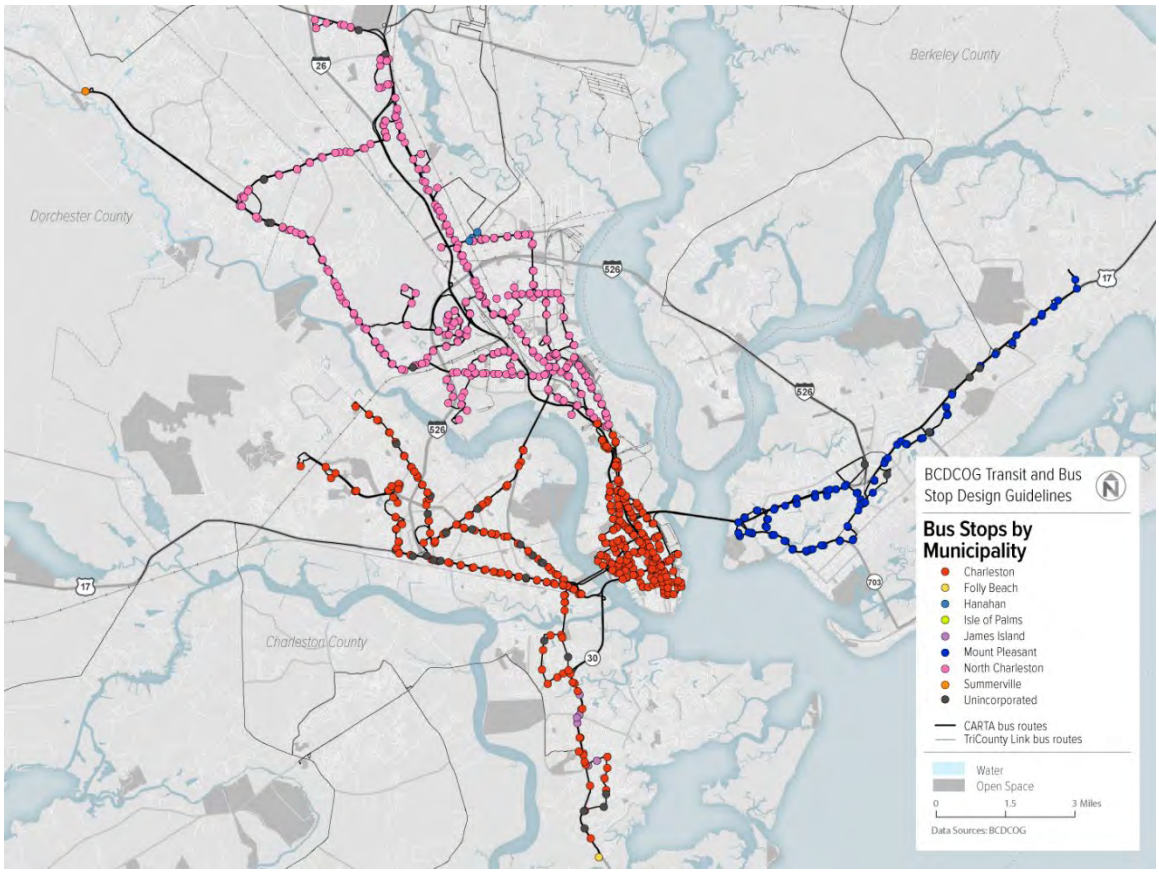


Figure 6-4 Map of Bus Stops by Municipality



7 OPERATIONAL CONSIDERATIONS

This section covers relevant technical and engineering considerations associated with transit operations: (1) vehicle dimensions, (2) turn radii, (3) visibility, (4) lane widths, and (5) coordination with other curb uses.

VEHICLE DIMENSIONS

Any space that will be served by a CARTA bus should consider the height, width, and length of vehicles to ensure safe accommodation. CARTA currently operates a fleet of standard transit buses in two sizes: 35 feet and 40 feet. CARTA has programmed 60' buses to come online in the future, and they will fit within the operational limitations described here. Most buses operated in CARTA's service area are 35' in length. Most buses are equipped with bicycle racks, front wheelchair ramps and a front-end kneeling feature that reduces step height for mobility-impaired patrons. CARTA owns and operates Tel-A-Ride, the regional paratransit service. At several bus stop locations, the curb space is shared by both standard transit buses and paratransit vehicles.

The most common lifts used on buses are conventional wheelchair lifts. Since the wheelchair lift may be at the front or rear door, bus stop designs need to allow for either possibility. The length of the ramp typically extends 2 to 3 feet from the edge of the bus for a standard height curb.

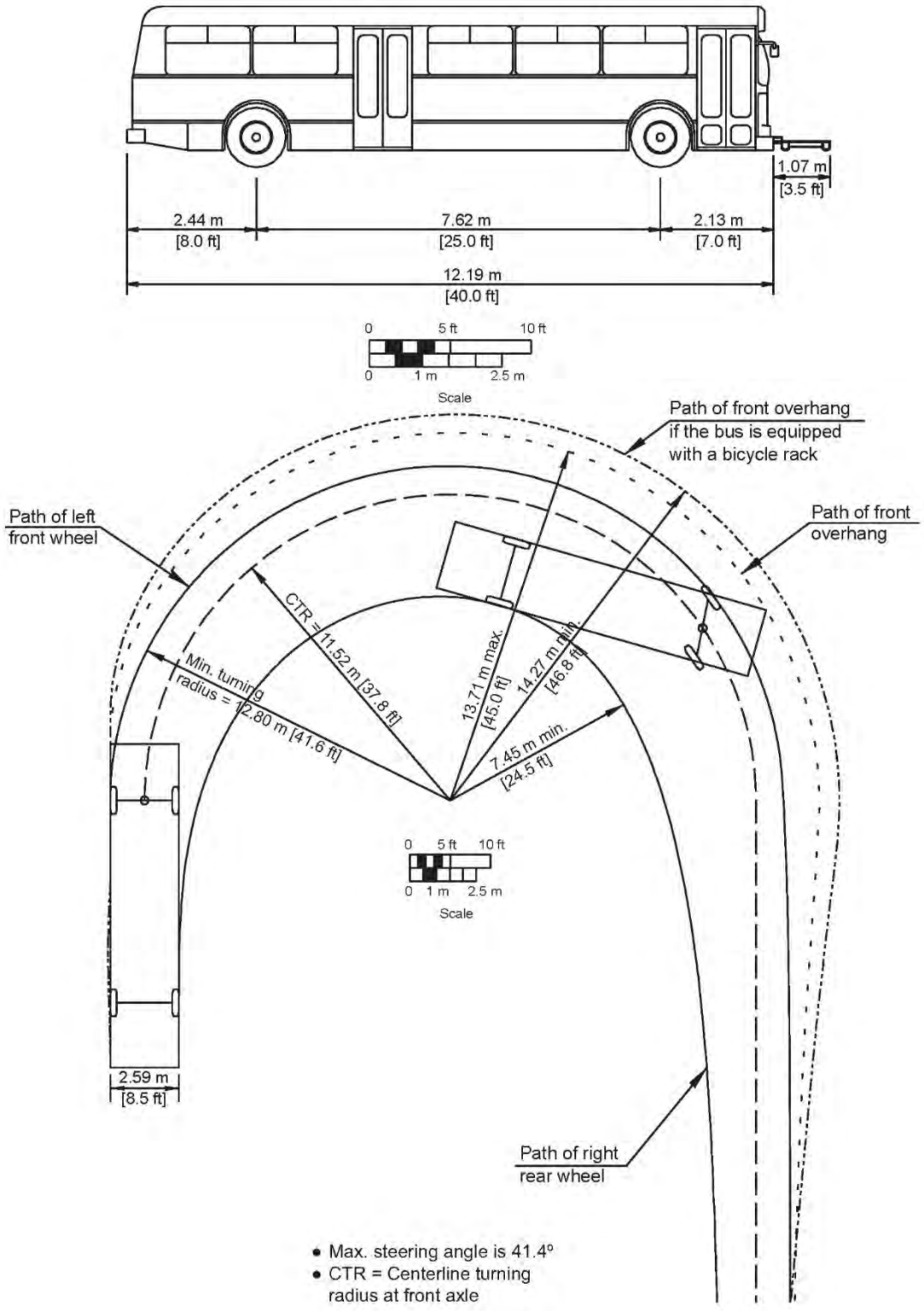
TURN RADII

Because transit vehicles make wide turns, properly designing or modifying the geometry of an intersection through corner radii, stop lines, and on-street parking helps minimize conflicts among buses, cars, bicycles, and pedestrians. Minimizing turning speeds is also critical to the safety of pedestrians, who are the most vulnerable street users.

Standards for turning radius can vary depending on the effective radius of each bus and other factors such as whether a bicycle lane or parking lane is available or if traffic volumes are so low as to allow transit vehicles to make full use of either or both of the departure or receiving lanes. Design considerations for designing turning radii include:

- Turning speeds should be limited to 15 miles per hour or less, with turn radii as small as is feasible.
- Since 30'-, 35'-, and 40' buses are used throughout the region, all future transit designs shall accommodate the AASHTO standard 40' city bus to accommodate fleet flexibility and future needs.
- Curb radii on dense urban grid streets where buses operate should be designed with a target radius of 20-30 feet.
- Parking may need to be restricted close to a street corner to achieve the required effective turn radii.
- A stop line on a receiving street may need to be relocated back from an intersection to achieve the required effective turn radii.
- Other modifications to striping at intersections may be made to achieve the required effective turn radii, including shifting through lanes.
- At intersections where buses turn, bus stops for the turning bus route should be located only on the far side of the intersection.

Figure 7-1 Standard 40-Foot Bus Dimensions and Curb Radii Dimensions (AASHTO, 2011)

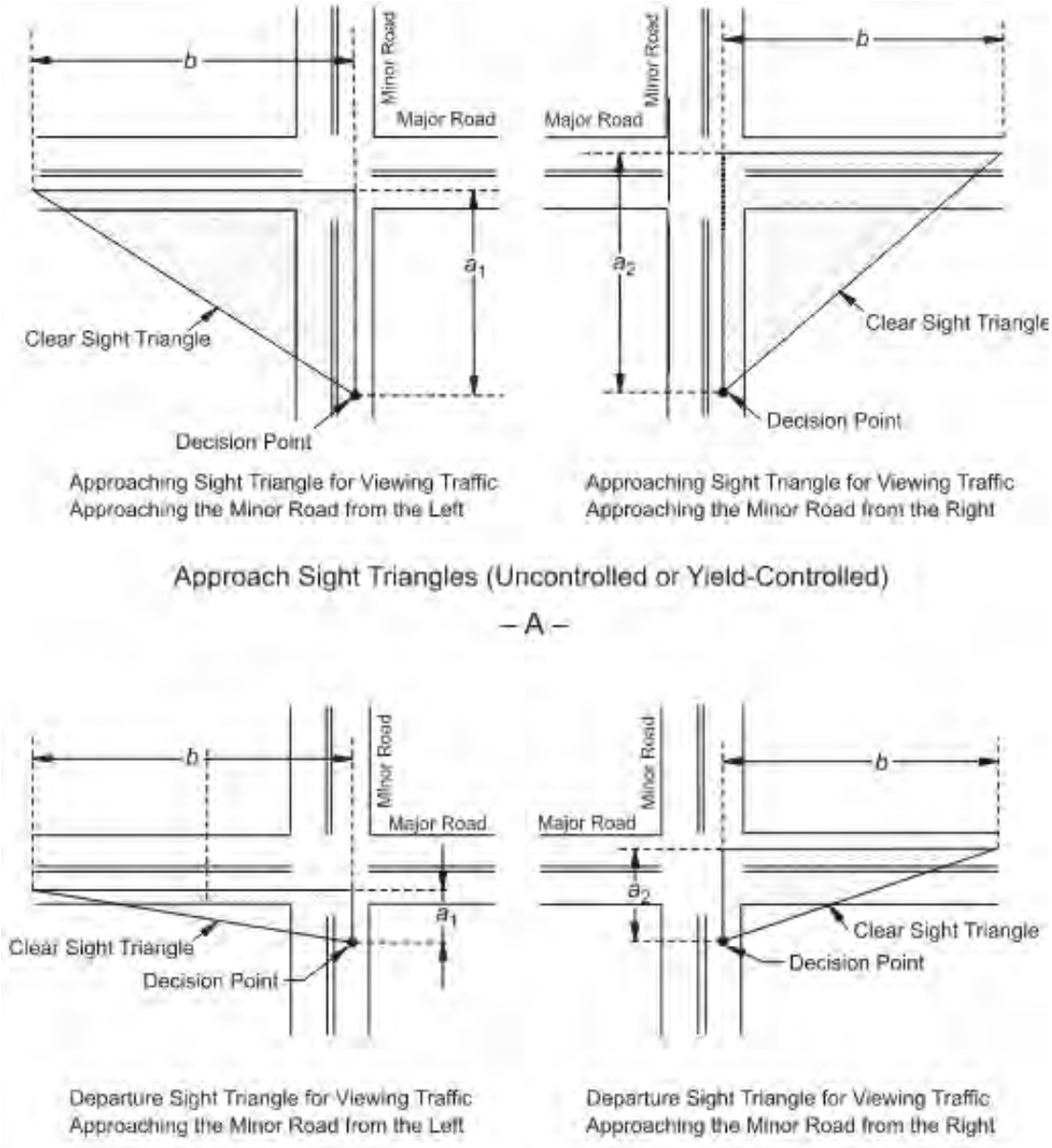


VISIBILITY

Bus operators need to see far enough ahead to assess developing situations and take actions appropriate for the conditions. This includes being able to see bus stops and waiting passengers adjacent to a roadway, approaching vehicles, crossing cyclists, and pedestrians. Short sight distances due to topography or curves can prevent traffic from stopping safely behind a stopped bus. Sight distance calculations for road design should follow the AASHTO requirements outlined in the Geometric Design Guide for Transit Facilities on Highways and Streets, or specific local jurisdiction requirements. Design considerations for appropriate sight distances include:

- When developing transit facilities, bus shelters and other sight-obscuring amenities such as trees should be located outside of the sight distance triangle of intersections and driveways. Professional judgment should be used to ensure that the shelters minimize visual obstructions between the approaching operator's view and the shelter location.
- Bus stops must not be placed over the crest of a hill or around a blind curve, nor located near a corner, curve, gully, traffic island, or intersection if the stop blocks sight lines for pedestrians and vehicle drivers.

Figure 7-2 Sight Distance Triangles for Intersections and Driveways



Source: AASHTO A Policy on Geometric Design of Highways and Streets, Figure 9-15 Intersection Sight Triangles (2011). Variables:

a_1: Distance from the major road along the minor road

a_2: Distance of a_1 plus the width of the lanes departing from the intersection on the major road. This should also include the width of any median present on the major road unless the median is wide enough to permit a vehicle to stop before entering or crossing the roadway beyond the median

b: Length of the leg of the sight triangle.

Note: The appropriate measurement of distances a_1 and a_2 for departure sight triangles depends on the placement of any marked stop line that may be present.

LANE WIDTHS

Bus travel lanes should be designed to ensure the safety of both the passenger on-board and the surrounding vehicles, bicycles and pedestrians. Street transit operations are best accommodated on streets with travel lanes that are a minimum of 10 feet, or 11 feet for center running travel lanes, but operations can still be possible on narrow streets such as those found throughout downtown Charleston. Narrower lanes can impede maneuverability, result in more difficult turning movements for buses and/or a need for buses to encroach into the adjacent lane to complete a turn (known as lane splitting).

COORDINATION WITH OTHER CURB USES

Parking and Loading Zones

In many locations, on-street parking and/or loading zones may surround the bus stop and compete for available curb space. Since many bus stops need to be lengthened in order to meet modern accessibility standards, the impact to on-street parking can be somewhat offset by increasing the space between bus stops to the recommended 1000 feet. Alternatively, a curb extension (also known as a bulb-out) may also be developed in order to leave more on-street parking in place.

Driveways

Driveways and other curb cuts near bus stops can pose safety hazards for boarding and alighting passengers and transit vehicles. There are six principles that guide the siting of bus stops in relation to driveways, as described below:

1. Avoid restricting sight distances for exiting vehicles.
2. Avoid blocking a driveway that provides the only access to a property.
3. Avoid unloading passengers into driveways.
4. Stop on the far side of a driveway if there is adequate sidewalk length close to the intersection.
5. Allow for safe sight distances for exiting vehicles.
6. Where there are two driveways in a constrained location near an intersection and the best stop location is on the far side of the second driveway, a transit vehicle may block the second driveway.

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.

8 IMPLEMENTATION

This chapter explains how to prioritize bus stop investments and provides an overview of cost estimates, and oversight and maintenance responsibilities.

The information in the preceding chapters provides guidance to ensure that bus stops will be designed for safety, comfort, and accessibility. It is equally important to have a program for ongoing improvement and maintenance of bus stops, so that these high-quality designs can be implemented. This chapter discusses these topics.

PRIORITIZING INVESTMENTS

While many bus stop improvements will occur because of roadway or development projects, some funding should be devoted to bus stop enhancements. For these projects, criteria to evaluate and prioritize investments is needed. This section includes a scoring rubrics for prioritizing bus stops for capital investment.

Bus Stop Capital Improvement Scoring Rubric

When considering a bus stop modification request, CARTA uses the following Basic Bus Stop Upgrade scoring rubric to determine whether further investment, usually in the form of additional amenities or relocation, is appropriate. CARTA will prioritize the highest scoring bus stops for capital investment.

Consideration should be given to implementing improvements at the same time for both halves of a bus stop pair, since most people need to make round trips. Exceptions to this rule might be made if one of the stops is already in relatively good condition (with only minor deficiencies) while the other is in poor condition.

Criteria	Responsibility
Passenger Activity – Sum of weekday boardings and alightings	▪ 40 points if sum is greater than 50 ▪ 30 points if sum is between 25-50
Existing Conditions	▪ 20 points if rated as 1 (Very Poor) ▪ 15 points if rated as 2 (Poor) ▪ 10 points if rated as 3 (Fair)
Zero-vehicle households and Environmental Justice Area	▪ 10 points if zero-vehicle household population in the surrounding census block group is greater than CARTA service area average ▪ 10 points if stop is located in an Environmental Justice Area ▪ 20 points if both
Significant Transfer Point	▪ 10 points
Near Medical Facility, Significant Civic Building or Educational Institution (1/4 mile)	▪ 10 points
Part of corridor or neighborhood initiative to strengthen identity	▪ 10 points

CARTA-APPROVED AND -FUNDED AMENITIES

CARTA's over 860 stops vary in terms of their ridership, existing condition, and level of service. These guidelines include the process for CARTA to prioritize capital improvements at stops. Importantly, they also describe the approved amenities for CARTA stops that the agency could fund for stops. The amenities and the baseline capital costs for each that CARTA could cover are summarized below. These amenities are described in detail in Chapter 5 Bus Stop Amenities.

CARTA Approved and Funded Amenities

#	CARTA-Approved Amenity	Total Cost (see note)
1	Bus stop post and sign	$150
2	ADA-compliant landing pad	$4,825
3	Bike rack	$168
4	Solar shelter lighting	$1,550
5	Bench	$906 - $1,620
6	Trash can	$105 - $525
7	Shelter	$12,495
8	Digital signage (not pictured)	$8,515 - $9,315

Notes:

Minimum amenities at all CARTA bus stops are a bus stop post, sign, and ADA compliant landing pad. If a municipality calls for additional amenities, CARTA would pay for the baseline cost of those amenities. Any additional costs due to upgraded or additional amenities, including variations in paint schemes, must be borne by the relevant municipality requesting that upgraded amenity. Developers would cover all costs of any new stop or stop improvements, including the installation.

The costs above for bus stop capital items do not include engineering or install fees. Those additional fees are below:

- Engineering fees ranging from $10,000 to $20,000 per shelter/bench
- Shelter installation at approximately $6,500
- Bench installation at approximately $1,500
- Digital signage installation at approximately $750

LED signage installation at approximately $1,100

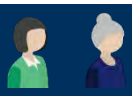
Developers and local planners interested in coordinating with CARTA for bus stop improvements should refer to Chapter 6 – Bus Stop Modifications.

AMENITY INSTALLATION AND MAINTENANCE

The installation of amenities at bus stops and their ongoing physical maintenance often involves both public and private partners. The table below shows the distribution of installation and maintenance responsibilities among the parties most commonly involved in bus stop installation and upgrades: (1) CARTA, and (2) the property owner who may be SCDOT, a municipality, or private land owner.

Amenity	CARTA	Other Agency Staff or Property Owner	Notes
	Installation Coordination	**Maintenance**	
	Installation Maintenance	Coordination	CARTA funds, installs, and maintains its bus stop signs.
	Installation Maintenance	**Installation Maintenance**	CARTA funds, installs, and maintains integrated bus shelter lighting and sign-mounted solar power lights. Overhead streetlamps and other forms of lighting can be installed at bus stops by local roadway authorities and adjacent property owners in coordination with CARTA.

	CARTA	Other Agency Staff or Property Owner	Notes
	Installation Maintenance	Coordination	CARTA funds, installs, and maintains its real-time information signs
	Installation Maintenance	Coordination	CARTA funds, installs, and maintains passenger information at its stops.
	Installation Maintenance	Installation Maintenance	At most stops, CARTA is responsible for installing and maintaining trash cans, but in certain cases, trash receptacles at bus stops are emptied by the municipality or business district in which they are sited.
	Installation Maintenance	Installation	Benches at bus stops may be funded and installed by CARTA, local jurisdictions, or private entities. CARTA funds and installs only standard benches attached to bus shelters, making seating at bus stops that do not have shelters the responsibility of local jurisdictions and private entities. CARTA is committed to maintaining all bus stop benches.
	Installation Maintenance	Installation	CARTA funds, installs, and maintains most shelters, except for shelters built by a developer.
	Installation Maintenance	Installation Maintainance	The funding, installation, and maintainaince of bike racks are determined on a case by case basis.
	Installation Maintenance	Coordination	CARTA funds, installs, and maintains fare machines at its bus stops.
	Installation Maintenance	Coordination	CARTA funds, installs, and maintains electric bus charters at its bus stops.
Safety & Security	Installation Maintenance	Installation Maintenance	At most stops, CARTA is responsible for installing and maintaining safety and security elements like cameras and emergency call boxes, but in certain cases, they may be installed and

Amenity	CARTA	 Other Agency Staff or Property Owner	Notes
			maintained by the municipality or business district in which they are sited.

CARTA Is Here to Help

CARTA receives requests year-round and implements modifications to bus stops on an as-needed and approved basis.

For bus stop amenity, procurement, and construction-related questions, email Transit Planning at belenv@bcdcog.com or call BCDCOG at (843) 529-0400.

APPENDICES

Appendix	Contents
Appendix A	Glossary of Terms
Appendix B	Checklist for Bus Stop Inventory Field Visits
Appendix C	Developer Checklist
Appendix D	Bus Stop Accessibility and ADA Standards
Appendix E	Amenity Standards and Specifications Solar Lighting Specifications Digital Sign Specifications Trash Receptacle Specifications Bench Specifications Shelter Specifications Bike Rack Specifications Leaning Rail Specifications
Appendix F	BCDCOG Staff Checklist
Appendix G	Bus Stop Amenities Installation Guide
Appendix H	Bus Stop Inventory

APPENDIX A: GLOSSARY OF TERMS

Accessible boarding area (ADA pad or landing pad): The place where passengers get on and off the bus at the front door, directly adjacent to the bus stop sign. This is also where the bus operators deploy the ramp for passengers using mobility devices. The area is a firm and stable surface, and shall provide a clear length of 96 in. (8 ft.), measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 in. (5 ft.) minimum, measured parallel to the vehicle roadway, as stated in 810 Transportation Facilities chapter of the 2010 ADA Standards for Accessible Design.

ADA compliance: Characteristics of transit equipment, service and boarding areas that comply with the Americans with Disabilities Act (ADA) of 1990 and subsequent amendments. ADA legislation that mandates equal access to all public transportation services, regardless of mobility status The ADA requires that fixed-route transit be accessible and that paratransit service be provided in the same geographic areas on the samedays and hours as the fixed route service.

Alight: To get off or out of a transportation vehicle.

Board: To get on or into a transportation vehicle.

Bumpout/curb extension: A curb bumpout is a strategy to improve safety for all road users, by extending the curb at a corner and narrowing the roadway width at intersections.

Bus Rapid Transit (BRT): Bus Rapid Transit offers rail-like transit on an upgraded, rubber-tired bus service. BRT is characterized by attention to major transit corridors, simple but frequent service, preferential traffic light controls and reduced number of stops.

Bus stop: A location marked with site specific signs, indicating where buses will stop.

Dwell zone: The dwell zone is the space, in the street, needed for a transit vehicle to stop at the curb, or edge of roadway, and perform dwell functions: rider boarding and alighting, fare collection, etc.

Far side: Bus stop located after the intersection (in the direction of travel).

Fixed route bus service: Transit provided along dependable and defined routes with published schedules and stops at designated locations.

Floating bus stop: A floating bus stop design channelizes the bike lane behind the clear zone of the bus stop, to maintain separate spaces for people biking and people boarding, alighting, and waiting for transit.

Headway: The frequency interval between the passing of successive buses moving along the same route in the same direction, usually expressed in minutes. Also known as Frequency.

In-lane stop: Bus stop located in a travel lane, allowing the bus to serve the stop and continue the route without having to merge out and then back into the travel lane.

Mid-block: Bus stop located at least 200 feet from nearest intersection.

Near side: Bus stop located before the intersection (in the direction of travel).

Pedestrian Access Route (PAR): A continuous, and clear path with width of 4.0 ft minimum, exclusive of the width of the curb, as stated Chapter R3 Technical Requirements of the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way 2011 (PROWAG). The PAR connects the bus stop to destinations.

Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way 2011 (PROWAG): Recommended guidelines for designing and constructing facilities within the public rights of way, most recently released in 2011, as a best practice for accessibility issues in the public right of way not covered by the Department of Justice's currently adopted standards.

Pull-out stop: Bus stop located in a curbside lane (usually a parking lane or pull-out bay, signed as a bus stop), requiring the bus to merge out of and back into the travel lane in order to serve the stop.

Travel lane: A lane devoted exclusively to vehicular traffic.

Trip generator: A land use or discrete activity that by nature of its operations tends to create a significant amount of travel.

United States Access Board 2010 ADA Standards for Accessible Design: The US Access Board is a federal agency that promotes equality and inclusion of people with disabilities by creating accessibility guidelines and standards for the built environment, transit vehicles, telecommunications equipment, medical diagnostic equipment, and information technology. The most recent federal standard is the 2010 ADA Standards for Accessible Design, which sets the minimum requirements – both scoping and technical for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities.

APPENDIX B: CHECKLIST FOR BUS STOP INVENTORY AND MAINTENANCE FIELD VISITS

In addition to being useful for updating and maintaining this guide, bus stop data is important to facilitate planning throughout the region. The information that is currently known about CARTA bus stops is attached at Appendix G: CARTA Bus Stop Database. CARTA staff will continue to maintain this information with regular field visits and bus stop inventory updates. Additional up-to-date information for each stop should also be collected for CARTA's bus stop inventory, and this checklist includes a list of all bus stop attributes to collect. This checklist will also be used by CARTA maintenance during regular field visits to inspect bus stops.

General Information	
Created on:	Updated on:
Stop ID #	
Stop Name	
Routes Served	
Bus direction	☐ Inbound ☐ Outbound ☐ Terminal
Location relative to intersection	☐ Near-side ☐ Midblock ☐ Loop ☐ Far-side ☐ Off-street (e.g. in a parking lot or transit center)
Amenities available:	☐ Sidewalk ☐ Crosswalk ☐ Bus stop sign ☐ Mounted on post (with square mount) ☐ Mounted on post (with u-channel) ☐ Mounted on existing pole (e.g. electric pole) ☐ Lighting ☐ Street light ☐ CARTA solar pole-mounted ☐ Pole mounted (not solar) ☐ Building light ☐ CARTA solar shelter light ☐ Seating ☐ CARTA approved seating ☐ Commercial advertising bench ☐ Non-standard bench ☐ Lean bar ☐ Other: _____ ☐ Trash receptacle ☐ Mounted trash can (10 gal) ☐ Trash can on ground (28+ gal) ☐ Other ☐ Shelter ☐ Bike rack ☐ Real time information ☐ Existing overhead shade (from a tree, building awning, building overhang, etc.)

Landing Zone and Sidewalk Information	
Is there an accessible 5' wide by 8' deep landing zone in front of the bus stop sign?	☐ Yes ☐ No
If not, landing area width and depth	Width:_____ Depth:_____
Does the landing zone comply with the other following ADA standards? 1. A cross slope no greater than 2% (1/50). 2. Any connections to a street, sidewalk, path etc. are at least 3' wide.	 ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A
Do elements obstruct the landing area (e.g. barrels, news boxes, bench, bike racks, etc)	☐ Yes ☐ No
What is the material of the landing area?	☐ Hard paving material (concrete, stone, asphalt) ☐ Soil ☐ Grass ☐ Other
What is the material of the sidewalk?	☐ Concrete ☐ Asphalt ☐ Stone ☐ Other:_____
Are there physical barriers that constrict the width of the sidewalk? If yes, take and include a photo.	☐ Yes ☐ No
Are there any problems with the sidewalk or landing area surface? If yes, take and include a photo.	☐ Yes ☐ No
Rank the sidewalk condition (1-5)	_____
If stop is not accessible, is it feasible to shift the stop to an alternate location nearby?	
Is there a level and clear boarding area at each back door of the bus?	☐ Yes ☐ No
Seating Information	
What is the seat height of the bench	Width:_____ Depth:_____

Does the bench comply with the following ADA standards? 1. Seat dimensions: 20 inches minimum to 24 inches maximum in depth and 42 inches minimum in length. 2. Seat height: 17 inches minimum to 19 inches maximum above the floor or ground. 3. Back support: 42 inches minimum in length and that extends from a point 2 inches maximum above the seat to a point 18 inches minimum above the seat. 4. Structure supporting vertical or horizontal forces of 250 pounds applied at any point on the seat, fastener, mounting device, or supporting structure. 5. Exposed benches: slip resistant and designed to shed water. 6. If installed inside the shelter it must be installed in such as manner to allow a wheelchair passenger to still use the shelter (30″). 7. Do not install bench on ADA landing pad 8. Minimum of 2′ between the bench and back face of curb. 9. Minimum of 3′ circulation space on either side of the bench for access.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A
Rank the bench condition (1-5)	_____
Which way does the bench face?	☐ Parallel to curb ☐ Perpendicular to curb ☐ Angled to curb
Shelter Information	
What type of shelter is it?	☐ CARTA standard shelter ☐ Historic district shelter ☐ Domed top shelter ☐ Gable roof shelter ☐ Other:_____
Shelter dimensions	Width: _____ Depth: _____ Height: _____
Distance from front of shelter (windscreen or post) to curb	_____

Distance from back of shelter (windscreen or post) to back of sidewalk or building/fence/wall	_____
Is the shelter in the middle of the sidewalk and obstructing the general pedestrian path of travel?	☐ Yes ☐ No
Is there a 32" deep x 48" wide accessible space fully within and under the shelter roof?	☐ Yes ☐ No
Does the shelter comply with the following ADA standards? 1. Clear path of 3' minimum in front or behind shelter for sidewalk. 2. Entrance must be 2'8" wide at minimum. 3. Minimum clear floor area of 30 inches wide by four feet deep. 4. Not placed on the ADA landing pad. 5. Minimum height of 6'8". 6. If it abuts a building, there must be 12" between the shelter and building at minimum. 7. Connected to route to the landing pad.	 ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A
Does the shelter have a bench?	☐ Yes ☐ No
Who owns the shelter?	_____
Information Features	
Is there a bus stop sign?	☐ Yes ☐ No
Bus stop sign is posted how high above the ground/surface (in inches)?	Height:_____
Does it include the correct Stop ID?	☐ Yes ☐ No
List the route numbers indicated on the bus stop sign	_____ _____ _____
Are existing signs and/or posts damaged, worn or not secured?	☐ Yes. Explain: _____ ☐ No
What is the sign face orientation to the curb?	☐ Parallel to curb ☐ Perpendicular to curb ☐ Angled to curb

What is the distance from the pole/post/other to the street edge/curb (in inches)?	_____
Does the bus stop sign mounting/placement conform with the following ADA Standards? 1. If it is mounted on a wall or telephone pole and between 27" and 80" off the ground, it cannot protrude into the pathway by more than 4". Below 27" can protrude any amount. 2. If it is mounted on its own pole between 27" and 80" from the ground, it can overhang by up to 12". 3. If the bottom of the sign is mounted less than 80" from the ground, a barrier must be provided to warn the visually impaired.	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A
Is there a route map posted?	☐ Yes ☐ No
Is there a schedule posted?	☐ Yes ☐ No
Is there an area map posted?	☐ Yes ☐ No
Is parking allowed in the bus stop (i.e. is the bus stop mistakenly painted to members of the public to parallel park in it or use the curb for pick up/drop off)?	☐ Yes ☐ No
Miscellaneous Information	
Is bus stop near an at-grade railroad crossing?	☐ Yes ☐ No

Ranking System

Regarding rating conditions at each stop, a suggested scoring system is shown below:

- Score of 5 = Stop is already fully accessible and in excellent condition
- Score of 4 = Good condition, functionally accessible, deficiencies are minor
- Score of 3 = Fair condition, some significant issues for safety and/or accessibility
- Score of 2 = Poor condition, not accessible, very significant problems
- Score of 1 = Very poor condition, difficult for anyone to use stop

APPENDIX C: DEVELOPER CHECKLIST

When CARTA receives a request for bus stop addition or relocation, it evaluates the proposed bus stop location using the access, safety, and operational efficiency factors outlined in Chapter 6 – Bus Stop Modifications. This checklist is designed to guide property developers though the bus stop addition or relocation process. Projects covered in this checklist include, but are not limited to, new developments, renovations, road projects, and streetscape projects.

First things first: defining the need

Property developers interested in upgrading transit service to a development must contact CARTA during the project planning phase to explore whether it is operationally feasible to provide new or relocated transit stops on or adjacent to the proposed development. If feasible, CARTA will determine what type of bus stop and what level of amenities should be provided.

To make a bus stop-related request for CARTA, email Transit Planning at belenv@bcdcog.com or call BCDCOG at (843) 529-0400.

Developer Checklist:

	Transit Circulation and Stop Placement
	Design all roadways and driveways that will accommodate buses to have lane widths between 10-12 ft. (See Chapter 7 -- Operational Considerations)
	For all intersections and driveways that will accommodate buses, design corners for a 50 ft. (15.2m) outside and 30 ft. (9.1m) inside turning radius. (See Chapter 7 -- Operational Considerations)
	For all roadways, driveways, and stop areas that will accommodate buses, design pavement cross-sections to withstand the wear-and-tear that will be generated by heavier vehicles (ideally including concrete pads at bus stop areas) (See Chapter 3 – Bus Stop Configurations)
	Locate proposed bus stop in a safe, visible, and well-lit location in reasonable proximity to primary destinations (See Chapter 2 – Bus Stop Placement)
	If the proposed bus stop will be located in the public right of way, secure right-of-way and appropriate encroachment permits. (See Chapter 6 – Bus Stop Modifications)
	Bus Stop Design and Accessibility
	Allocate sufficient length along the curb lane to accommodate the proposed bus stop configuration. (See Chapter 3 – Bus Stop Configurations)
	Allocate sufficient right of way behind the curb to meet ADA requirements and accommodate all required amenities for the proposed bus stop type, at a minimum. (See Chapter 3 – Bus Stop Configurations)

	Coordinate with CARTA for bus stop design and amenity placement consistent with the Transit and Bus Stop Design Guidelines.
	Coordinate an amenity installation and maintenance agreement with CARTA and any other involved local parties.
	Coordinate with local public works agencies for utility services and pavement markings, if necessary.
	Provide adequate pedestrian walkways to transit stops. Ensure proposed bus stops are connected to the development and any primary destinations with an ADA-compliant pedestrian access path free of obstacles. (See Chapter 5 – Bus Stop Amenities and Appendix D – Bus Stop Accessibility Guidelines).

APPENDIX D: BUS STOP ACCESSIBILITY AND ADA STANDARDS

The following standards are based on the Americans with Disabilities Act of 1990 and the subsequent ADA Accessibility Guidelines for Buildings and Facilities (ADAAG). These minimums will help determine if a stop can be placed or what modifications must be made to the proposed location to meet the minimum guidelines. The ADA Standards presented are the minimum requirements to comply with the law and are not necessarily best practices.

Background and Applicability of ADA Standards

The Americans with Disabilities Act of 1990 (ADA) is broad legislation intended to make American society more accessible to people with disabilities. It consists of five sections or titles. Titles II and III (public services and public accommodations) affect bus stop planning, design, and construction.

Although the definition of disability under the ADA is broad, bus stop placement and design most directly affect persons with mobility and visual impairments. Making new stops conform to ADA physical dimension requirements is relatively easy. Modifying existing stops to comply with ADA, though desirable from an accessibility perspective, is not required under ADA. Modification of existing stops is more difficult, especially if the stops are at sites with limited easement or not subject to the transit agency's control, such as shopping malls, on state rights-of-way, or suburban subdivisions. Either way, the "equal access" provisions of the ADA require that the route for persons with limited mobility or vision be as accessible as the route used by those without disabilities. A person with disabilities should not have to travel further, or use a roundabout route, to get to a designated area.

ADA Bus Stop Design Principles

ADA bus stop design principles govern bus stop signs, landings, benches, and shelters. Currently, BCDCOG bus stop design principles do not exceed ADA standards in any way. In addition, SCDOT guidelines emphasize that all bus stops on state roads must meet the accessibility criteria in the ADA. The following pages describe ADA bus stop design principles, organized by bus stop element.

SIGNAGE

Bus stops marked with signs indicate to passengers where the bus will stop and publicize the availability of transit service to the general public.

1. Letters and numbers to be a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10.
2. Characters and numbers should be sized according to the viewing distance from which they are to be read. The minimum height is measured using an uppercase X.
3. Accompany pictograms with the equivalent verbal description placed directly below, with a border dimension of 6 inches (152 millimeters) minimum in height.
4. Characters and background of signs in a non-glare finish, with characters and symbols contrasting from their background.
5. If it is mounted on a wall or telephone pole and between 27'' and 80'' off the ground, it cannot protrude into the pathway by more than 4". Below 27" can protrude any amount.
6. If it is mounted on its own pole between 27'' and 80'' from the ground, it can overhang by up to 12".
7. If the bottom of the sign is mounted less than 80" from the ground, a barrier must be provided to warn the visually impaired.

LANDING PAD AND PASSENGER WAITING AREA

A bus stop area is a designated location where the bus will stop to let on and off passengers. It is indicated by a bus stop sign. *Flag stop areas/zones are not considered a designated area and thus not subject to the requirements outlined.*

1. A firm stable surface including concrete, asphalt, brick, stone, tile and wood. Loose material such as gravel or stone dust do not meet the requirements unless properly treated with binders, consolidants, compaction or grid forms. Grass is not considered a firm stable surface.
2. ADA landing pad – an area that is clear of obstructions and measures eight feet (perpendicular to the curb) by five feet (parallel to the curb, connected to a pedestrian path or accessible walkway, and a firm stable surface). The landing pad can include part of the sidewalk.
3. A cross slope no greater than 2% (1/50).
4. Accessible connections to a street, sidewalk, path etc. if any exist. Must be at least 3' wide.

BENCHES

1. Seat dimensions: 20 inches minimum to 24 inches maximum in depth and 42 inches minimum in length.
2. Seat height: 17 inches minimum to 19 inches maximum above the floor or ground.
3. Back support: 42 inches minimum in length and that extends from a point 2 inches maximum above the seat to a point 18 inches minimum above the seat.
4. Structure supporting vertical or horizontal forces of 250 pounds applied at any point on the seat, fastener, mounting device, or supporting structure.
5. Exposed benches: slip resistant and designed to shed water.
6. If installed inside the shelter it must be installed in such as manner to allow a wheelchair passenger to still use the shelter (30").
7. Do not install bench on ADA landing pad
8. Minimum of 2' between the bench and back face of curb.
9. Minimum of 3' circulation space on either side of the bench for access.

Example Bench at CARTA Bus Stop

SHELTER

Shelters provide protection from the elements while waiting for the bus and the decision to install a shelter is typically based upon passenger volumes.

1. Clear path of 3’ minimum in front or behind shelter for sidewalk.
2. Entrance must be 2’8” wide at minimum.
3. Minimum clear floor area of 30 inches wide by four feet deep.
4. Not placed on the ADA landing pad.
5. Minimum height of 6’8”.
6. If it abuts a building, there must be 12” between the shelter and building at minimum.
7. Connected to route to the landing pad.
8. Accessible connections to a street, sidewalk, path etc.

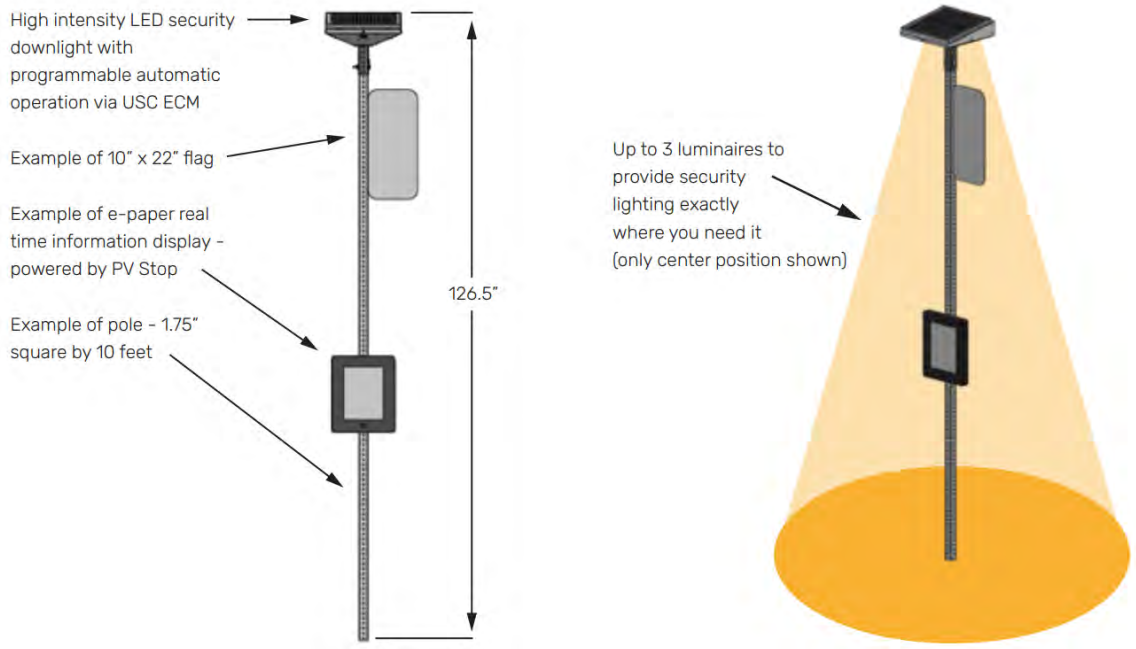
APPENDIX E: AMENITY STANDARDS AND SPECIFICATIONS

Appendix E contains the specifications for all CARTA amenities, as described in Chapter 5: Bus Stop Amenities. Amenities at bus stops may differ, but the following amenities are those formally approved by CARTA for use at their bus stops.

Solar Lighting Specifications

CARTA has approved solar lights for two discrete uses. The first is a sign mounted solar light, and the second is a solar light package approved for shelters. The specifications for each are below:

PV-STOP+ TRANSIT SOLAR-POWERED LED LIGHTING SYSTEM



Solar Lighting in Use at CARTA Bus Stop.

BRASCO SOLAR LIGHTING PACKAGE

Includes:

1. 175 watt flexible solar panel
2. 4.3 watt LED light
3. 73 AMP hour batteries

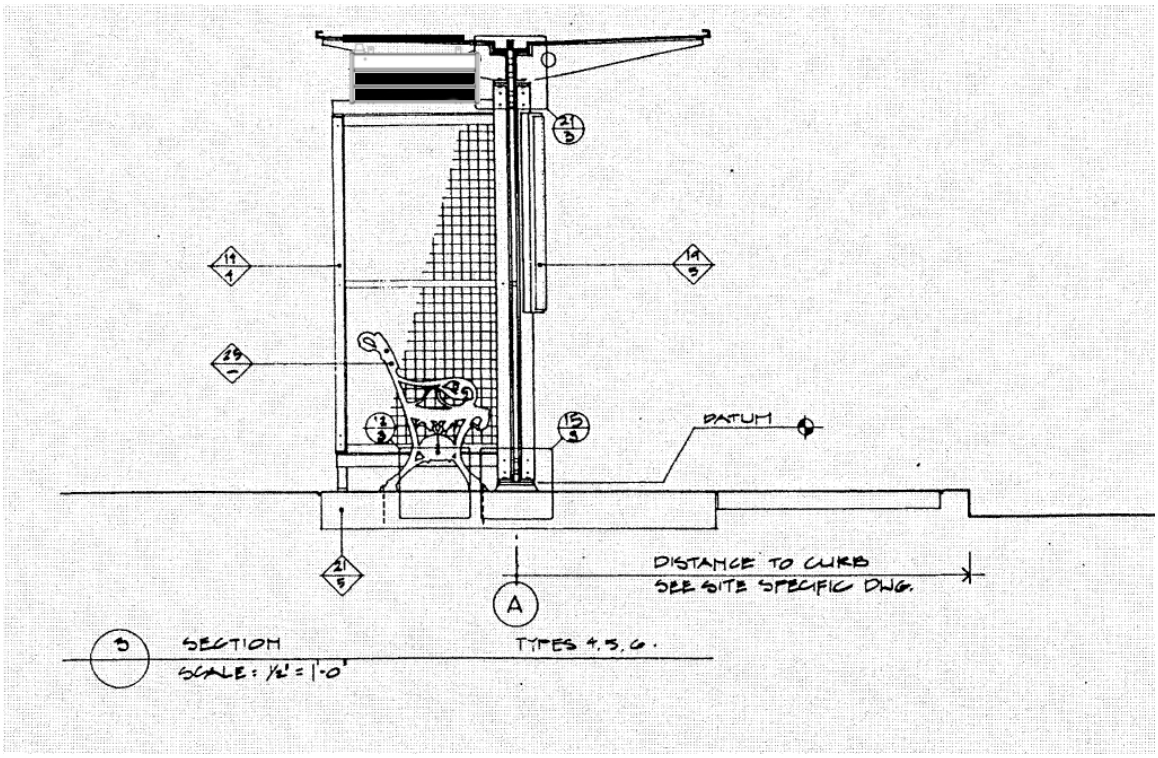
Shelter light installed at a CARTA shelter

SPECIFICATIONS	
Model No.	SU-6
Dimensions	5" x 5"
Power Consumption	4.3 W
Fixture	Aluminum Weldment with Frosted Acrylic Lens
Input Voltage	12 Volts DC
Operating Temperature	-40 - 74°C
Finish	Standard Powder Coat or Anti-Graffiti Powder Coat
Power Supply	A/C, Solar Powered
Hardware	Tamper Resistant
Mounting	Header or Column Mounted
Operating Hours	50,000

BRASCO Solar Light Specifications

Digital Sign Specifications

CARTA has an approved digital sign approved for use at its bus stops. The sign is built by Sunrise Systems and comes in single- or double-sided models.



Sunrise Systems Single Side Digital Sign shown in use at a Charleston bus shelter.

Digital sign mounted to a CARTA bus sign.

Trash Receptacle Specifications

Trash receptacles vary throughout the region based on the municipality. CARTA has two pre-approved trash receptacles for their own stops: The "Landscape" trash receptacle and the "Eclipse 32." Specifications for these stops and other popular trash receptacle models by municipality are below.

CARTA uses the "Landscape" trash receptacles and attaches them to sign posts.

Eclipse-10-20

Landscape 10-20

Small steel waste receptacles for column mounting with optional lids and optional mounting bracket. Includes center message band.

10 Gallon Landscape Trash Receptacle

20 Gallon Landscape Trash Receptacle

- Retainer bands hold bags in place
- Bottom drainage holes included
- Mounting holes for poles or walls Included
- Add decals to center band for message
- Weather and UV-resistant powder coat
- Available in black, coffee brown, or hunter green

The "Eclipse 32" is typically installed with Brasco Sunline shelters.

Eclipse-32

Eclipse 32

18" Diameter, 38" H. Large freestanding aluminum waste receptacle with optional lid and optional liner.

32 Gallon Eclipse Trash Receptacle

- Pedestal base with drainage holes included
- Weather and UV-resistant powder coat
- Available in standard powder coat painted finish RAL colors

Mt. Pleasant and the City of Charleston typically use the "Streetscape" trashcans.

Streetscape

Streetscape

26" Diameter, 33" H. Large freestanding steel waste receptacle with optional lid, optional liner and optional center message band.

35 Gallon Streetscape Trash Receptacle

- Optional "Recycle Blue" finish
- Pre-drilled mounting holes for concrete
- Weather and UV-resistant powder coat
- Available in black, coffee brown, or hunter green

Additionally, Mt. Pleasant often uses the Chase Park model trash bin at stops.

RECYCLING-LITTER BIN

Model	Chase Park, dual use
Manufacturer	Landscape Forms
Openings	Standard side (1), 5 inch diameter hole (1)
Size	36 gallon, 24 inch diameter, divided liner
Signs	(2) standard design, 10-recyclable, 13 waste only
Color	Black, Powdercoat

Bench Specifications

CARTA has an approved bench design for its new shelters. In addition, historical benches are used in Charleston's historic district, and Mt. Pleasant has its own preferred bench design. Seating should be secured to a poured foundation and incorporated within shelters when possible. **The standard depth for poured concrete or asphalt foundations beneath benches is 4".**

CARTA's approved bench is the BRASCO 6' Curveline bench. The specifications for this bench and a photo of it installed at a BRASCO shelter are shown below.

The historical bench used in the Charleston historic district is built by J&M Foundry in Summerville (Address - 1594 State Rd, Summerville, SC 29483; Phone Number- (843) 761-2990). Below is a picture of the benches installed at a historic district bus stop.

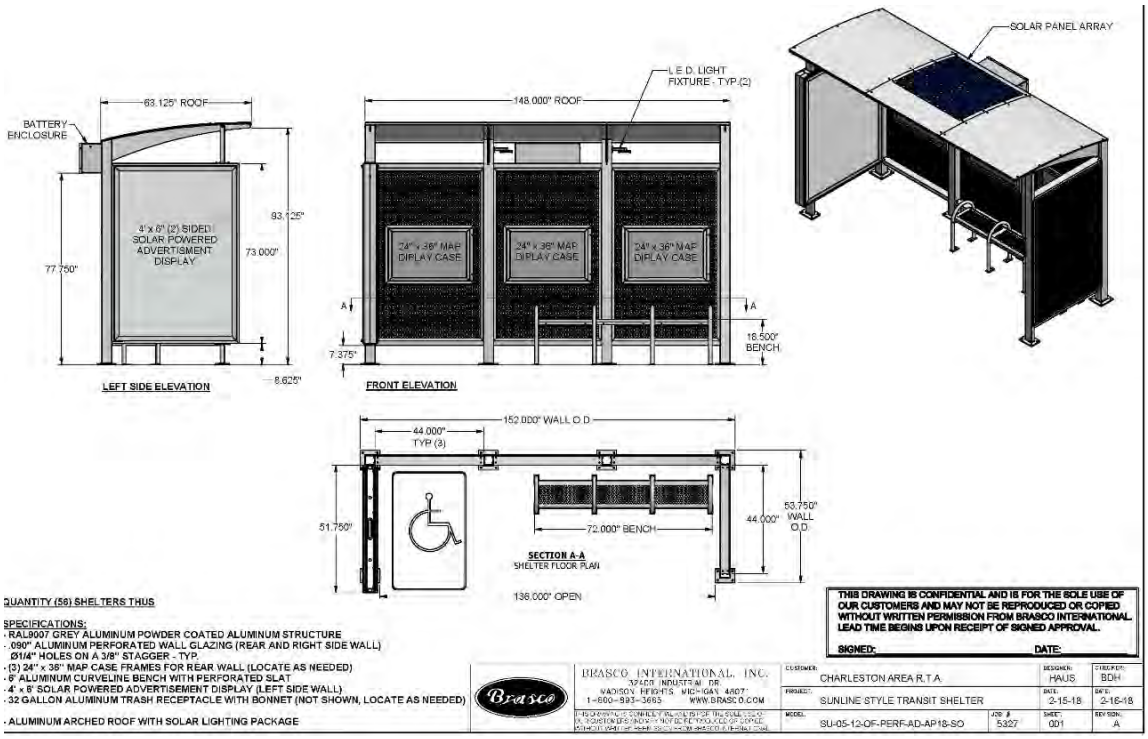
Additionally, the Town of Mt. Pleasant often installs the "Austin" model bench shown below.

Model	Austin
Manufacturer	Landscape Forms
Style	Backed
Wood	Ipe, no finish
Mounting	Cantilever Surface Mount
Arm Option	No arms
Color	Titanium Powdercoat

Shelter Specifications

CARTA's standard shelter is manufactured by BRSCO. The shelter is ADA compliant and made of aluminum. .Shelters must be built on and secured to a reinforced concrete foundation; CARTA requires that the poured foundation for its standard shelter be 8" deep reinforced concrete. Bus shelters should provide a clear line of sight to approaching buses and ensure that waiting passengers are visible to bus operators and other street users.

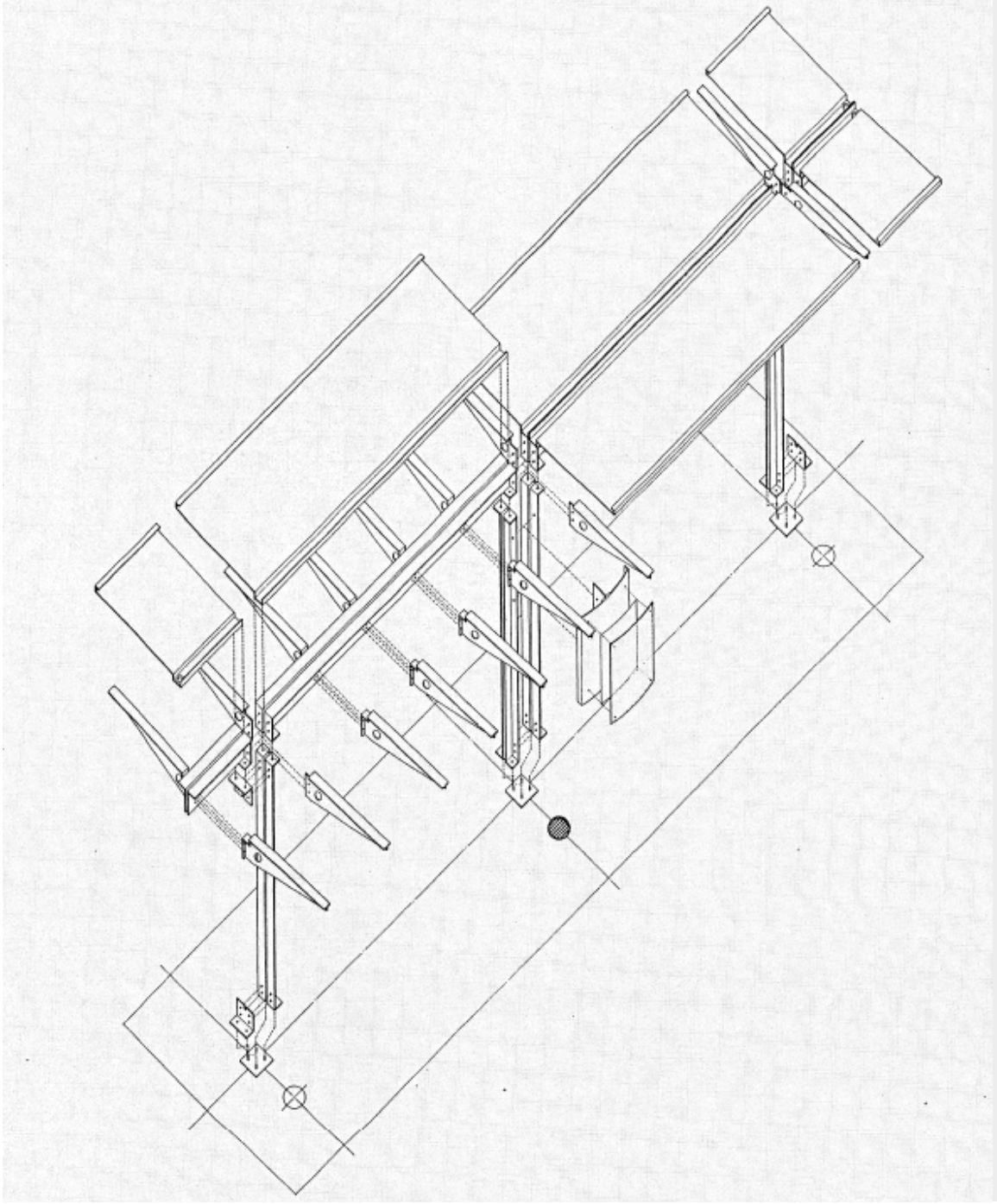
Its specifications and two example photos are below. The shelter comes in gray and green.



FOR LEASE
225-5700
Allstate
MARISCOS
FRAMING
POPCORN
AUTO
REGISTRATION
533-3333

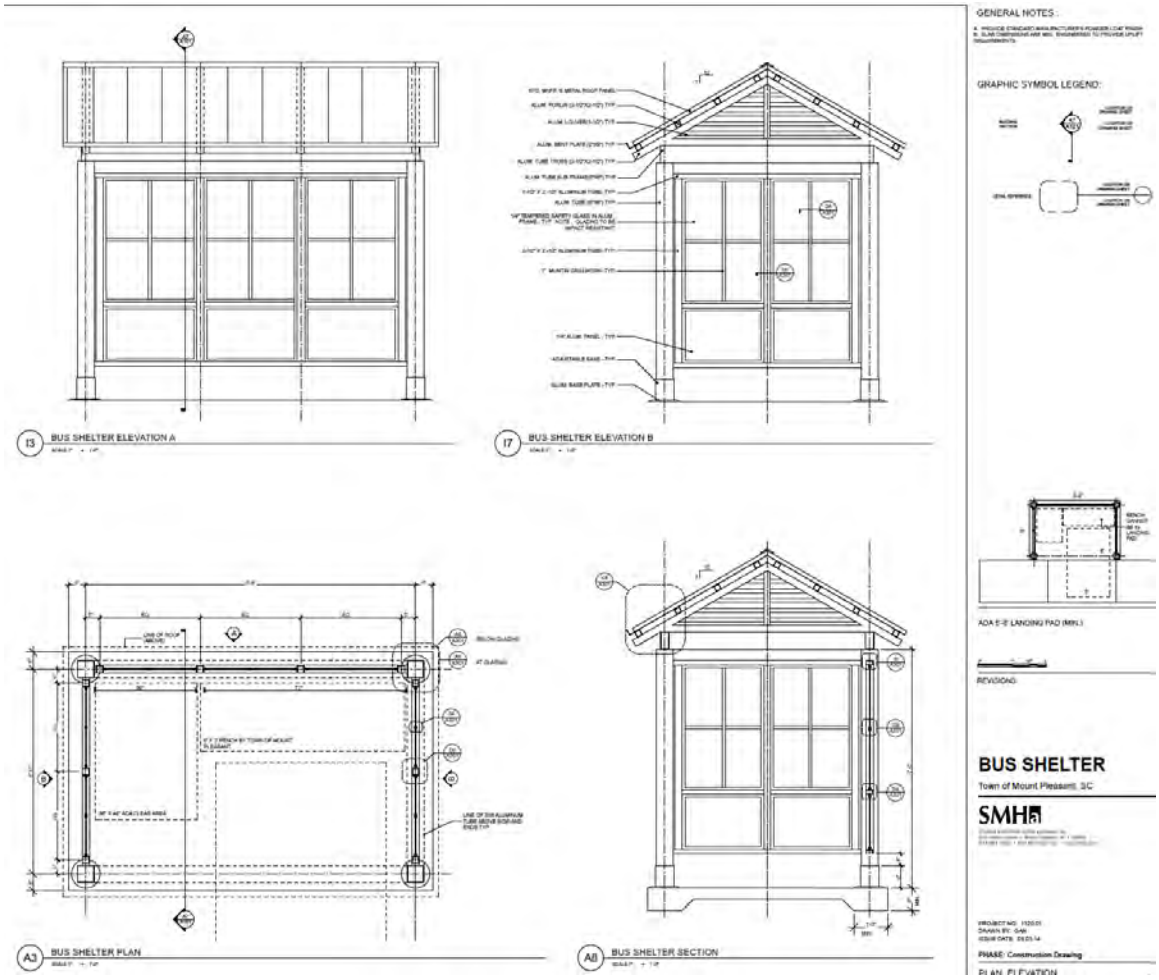
Coburg Rd
COBURG
Bank of

The City of Charleston has approved and adopted two shelter designs. The first is the Standard CARTA Stop. The second is the Historical Shelter Design, which is the preferred shelter design for all shelters installed south of Line Street. The Historical Shelter features a unique roof structure. Dimensions and additional photos the historical shelter designs are below. Poured foundations for historic shelters must be 12” deep reinforced concrete.



Comfort INN
CLEARANCE 9' 7"

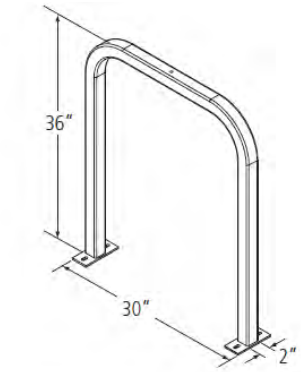
The Town of Mount Pleasant has adopted a standard BRASCO bus shelter for all shelters within the municipality. The Mount Pleasant shelter features a gable roof design. Similar to the City of Charleston's shelter designs, Mt. Pleasant's has been adopted by the city so that the town's Design Review Team is generally only asked to approve shelter locations. Shelter specifications for Mt. Pleasant's design are below. Poured foundations for custom shelters like that approved by the Town of Mount Pleasant must be 4" deep with an 18" edge around the perimeter, and they must also include a "turn down" edge and 4 12" x 30" depth footers of reinforced concrete.

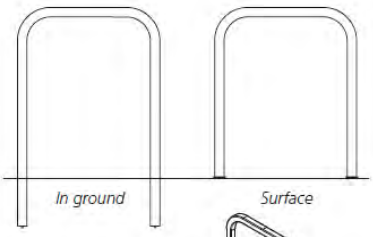


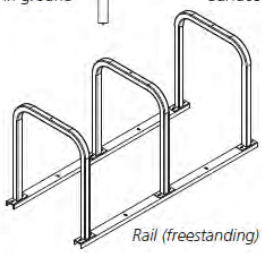
The Town of James Island uses the CARTA standard shelter but painted blue**.** Shelters must be built on and secured to a reinforced concrete foundation; CARTA requires that the poured foundation for its standard shelter be 8” deep reinforced concrete.

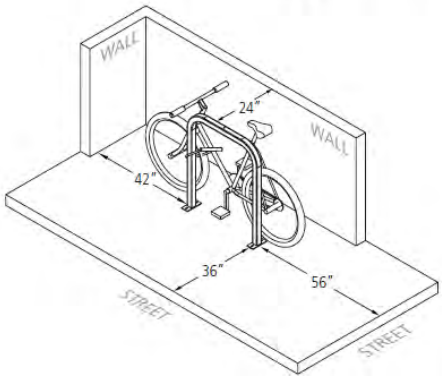
Bike Rack Specifications

CARTA's preferred bike rack design is the Dero Downtown Rack | Square Tube Secure Bike Rack. In areas outside of the Historic District, this bike rack is gray. Within the historic district, this rack is black. Specifications and an example of the gray rack in action are below. Bicycle racks should be affixed to a paved surface. For CARTA, **the standard depth for poured concrete or asphalt bicycle rack foundations is 4".** If multiple bicycle racks are installed, they must be placed at least 3 feet apart to allow convenient access. Where multiple rows of racks are installed to form a "bicycle parking lot," there should be 4 feet between each row, measured from tire to tire.









Product
Dero Downtown Rack
As manufactured by Dero Bike Racks

Capacity
2 Bikes

Materials
2" x 2" x 3/16" square tube - mild steel
2" x 2" x 11g square tube - stainless steel

Finishes
An after fabrication hot dipped galvanized finish is our standard option. 250 TGIC powder coat colors, thermoplastic coating, PVC dip, and stainless steel finishes are also available as alternate options.

Our powder coat finish assures a high level of adhesion and durability by following these steps:
1. Sandblast
2. Epoxy primer electrostatically applied
3. Final thick TGIC polyester powder coat

Installation Methods
In ground mount is embedded into concrete base. Specify in ground mount for this option.
Foot Mount has two 2.5"x6"x.25" feet with two anchors per foot. Specify foot mount for this option.
Rail Mounted Downtown Racks are bolted to two parallel rails which can be left freestanding or anchored to the ground. Rails are heavy duty 3"x1.4"x3/16" thick galvanized mounting rails. Specify rail mount for this option.

Space Use and Setbacks
Wall Setbacks:
For racks set parallel to a wall:
Minimum: 24"
Recommended: 36"

For racks set perpendicular to a wall:
Minimum" 28"
Recommended: 42"

Distance Between Racks:
Minimum: 24"
Recommended: 36"

Street Setbacks:
Minimum: 24"
Recommended: 36"

Outdoor, unsheltered racks are the most common and cheapest to provide for short-term parking in the Charleston region. Bike parking can also be provided in indoor, guarded storage areas or lockers, which are highly secure. Or, they can be provided in sheltered storage area It is uncommon for a municipality or agency to have a specific policy on the number of bike parking spaces that must be provided at a given public location like a transit stop.

The Town of Mt. Pleasant often installs “Ring” model bike racks, made of stainless steel, but these are not CARTA-standard.

Leaning Rail Specifications

Leaning rails are uncommon today in CARTA's system but are planned to be expanded to more stops. CARTA's preferred leaning rack design is BRASCO's Contour leaning rail design, pictured below.

CONTOUR (LR-CO)

A modern rail that can be surface-mounted or affixed to a shelter or wall. Constructed from 4" round aluminum extrusion and is available in 4', 6' and 8' lengths and a 32" height. Powder coated to the color of your choice.

APPENDIX F: BUS STOP MODIFICATIONS CHECKLIST

The following checklist will be used by CARTA upon receiving a bus stop modification request:

Evaluating Bus Stop Requests	
	Receive bus stop modification request via CARTA-led planning effort or by email/phone call to CARTA (directions to make requests to CARTA are described on Page 6-1).
	Determine typology category of affected bus stop (described in Chapter 4 Bus Stop Typologies)
	Proceed to relevant checklist based on modification request type: ▪ For requests to modify amenities at an existing bus stop, continue to Evaluating Modification Requests. ▪ For requests to add a new bus stop to an existing bus route, continue to Evaluating Addition and Relocation Requests. ▪ For requests to permanently move the location of an existing bus stop, continue to Evaluating Addition and Relocation Requests. ▪ For requests to remove a bus stop, continue to Evaluating Removal Requests. ▪ For temporary bus stop changes, continue to Temporary Bus Stop Changes.
Evaluating Modification Requests	
	Does affected stop meet bus stop spacing guidelines (described on Page 2-3)? ▪ If yes (bus stop is within recommended spacing of adjacent stops), proceed below. ▪ If no (bus stop if removed would maintain good bus stop spacing), continue to Evaluating Removal Requests
	Score bus stop using Bus Stop Amenities Scoring Rubric (Page 8-1) ▪ If bus stop scores higher than other prioritized and funded bus stops, proceed to Implementing Bus Stop Changes. ▪ If bus stop scores lower than other prioritized and funded bus stops, note request in inventory and notify requestor that other bus stops have received priority
Evaluating Addition and Relocation Requests	
	Evaluate potential new bus stop location based on Access, Safety, and Operational Efficiency guidelines (described on Page 6-4). Does bus stop location meet these guidelines? ▪ If yes, proceed to next step. ▪ If no, deny request.

	Does new bus stop location meet bus stop spacing guidelines (described on Page 2-3)? ▪ If yes (bus stop will be within recommended spacing of adjacent stops), proceed to Implementing Bus Stop Changes. ▪ If no (bus stop if added would result in poor bus stop spacing), is a bus stop still needed in the proposed location due to safety issues (e.g. existing bus stops do not allow for safe access to a destination)? – If yes, proceed to Implementing Bus Stop Changes – If no, deny request.
Evaluating Removal Requests	
	If approved, will remaining bus stops meet bus stop spacing guidelines (described on Page 2-3)? ▪ If yes (bus stop will be within recommended spacing of adjacent stops), proceed to next stop. ▪ If no (bus stop if removed would result in poor bus stop spacing), deny request.
	Evaluate the proposed stop based on its existing access, role as a transfer point, proximity to major destinations, existing ridership (see guidelines on page 6-7. Would the removal of this stop significantly and negatively affect access, transit operations, or stop spacing as described by these guidelines? ▪ If yes, is bus stop removal request due to the existing stop being unsafe? – If yes, proceed to Evaluating Addition and Relocation Requests. – If no, deny request. ▪ If no, proceed to next step.
	Post a rider notice to notify transit users and the surrounding community of the proposed stop removal 15 days before stop is removed. See Figure 6-1 (Example Rider Notice at Modified Stop). Proceed to next step.
	Notify and coordinate with facilities staff and transit operator on removal plans and remove stop.
Temporary Bus Stop Changes	
	Identify primary point of contact with entity responsible for construction, DOT, property owner, and official of any involved municipalities.
	Review work zone traffic control plans to ensure that transit is accommodated within the limits of the construction project as described on Page 6-9.
	Post a rider notice to notify transit users and the surrounding community of the temporary bus stop change 15 days before stop is changed or as soon as possible. See Figure 6-1 (Example Rider Notice at Modified Stop).
Implementing Bus Stop Changes	
	If appropriate, bring the requester of the bus stop change as a partner in this process.
	Ensure that funding is available and committed to this project.

	Determine high-level design and bus stop amenities based on the following: ▪ Includes all minimum amenities of relevant bus stop typology (described in Chapter 4 Bus Stop Typologies) ▪ Includes any preferred or optional amenities that CARTA and partner(s) agree upon ▪ Uses the approved amenities of the area where the bus stop is located (described in Appendix E), ▪ Consistency with any corridor or street plans ▪ ADA compliant (described in Appendix D) ▪ Includes foundation under all amenities using material at standard depth specifications (as described in Chapter 5 Bus Stop Amenities. For example, all landing pads must be 4" deep of poured asphalt or concrete, and all benches must be secured to a foundation of at least 4" of depth)
	If needed due to amenities planned to be installed, enter into a cost sharing agreement and maintenance agreement: ▪ Cost sharing agreement: As described on Page 8-2, at non-developer stops, CARTA will only pay for the amenities and baseline costs of its approved amenity package. Any costs above those base costs are known as a "betterment." CARTA is not responsible for betterment costs; these costs are borne by the entity requiring the betterment. Developers are responsible for all costs at their stops. ▪ Maintenance agreement: In some cases, a developer, property owner, town, or business improvement district may take on maintenance of a particular bus stop and/or its amenities. If this will be the case, CARTA will enter into a maintenance agreement with the relevant entity.
	Determine location of bus stop and any relevant additional permits/approvals needed (described in detail on Page 6-10) ▪ Will bus stop impact private property? If yes, seek a lease or ownership agreement with owner of the land that the bus stop will occupy and bring property owner on as a partner. ▪ Will bus stop impact public property? SCDOT maintains a "Street Finder" to help determine if a road is under municipal or SCDOT jurisdiction: https://ris.scdot.org/RoadwayInformationStreetFinder.aspx. If yes, determine jurisdiction and apply for an encroachment permit from the relevant entity: – SCDOT: https://www.scdot.org/business/permits.aspx – County of Charleston: https://www.charlestoncounty.org/departments/public-works/index.php – City of Charleston and City of Charleston Historic District: https://www.charleston-sc.gov/DocumentCenter/View/1336/DRC-process-and-application-form?bidId=. – Town of Mt. Pleasant: http://www.tompsc.com/1170/Development-Review-Team. – City of North Charleston: https://www.northcharleston.org/business/construction-and-development/permits/encroachment-permit/. ▪ Work together with partners and relevant entities to finalize needed permits and approvals.
	Engage a private engineering firm to conduct surveys and draw up a set of bus stop plans that are in line with the identified requirements.

	Coordinate with local public works agencies for utility services and pavement markings, if necessary.
	Inform marketing in case customers and/or media should be notified of bus stop change.
	Following construction, inspect bus stop using Bus Stop Installation Inspection Checklist (next page)
	Update bus stop inventory
	Notify the following CARTA departments or entities of modification completion: ▪ Marketing ▪ Finance ▪ Maintenance ▪ Transdev

Bus Stop Installation Inspection Checklist

TO: Project File

FROM:

SUBJECT: Bus shelter installation Inspection checklist

DATE:

Bus Stop Name:	ID Number:	Inspection Date:
Project Description:		
Inspection Performed By:		
Is the spatial location consistent with the design plans:	Yes ☐	No ☐
Bus stop sign installed:	Yes ☐	No ☐
Sign Orientation/Position Acceptable:	Yes ☐	No ☐
Correct Route Information/ID Number:	Yes ☐	No ☐
Sign/Post In Good Condition:	Yes ☐	No ☐
Concrete Pad poured to specification:	Yes ☐	No ☐
Concrete Expansion Joints Installed:	Yes ☐	No ☐
Any Concrete Cracking:	Yes ☐	No ☐
Curb Tie-in per Design Plans:	Yes ☐	No ☐
Sidewalk Tie-in per Design Plans:	Yes ☐	No ☐
Bench Installed:	Yes ☐	No ☐
All side panels present and fastened:	Yes ☐	No ☐
Garbage installed: Secured:	Yes ☐ Yes ☐	No ☐ No ☐
Map Holders Installed (3):	Yes ☐	No ☐
Date Marketing Department Notified to Install map inserts:		
Date Finance Department Notified to Update Stop Database and GTFS:		
Drainage Sloped Away from Structure:	Yes ☐	No ☐
Sediment and Erosion Control devices:	Yes ☐	No ☐

Dimensions meet ADA Guidelines: ▪ Landing area at least 5 feet wide and 8 feet deep ▪ Wheelchair fits completely under the shelter (min. space of a common mobility device is 30 in. by 48 in.	Yes ☐	No ☐
Sod Installation	Yes ☐	No ☐
Accepted:	Yes ☐	No ☐
Comments:		
Corrective Action Requested:		

An inspection checklist, when used properly, is an assurance that a particular piece of equipment has been inspected. As each item on the checklist is ticked off, the person doing the inspection is verifying that each component of the equipment is in correct working order.

A grantee of the Federal Transit Administration (FTA) must ensure continuous management of grant projects. Capital projects, such as construction projects, rolling stock procurements, and technology projects, must have a mechanism for technical oversight of the projects.

The purpose of document is to describe the procedures and reporting requirements that the Federal Transit Administration (FTA) expects from the project manager (PM) with regard to the Sponsor's management, organization, and capability to effectively and efficiently plan, develop, manage, and complete a Federally-assisted capital project.

When projects are implemented, the PM is ultimately responsible for, and must ensure technical oversight of, the project. Monitoring mechanisms may include:

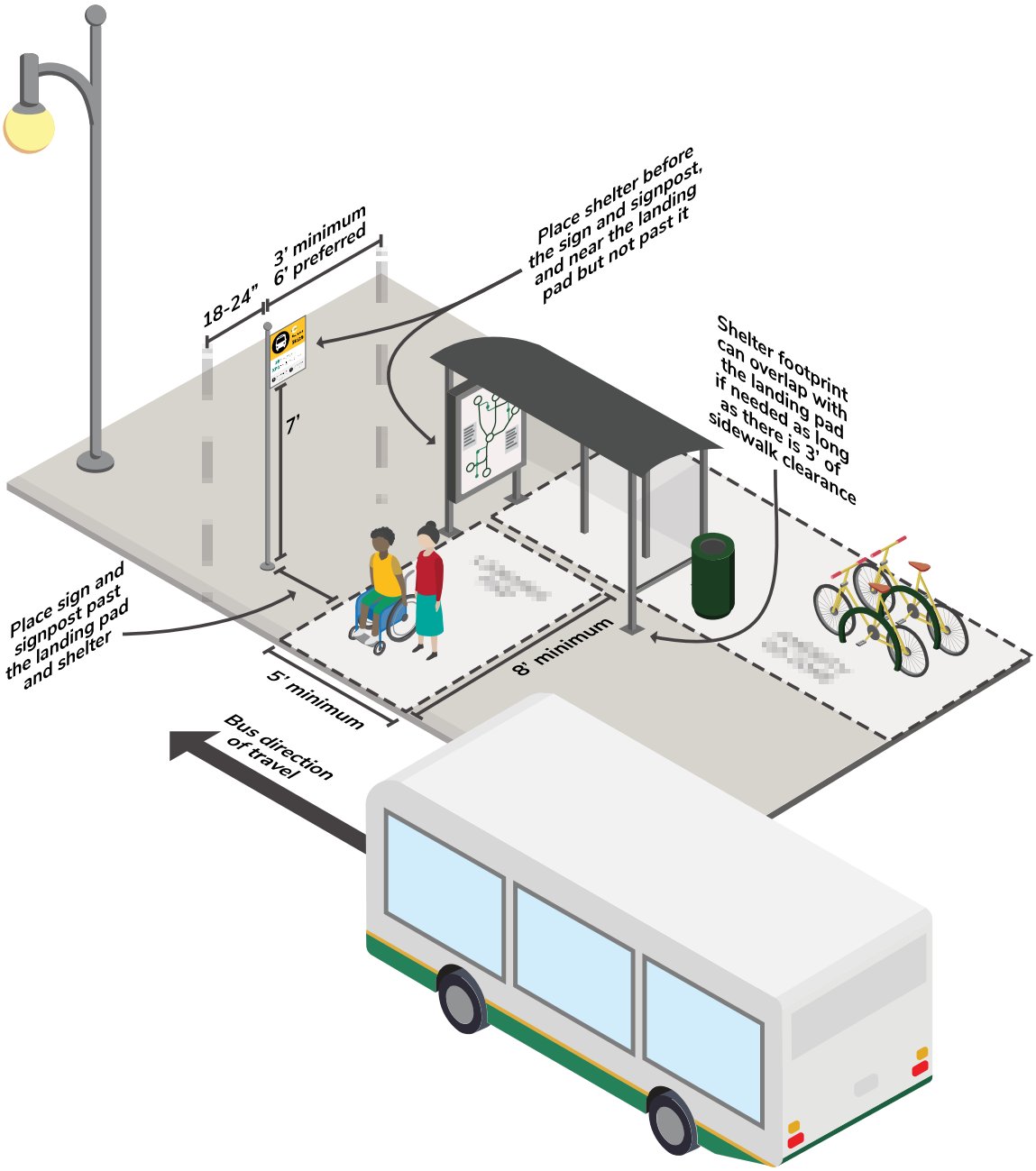
- Contracting with a consultant to provide project management oversight
- Reviewing requests for proposals and construction contracts
- Reviewing plans and drawings
- Conducting periodic site inspections
- Requiring/Completing progress reports
- Attending project review meetings
- Withholding payment of a portion of the grant until final inspection and acceptance of the facility by the PM

Contractors and/or subrecipients are required to prepare a variety of reports on a quarterly basis. These include a project narrative, invoices, project performance measures (number of passenger trips provided, vehicle miles traveled, unit installed, project status etc. as appropriate based on the project).

Signature: _____

APPENDIX G: BUS STOP AMENITIES INSTALLATION GUIDE

The following guide is designed for use by CARTA maintenance staff to ensure optimal and ADA-compliant placement of the most vital bus stop elements, including the bus stop post, sign, landing pad, shelter, bench, bike rack, and trash can.



APPENDIX H: CARTA BUS STOP DATABASE

CARTA Bus Stop Database as of September 2021.

Stop Num	StopID	Stop Name	GTFS Description	Stop Placement (near/far/mid)	Sidewalk	Bench (y/y-commercial/n)	Crosswalk (y/n)	ADA Compliant (y/n)	Bike Rack (y/n)	Shelter	Lighting (Street, Pole Mounted, Solar or None)	Trash Can? (Y/N)
1	2517691	Casper Padgett Way / Remount Rd	Sidewalk	Far	Y	N	Y	N	N	N	Digital Sign on bus stop sign post	Y
2	764433	Meeting St / Cool Blow St	Sidewalk; Bench	Mid	Y	Y- Donated	N	Y	Y	N	Pole Mounted	N
3	764442	Meeting St / Romney St	Sidewalk	Far	Y	N	N	N	N	N	Pole Mounted	N
4	764475	Meeting St / Mt Pleasant St	Bench; Sidewalk		Y	Y	N			N	None	Y
5	764525	Meeting Street Rd / Hackemann Ave	Shelter	Near	N	Y	N		N	Y	Solar in Shelter	Y
6	764541	Carner Ave / Clement Ave		Near	N	N	N	N	N	N	Solar on bus stop sign post	Y
7	764568	Rivers Ave / Carver Ave	Sidewalk; Bus Pull-off Lane		Y	N	N			N	Street	Y
8	2320942	Rivers Ave / Success St				N				N	Unknown	N
9	2326332	Rivers Ave / Commander Rd	Sidewalk		Y	N	N			N	Street	N
10	764612	Rivers Ave / Verde Ave	Sidewalk; Bus Pull-off Lane		Y	N	N			N	Street	N
11	843351	Corporate Rd / Bridgeview Dr				N				N	None	N
12	764627	Rivers Ave / Helm Ave	Shelter; Sidewalk	Far	Y	Y	Y	Y	N	Y	Street	Y
13	2332214	Meeting St / Legacy Meats				N				N	Street	N
14	764639	Rivers Ave / Macon Ave	Bus Pull-off Lane; Sidewalk		Y	N	N			N	Street	N
15	764655	Rivers Ave / Piggly Wiggly Dr	Sidewalk	Far	Y	N	N	N	N	N	Solar on bus stop sign post	N
16	764662	Rivers Ave / Rich St	Sidewalk; Bus Pull-off Lane	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
17	764712	Rivers Ave / Remount Rd	Shelter; Sidewalk, Bicycle Rack	Far	Y	N	N	Y	Y	Y	Solar in Shelter	Y
18	764720	Rivers Ave / W. Oak Grove St	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
19	764726	Rivers Ave / Aviation Ave	Bench; Sidewalk	Near	Y	Y	N	Y	N	N	Street	Y
20	764734	Rivers Ave / Benderson Dr	Bench	Mid	N	Y- Commercial	N	N	N	N	Solar on bus stop sign post	Y
21	2554980	Greenridge Rd / S Antler Dr	Sidewalk	Far	Y	N	N		N	N	Street	Y
22	764744	Hanahan Rd / SC Works-Trident One Stop	Shelter		N	N	N			Y	Street	Y
23	764746	Rivers Ave / Midland Park Rd	Shelter; Sidewalk	Far	Y	N	N	Y	N	Y	Solar in Shelter	Y
24	764750	College Dr / Trident Technical College	Wooden Gazebo		N	N	N			N	None	Y
25	764754	Mabeline Rd / Trident Technical College	Wooden Gazebo		N	N	N			N	None	N
26	2320941	Rivers Ave / Northwoods Blvd	Sidewalk	Near	Y	N	Y	N	N	N	Street	N
27	764763	Rivers Ave / Ashley Phosphate Rd	Shelter; Sidewalk; Bus Pull-off Lane; Bicycle Rack	Far	Y	N	Y	Y	Y	Y	Solar in Shelter	Y
28	2329766	Hwy 78 / Old University Blvd	Shelter		N	N	N			Y	Street	N
29	764778	S Antler Dr / Melnick Dr	Bench		N	Y	N			N	None	N
30	764801	Meeting St / Brigade St	Shelter; Sidewalk		Y	N	N			Y	None	Y
31	764803	Rivers Ave / Aichele Dr SB @ Post Office	Shelter	Mid	N	N	N		N	Y	Street	Y
32	764807	Rivers Ave / Meeting Street Rd	Sidewalk; Bus Pull-off Lane		Y	N	N			N	Street	Y
33	764839	Hwy 78 / Shadow Ln	Sidewalk		Y	N	N			N	Street	N
34	764915	Rivers Ave / Eagle Dr	Sidewalk		Y	N	N			N	Solar in Shelter	Y
35	767194	Hwy 78 / Fernwood Dr.	Shelter; Sidewalk; Bicycle Rack	Near	Y	N	Y	Y		Y	Solar in Shelter	Y
36	789120	Rivers Ave / Dunlap St	Sidewalk	Mid	Y	N	N	N	N	N	None	N
37	798116	Military Magnet Academy	Crosswalk		N	N	Y			N	Street	N
38	2332332	Rivers Ave / Aamaco Way	Bench	Mid	N	Y- Commercial	N	N	N	N	None	Y
39	808137	Rivers Ave / Taylor Street @ RR Crossing	Sidewalk; Bus Pull-off Lane		Y	N	N			N	Street	N
40	819678	Meeting Street Rd / Delaware Ave				N				N	None	N
41	819682	Meeting St / Little Ave								N	Street	N
42	764793	Medcom St / Trident Medical Center	Shelter	Mid	N	N	N		N	Y	None	Y
43	764916	Transit Mall	Bench; Sidewalk	Mid	Y	Y	N	Y	N	N	Pole Mounted	Y
44	764486	Meeting St / Cunnington St								N	Street	N
45	764505	Meeting St / Four Mile Ln	Bike Lane		N	N	N			N	Street	N
46	764516	Meeting St / Pittsburgh Ave		Mid	N	N	N	N	N	N	Solar on bus stop sign post	Y
47	764585	Rivers Ave / Cosgrove Ave	Shelter; Sidewalk	Near	Y	N	Y		Y	Y	Street	Y
48	798683	Meeting St / Legacy Meats SB	Sidewalk		Y	N	N			N	Street	N
49	798684	Meeting St / Greenleaf Rd	Sidewalk		Y	N	N			N	Street	N
50	764337	Meeting St / Mary St	Sidewalk		Y	N	N			N	Street	N
51	764370	Meeting St / Spring St SB	Sidewalk		Y	N	N			N	Pole Mounted	N
52	764333	Mary St / Meeting St	Benches; Shelter; Sidewalk		Y	Y	N			Y	Pole Mounted	Y
53	764771	Rivers Ave / Eagle Landing Blvd	Shelter; Bus Pull-off Lane; Commercial Bench; Sidewalk		Y	Y- Commercial	N			Y	Street	Y
54	764697	Rivers Ave / Rebecca St	Sidewalk; Bus Pull-off Lane	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
55	764689	Rivers Ave / Emden St SB	Bus Pull-off Lane; Sidewalk	Mid	Y	N	N		N	N	Solar on bus stop sign post	Y
56	764702	Rivers Ave / Target St	Sidewalk; Bus Pull-off Lane	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
57	764707	Rivers Ave / Sabal St	Sidewalk; Bus Pull-off Lane	Near	Y	N	N		N	N	Street	N
58	764353	Meeting St / Woolfe St	Sidewalk		Y	N	N			N	Street	N
59	764376	Meeting St / Line St SB	Sidewalk	Far	Y	N	Y	N	N	N	Street	N
60	764406	Meeting St / Johnson St SB	Sidewalk		Y	N	N			N	Pole Mounted	N
61	764420	Meeting St / Huger St	Shelter; Bus Pull-off Lane; Sidewalk		Y	N	N			Y	Pole Mounted	Y
62	764523	Meeting Street Rd / Delaware Ave	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
63	764646	Rivers Ave / Durant Ave	Shelter; Sidewalk	Near	Y	N	Y	N	N	Y	Solar on bus stop sign post	Y
64	764688	Rivers Ave / Emden St	Sidewalk; Bus Pull-off Lane	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
65	764698	Rivers Ave / Rebecca St	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
66	764705	Rivers Ave / Harley St	Shelter; Sidewalk		Y	N	N			Y	Street	N
67	764714	Rivers Ave / Baker St	Sidewalk		Y	N	N			N	Street	N
68	764731	Rivers Ave / Hawthorne Dr	Bus Pull-off Lane		N	N	N			N	Street	N
69	764739	Rivers Ave / Aichele Dr NB	Commercial Bench		N	Y- Commercial	N			N	Street	Y
70	764742	Rivers Ave / Eagle Dr NB	Sidewalk		Y	N	N			N	Street	N
71	764745	Rivers Ave / Tipson St	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
72	764781	Medical Plaza Drive / Trident Medical Arts Center	Bench	Mid	N	N	Y	N	N	N	Solar on bus stop sign post	Y
73	764796	Rivers Ave / Trident Technical College	Shelter; Sidewalk		Y	N	N			Y	Street	Y
74	764842	Meeting St / Cedar St	Sidewalk		Y	N	N			N	Pole Mounted	N
75	781902	Meeting St / Little Ave	Sidewalk		Y	N	N			N	None	N
76	789095	Meeting St / Cool Blow St	Shelter; Sidewalk; Bus Turn-Out		Y	N	N			Y	Pole Mounted	Y
77	789096	Meeting St / Romney St	Sidewalk		Y	N	N			N	Pole Mounted	N
78	789097	Meeting St / Mt Pleasant St	Wooden Bench; Sidewalk		Y	Y	N			N	Street	Y
79	789099	Rivers Ave / Bolton St	Sidewalk	Mid	Y	N	N	N	N	N	None	Y
80	789101	Meeting Street Rd / Hackemann Ave								N	Street	N
81	789102	Carner Ave / Burton Ln	Sidewalk		Y	N	N			N	Street	N
82	789104	Rivers Ave / McMillan Ave	Shelter; Sidewalk; Bus Pull-off Lane	Far	Y	N	N	Y	N	Y	Street	Y
83	789105	Rivers Ave / Verde Ave	Bench; Sidewalk		Y	Y	N			N	None	N
84	789107	Rivers Ave / Helm Ave	Bus Pull-off Lane; Sidewalk		Y	N	N			N	None	N
85	789109	Rivers Ave / Macon Ave	Bus Pull-off Lane; Sidewalk		Y	N	N			N	Street	N
86	789110	Rivers Ave / Piggly Wiggly Dr	Sidewalk		Y	N	N			N	Street	N
87	789115	Rivers Ave / Remount Rd NB	Sidewalk	Near	Y	N	N	Y	N	N	Street	Y
88	789117	Rivers Ave / Spaulding Dr	Sidewalk		Y	N	N			N	Street	N
89	789116	Rivers Ave / Aviation Ave	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	Y

90	789118	Rivers Ave / Hawthrone Dr N	Commercial Bench; Bus Pull-off Lane		N	Y- Commercial	N			N	Street	N
91	2320934	S Antler Dr / Otranto Rd				N				N	None	N
92	2320938	Rivers Ave / Mabeline Rd	Sidewalk	Near	Y	N	N	N	N	N	Solar on bus stop sign post	N
93	789121	Rivers Ave / Ashley Phosphate Rd	Commercial Bench; Sidewalk	Near	Y	Y- Commercial	Y	N	N	N	Solar on bus stop sign post	Y
94	789122	Rivers Ave / Easy St	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	None	Unknown
95	789123	Hwy 78 / Fernwood Dr @ Wannamaker Park	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Pole Mounted	N
96	789124	Meeting St / Brigade St	Bench; Sidewalk	Near	Y	Y- Donated	N		N	N	None	Y
97	798115	S Antler Dr / Melnick Dr	Sidewalk	Far	Y	N	Y		N	N	Street	N
98	798670	Meeting St / Williman St	Sidewalk		Y	N	N			N	Pole Mounted	Y
99	798673	Meeting Street Rd / Groveland Ave	Sidewalk		Y	N	N			N	Street	N
100	798675	Military Magnet Academy	Crosswalk; Sidewalk		Y	N	Y			N	None	N
101	798677	Hwy 78 / Elms Center Rd	Sidewalk		Y	N	N			N	Pole Mounted	N
102	798679	Trident Medical Center - 9279 Medical Plaza Dr				N				N	None	N
103	807759	N. Charleston SuperStop on Rivers Ave	Sidewalk, Bench, Transfer Center	Near	Y	Y	Y	Y	N	N	Street	Y
104	819695	Rivers Ave / Success St	Sidewalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N
105	789100	Meeting St / Pittsburgh Ave	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Street	Y
106	798671	Meeting St / Greenleaf Rd	Sidewalk	Mid	Y	Y- Donated	N			N	Street	N
107	798672	Meeting St / Four Mile Ln	Sidewalk	Mid	Y	N	N		N	N	Street	N
108	764772	Rivers Ave / The Promenade at Northwoods	Commercial Bench		N	Y- Commercial	N			N	Street	N
109	764773	Rivers Ave / Northbrook Blvd	Shelter	Mid	N	N	N	Y	N	Y	Solar in Shelter	Y
110	2740395	Hanahan Rd / VA Hospital	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
111	789114	Rivers Ave / Ranneau Ave	Sidewalk		Y	N	N			N	Street	N
112	789094	Meeting St / Woolfe St	Sidewalk	Near	Y	N	Y	Y	N	N	Street	Y
113	764381	Meeting St / Sheppard St	Shelter; Sidewalk	Near	Y	N	Y	Y	N	Y	Pole Mounted	Y
114	764402	Meeting St / Johnson St NB	Shelter; Bench; Sidewalk; Bus Turn-Out	Mid	Y	Y	N	Y	N	Y	Pole Mounted	Y
115	764843	Meeting St / Line St NB	Shelter; Sidewalk	Near	Y	N	Y	Y	N	Y	Solar in Shelter	Y
116	764367	Elmwood Ave / Congress St	Sidewalk		Y	N	N			N	Street	N
117	764372	Sumter St / President St	Sidewalk		Y	N	N			N	Street	N
118	764398	Moultrie St / Ashley Ave								N	Street	N
119	764437	Rutledge Ave / Simons St	Sidewalk		Y	N	N			N	Street	N
120	764445	Rutledge Ave / Maple St	Sidewalk		Y	N	N			N	Street	N
121	764462	Rutledge Ave / Sans Souci St	Sidewalk		Y	N	N			N	Street	N
122	764500	King St / Ashepoo Ln	Sidewalk		Y	N	N			N	Street	N
123	798688	Rutledge Ave / Grove St	Shelter; Sidewalk	Far	Y	N	Y	Y	N	Y	Street	Y
124	802553	Azalea Dr / Elegans Dr	Wooden Bench	Mid	N	Y	N	N	N	N	Solar on bus stop sign post	Y
125	802554	Azalea Dr / Baker Hospital Blvd								N	Street	N
126	849851	Meeting St / Cunnington Ave	Sidewalk	Mid	Y	Y- Donated	N	N	N	N	Solar on bus stop sign post	N
127	2320918	Leeds Ave / Tile Dr	Bench		N	Y	N			N	None	N
128	819727	Rutledge Ave / Fishburne Ave				N				N	Street	N
129	819728	Sumter St / Rutledge Ave	Sidewalk		Y	N	N			N	Street	N
130	819729	Sumter St / Ashley Ave								N	Street	N
131	819730	Austin Ave / Peonie St	Sidewalk		Y	N	N			N	Street	N
132	819731	Austin Ave / Peace St								N	Street	N
133	819821	Azalea Dr / Meridian Rd		Far	N	N	N	N	N	N	Solar on bus stop sign post	N
134	819822	King St Ext / Lanxess Chemical Dr				N				N	Street	N
135	819823	Elmwood Ave / Moultrie St	Shelter; Sidewalk		Y	N	N			Y	Street	Y
136	764526	Baker Hospital Blvd / Evatt Ln		Mid	N	N	N	N	N	N	Solar on bus stop sign post	N
137	764582	N. Charleston SuperStop	Sidewalk, Bench; Covered Waiting Area	Off-Street	Y	Y	Y	Y	N	N	Canopy	Y
138	764276	Ashley Ave / Doughty St	Sidewalk		Y	N	N			N	Street	N
139	764474	Mt Pleasant St / King St	Shelter; Sidewalk	Far	Y	N	Y	N	N	Y	Street	Y
140	2511769	Freddie Whaley Community Center SB				N				N	Unknown	Unknown
141	764273	Rutledge Ave / Vanderhorst St	Sidewalk		Y	N	N			N	Street	N
142	764295	Rutledge Ave / Bee St	Sidewalk		Y	N	N			N	Street	N
143	764322	Rutledge Ave / Spring St	Sidewalk		Y	N	N			N	Street	N
144	764888	Rutledge Ave / Moultrie St	Sidewalk		Y	N	N			N	Street	N
145	764893	Rutledge Ave / Line St	Bench; Sidewalk; Crosswalk		Y	Y	Y			N	Street	N
146	764490	King St / Heriot St	Sidewalk		Y	N	N			N	Street	N
147	805195	Cosgrove Ave / Mott Ave	Sidewalk	Far	Y	N	N	N	N	N	Solar on bus stop sign post	N
148	764508	Austin Ave / Peonie St	Sidewalk	Far	Y	N	N	N	N	N	Solar on bus stop sign post	N
149	764513	Austin Ave / Peace St		Near	N	N	Y	N	N	N	Solar on bus stop sign post	N
150	764521	King St Ext / Lanxess Chemical Dr NB	Bus Pull-off Lane		N	N	N			N	Street	N
151	764532	Azalea Dr / Baker Hospital Blvd				N				N	Street	N
152	764535	Azalea Dr / Elegans Dr		Mid	N	N	N	N	N	N	Solar on bus stop sign post	N
153	764540	Azalea Dr / Meridian Rd		Far	N	N	N	N	N	N	Street	N
154	794785	Freddie Whaley Community Center NB	Sidewalk		Y	N	N			N	Street	N
155	800701	King St / Ashepoo Ln	Bus Pull-off Lane		N	N	N			N	Street	N
156	805268	King St / Heriot St								N	Street	N
157	819716	Sumter St / President St								N	Street	N
158	819717	Elmwood Ave / Congress St								N	Street	N
159	819718	Elmwood Ave / Moultrie St								N	Street	N
160	819719	Moultrie St / Ashley Ave								N	Street	N
161	819720	Moultrie St / Rutledge Ave								N	Street	N
162	819721	Rutledge Ave / Grove St	Sidewalk	Near	Y	Y- Donated	Y	N	N	N	Street	Y
163	819722	Rutledge Ave / Simons St								N	Street	N
164	819723	Rutledge Ave / Maple St	Sidewalk		Y	N	N			N	Street	N
165	819724	Rutledge Ave / Sans Souci St								N	Street	N
166	819726	King St / Mt Pleasant St								N	Street	N
168	764903	Ashley Ave / Bee St	Sidewalk		Y	N	N			N	Street	N
169	764904	Ashley Ave / Fishburne St	Sidewalk		Y	N	N			N	Street	Unknown
170	764905	Sumter St / Ashley Ave	Sidewalk		Y	N	N			N	Street	Unknown
171	764911	Mt Pleasant St / Rutledge Ave	Sidewalk		Y	N	N			N	Street	N
172	798690	Ashley Ave / Spring St	Shelter; Sidewalk		Y	N	N			Y	Street	Y
173	794874	Cosgrove Ave / Mott Ave	Sidewalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N
174	794876	Cosgrove Ave / Lenape St	Sidewalk		Y	N	N			N	Street	Y
175	2529082	Rivers Ave / Melbourne Ave	Sidewalk		Y	N	N				Street	
176	2537757	Rivers Ave / Fuller St	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
177	764576	Constitution Ave / Ranger Dr								N	Unknown	Y
178	764584	Leeds Ave / Spur St	Sidewalk		Y	N	N			N	None	N
179	764602	Leeds Ave / Primrose Ave	Sidewalk		Y	N	N			N	None	N
180	764610	Martha Dr / Peacock Ave	Sidewalk		Y	N	N			N	Street	N

181	764613	Martha Dr / Ranger Dr								N	None	N
182	764617	Martha Dr / Stith Ave								N	Street	N
183	2455713	Martha Dr / Budds Ave								N	Street	N
184	2554989	Greenridge Rd / S Antler Dr	Near	N	N	N		N	N	None	Y	
185	2536279	Ashley River Rd / Plainview Rd WB	Near	N	N	N		N		Street		
186	2536280	Ashley River Rd / Plainview Rd EB	Near	N	N	N		N	N	None		
187	819833	Dorchester Rd / Pinehaven Dr	Sidewalk	Y	N	N			N	Street	N	
188	764529	County Public Services Bldg	Bench; Sidewalk	Mid	Y	Y	Y	Y	N	N	Street	N
189	764574	Dorchester Rd / Paramount Dr	Shelter; Sidewalk		Y	N	N			Y	Street	Y
190	764554	Dorchester Rd / Kent Ave	Sidewalk		Y	N	N			N	Street	N
191	764556	Dorchester Rd / South Allen Dr	Sidewalk		Y	N	N			N	Street	N
192	764558	Dorchester Rd / Meeting Street Rd	Sidewalk		Y	N	N			N	Street	N
193	764560	Dorchester Rd / Stark Ln	Sidewalk		Y	N	N			N	Street	Y
194	764563	Dorchester Rd / W Surrey Dr	Sidewalk		Y	N	N			N	Street	N
195	794790	Leeds Ave / County Detention Center	Bench		N	Y	N			N	None	N
196	794803	Constitution Ave / Ranger Dr								N	None	N
197	794807	Leeds Ave / Spur St								N	Street	N
198	2320901	Lawrence St. / Constitution Ave.								N	Street	Y
199	794815	Leeds Ave / Primrose Ave								N	Street	N
200	794819	Martha Dr / Peacock Ave	Sidewalk		Y	N	N			N	Street	N
201	794820	Martha Dr / Louise Dr								N	Unknown	Unknown
202	794821	Martha Dr / Budds Ave								N	Street	N
203	794822	Martha Dr / Stith Ave	Sidewalk		Y	N	N			N	Street	N
204	807164	Leeds Ave / Dorchester Rd (CARTA)								N	None	N
205	819824	Faber Pl / Leeds Ave	Shelter; Sidewalk; Bicycle Rack	Far	Y	N	N	Y	Y	N	Solar in Shelter	Y
206	819825	Faber Pl / Lifepoint								N	None	N
207	819826	Faber Pl / Boeing								N	None	N
208	819827	Faber Place Dr / Paramount Dr	Sidewalk	Mid	Y	N	N	N	N	N	None	Y
209	764580	Dorchester Rd / Pinehaven Dr	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
210	764557	Dorchester Rd / Allen (Greyhound Station)	Commercial Bench; Sidewalk	Mid	Y	Y- Commercial	N	N	N	N	Solar on bus stop sign post	Y
211	789044	Dorchester Rd / Meeting Street Rd	Sidewalk		Y	N	N			N	Street	Y
212	789046	Dorchester Rd / Constitution Ave	Sidewalk		Y	N	N			N	Street	N
213	794801	Dorchester Rd / Stark Ln	Sidewalk		Y	N	N			N	Street	Y
214	764622	McMillan Ave / Hobson Ave				N				N	Street	N
215	764631	Turnbull Ave / Manley Ave	Shelter	Mid	N	N	N	N	N	Y	Solar on bus stop sign post	Y
216	764668	North Charleston Transit Center	Sidewalk, Covered boarding area, Amtrak Station		Y	Y	N	Y		N	Street	N
217	764677	Montague Ave / Park Place West	Sidewalk		Y	N	N			N	Street	N
218	764678	Montague Ave / O'Hear Ave	Sidewalk		Y	N	N			N	Pole Mounted	N
219	764690	Durant Ave / Rivers Ave			N	N	N			N	Street	N
220	764806	McMillan Ave / Old Pine Circle E								N	Street	N
221	764817	Durant Ave / Mixson Ave	Sidewalk, Wooden Shelter		Y	N	N			N	Street	N
222	764676	Montague Ave / Marlboro Rd	Sidewalk		Y	N	N			N	Street	N
223	764825	Mixson Ave / E Montague Ave	Shelter; Sidewalk	Far	Y	N	N			Y	Street	Y
224	819886	Montague Ave / Spruill Ave								N	Street	N
225	819892	Montague Ave / Jenkins Ave	Sidewalk		Y	N	N			N	Pole Mounted	N
226	766429	E Montague Ave / Parkside Dr	Sidewalk		Y	N	N			N	Street	N
227	789137	Remount Rd / Saxon St	Sidewalk		Y	N	N			N	Street	Y
228	2332230	Lawrence St / Ranger Dr								N	Unknown	Unknown
229	2574553	Dorchester Rd / Bennett Yard Rd	Sidewalk	Near	Y	N	N		N	N	None	N
230	764596	Rivers Ave / Shipwatch Square	Sidewalk; Bus Pull-off Lane	Near	Y	N	Y	N	N	N	Street	Y
231	764674	Rivers Ave / Mall Dr	Shelter; Bus Pull-off Lane; Sidewalk	Far	Y	N	N	Y	N	Y	Solar on bus stop sign post	Y
232	819874	Montague Ave / Jenkins Ave	Shelter; Sidewalk; Bicycle Rack	Mid	Y	N	Y	Y	Y	Y	Solar in Shelter	Y
233	764851	Centre Pointe Dr / Tanger Outlet Blvd (Northside)	Shelter; Commercial Bench; Sidewalk	Far	Y	Y- Commercial	Y	Y	N	Y	Street	Y
234	764864	Centre Pointe Dr / Golden Corral	Sidewalk		Y	N	N			N	Street	N
235	819880	Centre Pointe Dr / Wetland Crossing	Bench			Y- Commercial				N	Street	Y
236	764659	Mall Dr / City Hall Ln	Shelter; Sidewalk	Far	Y	Y- Commercial	Y	Y	N	Y	Solar in Shelter	Y
237	764665	Mall Dr / Lacross Rd	Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
238	764671	Park Circle / S Rhett Ave	Sidewalk; Commercial Bench	Mid	Y	Y- Commercial	Y	N	N	N	Street	Y
239	764679	Park Circle / E Park Pl	Sidewalk		Y	N	N			N	Street	N
240	819881	W. Montague Ave / Banco Rd				N				N	Street	Y
241	819885	N. Rhett Ave / Braddock Ave	Sidewalk		Y	N	N			N	Street	N
242	764823	Mixson Ave / E Montague Ave		Near	N	N	Y			N	Street	N
243	764669	Durant Ave / Bixby Ln	Sidewalk		Y	N	N			N	Street	N
244	794808	Lawrence St / Constitution Ave	Sidewalk		Y	N	N			N	None	N
245	794827	Mall Dr / City Hall Ln				N				N	Street	N
246	764672	Durant Ave / Bexley St	Sidewalk	Far	Y	N	Y	N	N	N	None	N
247	819847	McMillan Ave / Old Pine Circle	Sidewalk		Y	N	N			N	Street	N
248	819848	McMillan Ave / Hobson Ave				N				N	Street	N
249	819849	Turnbull Ave / Manley Ave	Sidewalk		Y	N	N			N	Street	N
250	819944	Noisette Blvd / 2nd St N				N				N	Street	N
251	819943	Noisette Blvd / 2nd St N				N				N	Street	N
252	764664	Virginia Ave / Bethany St	Sidewalk		Y	N	N			N	Street	N
253	2388625	Leeds Ave / Leeds Pl W								N	None	Unknown
254	819873	Montague Ave / O'Hear Ave								N	Pole Mounted	N
255	819875	E Montague Ave / Spruill Ave	Sidewalk		Y	N	N			N	Street	N
257	2501578	Meeting St / Queen St				N				N	Street	Unknown
258	794830	Montague Ave / Upjohn Rd	Sidewalk		Y	N	N			N	Street	N
259	789111	Rivers Ave / Morningside Dr	Sidewalk		Y	N	N			N	None	Y
260	794824	Tanger Outlet Blvd / International Blvd	Commercial Bench; Bus Pull-off Lane		N	Y- Commercial	N			N	Street	Y
261	794826	Tanger Outlet Blvd / Hotel Rd	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
262	794828	Mall Dr / Lacross Rd	Sidewalk		Y	N	N			N	Street	N
263	794831	E Montague Ave / Park Pl E	Sidewalk; Crosswalk		Y	N	Y			N	Pole Mounted	N
264	798110	W. Montague Ave / N Arco Ln (McDonald's)	Sidewalk		Y	N	N			N	Street	N
265	819876	N. Rhett Ave and Marquis Rd								N	Street	N
266	764439	Morrison Dr / Charleston County Magistrate Courts	Sidewalk; Bus Pull-off Lane	Mid	Y	N	N	N	N	N	None	Y
267	764450	Morrison Dr / Romney St	Bike Lane; Sidewalk		Y	N	N			N	Street	N
268	764461	Morrison Dr / Brigade St	Bike Lane; Sidewalk		Y	N	N			N	Street	Y
269	764520	Spruill Ave / Little Ave	Bike Lane; Sidewalk		Y	N	N			N	Street	N
270	764524	Spruill Ave / Groveland Ave	Bike Lane; Sidewalk		Y	N	N			N	Street	N
271	764533	Spruill Ave / Riverview Ave	Bike Lane; Sidewalk		Y	N	N			N	Street	Y

272	764539	Spruill Ave / Stromboli Ave	Bike Lane; Sidewalk		Y	N	N			N	Street	N
273	764544	Spruill Ave / Burton Ln	Bike Lane; Sidewalk		Y	N	N			N	Street	Y
274	764551	Spruill Ave / English St	Shelter; Stone Bench; Bike Lane; Sidewalk	Mid	Y	Y- Donated	N		N	Y	Solar on bus stop sign post	Y
275	764555	Spruill Ave / Baxter St	Bike Lane; Sidewalk		Y	N	N			N	Street	Y
276	764578	North Carolina Ave / Calvert St	Gazebo; Wooden Bench; Sidewalk		Y	Y	N			N	Street	N
277	764589	North Carolina Ave / Success St	Sidewalk		Y	N	N			N	Street	N
278	764605	North Carolina Ave / Reynolds Ave	Bench; Sidewalk	Near	Y	Y	N	Y	N	N	Street	N
279	764618	Montague Ave / Fargo St	Sidewalk		Y	N	N			N	Street	N
280	764862	Morrison Dr / Meeting St	Bike Lane; Sidewalk		Y	N	N			N	Street	N
281	794825	International Blvd / I-526E Entrance (Southside)	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	None	Y
282	794832	International Blvd / Boeing	Shelter; Sidewalk		Y	N	N			Y	Street	Y
283	794833	International Blvd / I-526 EB (Northside)	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	None	N
284	800689	Montague Ave / Dorchester Rd	Sidewalk, Bench	Mid	Y	Y- Commercial	N	N	N	N	None	Y
285	2394992	McMillan Ave / St John St				N				N	Street	Unknown
286	800846	Spruill Ave / Echo Ave	Bike Lane; Sidewalk		Y	N	N			N	Street	N
287	807731	Reynolds Ave / N Atlantic Ave	Wooden Bench; Sidewalk	Mid	Y	Y- Donated	Y	N	N	N	Street	Y
288	807732	Reynolds Ave / Spruill Ave	Sidewalk		Y	N	N			N	Street	N
289	819924	International Blvd / Darius Rucker Blvd								N	None	N
290	819925	Emmett I. Davis Jr. Ave / Firestone Rd	Sidewalk		Y	N	N			N	Street	Y
291	819926	W. Montague Ave / Calvin St								N	None	N
292	764691	Charleston International Airport	Shelter, Sidewalk		Y	N	N			Y	Pole Mounted	N
293	764566	Dorchester Rd / Lexington Ave SB	Sidewalk		Y	N	N			N	Street	N
294	764572	Dorchester Rd / Leeds Ave	Sidewalk		Y	N	N			N	Street	N
295	789047	Dorchester Rd / Bonds Ave SB	Sidewalk		Y	N	N			N	Street	N
296	798145	Dorchester Rd / Leeds Ave SB (at Shelter)	Shelter; Sidewalk		Y	N	N			Y	Street	Y
297	2501527	Dorchester Rd / Veneer Ave				N				N	Street	Unknown
298	819869	Dorchester Rd / Transfer St				N				N	Street	N
299	764377	Columbus St / America St	Shelter; Sidewalk		Y	N	N			Y	None	N
300	764802	Morrison Dr / Stuart St	Shelter; Sidewalk		Y	N	N			Y	None	Y
301	764863	Columbus St / Drake St	Sidewalk		Y	N	N			N	Street	N
302	764865	Morrison Dr / Jackson St (Sanders-Clyde Elementary)	Sidewalk		Y	N	N			N	Pole Mounted	Y
303	764583	Reynolds Ave / Ottawa Ave	Sidewalk		Y	N	N			N	Street	N
304	764860	Morrison Dr / Jackson St								N	Street	N
305	764861	Morrison Dr / Stuart St	Sidewalk	Mid	Y	N	N		N	N	None	N
306	794782	Morrison Dr / Charleston County Magistrate Courts	Sidewalk		Y	N	N			N	Street	N
307	794783	Morrison Dr / Romney St	Sidewalk		Y	N	N			N	Street	N
308	794784	Morrison Dr / Brigade St	Bike Lane; Sidewalk		Y	N	N			N	None	N
309	794786	Spruill Ave / Little Ave	Bike Lane		N	N	N			N	Street	N
310	794787	Spruill Ave / Groveland Ave	Bike Lane	Mid	N	N	N	N	N	N	Solar on bus stop sign post	N
311	794788	Spruill Ave / Echo Ave	Bike Lane		N	N	N			N	None	N
312	794789	Spruill Ave / Riverview Ave	Sidewalk; Bike Lane		Y	N	N			N	None	N
313	794791	Spruill Ave / Stromboli Ave	Bike Lane; Sidewalk		Y	N	N			N	Street	N
314	794792	Spruill Ave / Burton Ln	Bench; Sidewalk; Bike Lane	Far	Y	Y	N	N	N	N	Solar on bus stop sign post	N
315	794798	Spruill Ave / English St	Sidewalk; Bike Lane		Y	N	N			N	Street	N
316	794800	Spruill Ave / Baxter St	Bike Lane	Mid	N	N	N	N	N	N	Solar on bus stop sign post	Y
317	794804	North Carolina Ave / Calvert St	Sidewalk		Y	N	N			N	Street	N
318	794809	North Carolina Ave / Success St	Sidewalk		Y	N	N			N	Street	N
319	794817	North Carolina Ave / Reynolds Ave	Bench; Sidewalk	Far	Y	Y	N	Y	N	N	Solar on bus stop sign post	N
320	794823	Montague Ave / Fargo St	Sidewalk		Y	N	N			N	None	N
321	794834	Morrison Dr / Meeting St	Sidewalk		Y	N	N			N	Street	N
322	819922	W. Montague Ave / Calvin St	Sidewalk		Y	N	N			N	None	N
323	819923	Emmett I. Davis Jr. Ave / Firestone Rd	Sidewalk		Y	N	N			N	Street	N
324	764570	Dorchester Rd / SC Vocational Rehab Center	Shelter; Sidewalk	Mid	Y	Y	N	Y		Y	Solar in Shelter	Y
325	789049	Dorchester Rd / Oscar Johnson Dr	Sidewalk		Y	N	N			N	Street	Y
326	789052	Dorchester Rd / Montague Ave (before intersection)	Sidewalk	Near	Y	N	N		N	N	Solar on bus stop sign post	Y
327	798142	Dorchester Rd / Ranger Dr NB	Sidewalk		Y	N	N			N	Street	N
328	764346	Mary St / America St	Sidewalk		Y	N	N			N	Street	Y
329	798915	America St / Columbus St	Sidewalk		Y	N	N			N	None	Y
330	764858	America St / Reid St	Sidewalk		Y	N	N			N	Street	N
331	764859	Columbus St / Drake St	Sidewalk		Y	N	N			N	None	N
332	764581	Dorchester Rd / Larchmont Dr	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
333	764587	Dorchester Rd / Bon Aire Blvd	Sidewalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N
334	764591	Dorchester Rd / Oak Ridge Plaza	Bench; Sidewalk		Y	Y	N			N	None	N
335	764594	Dorchester Rd / Montague Ave	Sidewalk		Y	N	N			N	None	N
336	764600	Dorchester Rd / Evanston Blvd	Bench; Sidewalk	Far	Y	Y	Y	Y	N	N	Solar on bus stop sign post	Y
337	764611	Dorchester Rd / Trailwood Dr	Shelter; Commercial Bench; Sidewalk	Near	Y	Y- Commercial	N	Y	N	Y	Solar on bus stop sign post	Y
338	764621	Dorchester Rd / Gwinnett St	Bench; Sidewalk	Mid	Y	Y	N	Y	N	N	Solar on bus stop sign post	Y
339	764628	Dorchester Rd / Leslie St	Bench, Sidewalk	Far	Y	Y	N	Y	N	N	Solar on bus stop sign post	Y
340	764640	Dorchester Rd / Michaux Pkwy	Sidewalk	Near	Y	N	N	N	N	N	Solar on bus stop sign post	N
341	764652	Dorchester Rd / Great Oak Dr	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
342	764666	Dorchester Rd / Hanniford Dr	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
343	764685	Dorchester Rd / Lake Ashley Park	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
344	764692	Dorchester Rd / Apartment Blvd	Shelter; Sidewalk	Far	Y	N	Y	N	N	Y	Solar in Shelter	Y
345	764696	Dorchester Rd / Lambs Rd	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
346	764706	Dorchester Rd / Hunley Park	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
347	764713	Dorchester Rd / Cross County Rd								N	None	N
348	764724	Dorchester Rd / Lowell Dr	Shelter	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
349	764727	Dorchester Rd / Foxwood Dr	Shelter	Near	Y	N	N	Y	N	Y	Solar in Shelter	Y
350	764728	Dorchester Rd / Parkgate Dr	Sidewalk; Bench; Bicycle Rack; Bus Pull-off Lane	Mid	Y	Y	N	Y	Y	N	None	N
351	764733	Dorchester Rd / Archdale Blvd	Commercial Bench	Near	N	Y- Commercial	N	N	N	N	Solar on bus stop sign post	Y
352	764741	Ashley Phosphate Rd / Dorchester Rd	Sidewalk	Near	Y	N	N	N	N	N	Solar on bus stop sign post	Y
353	764743	Ashley Phosphate Rd / Patriot Blvd	Commercial Bench; Sidewalk; Crosswalk	Near	Y	Y- Commercial	Y	N	N	N	Solar on bus stop sign post	Y
354	764747	Ashley Phosphate Rd / Dorchester Manor Blvd	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
355	764748	Ashley Phosphate Rd / Windsor Hill Dr	Shelter; Bench; Crosswalk; Sidewalk	Far	Y	Y	Y	Y	N	Y	Solar in Shelter	Y
356	764749	Ashley Phosphate Rd / Pepperidge Dr	Shelter; Sidewalk; Crosswalk	Near	Y	N	Y	Y	N	Y	Solar in Shelter	Y
357	764752	Ashley Phosphate Rd / Plantation Rd	Commercial Bench; Sidewalk	Mid	Y	Y- Commercial	N	N	N	N	Street	N
358	764756	Ashley Phosphate Rd / Brandywine Rd	Shelter; Sidewalk	Near	Y	N	N	Y	N	Y	Solar in Shelter	Y
359	764758	Ashley Phosphate Rd / N Spartan Blvd	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
360	764759	Ashley Phosphate Rd / Stall Rd	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
361	764761	Ashley Phosphate Rd / Northside Dr	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N

362	764762	Northwoods Blvd / Ashley Phosphate Rd								N	Street	N
363	764764	Northwoods Blvd / Lowes	Commercial Benches		N	Y- Commercial	N			N	Street	N
364	764767	Northwoods Blvd / Carolina Ice Palace		Mid	N	N	N	N	N	N	Solar on bus stop sign post	N
365	764769	Rivers Ave @ BB&T		Mid	N	N	N	Y	N	N	Street	Y
366	764770	Northwoods Mall								N	Street	N
367	764774	Greenridge Rd / Rivers Ave	Shelter; Sidewalk, Bicycle Rack	Near	Y	Y- Commercial	N	Y	Y	Y	Solar in Shelter	Y
368	800693	Dorchester Rd / Park Forest Pkwy	Sidewalk	Far	Y	N	N	N	N	N	Solar on bus stop sign post	N
369	764777	S Antler Dr / Otranto Rd	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar on bus stop sign post	Y
370	807758	N. Charleston SuperStop on Cosgrove Ave	Sidewalk		Y	N	N			N	Street	Y
371	799178	Dorchester Rd / Patriot Blvd SB		Far	N	N	Y	N	N	N	Solar on bus stop sign post	N
372	799179	Dorchester Rd / Air Force Base Gate	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	None	Y
373	764595	Dorchester Rd / Olivia Dr	Bench	Near	N	Y	Y	Y	N	N	Solar on bus stop sign post	Y
374	764619	Dorchester Rd / Gwinnett St NB	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
375	764670	Dorchester Rd / El Cheapo	Bench		N	Y	N			N	None	N
376	764717	Dorchester Rd / Cross County Rd	Commercial Bench	Near	N	Y- Commercial	N	N	N	N	Solar on bus stop sign post	N
377	764730	Dorchester Rd / Ruff Rd		Mid	N	N	N	N	N	N	Solar on bus stop sign post	Y
378	764740	Dorchester Rd / Park Forest Pkwy	Shelter		N	N	N			Y	None	Y
379	764751	Ashley Phosphate Rd / Peppermill Pkwy	Sidewalk, Bench		Y	Y	N			N	Street	N
380	764755	Ashley Phosphate Rd / Cross County Rd	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
381	764766	Northwoods Blvd / Holiday Inn Express	Commercial Bench		N	Y- Commercial	N			N	None	N
382	764875	Otranto Rd / Rivers Ave	Sidewalk; Bus Pull-off Lane; Commercial Bench		Y	Y- Commercial	N			N	None	Y
383	789050	Dorchester Rd / Larchmont Dr								N	None	N
384	789051	Dorchester Rd / Scarsdale Ave	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	None	N
385	789053	Dorchester Rd / Trailwood Dr	Commercial Bench; Sidewalk	Near	Y	Y- Commercial	N	N	N	N	Solar on bus stop sign post	Y
386	789055	Dorchester Rd / Michaux Pkwy	Commercial Bench		N	Y- Commercial	N			N	None	Y
387	789054	Dorchester Rd / Leslie St	Sidewalk		Y	N	N			N	Street	N
388	789056	Dorchester Rd / Great Oak Dr	Bench	Mid	N	Y	N	Y	N	N	Solar on bus stop sign post	N
389	789057	Dorchester Rd / Reserve at Ashley River	Bench; Sidewalk		Y	Y	N			N	None	N
390	789058	Dorchester Rd / Lambs Elementary School	Shelter		N	N	N			Y	Solar in Shelter	Y
391	789059	Dorchester Rd / Hunley Park								N	None	N
392	789061	Dorchester Rd / Lowell Dr	Bench	Mid	N	Y	N	Y	N	N	Solar on bus stop sign post	Y
393	789062	Dorchester Rd / Purcell St	Shelter; Sidewalk	Near	Y	N	Y	N	N	Y	Solar in Shelter	Y
394	789063	Dorchester Rd / Franchise St		Near	N	N	N	N	N	N	Solar on bus stop sign post	Y
395	789064	Burger King @ Ashley Phosphate Rd / Dorchester Rd	Commercial Bench; Sidewalk	Mid	Y	Y- Commercial	N	N	N	N	Solar on bus stop sign post	Y
396	789065	Ashley Phosphate Rd / Lincoln Patriot Blvd	Bench, Sidewalk	Near	Y	Y	Y	Y	N	N	Solar on bus stop sign post	Y
397	789066	Ashley Phosphate Rd / University Dr	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
398	789067	Ashley Phosphate Rd / Windsor Hill Dr	Sidewalk; Crosswalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N
399	789068	Ashley Phosphate Rd / Pepperidge Dr	Sidewalk; Crosswalk		Y	N	Y			N	None	N
400	789070	Ashley Phosphate Rd / E Spartan Blvd	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	None	N
401	789071	Ashley Phosphate Rd / Stall Rd	Commercial Bench; Sidewalk; Crosswalk		Y	Y- Commercial	Y			N	Street	N
402	789072	Northwoods Blvd / Ashley Phosphate Rd								N	Street	N
403	789073	Northwoods Blvd / Home Depot	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
404	789074	Northwoods Blvd @ BB&T Bank				N				N	Street	N
405	789075	Northwoods Mall								N	None	N
406	764703	Dorchester Rd / W Hill Blvd NB	Commercial Bench	Near	N	Y- Commercial	N	N	N	N	Solar on bus stop sign post	N
407	764735	Dorchester Rd / Patriot Blvd NB								N	None	Unknown
408	764632	Tanger Outlet Blvd / International Blvd	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
409	764644	Tanger Outlet Blvd / Hotel Rd	Sidewalk		Y	N	N			N	Street	N
410	764684	Park Circle / E Montague Ave	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
411	764715	Remount Rd / Attaway St	Sidewalk	Far	Y	N	N	N	N	N	Solar on bus stop sign post	N
412	2320183	Ashley Phosphate Rd / Pepperdam Ave								N	None	N
413	764822	Remount Rd / Flanders Ave	Sidewalk		Y	N	N			N	Street	N
414	2382745	King St / Poplar St	Sidewalk	Far	Y	N	N		N	N	Street	N
415	798685	Remount Rd / Leiderman St	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
416	819898	N. Rhett Ave / Sumner Ave				N				N	Street	N
417	819900	Spruill Ave / Bexley				N				N	Street	N
418	819901	Spruill Ave / Gullah Ave				Y- Donated				N	Street	N
419	819902	Spruill Ave / McMillan Ave	Sidewalk		Y	N	N			N	Street	N
420	819903	Spruill Ave / Cosgrove Ave								N	Street	N
421	819905	Remount Rd / Corner Ave	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
422	819909	Remount Rd / Yeamans Hall Rd	Sidewalk		Y	N	N			N	Street	N
423	819911	Spruill Ave / Buist Ave	Sidewalk		Y	N	N			N	Street	N
424	819912	Mall Dr / Rivers Ave			N					N	Street	Unknown
425	764658	Centre Pointe Dr / Tanger Outlet Blvd (Southside)	Shelter; Commercial Bench; Sidewalk		Y	Y- Commercial	N			Y	Street	Y
426	764649	Spruill Ave / Bexley St	Bike Lane; Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
427	764654	Centre Pointe Dr / Wetland Crossing	Sidewalk		Y	N	N			N	Street	N
428	764663	Spruill Ave / Buist Ave	Bike Lane	Near	N	N	N	N	N	N	Solar on bus stop sign post	N
429	764721	Remount Rd / N Murray Ave	Bench, Sidewalk	Near	Y	Y	Y	N	N	N	Solar on bus stop sign post	N
430	764821	Mall Dr / Rivers Ave	Shelter, Sidewalk	Far	Y	Y- Commercial	N	Y	N	Y	Solar in Shelter	Y
431	807468	International Blvd / Centre Pointe Dr	Sidewalk		Y	N	N			N	Street	Unknown
432	808175	Centre Pointe Dr @ Fashion Dr.	Sidewalk		Y	N	N			N	Street	N
433	819893	Spruill Ave / McMillan Ave								N	Street	N
434	819894	Gullah Ave / Spruill Ave	Sidewalk							N	Street	N
435	819895	N. Rhett Ave and Braddock	Sidewalk							N	Street	N
436	819896	N Rhett Ave / Sumner Ave	Sidewalk	Mid	Y	N	N	N	N	N	Street	Y
437	819897	Remount Rd / N. Rhett Ave								N	Street	Y
438	819904	Remount Rd / Corner Avenue	Sidewalk							N	None	N
439	819906	Remount Rd / Allison Ave	Sidewalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	Y
440	819907	Remount Rd / Dickson Ave	Sidewalk	Near	Y	N	N		N	N	Street	N
441	819908	Remount Rd / Yeamans Hall Rd	Sidewalk		Y	N	N			N	None	N
442	764229	Meeting St / Cumberland St	Sidewalk		Y	N	N			N	Pole Mounted	N
443	764237	Meeting St / Market St	Sidewalk	Near	Y	N	Y	Y	N	N	Pole Mounted	N
444	2752244	King St / Engel St	Sidewalk	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
445	764286	Meeting St / Calhoun St	Sidewalk		Y	N	N			N	Pole Mounted	N
446	764356	Columbus St / King St	Sidewalk		Y	N	N			N	Street	N
447	764371	King St / Line St	Sidewalk		Y	N	N			N	Street	N
448	764387	King St / Sumter St	Sidewalk		Y	N	N			N	Street	N
449	764399	King St / Congress St	Sidewalk		Y	N	N			N	Street	N
450	764476	Mt Pleasant St / Rutledge Ave	Shelter; Sidewalk		Y	N	N			Y	Street	Y
451	764804	Columbus St / Meeting St	Sidewalk		Y	N	N			N	Street	N

452	764869	Meeting St / Wentworth St	Sidewalk		Y	N	N			N	Pole Mounted	N
453	819714	King St / Cleveland St	Sidewalk		Y	N	N			N	Street	N
454	764844	Broad St / Meeting St	Sidewalk	Near	Y	N	Y	Y	N	N	Street	N
455	819715	King St / Broad St	Sidewalk	Mid	Y	N	N	Y	Y-City	N	Pole Mounted	Y
456	764438	King St / Romney St	Sidewalk		Y	N	N			N	Street	N
457	764443	King St / Poplar St	Sidewalk		Y	N	N			N	Street	N
458	764900	King St / Cypress St	Sidewalk		Y	N	N			N	Street	N
459	807626	King St / Grove St	Shelter; Sidewalk	Mid	Y	N	Y	Y	N	Y	Street	Y
460	764913	Rutledge Ave / Courtland Ave	Sidewalk		Y	N	N			N	Street	N
461	764315	Visitors Center / Charleston Museum	Shelter; Sidewalk; Bus Pull-off Lane	Near	Y	N	Y	Y	N	Y	Pole Mounted	Y
462	764383	King St / Carolina St	Bench, Sidewalk		Y	Y	N			N	Pole Mounted	N
463	764409	King St / Huger St	Sidewalk		Y	N	N			N	Street	N
464	764421	King St / Cleveland St	Sidewalk		Y	N	N			N	Street	N
465	764429	King St / Poinsett St	Shelter; Sidewalk		Y	N	N			Y	Street	Y
466	764440	King St / Simons St	Sidewalk		Y	N	N			N	Street	Y
467	764459	King St / Peachtree St	Sidewalk		Y	N	N			N	Street	N
468	764868	Meeting St / S Market St	Sidewalk		Y	N	N			N	Pole Mounted	Y
469	794755	Meeting St / Cumberland St	Sidewalk	Near	Y	N	Y	Y	N	N	Pole Mounted	Y
470	794760	Columbus St / King St	Sidewalk		Y	N	N			N	Street	N
471	794761	King St / Line St	Sidewalk		Y	N	N			N	Pole Mounted	N
472	794763	King St / Congress St	Sidewalk		Y	N	N			N	Street	N
473	764256	Meeting St / Wentworth St	Shelter; Sidewalk		Y	N	N			Y	Street	Y
474	794756	Meeting St / George St	Bench; Sidewalk	Mid	Y	Y	N	Y	N	N	Street	Y
475	794757	Meeting St / Calhoun St	Sidewalk		Y	N	N			N	Street	N
476	764871	Charleston Museum / Visitors Center	Sidewalk		Y	N	N			N	Pole Mounted	N
477	2335615	King St / Cannon St	Sidewalk		Y	N	N			N	Pole Mounted	Unknown
478	764258	Harborview Tower	Shelter		N	N	N			Y	Street	Y
479	764263	Courtenay Dr / Charleston Center Dr	Sidewalk	Near	Y	N	N	Y	N	N	Street	N
480	764281	President St / Bee St	Sidewalk	Far	Y	N	Y	Y	N	N	Street	N
481	764317	Horizon St / Medical Park & Ride	Shelter; Bus Pull-off Lane; Sidewalk	Mid	Y	N	N	Y	Y-City	Y	Street	Y
482	764321	Fishburne St / Horizon St Park & Ride	Shelter		N	N	N			Y	Street	Y
483	2394991	McMillan Ave / St John St								N	Street	
484	2332206	King St / Mt. Pleasant St	Sidewalk	Near	Y	Y- Donated	Y	Y	N	N	None	N
485	764268	Jonathan Lucas St / MUSC Quad	Sidewalk	Mid	Y	N	Y	Y	N	N	Street	N
486	764291	Spring St / Hagood Ave	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Pole Mounted	Y
487	764309	Lockwood Dr / Brittlebank Park	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Street	Y
488	764328	Fishburne St / Horizon St	Sidewalk		Y	N	N			N	Street	N
497	764306	Calhoun St / East Bay St	Sidewalk	Mid	Y	N	Y	Y	N	N	Street	N
498	770038	Calhoun St / Elizabeth St	Sidewalk	Near	Y	N	Y	Y	N	N	Street	N
499	2506687	Dorchester Rd / Forest Hills Dr	Bench, Sidewalk		Y	Y	N			N	Street	N
500	764264	Calhoun St / Smith St	Sidewalk	Near	Y	N	Y	Y	N	N	Street	N
501	2730166	Huger St / Meeting St								N	Street	N
502	764252	Calhoun St / Jonathan Lucas St (near side)	Two Shelters; Sidewalk	Near	Y	N	N	N	N	Y	Street	Y
503	800547	Calhoun St / Ashley Ave (farside)	Sidewalk	Far	Y	N	N	N	N	N	Street	N
504	764799	Courtenay Dr / Bee St	Bench; Sidewalk		Y	Y	N			N	None	N
505	2320925	N. Rhett Ave / Marquis Rd	Sidewalk		Y	N	N			N	Street	N
506	2326331	King St / Huger St.								N	Street	N
507	2332207	Austin Ave / Birdie Garrett St								N	Street	N
508	2332189	King St / Moultrie St	Sidewalk		Y	N	N			N	Street	Y
509	2429161	Conroy St / Morrison Dr	Park-N-Ride	Near	N	N	N	N	N	N	Street	N
510	2536278	Meeting St / Burns Ln	Sidewalk	Mid	Y	N	N	Y	N	N	Street	N
511	2429163	Meeting St / Broad St								N	Unknown	Unknown
512	2429164	East Bay St / Vendue Range								N	Unknown	Unknown
513	2429165	East Bay St / S. Market St								N	Unknown	Unknown
514	2382425	East Cooper Medical Center	Sidewalk		Y	N	N			N	Unknown	Unknown
515	2455618	East Bay St / Calhoun St								N	Pole Mounted	Unknown
516	2483565	Morrison Dr / NoMo Apartment Complex								N	Pole Mounted	N
517	2555983	Reynolds Ave / Florida Ave		Near	Y	N	N	Y	N		Street	
518	2618170	Meeting St / Walnut St	Sidewalk	Far	Y	N	Y	Y	N		Street	N
521	2573648	Johnnie Dodds Blvd (Frontage Rd) / Cottingham Dr	Sidewalk	Near	Y	N	N		N	N	Street	N
522	2538026	King St / George St	Sidewalk	Near	Y	N	Y	Y	Y	N	Street	N
523	2501529	Hwy 17 / George Browder Blvd	Sidewalk		Y	N	N			N	Unknown	Unknown
524	2456406	Campbell St / Yeamans Hall Rd								N	Unknown	Unknown
525	2456422	Yeamans Hall Rd / Yeamans Hall Plaza								N	Pole Mounted	Unknown
526	2394658	Fuel Farm Rd / Dreamliner Dr				N				N	None	Unknown
527	2382249	Folly Rd / Nashmor Rd	Sidewalk		Y	N	N			N	None	N
528	2517407	Hwy 17 N / Market Center Blvd	Sidewalk	Near	Y	N	Y		N	N	Pole Mounted	N
529	2335595	Savannah Hwy / Parkdale Dr	Sidewalk		Y	N	N			N	Unknown	Unknown
530	2332154	Savage Rd / Etiwan Ave								N	Unknown	Unknown
531	2332211	Fort Johnson Rd / Freer St				N				N	Street	N
532	2332210	Folly Rd / Eugene Gibbs St		Near	N	N	Y	N	N	N	None	N
533	2505952	Croghan Spur Rd / Fielding Connector	Sidewalk	Far	Y	N	N	N	N	N	None	Y
534	2505939	Fleming Rd / Promenade Vista St								N	Unknown	Unknown
535	764251	Coming St / George St	Sidewalk		Y	N	N			N	Street	N
536	764257	St Philip St / Liberty St	Sidewalk		Y	N	N			N	Street	N
537	764279	Calhoun St / King St	Sidewalk		Y	N	N			N	Street	N
538	764303	Calhoun St / Elizabeth St	Shelter; Sidewalk	Mid	Y	N	N	N	N	Y	Solar in Shelter	Y
539	764327	Aquarium (Concord St)	Shelter; Wooden Benches; Sidewalk		Y	Y	N			Y	Pole Mounted	Y
540	2332188	Remount Rd / Robinson St	Sidewalk		Y	N	N			N	Pole Mounted	Unknown
541	770037	Warren St / St Philip St	Sidewalk		Y	N	N			N	Street	N
542	800535	Calhoun St / Meeting St (near side)	Sidewalk		Y	N	N			N	Street	N
543	800536	Calhoun St / Meeting St (far side)	Sidewalk		Y	N	N			N	Street	N
544	808176	St Philip St / Calhoun St	Sidewalk		Y	N	N			N	Street	N
545	764239	Wentworth St / Coming St	Sidewalk, Bench	Mid	Y	Y- Donated	N	N	N	N	Street	N
546	794758	Meeting St / Charlotte St	Sidewalk		Y	N	N			N	Street	Y
547	770040	Calhoun St / St Philip St	Shelter; Sidewalk; Bench	Near	Y	Y- Donated	Y	Y	N	Y	Pole Mounted	N
548	764221	King St / Queen St	Sidewalk		Y	N	N			N	Street	N
549	764224	Waterfront Park	Sidewalk		Y	N	N			N	Street	Y
550	764228	King St / Clifford St	Sidewalk; Bus Pull-off Lane		Y	N	N			N	Street	N
551	764235	King St / Market St	Bus Pull-off Lane; Sidewalk		Y	N	N			N	Street	N

552	764249	King St / Wentworth St	Sidewalk		Y	N	N			N	Street	N	
553	2388624	Savannah Hwy / Apollo Rd								N	Street	N	
554	764331	King St / Morris St	Sidewalk		Y	N	N			N	Street	N	
555	764216	Meeting St / Chalmers St	Shelter; Sidewalk	Mid	Y	N	Y	Y	N	Y	Pole Mounted	Y	
556	764846	Concord St / Cumberland St	Sidewalk	Mid	Y	N	N	N	N	N	Street	N	
557	764866	Market St / East Bay St	Sidewalk		Y	N	N			N	Street	N	
558	764867	Market St / Meeting St	Sidewalk		Y	N	N			N	Street	N	
559	2505951	Croghan Spur Rd / Albemarle Rd	Sidewalk	Far	Y	Y- Donated	Y	N	N	N	None	Y	
560	794759	Meeting St / Mary St	Shelter; Sidewalk		Y	N	N			Y	Street	Y	
561	800537	King St / Calhoun St	Sidewalk		Y	N	N			N	Street	N	
562	800538	Broad St / Church St	Sidewalk		Y	N	N			N	Street	N	
563	764293	King St / Vanderhorst St	Sidewalk		Y	N	N			N	Street	N	
564	764355	Spring St / Meeting St	Shelter; Sidewalk; Bus Pull-off Lane	Mid	Y	N	N	Y	N	Y	Pole Mounted	Y	
565	764272	Bee St / VA Hospital	Shelter; Sidewalk		Y	N	N			Y	Street	Y	
566	764282	Lockwood Dr / Westedge St	Bench; Sidewalk	Mid	Y	Y- Donated	Y	Y	N	N	Solar on bus stop sign post	N	
567	764325	President St / Line St	Shelter; Sidewalk	Near	Y	N	N	Y	N	Y	Solar on bus stop sign post	Y	
568	764345	Fishburne St / Burke High School	Sidewalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N	
569	800541	Courtenay Dr / Doughty St	Sidewalk		Y	N	N			N	Street	N	
570	764296	Cannon St / President St	Shelter; Sidewalk		Y	N	N			Y	Street	Y	
571	764312	Cannon St / Rutledge Ave	Bench; Sidewalk	Near	Y	Y	Y	Y	Y	N	Street	Y	
572	764332	Cannon St / Coming St	Sidewalk		Y	N	N			N	Street	Y	
573	764342	Cannon St / St Philip St	Sidewalk		Y	N	N			N	Street	N	
574	800539	Calhoun St / St Philip St	Sidewalk	Near	Y	N	Y	Y	N	N	Pole Mounted	Y	
575	800540	Calhoun St / Jonathan Lucas St (far side)	Sidewalk		Y	N	N			N	Street	N	
576	764243	Savannah Hwy / Nicholson St	Bench, Sidewalk; Crosswalk		Y	Y	Y			N	Street	N	
577	764305	Cannon St / Ashley Ave	Sidewalk		Y	N	N			N	Street	N	
578	764308	Savannah Hwy / Stinson Dr	Sidewalk		Y	N	N			N	Street	N	
579	764230	Savannah Hwy / Wesley Dr	Bench; Sidewalk		Y	Y	N			N	Street	N	
580	764238	Savannah Hwy / John Wesley Church								N	Street	N	
581	764253	Savannah Hwy / Coburg Rd	Shelter; Sidewalk	Near	Y	N	Y	Y	N	Y	Solar in Shelter	Y	
582	2335526	Citadel Mall / S. Park Circle								N	None	N	
583	764262	Savannah Hwy / West Oak Forest Dr	Bench; Sidewalk; Crosswalk		Y	Y	Y			N	Street	Y	
584	764270	Savannah Hwy / Briarcliff Dr	Sidewalk		Y	N	N			N	Street	N	
585	764277	Savannah Hwy / Markfield Dr	Shelter; Sidewalk; Crosswalk		Y	N	Y			Y	Street	Y	
586	764283	Savannah Hwy / White Oak Dr	Sidewalk	Near	Y	Y- Donated	N	N	N	N	Solar on bus stop sign post	N	
587	764294	Savannah Hwy / Braxton Ave	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N	
588	819680	Savannah Hwy / Orleans								N	Street	N	
589	819683	Savannah Hwy / Wappoo Rd	Shelter; Sidewalk	Near	Y			Y	N	Y	Solar in Shelter	Y	
590	819684	Savannah Hwy / Parkwood Estates Dr	Sidewalk		Y	N	N			N	Street	N	
591	819685	Savannah Hwy / Stocker Dr				Y- Donated				N	None	N	
592	819689	Savannah Hwy / West Harrison Rd				N				N	None	N	
593	764287	Cannon St / Wescott St	Sidewalk		Y	N	N			N	Pole Mounted	Y	
594	764245	Savannah Hwy / Avondale Ave	Sidewalk; Crosswalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N	
596	794766	Savannah Hwy / Colyem Rd	Sidewalk		Y	N	N			N	Street	N	
597	794779	Spring St / Rutledge Ave	Sidewalk		Y	N	N			N	Street	N	
599	764304	Spring St / President St	Shelter; Sidewalk		Y	N	N			Y	Street	Y	
600	764336	Spring St / Ashe St	Sidewalk		Y	N	N			N	Street	N	
601	2562467	Savage Rd / Etiwan Ave	Sidewalk	Mid	Y	N	N	Y	N	N	None	N	
602	764373	Castlewood Blvd / Savage Rd								N	Street	N	
603	2320181	Glenn McConnell Pkwy / Goodwill Way								N	None	N	
604	764391	Castlewood Blvd / Sir Scott Pl								N	Street	N	
605	800706	Savannah Hwy / Parkdale Dr	Sidewalk	Mid	Y	N	N	N	N	N	Street	N	
606	819703	Charlie Hall Blvd / Charleston Dorchester Mental Health Center	Shelter; Sidewalk	Mid	Y	N	N	N	N	Y	None	Y	
607	819705	Magwood Dr / Ashley Crossing Plaza	Sidewalk		Y	N	N			N	None	N	
608	819865	Charlie Hall Blvd / Medical Park	Sidewalk		Y	N	N			N	Street	N	
609	819867	Charlie Hall Blvd / Magwood Dr	Sidewalk		Y	N	N			N	Street	N	
610	819697	Skylark Dr / Savannah Hwy (East Side)				N				N	Street	N	
611	764395	Citadel Mall	Two Shelters; Sidewalk	Mid	N	N	N	N	N	Y	Solar on bus stop sign post	Y	
612	764452	Bon Secours-St Francis Hospital	Bench	Near	Y	Y- Donated	Y	N	N	N	Solar on bus stop sign post	N	
613	764502	Bees Ferry Rd Walmart	Sidewalk		Y	N	N			N	Pole Mounted	N	
614	764789	Magwood Dr / Henry Tecklenburg Dr	Sidewalk; Wooden Gazebo		Y	N	N			N	Street	Y	
615	2519779	Remount Rd / Rivers Ave	Sidewalk; Bench	Far	Y	Y- Commercial	N		N	N	None	N	
616	819702	Glenn McConnell Pkwy / Waterstone Ln								N	Street	N	
617	819707	Henry Tecklenburg Dr @ Charleston ENT				N				N	Street	N	
618	819709	Savage Rd / Castlewood Dr								N	Street	N	
619	764484	Charlie Hall Blvd / Magwood Dr	Sidewalk		Y	N	N			N	Street	N	
620	764495	W. Wildcat Blvd / William E Murray Blvd	Sidewalk		Y	N	N			N	Street	N	
621	764788	Charlie Hall Blvd / Charleston Dorchester Mental Health Center	Sidewalk		Y	N	N			N	Street	N	
622	764792	Charlie Hall Blvd / Medical Park	Sidewalk		Y	N	N			N	Street	N	
623	819706	Magwood Dr / Ashley Crossing Plaza	Sidewalk		Y	N	N			N	Street	N	
624	2332212	Stuart Engals Blvd / Bowman Rd								N	Street	N	
625	819854	Castlewood Blvd / Sir Scott Pl								N	Street	N	
626	819856	Savage Rd / Castlewood Blvd								N	Street	N	
627	796291	Skylark Dr / Savannah Hwy - (Westside)				N				N	Street	N	
628	764483	Glenn McConnell Pkwy / Bairds Cove				N				N	Street	N	
629	764496	Glenn McConnell Pkwy / Mary Ader Ave				N				N	Street	N	
630	800704	Henry Tecklenburg Dr @ Charleston ENT	Sidewalk		Y	N	N			N	Street	N	
631	819698	Hwy 17 / Ashley Town Center Rd	Sidewalk		Y	N	N			N	Street	N	
632	819845	Castlewood Dr / Savage Rd		Far		N	N	N	N	N	Street	N	
633	764163	Folly Rd / Grimball Rd Ext.	Bike Lane	Near	N	N	N	N	N	N	Solar on bus stop sign post	N	
634	764168	Folly Rd / Westway Dr		Far	N	N	N	N	N	N	Solar on bus stop sign post	N	
635	764172	Folly Rd / Pauline Ave NB		Far	N	N	N	N	N	N	Solar on bus stop sign post	Y	
636	764175	Folly Rd / Wilton St NB		Near	N	N	N	N	N	N	Solar on bus stop sign post	Y	
637	764178	Folly Rd / Prescott St NB		Mid	N	N	N	N	N	N	Solar on bus stop sign post	N	
638	764179	Folly Rd / Calvary Church NB	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N	
639	764180	Folly Rd / Camp Rd NB	Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	Y	
640	764181	Folly Rd / Rivers Point Row	Bus Pull-off Lane; Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	Y	
641	764184	Folly Rd / Patterson Ave	Bike Lane		N	N	N			N	Street	N	
642	2506703	Maybank Hwy / Promenade Vista St	Bench; Sidewalk	Near	Y	Y	N	Y	N	N	Street	N	
643	2505946	Folly Rd / Carlin Ave								N	None	Y	

644	764212	Maybank Highway / Old Folly Rd	Shelter; Sidewalk	Far	Y	N	Y	Y	N	Y	Solar in Shelter	Y
645	764227	Folly Road Blvd / Albemarle Rd	Sidewalk		Y	N	N			N	Street	N
646	798129	Folly Rd / Ellis Oak Ave NB	Bench; Sidewalk	Near	Y	Y	Y	Y	N	N	None	Y
647	2505948	Folly Rd / James Island Connector				N				N	Street	N
648	798132	Folly Road Blvd / Johnson Rd	Sidewalk		Y	N	N			N	None	N
649	798133	Folly Road Blvd / Windermere Blvd NB	Sidewalk		Y	N	N			N	None	N
650	818223	Battery Island Dr / Folly Rd		Far	N	N	N	N	N	N	None	N
651	2505944	Grimball Rd Ext / Folly Rd		Near	N	N	Y	N	N	Y	Solar on bus stop sign post	N
652	2505943	Secessionville Rd / Grimball Rd Ext				N				N	None	N
653	764196	Central Park Rd / Folly Rd	Sidewalk		Y	N	N			N	None	N
654	764165	Secessionville Rd / Rainbow Rd	Sidewalk		Y	N	N			N	None	N
655	764166	Secessionville Rd / Westmoreland Ave	Sidewalk		Y	N	N			N	Street	N
656	764169	Secessionville Rd / Westchester Playground	Sidewalk		Y	N	N			N	Street	N
657	764170	Secessionville Rd / Sineca Pl	Sidewalk		Y	N	N			N	Street	N
658	764173	Fort Johnson Rd / Jeffords St	Sidewalk		Y	N	N			N	None	N
659	764174	Fort Johnson Rd / Secessionville Rd	Sidewalk	Far	Y	N	N	N	N	N	Solar on bus stop sign post	N
660	2505945	Sol Legare Rd / Folly Rd				N				N	Street	N
661	2505949	Fleming Rd / Houghton Dr								N	None	N
662	2505940	Central Park Rd / Fleming Rd								N	Street	N
663	764190	Folly Rd / Ellis Oak Ave SB	Bike Lane; Sidewalk		Y	N	N			N	None	N
664	2505941	Central Park Rd / EME Apartments								N	Street	N
665	2505942	Central Park Rd / Yale Dr								N	None	N
667	2505950	Fleming Rd / Stir Creek Rd								N	None	N
668	2517384	Senior Center at Dorchester Road	Sidewalk		Y	N	N			N	None	N
669	2505947	Folly Rd / Joe Richardson Rd (Private Rd)								N	None	N
670	2505938	Folly Rd / Old Folly Rd SB								N	None	Y
671	764214	Folly Road Blvd / Formosa Dr	Sidewalk		Y	N	N			N	None	N
672	764219	Folly Road Blvd / Windermere Blvd	Shelter; Bus Pull-off Lane; Sidewalk		Y	N	N			Y	Street	Y
673	2505953	Albemarle Rd / Folly Rd SB	Sidewalk	Mid	Y	N	N	N	N	N	Street	N
674	2455699	Coleman Blvd / Patriots Point Blvd	Sidewalk		Y	N	N			N	None	Unknown
675	798120	Folly Rd / Camp Rd SB	Shelter; Bench		N	Y	N			Y	Unknown	Y
676	798122	Folly Rd / Prescott St	Bike Lane		N	N	N			N	None	N
677	798124	Walmart @ Folly Rd	Sidewalk		Y	N	N			N	Unknown	N
678	2517406	Hwy 17 N / Indigo Market Dr	Shelter, Sidewalk	Mid	Y	N	N	Y	Y	Y	Street	Y
679	819328	Folly Rd / Hunley Ave								N	Pole Mounted	N
680	819329	Folly Rd / Fort Johnson	Sidewalk		Y	N	N			N	None	N
681	2320924	Sam Rittenberg Blvd / Oxford St								N	None	N
682	764417	Sam Rittenberg Blvd / Ashley River Rd	Shelter; Sidewalk	Near	Y	N	Y	Y	N	Y	Solar on bus stop sign post	Y
683	764453	Sam Rittenberg Blvd / Trailee Dr	Bench; Sidewalk	Mid	Y	Y- Donated	N	N	N	N	Solar on bus stop sign post	N
684	764482	Ashley Landing Mall	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar on bus stop sign post	Y
685	764784	Hwy 17 / Ashley Town Center Dr	Sidewalk		Y	N	N			N	Street	N
686	764506	Sam Rittenberg Blvd / Durham Pl		Near	N	N	N	N	N	N	Solar on bus stop sign post	N
687	764790	Sam Rittenburg Blvd / Altman St		Mid	N	N	N	N	N	N	Solar on bus stop sign post	N
688	800546	Sam Rittenberg Blvd / Plugs Appliance Store	Sidewalk		Y	N	N			N	Street	N
689	805193	Sam Rittenberg Blvd / Ashley Hall Rd		Far	N	N	Y	N	N	N	Solar on bus stop sign post	N
690	2320921	Bowman Rd / Pumpkin Ln								N	Street	N
691	819710	Sam Rittenberg / Heartland Hospice	Sidewalk; Wooden Shelter	Mid	Y	N	N	N	N	Y	Street	Y
692	764393	Sam Rittenberg Blvd / Outback Plaza	Sidewalk		Y	N	N			N	None	N
693	764441	Sam Rittenberg Blvd / Ashley Hall Rd	Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	N
694	764501	Sam Rittenberg Blvd / Gamecock Ave		Mid	N	N	N	N	N	N	Solar on bus stop sign post	N
695	764786	Sam Rittenburg Blvd / Poston Rd	Sidewalk	Near	Y	N	Y	N	N	N	Solar on bus stop sign post	N
696	794856	Sam Rittenberg Blvd / Ashley River Rd	Shelter; Sidewalk		Y	N	N			Y	None	N
697	794861	Sam Rittenberg Blvd / N. Woodmere Dr	Shelter; Sidewalk		Y	N	N			Y	Street	Y
698	794862	Sam Rittenberg Blvd / Downing St								N	Street	N
699	794865	Sam Rittenberg Blvd / Amberly Rd								N	Street	Y
700	819696	Sam Rittenberg Blvd / Colonial Village Apts	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
701	2320917	Hwy 17 / Old Georgetown Rd								N	Street	N
702	764451	Johnnie Dodds Blvd (Frontage Rd) / S Shelmore Blvd (N of Hwy 17)	Bike Lane; Bench; Sidewalk		Y	Y	N			N	None	N
703	764466	Johnnie Dodds Blvd (Frontage Rd) / Sandlake Rd	Bike Lane; Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
704	764469	Johnnie Dodds Blvd (Frontage Rd) / Queensborough Shopping Center	Bike Lane; Metal Bench; Sidewalk		Y	Y	N			N	Street	Y
705	764473	Johnnie Dodds Blvd (Frontage Rd) / Lake Hunter Circle	Bike Lane; Sidewalk		Y	N	N			N	Street	N
706	764805	Johnnie Dodds Blvd (Frontage Rd) / Runaway Bay Dr	Bike Lane; Sidewalk		Y	N	N			N	Street	N
707	764826	Johnnie Dodds Blvd (Frontage Rd) / Bowman Rd (N of Hwy 17)	Bench; Sidewalk; Bike Lane	Far	Y	Y	N	Y	N	N	Solar on bus stop sign post	Y
708	764838	Hwy 17 / Beaucastle Rd	Sidewalk		Y	N	N			N	None	N
709	819342	Bowman Rd / Old Georgetown Rd	Sidewalk		Y	N	N			N	None	N
710	819343	Coleman Blvd / Patriots Point Rd								N	Street	Y
711	764489	Stuart Engals Blvd / Wando Crossing Shopping Center		Mid	N	N	N	N	N	N	None	N
712	764404	Houston Northcutt Blvd / Harbor Pointe Dr								N	None	N
713	764415	Houston Northcutt Blvd / Harris Teeter	Bench	Mid	N	Y	N	N	N	N	Solar on bus stop sign post	Y
714	764514	Hungry Neck Blvd / Theater Dr	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar on bus stop sign post	Y
715	764507	Towne Centre / Market Center Blvd	Shelter; Sidewalk	Mid	Y	N	Y	Y	N	Y	Pole Mounted	Y
716	764444	Johnnie Dodds Blvd (Frontage Rd) / S Shelmore Blvd	Sidewalk		Y	N	N			N	Street	N
717	764458	Johnnie Dodds Blvd (Frontage Rd) / Dragoon Dr	Sidewalk; Bike Lane		Y	N	N			N	Street	N
718	819340	Anna Knapp Blvd / Johnnie Dodds Blvd (N of 17)								N	Street	N
719	764467	Bowman Rd / Rosemead Rd	Sidewalk		Y	N	N			N	None	N
720	764498	Hwy 17 / Freeman Scott Rd	Metal Bench; Sidewalk		Y	Y	N			N	None	N
721	764783	Johnnie Dodds Blvd (Frontage Rd) / Lansing Dr	Sidewalk; Bike Lane		Y	N	N			N	Street	N
722	764840	Hwy 17 / Venning Rd	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
723	794869	Towne Centre / Market Center Blvd	Sidewalk	Near	Y	N	N	Y	N	N	Pole Mounted	N
724	764465	Johnnie Dodds Blvd (Frontage Rd) / Anna Knapp Blvd	Sidewalk; Bike Lane	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
725	819341	Johnnie Dodds Blvd / Bowman Rd (N of 17)								N	Street	N
726	794853	Houston Northcutt Blvd / Harbor Pointe Dr	Wooden Bench; Sidewalk		Y	Y	N			N	None	Y
727	794855	Houston Northcutt Blvd / Ann Edwards Ln	Shelter; Sidewalk		Y	N	N			Y	None	Y
728	794848	Coleman Blvd / Patriots Point Rd	Sidewalk		Y	N	N			N	Pole Mounted	N
729	794870	Hungry Neck Blvd / Theater Dr								N	None	N
730	764344	Coleman Blvd / Mill St WB	Sidewalk		Y	N	N			N	Pole Mounted	N
731	794842	Coleman Blvd / Pherigo St	Sidewalk; Bike Lane		Y	N	N			N	Street	N
732	764365	Coleman Blvd / Pelzer Dr	Sidewalk; Bike Lane		Y	N	N			N	Pole Mounted	N
733	764366	Coleman Blvd / Sea Island Shopping Center	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar on bus stop sign post	Y
734	764382	Coleman Blvd / Harborgate Dr	Sidewalk		Y	N	N			N	Pole Mounted	N

735	764419	Mt Pleasant Waterfront Park	Sidewalk		Y	N	N			N	Pole Mounted	N
736	764423	Wingo Way / Cooper River Dr	Sidewalk		Y	N	N			N	None	N
737	819651	Coleman Blvd / Simmons St	Shelter, Sidewalk; Bike Lane; Crosswalk	Far	Y	N	Y	Y		Y	Street	
738	764837	Wingo Way / Sandpiper Dr WB	Metal Bench; Sidewalk		Y	Y	N			N	Pole Mounted	Y
739	764829	Harry Hallman Blvd / Patriots Point Rd	Shelter; Sidewalk		Y	N	N			Y	Street	Y
740	819654	Chuck Dawley / Old Georgetown	Sidewalk		Y	N	N			N	None	N
741	819657	Midtown Ave / MUSC Health East Cooper	Bench		N	Y	N			N	Pole Mounted	N
742	819658	Myrick Rd / Chuck Dawley Blvd								N	None	N
743	819668	Rifle Range Rd / Cassidy Ct	Sidewalk		Y	N	N			N	Street	N
744	819669	Coleman / Moultrie Middle School	Sidewalk		Y	N	N			N	Pole Mounted	N
745	819670	Patriots Point Blvd / Coleman Blvd	Sidewalk		Y	N	N			N	Street	N
746	2320922	Watermark Rd / Appling Dr	Sidewalk		Y	N	N			N	Unknown	N
747	764339	Coleman Blvd / Moultrie Middle School	Bench; Sidewalk		Y	Y	N			N	Pole Mounted	N
748	764341	Coleman Blvd / Mill St EB	Sidewalk		Y	N	N			N	Pole Mounted	N
749	764360	Rifle Range Rd / Shucker Cir	Sidewalk		Y	N	N			N	None	N
750	764368	Coleman Blvd / Shrimp Boat Ln	Sidewalk; Bike Lane		Y	N	N			N	Pole Mounted	N
751	764380	Coleman Blvd / Provincial Circle	Sidewalk; Bike Lane		Y	N	N			N	Pole Mounted	N
752	2320916	Hwy 17 / S Morgan Point Rd	Sidewalk		Y	N	N			N	Street	N
753	764834	Wingo Way / Sandpiper Dr EB	Sidewalk		Y	N	N			N	Street	N
754	764877	Mt Pleasant Waterfront Park	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
755	764349	Coleman Blvd / Brookgreen Town Center	Shelter; Sidewalk; Bike Lane	Mid	Y	N	N	Y		Y	Street	N
756	794857	Wingo Way / Cooper River Dr	Sidewalk		Y	N	N			N	Street	N
757	764836	Coleman Blvd / Simmons St	Shelter; Sidewalk; Bike Lane; Crosswalk	Far	Y		Y	Y		Y	Pole Mounted	
758	819652	Coleman Blvd / Sea Island Shopping II								N	None	N
759	819653	Myrick / Chuck Dawley								N	Street	N
760	819655	Chuck Dawley Blvd / Old Georgetown Rd	Sidewalk		Y	N	N			N	None	N
761	764515	Sweetgrass Basket Pkwy / Two Island Ct								N	None	N
762	764522	Sweetgrass Basket Pkwy / Basketweave Dr	Shelter, Sidewalk	Near	Y	Y	N	Y	Y	Y	Pole Mounted	Y
763	764528	Six Mile Rd / Tea Planter Ln	Shelter, Sidewalk	Mid	Y	N	N	N	Y	Y	Solar on bus stop sign post	Y
764	764573	Hwy 17 / Brickyard Pkwy	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
765	764606	Hwy 17 / Hwy 41	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
766	819674	Hwy 17 / Park West	Sidewalk		Y	N	N			N	Street	N
767	819671	Hwy 17 / Long Point Rd	Sidewalk	Near	Y	N	Y	N	N	N	Street	N
768	764626	Hwy 17 / Lexington Dr	Sidewalk		Y	N	N			N	Street	N
769	819675	Mt Pleasant Hospital								N	Pole Mounted	N
770	819676	Carolina Park Blvd / Hwy 17								N	Street	N
771	764694	Wando High School	Shelter; Sidewalk	Mid	Y	N	N	Y	Y	Y	Pole Mounted	Y
772	764536	Hwy 17 / Long Point Rd	Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	N
773	764590	Hwy 17 / Hwy 41	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
774	794871	Sweetgrass Basket Pkwy / Two Island Ct	Sidewalk		Y	N	N			N	None	N
775	794872	Six Mile Rd / Tea Planter Ln	Shelter; Sidewalk	Mid	Y	N	N	N	Y	Y	None	Y
776	794875	Hwy 17 / Hamlin Rd	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
777	800698	Sweetgrass Basket Pkwy / Basketweave Dr	Sidewalk		Y	N	N			N	Pole Mounted	N
778	2329735	Hwy 17 / National Dr								N	Pole Mounted	N
779	2320923	Harry Hallman Blvd / Patriots Point Rd	Sidewalk		Y	N	N			N	Street	N
780	764616	Walmart - Market At Oakland (Park & Ride)	Crosswalk		N	N	Y			N	Pole Mounted	N
781	764176	James Island Walmart (Park & Ride)		Parking Lot		N			N	N	Pole Mounted	N
782	764776	Rivers Ave Park & Ride	Shelter		Y	N		Y	Y	Y	Pole Mounted	Y
783	819712	Calhoun St. / Ashley Ave	Bench; Sidewalk	Near	Y	Y- Donated	Y	Y	N	N	Street	N
784	800548	Meeting St / Columbus St	Sidewalk		Y	N	N			N	None	N
786	764795	Dreamliner Dr / Boeing	Shelter		N	N	N			Y	Street	Y
787	764914	Dorchester Village Shopping Center Park & Ride	Shelter; Bicycle Rack	Parking Lot	N	N	N/A	Y	Y	Y	Solar in Shelter	Y
788	766423	North Charleston Visitors Center/Fire Museum	Sidewalk; Shelter		Y	N	N			Y	Pole Mounted	Y
789	766436	Tanger Outlet Center	Covered Bench; Sidewalk; Bus stop at Saks Fifth Ave. store		Y	Y	N			N	Pole Mounted	Y
790	764307	Visitors Center on John St	Shelter; Sidewalk; Bus Pull-off Lane	Far	Y	N	Y	Y	N	Y	Street	Y
791	794764	Savannah Hwy / Wesley Dr	Sidewalk		Y	N	N			N	Street	N
792	764233	Savannah Hwy / West Harrison Rd	Stone Bench; Sidewalk		Y	Y	N			N	None	Y
793	794765	Savannah Hwy / Parish Rd	Sidewalk		Y	N	N			N	Street	N
794	764242	Savannah Hwy / Blessed Sacrament School	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
795	794777	Savannah Hwy / Dupont Rd	Sidewalk	Near	Y	N	Y	N	N	N	Street	N
796	794767	Savannah Hwy / Apollo Rd	Sidewalk		Y	N	N			N	Street	N
797	794768	Savannah Hwy / West Oak Forest Dr	Sidewalk		Y	N	N			N	Street	N
798	794769	Savannah Hwy / Wateree Dr	Sidewalk		Y	N	N			N	Street	Y
799	794770	Savannah Hwy / Briarcliff Dr	Sidewalk		Y	N	N			N	Street	N
800	794771	Savannah Hwy / Markfield Dr	Sidewalk		Y	N	N			N	Street	N
801	794772	Savannah Hwy / White Oak Dr	Sidewalk		Y	N	N			N	Street	N
802	794775	Savannah Hwy / Braxton Ave	Sidewalk		Y	N	N			N	Street	N
803	794776	Savannah Hwy / Wappoo Rd	Sidewalk; Crosswalk	Far	Y	N	Y	N	N	N	Street	N
804	764313	Savannah Hwy / Orleans Rd	Sidewalk; Crosswalk		Y	N	Y			N	Street	N
805	764534	Ashley River Rd / Bees Ferry Rd	Sidewalk		Y	N	N			N	Street	N
806	764527	Ashley River Rd / Glendale Dr		Mid	N	N	N	N	N	N	Street	N
807	764517	Ashley River Rd / Old Parsonage Rd				N				N	Street	N
808	764512	Ashley River Rd / Woodland Rd		Mid	N	N	N	N	N	N	Street	N
809	764503	Ashley River Rd / Dogwood Rd		Near	N	N	Y	N	N	N	Solar on bus stop sign post	N
810	764800	Ashley River Rd / Magwood Dr								N	Street	N
811	764497	Ashley River Rd / Sledge Ln		Mid	N	N	N	N	N	N	None	N
812	764493	Ashley River Rd / Planters Trace Apartments				N				N	None	N
813	764485	Ashley River Rd / Ashley Hall Plantation Rd		Near	N	N	N	N	N	N	Solar on bus stop sign post	N
814	764478	Ashley River Rd / Richmond St								N	None	N
815	764457	Tobias Gadsden Blvd / Paul Cantrell Blvd SB	Shelter; Sidewalk		Y	N	N			Y	None	Y
816	764434	Orleans Rd / Carrie St	Bench; Sidewalk		Y	Y	N			N	None	N
817	764428	Orleans Road / Carverwood Ln	Sidewalk		Y	N	N			N	None	N
818	800545	Sam Rittenberg Blvd / Orleans Rd	Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	N
819	764410	Hwy 61 / Wappoo Rd	Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	N
820	764397	Hwy 61 / Crull Dr	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
821	764396	Hwy 61 / Spanish Oaks Apartments	Shelter; Sidewalk	Mid	Y	N	N	Y	N	Y	Solar in Shelter	Y
822	764392	Hwy 61 / Falkirk Dr	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	Y
823	764389	Ashley River Rd / Playground Rd	Sidewalk; Bench	Near	Y	Y- Donated	Y	Y	Y	N	Solar on bus stop sign post	N
824	819986	Hwy 61 / Diana St	Sidewalk		Y	N	N			N	Street	N
825	819987	St. Andrews Blvd / Davidson Ave	Sidewalk		Y	N	N			N	None	N

826	764330	St Andrews Blvd / Sycamore Ave	Sidewalk	Far	Y	N	Y	N	N	N	Solar on bus stop sign post	Y
827	764326	St Andrews Blvd / Avondale Ave	Sidewalk; Bike Lane		Y	N	N			N	Street	N
828	764301	Hwy 61 / Oakdale Pl	Sidewalk; Bike Lane		Y	N	N			N	Street	N
829	764274	St. Andrews Blvd / Riverdale Dr	Sidewalk; Bike Lane		Y	N	N			N	Street	N
830	764265	Hwy 61 / Parish Rd	Bike Lane; Sidewalk		Y	N	N			N	None	N
831	764244	Hwy 61 / West Harrison Rd	Sidewalk		Y	N	N			N	None	N
832	819988	Fielding Connector / Ripley Point Dr		Near	N	N	N	N	N	N	Solar on bus stop sign post	Y
833	819979	Fielding Connector / Ripley Point Dr.		Near	N	N	N	N	N	N	None	Y
834	764241	St. Andrews Blvd / Savannah Hwy	Crosswalk; Sidewalk		Y	N	Y			N	None	N
835	2448617	Chuck Dawley Blvd / S Shadow Dr	Sidewalk	Mid	Y	N	N	N	N	N	None	Unknown
836	764259	St Andrews Blvd / Sheldon Rd	Sidewalk; Bike Lane		Y	N	N			N	Street	N
837	794837	St Andrews Blvd / Colony Dr	Sidewalk; Bike Lane		Y	N	N			N	Street	N
838	794839	St Andrews Blvd / Oakdale Pl	Bike Lane; Sidewalk		Y	N	N			N	Street	N
839	764311	St Andrews Blvd / Penn Ave	Sidewalk; Bike Lane		Y	N	N			N	Street	N
840	794841	St Andrews Blvd / Sycamore Ave	Sidewalk	Far	Y	N	Y	N	N	N	Street	N
841	819980	St. Andrews Blvd / 5th Ave @ Taco Bell				N				N	None	N
842	819981	Ashley River Rd / Carriage Ln	Sidewalk	Mid	Y	N	N	N	N	N	None	N
843	794849	Ashley River Rd / Playground Rd	Sidewalk		Y	N	N			N	None	N
844	794850	Ashley River Rd / Heathwood Drive	Sidewalk	Mid	Y	N	N	N	N	N	Solar on bus stop sign post	N
845	794851	Ashley River Rd / Ashley Hall Rd	Sidewalk		Y	N	N			N	None	N
846	764403	Ashley River Rd / Westover Dr	Bench; Sidewalk	Mid	Y	Y- Donated	N	N	N	N	Solar on bus stop sign post	N
847	794854	Ashely River Rd / Wappoo Rd	Commercial Bench; Sidewalk		Y	Y- Commercial	N			N	Street	N
848	794858	Orleans Rd / Carverwood Ln								N	Street	N
849	794860	Orleans Rd / Carrie St	Sidewalk		Y	N	N			N	Street	N
850	794863	Tobias Gadsden Blvd / Paul Cantrell Blvd	Sidewalk		Y	N	N			N	None	N
851	794866	Ashley River Rd / Ashley Hall Plantation Rd				N				N	None	N
852	764499	Ashley River Rd / Magwood Dr	Sidewalk		Y	N	N			N	None	N
853	819982	Ashley River Rd / Dogwood Rd	Bench		N	Y	N			N	None	N
854	819983	Ashley River Rd / Pierpont Ave								N	None	N
855	819984	Ashley River Rd / Old Parsonage Rd	Bench; Sidewalk	Near	Y	Y	N		N	N	None	N
856	819985	Ashley River Rd / Glendale Dr								N	None	N
857	847937	Ashley River Rd / Tobias Gadson Blvd	Sidewalk		Y	N	N			N	None	N
858	764246	Calhoun St / Courtenay Dr	Bench; Sidewalk	Far	Y	Y	N	Y	N	N	Street	N
859	2320920	Tobias Gadsden Blvd / Ashley River Rd		Near	N	N	Y	N	N	N	None	N
860	848053	Sam Rittenberg Blvd / Orleans Rd	Sidewalk		Y	N	N			N	None	N
861	848054	Ashley River Rd / Richmond St								N	None	N
862	848055	Ashley River Rd / Planters Trace Apartments				Y				N	None	N
863	848056	Ashley River Rd / Sledge Ln	Bench; Sidewalk		Y	Y	N			N	None	N
864	839430	Festival Centre Park & Ride				N				N	Street	Y
865	2319801	Stuart Engals Blvd / Wando Crossing Shopping Center		Mid	N	N	N	N	N	N	Solar on bus stop sign post	Y
866	2320182	Ashley Phosphate Rd / Pepperdam Ave	Sidewalk		Y	N	N			N	Street	N
867	2320919	Stuart Engals Blvd / Bowman Rd				N				N	Street	N
868	2543546	Greenridge Rd / Rivers Ave		Mid	N	N	N		N	N	Street	Y
869	2619312	Ocean Blvd / 14th Ave	Sidewalk, Bench	Mid	Y	Y- Donated	Y	Y	N	N	Street	Y

MEMORANDUM

DATE: October 11, 2021

TO: CARTA Board of Directors

FROM: Ronald E. Mitchum, Executive Director

SUBJ: Contract Renewal – Bus Wrap & Shelter Advertising

Charleston Area Regional Transportation Authority (CARTA) is requesting approval to amend the Red Falcon Ink, LLC – Bus Wrap & Shelter Advertising contract # CARTA2019-03 for an additional year pursuant to the renewal terms outlined in the contract.

The contract was awarded on as a one (1) year contract with four (4) options to annually renew. This amendment will extend the contract through October 29, 2022.

MEMORANDUM

DATE: October 11, 2021

TO: CARTA Board of Directors

FROM: Ronald E. Mitchum, Executive Director

SUBJ: Armored Transport Services

Charleston Area Regional Transportation Authority (CARTA) is requesting approval to amend the Brink's Incorporated – Armored Transport Services contract # CARTA2019-03 for an additional year pursuant to the renewal terms outlined in the contract.

The contract was awarded on November 5, 2019 as a one (1) year contract with two (2) options to annually renew. This amendment will extend the contract through November 4, 2022.

Memorandum

Date: October 11, 2021
To: CARTA Board of Directors
From: Ron Mitchum, Executive Director
RE: Transit Planning Project Updates

Please find the progress reports for transit planning projects.

1. Stop/shelter Design Guidelines (Project Manager: Jon Dodson)
2. Service Planning Initiatives (Project Manager: Jon Dodson)
3. Electric Bus Master Plan (Project Manager: Jeff Burns)
4. CARTA On-Demand (TNC Pilot Project) (Project Manager: John Lambert)
5. Shelter Improvement Program (Project Manager: Belen Vitello)
6. Shipwatch Square Transit Center (Project Manager: Sharon Hollis)
7. Solar Lighting Installation (Project Manager: Belen Vitello)
8. Digital signage (Project Manager: Belen Vitello)
9. Vanpool Program (Project Manager: John Lambert)
10. Lowcountry Rapid Transit (Project Manager: Sharon Hollis)

Staff will be available at the Board Meeting to answer any questions you may have regarding the projects.

Transit and Bus Stop Guidelines

Staff contracted Nelson\Nygaard to develop Transit and Bus Stop Guidelines in the fall of 2020. On September 1st, the Technical Advisory Committee met for their final meeting to receive the draft guidelines document and provide feedback in advance of the October Board meeting. Their comments along with internal staff comments helped shape the Guidelines so that they will be a useful tool for municipalities, developers, other outside parties, and internal staff.

This 10-month long process is culminating with the Guidelines presented to the Board this month for your approval.

Service Planning Initiatives:

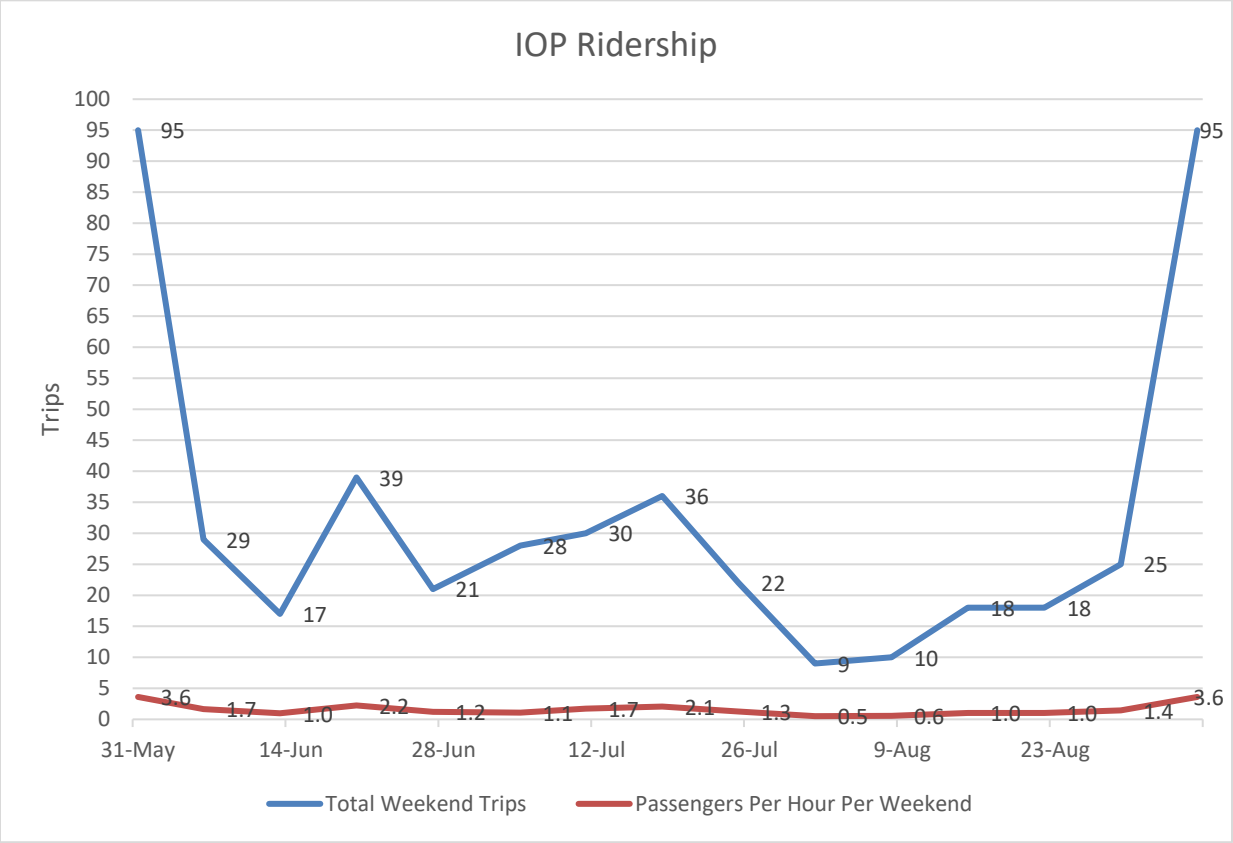
- Route 32 – Improve Frequency/Bike Bridge: Starting on Sunday, October 3rd, service frequency doubled on Route 32 between the North Charleston Superstop and Citadel Mall. On Sunday, service extends to Bees Ferry. Buses now leave every 30 minutes Monday through Saturday and every 60 minutes on Sunday. In order to bring more attention to the safe crossings policy across Northbridge, signs were placed at the four locations where free bicycle and pedestrian boardings and alightings take place. Notices were placed at key stops along the Route and on the buses, and social media alerts were sent out as well. Outreach will be ongoing.

- Beach Reach Shuttle – Service started over Memorial Day weekend and ended the Monday of Labor Day. With contributions from Mt Pleasant and Isle of Palms as well as free parking courtesy of Mt. Pleasant Towne Centre, the service was free to ride for the summer. CARTA providing the remaining costs to operate the service. At the request of Isle of the Palms, the beach stop location was moved in mid-July. A real-time information sign was placed at the beach as well to assist customers with their trip home.

  Our shortest fixed-route vehicle was made available for the seasonal service, with one bus making trips back and forth on service days. Service days were Saturdays and Sundays, with additional service provided on Memorial Day, the Monday after Independence Day, and Labor Day.

  In total, there were 492 total riders over the summer. This amounts to 1.7 riders per hour. For comparison, our system has an average of approximately 10 riders per hour. Chart 1 shows the weekend sums on the blue line while the red line shows the passengers per hour.

Marketing efforts included brand development, in-person pushes, flyer and sandwich board distributions, press releases and TV coverage, ads on the buses themselves, and social media pushes.



Electric Bus Master Plan:

The objective of the Project is to develop a comprehensive plan that optimizes the performance of the route network and its facilities as CARTA transitions its diesel bus fleet to all-electric bus fleet. The Master Plan is schedule to be completed in December 2021. A number of interim data collection tasks, existing condition reports, technical analyses, and facility assessments will be deliverables along this timeline. The consultant team continued analyzing route performance using on-vehicle, real-time data collection tools to determine power consumption for existing bus routes. An existing conditions report on the Shipwatch Square transfer facility has been completed that details the power demand and infrastructure requirements completed. These efforts will determine the charger needs and siting requirements at these facilities, for which that analysis continues. A pop-up event was held at the Cosgrove/Rivers Superstop to gather client transit needs from stakeholders and transit customers at the Shipwatch Square facility. The first stakeholder meetings for the same purpose was held during September 2021.

Work planned over the next month is to finalize the existing conditions analyses. Finalize the routing alternatives of the electric vehicles to optimize transit routes. Continue work

on the power demand and infrastructure requirements at the CARTA facilities, including site layout options. Continue drafting the fleet replacement and transition plan. Schedule additional stakeholder meetings to gather client transit needs at the Shipwatch Square facility.

CARTA OnDemand (TNC Pilot)

BCDCOG staff has continued promoting the OnDemand program through outreach directed towards regional senior centers, assisted living communities, and medical facilities.

The number of monthly rides taken on both Uber and UZURV has remained relatively consistent on both services since the service launched in February. August showed the highest levels of ridership on both systems since service began, and this trend continued into September with 20 Uber rides and 22 UZURV rides taken during that month. Since February, CARTA OnDemand has provided a total of 128 rides and 64 riders have been approved for the service. The project is expected to stay well under budget through the remainder of the pilot period ending in December 2021.

CARTA Shelter Improvement Program (SIP)

Bus stops play an important role in how our riders experience transit. CARTA is working to continuously improve our bus stops by providing the best amenities for riders as they board and depart the bus.

<u>Shelters/Benches in development:</u>

- 538 Calhoun St./ Alexander St. (Shelter) Shelter has been inspected and added to the CARTA system.
- Meeting/Romney- Contractor has picked up the shelter and will installing in October/November
- South Station Phase 1 Maybank HWY- Working with developers and SCDOT to have a pad installed for ADA accessible bus stop
- 713 Houston Northcutt Blvd/ Ann Edwards Ln- SCDOT approval. Construction schedule for Fall 2021
- Indigo Grove Project- Install a pad along Maybank Hwy
- 194 Cannon Street (Aloft Hotel) - FEE-IN-LIEU
- SPINX – West Wildcat Blvd – FEE-IN-LIEU
- 369 King Student Apartments - FEE-IN-LIEU
- KIA Country Re-Development - FEE-IN-LIEU
- 330 America St./ Reid St. (Bench) Construction Drawings Completed.
- 112 Meeting St./ Woolfe St. Property owner denied request for agreement. Moving forward with bench.
- Development Review Project: 102 President Street- NEW bench at BSID 480 President St/Bee St and shifted shelter location for BSID 570 Cannon St/President St
- 223 Mixon Ave/Montague (Shelter) Waiting on approval for permits from SCDOT and City of North Charleston. Documents have been submitted to ROD. Requested quote from contractor for install.

New Designs:

- 826 St Andrews Blvd / Sycamore Ave (Shelter) Continuing to work on the agreement with property owner.
- 547 Calhoun St / St Philip St (Shelter) Coordinating and working with the College of Charleston on an additional shelter project
- 188 County Public Service Bldg / Bridgeview Dr (Shelter) Coordinating and working with Charleston County to have a shelter installed
- 371 Dorchester Rd/Patriot Blvd SB- Working with Bosch to have a new shelter installed. Survey has been completed.
- 135 Citadel- Working with The Citadel to design a new shelter

ACBA Benches:

- 2 Meeting St / Cool Blow St –The pad, bench and bike rack have been installed.
- 823 Hwy 61 / Playground Rd– The pad, bench and bike rack have been installed.
- Vivian Anderson Moultrie Playground – The bench has been installed and inspected.

Shipwatch Square/Transit Hub

Civil site design on the bus transfer loop is going through the permitting process. Final Transit Center design is advancing and coordinated with City of North Charleston. Coordination with Charleston County hub/Library is ongoing. Final design is anticipated to be complete in November 2021.

Solar Lighting Project

Solar lighting systems provide security and illumination in needed areas when grid power is unattainable or costly to bring to a site. CARTA has invested $178,180 into solar lights for the region. To date 101 have been installed.

Recent Development: City of Charleston approved 27 locations. We have installed the approved locations with the City of Charleston. Newly installed at various locations in the West Ashley area. There are approximately 33 new locations we are working on having approved through the City of Charleston. The 3 locations below have been recently installed to support the North Bridge service change.

- Stop ID 147, Cosgrove Ave /Mott Ave
- Stop ID 695, Sam Rittenburg Blvd/Poston Rd
- Stop ID 686, Sam Rittenburg Blvd/Durham Pl

Project is on track for completion in Fall 2021.

Digital Signage

Strategically-located displays enable the transit signage system to inform the public, minimize wait times, and enhance the overall traveler's experience. The methodology

selected priorities based on ridership, quantity of connecting routes, existing shelters, and stop closures due to flooding.

The City of Charleston's Design Review Committee (DRC) approved 9 locations within existing shelters. CARTA is currently working on a final quote for Phase 1 of this project. Phase 1 will have a total of 13 locations. Project on schedule for installation Fall 2021.

Working with Synchromatics and our electrical contractor for the proper installation of signs. Shipping delays were due to Covid-19. Syncromatics is pending a finalized quote from their installation vendor and confirmation of installation dates for the equipment. All equipment for this phase is currently programed and ready to ship from the warehouse. Once Syncromatics has confirmation of installation dates and a finalized quote, they will ship the equipment directly to Watson for installation. Generally at this stage of the project, installation will occur within 4-6 weeks.

ORS Mini-Grant - BCDCOG Application Submittal: Submitted application for a grant to cover the cost of a new digital sign at BSID 188 County Public Service Bldg / Bridgeview Dr.

Vanpool Program

BCDCOG staff continues to promote the Lowcountry Go Vanpool program through employer outreach, printed marketing materials, paid media, and virtual presentations. Staff initially began promotion efforts by contacting employers that have previously expressed interest in employee transportation options, but the outreach efforts have now expanded to include the entire realm of regional employers. Conversations with these employers are ongoing, and BCDCOG staff is offering virtual and in-person presentations to provide employees with an overview of how the vanpool service operates.

In September, presentations were given to the Lowcountry Hospitality Association, SC Works, and representatives from the Town of Summerville and the Greater Summerville/Dorchester County Chamber of Commerce. The program was also advertised on local radio in September. Rawle Murdy is currently finalizing a 60 second video advertisement that offers an overview of the program. This video will be shared on the various social media pages for BCDCOG and Lowcountry Go once complete.

During the vanpool program's pilot period, the monthly fare is $30 per rider regardless of trip distance. Lowcountry Go's fleet of 11 vehicles (four 7-passenger and seven 15-passenger) are leased on a first come, first serve basis. The vans are branded with decals containing the Lowcountry Go Vanpool logo and telephone number. The service is able to accommodate riders in the rural and urban areas of the region as long as one leg of the commute is in the urban area.

Lowcountry Rapid Transit

A&E Design: 30% design submittals, project scope, schedule and budget are being reviewed by the FTA Project Management Consultant (PMOC), which was assigned at the end of May. A Value Engineering Study was conducted, and a risk workshop held with the PMOC. FTA is reviewing all documents.

Key Stakeholder Coordination: BCDCOG/County/SCDOT/ interagency agreements discussions are being finalized. Project team has been meeting with key stakeholders and providing presentation to neighborhoods and organizations as requested.

FTA Coordination: Monthly meetings are held with FTA. FTA's Project Management Oversight Consultant (PMOC) is reviewing documetns and conducting management capacity review. An Entry into Engineering (EIE) decision is anticipated in March 2022.

NEPA: Documented Categorical Exclusion was approved by FTA in July.

Maintenance Facility: A new maintenance facility/storage yard near the fairgrounds for LCRT buses has been included in the project. Design to be advanced to 30% level.

Transit Signal Prioritization: Transit signal prioritization at intersections is part of the LCRT project definition. A demonstration project of the TSP on Dorchester Road was initiated in March to develop the technology and infrastructure on a smaller scale corridor to advance that technology on CARTA transit buses traveling on Dorchester Road. This will provide the framework for the LCRT TSP technology which can be expanded to the remainder of the corridor. A draft concept of operations has been developed and coordination with SCDOT and project stakeholders is ongoing .

TOD Study: The TOD study Final Report is anticipated to be complete in October 2021.

Public Involvement: Stakeholder and neighborhood meetings are ongoing. Morgan Grimes, LCRT's communications specialist, has been visiting businesses along the corridor and reaching out to neighborhoods and community organizations. She has had direct communications with over 600 businesses and community members along the corridor, and that number continues to grow. Morgan held office hours throughout the month and will continued to do so this fall.