

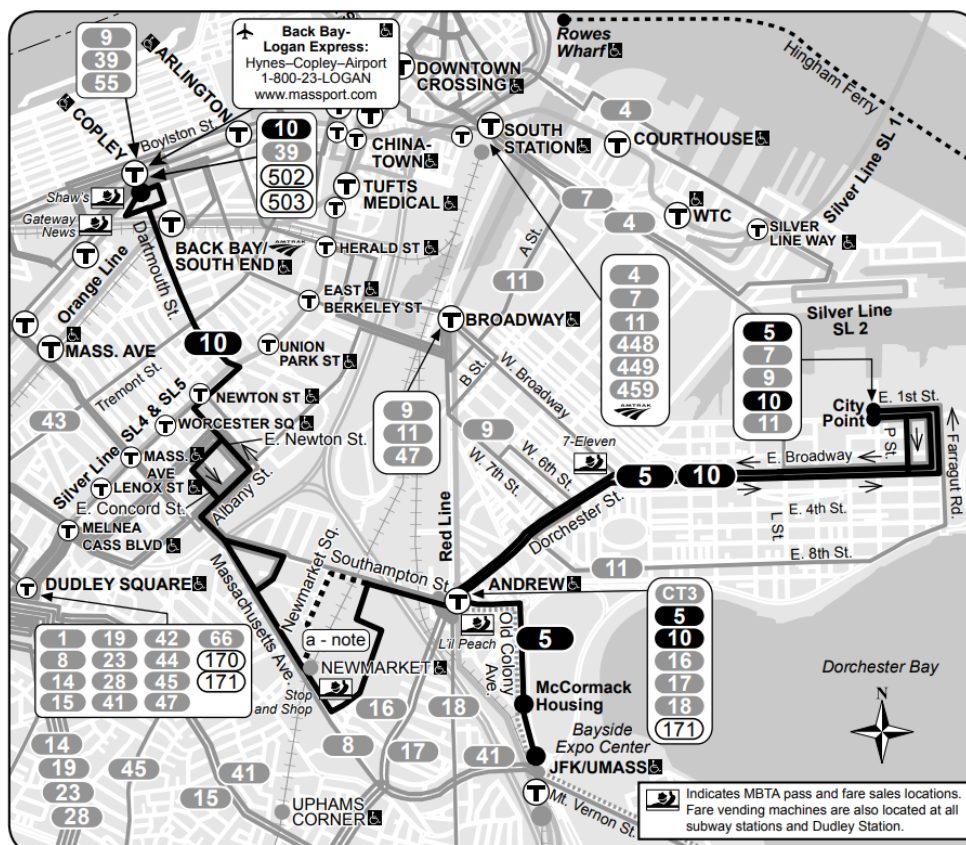
Route 10

City Point – Copley Square

Route Overview

Route 10 City Point – Copley Square is a Local bus route that operates between City Point in South Boston and Copley Square via South Bay Center, the Boston Medical Center area, and the South End (Figure 1).

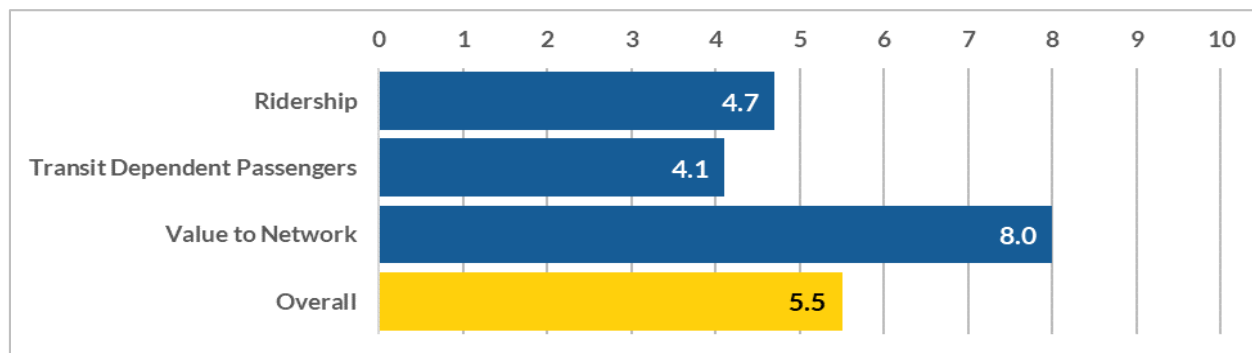
Figure 1 | Service Map



Network Importance

Route 10 has moderate importance within the overall system (see Figure 2). On a scale of 0 to 10, the route rates 4.7 in terms of ridership, 4.1 in terms of transit dependent ridership, and 8.0 in terms of its value to the network (which reflects the number of people who are uniquely served, the number of jobs and other important destinations, and the number of transferring passengers). Its overall score, which gives a 70% weight to overall ridership and a 15% weight to both other measures, is 5.5.

Figure 2 | Relative Importance within MBTA Bus Network (on a scale of 0 to 10)



Service Overview

Schedule

On weekdays, Route 10 operates from 4:55 AM to 1:31 AM, with service generally running every 20 during the AM and PM peaks (see Table 1). Early morning service is slightly more frequent, with service running as often as every 10 minutes. Midday and evening service is less frequent, with trips averaging every 35 to 60 minutes.

Table 1 | Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	4:55 AM to 1:31 AM			42/46
Sunrise	4:55 AM to 5:59 AM	15-35	23	3/1
Early AM	6:00 AM to 6:59 AM	10-35	15	4/3
AM Peak	7:00 AM to 8:59 AM	5-35	23	6/9
Midday Base	9:00 AM to 1:29 PM	5-40	38	7/9
Midday School	1:30 PM to 3:59 PM	15-40	28	5/6
PM Peak	4:00 PM to 6:29 PM	21-24	25	6/6
Evening	6:30 PM to 9:59 PM	20-40	29	8/8
Late Evening	10:00 PM to 11:59 PM	35-64	62	2/2
Night	12:00 AM to 1:31 AM	60	60	1/2
Saturday	6:15 AM to 1:14 AM	22-60	31	35/35
Sunday	6:00 AM to 1:11 AM	35-60	45	24/23

Note: Span of service reflects the time the first bus begins service until the time the last bus finishes service.

Route 10 operates for similar hours on Saturdays, beginning an hour later in the mornings and running every 31 minutes on average. Sunday service is more limited, with service running from 6:00 AM to 1:11 AM every 45 minutes on average.

Route 10 meets the span of service and the service frequency standards for Local routes during all service days and periods, except for some weekday late evening trips that operate 64 minutes apart (versus the standard of no more than 60).

Service Patterns

The majority of Route 10 trips operate Pattern 10.9, which serves the route’s full alignment from City Point to Copley Square via Andrew Station. There are six additional service patterns (see Table 2):

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				42	35	24
10.0	City Point Bus Terminal	Saint James Avenue at Dartmouth Street	Skips South Bay Center	13	3	11
10.1	City Point Bus Terminal	Dudley Station	Skips South Bay Center, Boston Latin Academy school trip	1	-	-
10.9	City Point Bus Terminal	Saint James Avenue at Dartmouth Street	Via South Bay Center	28	32	13
OUTBOUND				46	35	23
10.0	Saint James Avenue at Dartmouth Street	City Point Bus Terminal	Skips South Bay Center	9	2	10
10.3	Saint James Avenue at Dartmouth Street	Andrew Station Busway	Skips South Bay Center, skips Dorchester Street and E. Broadway	1	-	-
10.4	Andrew Station Busway	City Point Bus Terminal	Skips South Bay Center	1	-	-
10.5	Boylston Street at Dartmouth Street	City Point Bus Terminal	Continues to Boylston Street past Saint James Avenue	1	1	1
10.6	Saint James Avenue at Dartmouth Street	Andrew Station Busway	Skips Dorchester Street and E. Broadway	1	-	-
10.8	Townsend Street at Warren Street	City Point Bus Terminal	Boston Latin Academy school trip; Skips South Bay Center	2	-	-

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
10.9	Saint James Avenue at Dartmouth Street	City Point Bus Terminal	Via South Bay Center	31	32	12

- Trips that depart before approximately 8:30 AM operate Pattern 10.0, bypassing South Bay Center (since activity there has not yet started) and instead traveling from Andrew Station to Massachusetts Avenue via Newmarket Square.
- One early morning outbound trip operates Pattern 10.5, beginning service at Boylston Street at Dartmouth Street rather than Saint James Avenue.
- There are also a number of school trips:
 - One weekday morning school trip operates between City Point and Dudley Square, departing City Point at 6:25 AM (Pattern 10.1)
 - One outbound school trip operates between Andrew Station and City Point, departing Andrew Station at 7:40 AM (Pattern 10.4).
 - One outbound school trip operates between Saint James Avenue at Dartmouth Street and Andrew Station, departing at 7:50 AM (Pattern 10.3).
 - Two outbound school trips operate between Boston Latin Academy and City Point via Dudley Square and Andrew Station (Pattern 10.8). Two buses depart from the school at 1:40 PM.

Since the development of this document, the MBTA has modified or discontinued several infrequent Route 10 service patterns.

Ridership

Route 10 carries over 2,900 passengers on weekdays, 1,550 passengers on Saturday, and 800 passengers on Sundays. While total ridership is fairly high, Route 10 is the lowest ridership City Point route except for Route 5 City Point Terminal – McCormack Housing, which provides only very limited service.

Ridership by Stop

Route 10 has moderate but consistent ridership along most of its length. It largely transports South Boston residents and others alighting the Red Line at Andrew Station to Back Bay Station and Copley Square (see Figure 3).

On weekdays heading inbound from City Point:

- The outer segment of the route between City Point and East Broadway at M Street has the route's lowest ridership, with a total of 105 boardings and only one

alighting at six stops. This is because riders in this area traveling to the Red Line can use Route 7 City Point-Downtown to travel to South Station or Route 9 City Point-Copley Square, which have better travel times for most inbound trips.

- Boardings are consistent between East Broadway at L Street and Andrew Station, with stops serving between 15 and 105 passengers per day. Through this South Boston stretch of the route, the stops with the most boardings include E. Broadway at K Street (70 boardings), Dorchester Street at Broadway (72 boardings), and Dorchester Street at 8th Street (41 boardings).
- 115 passengers alight at Andrew Station and account for nearly 25% of the passengers who board prior to that point. A total of 370 passengers board at Andrew Station.
- A total of 105 passengers board and 115 passengers alight at the three stops in South Bay Center. These numbers indicate that ridership to the shopping center is similar from the eastern and western ends of the route.
- The stops along Massachusetts Avenue serve 100 boardings and 80 alightings.
- The three stops in the Boston Medical Center area on Albany Street and East Newton Street serve 175 boardings and 185 alightings. These numbers indicate that ridership to this area is similar from the eastern and western ends of the route.
- A total of 130 passengers board and 145 alight at the stops between the Boston Medical Center area and Back Bay Station.
- 315 passengers alight at Back Bay Station, or 24% of all inbound boardings.
- 205 passengers alight at Copley Square (Saint James Avenue at Dartmouth Street), or 15% of all inbound boardings.

School trips that serve Dudley Square serve fewer than two passengers per day (inbound and outbound). Therefore, while the school trips are well utilized overall, the service to and via Dudley Square is not. The majority of school riders on these trips are traveling to or from Boston Latin Academy.

Weekend ridership follows roughly the same ridership patterns inbound, with fewer but similarly distributed boardings and alightings. Stops serving the South Bay Center at Target, at Office Max, and at Stop & Shop have a higher proportion of overall route activity on weekends than on weekdays.

Figure 3 | Weekday Inbound Ridership by Stop Map



Ridership by Trip

Route 10 provides the only one-seat service between the Back Bay, South Boston, and South Bay Center. The majority of passengers board or alight at Andrew Station, Back Bay Station, and Saint James Avenue at Dartmouth Street. Together, these characteristics have a significant impact on ridership per trip.

On weekdays (see Figure 4 and Figure 5):

- Ridership is consistent throughout the day, with midday trips serving as many passengers as peak period trips. This is likely the result of passengers using the route for trips to access South Bay Center throughout the day.
- Ridership on inbound trips is consistent between 6:00 AM and 5:00 PM, with most trips serving between 40 and 70 passengers. However, because of a large amount of turnover at Andrew Station, South Bay Center, and Boston Medical Center, maximum loads are significantly lower, and consistently below seated capacity.
- Outbound ridership is also consistent between 6:00 AM and 6:00 PM, with most trips serving between 30 and 60 passengers. Maximum loads are significantly lower, ranging from 10 to 30.
- Ridership declines significantly after 10:00 PM, with all trips carrying fewer than 10 passengers.

On Saturdays, inbound trips serve between 20 and 40 passengers per trip from 8:00 AM to 7:00 PM (see Figure 6 and Figure 7). Ridership decreases after 8:00 PM, with all but one trip serving fewer than 15 riders. Outbound trips serve between 15 and 30 passengers. After 10:00 PM, ridership drops to below 10 passengers per trip.

On Sundays, ridership per trip is highest midday between 12:00 PM and 5:00 PM in both directions, with most trips serving between 20 and 30 passengers (see Figure 8 and Figure 9). Ridership in both directions decreases after 9:00 PM, with no trip serving more than 10 passengers.

No weekend trips have any standing riders.

Figure 4 | Weekday Ridership by Trip: Inbound

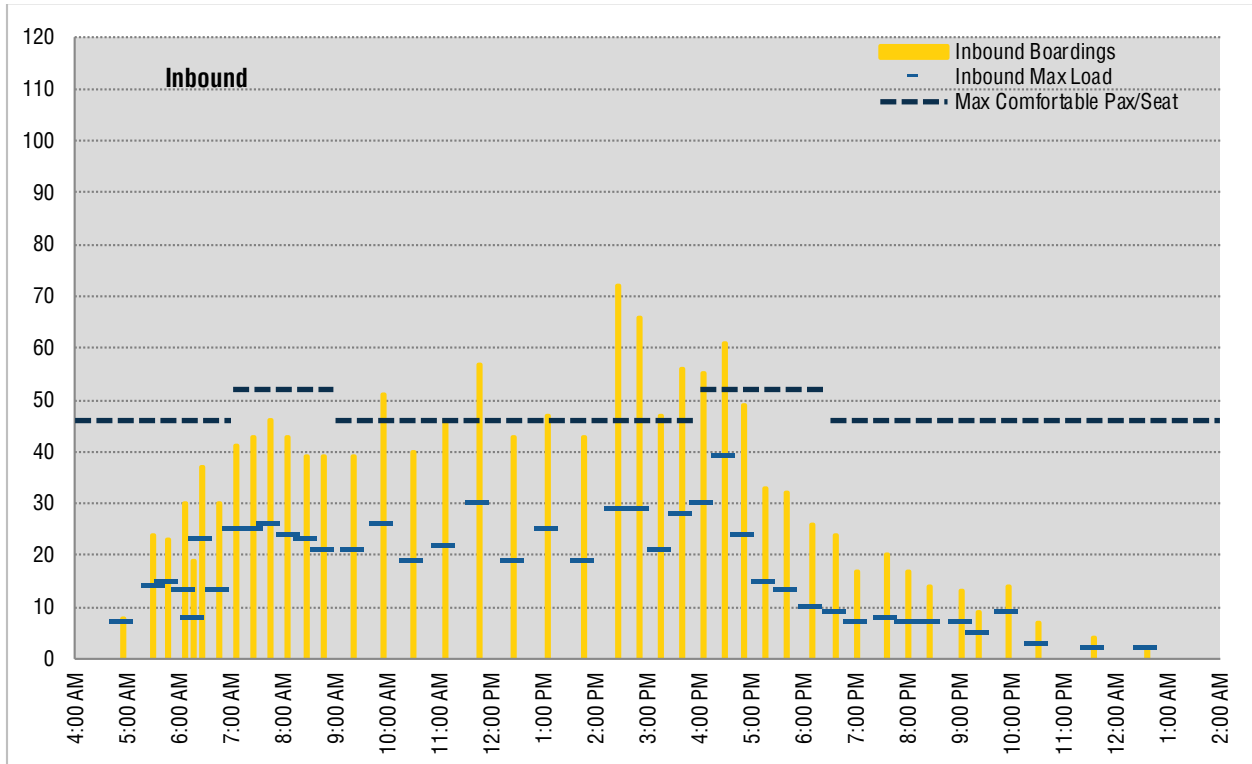


Figure 5 | Weekday Ridership by Trip: Outbound

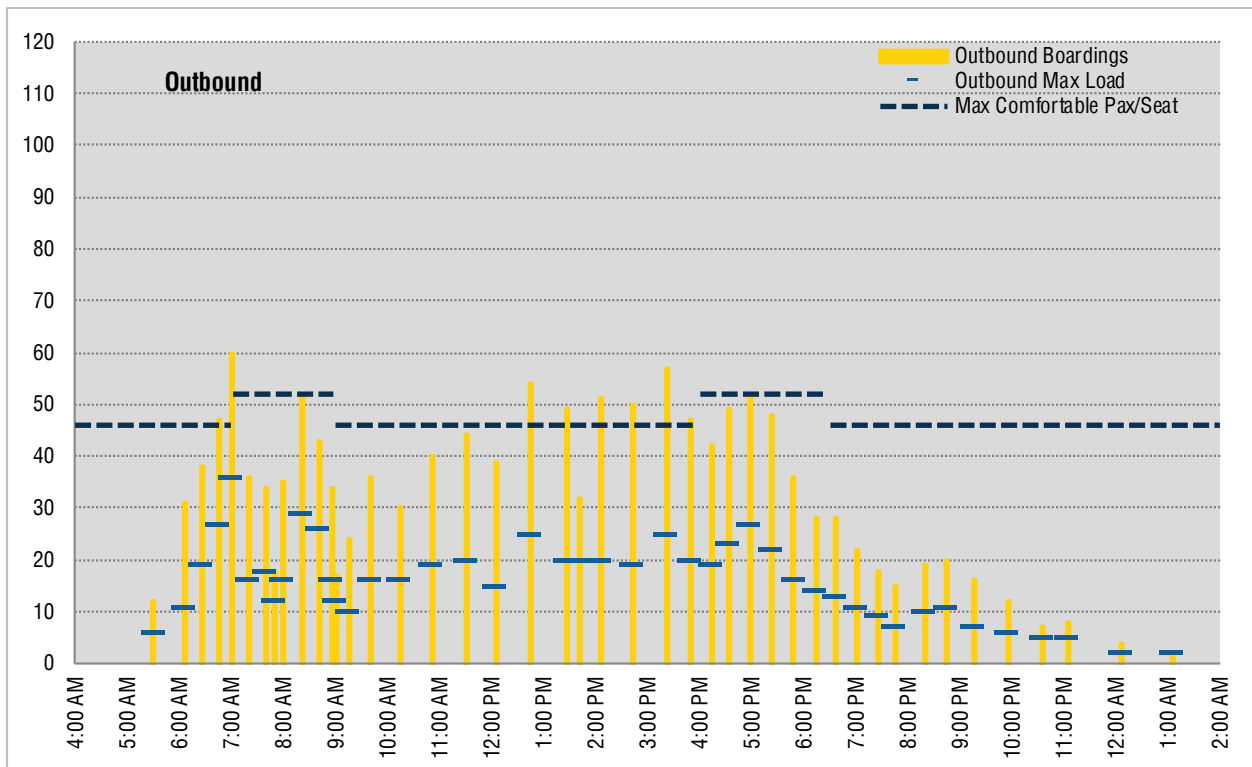


Figure 6 | Saturday Ridership by Trip: Inbound

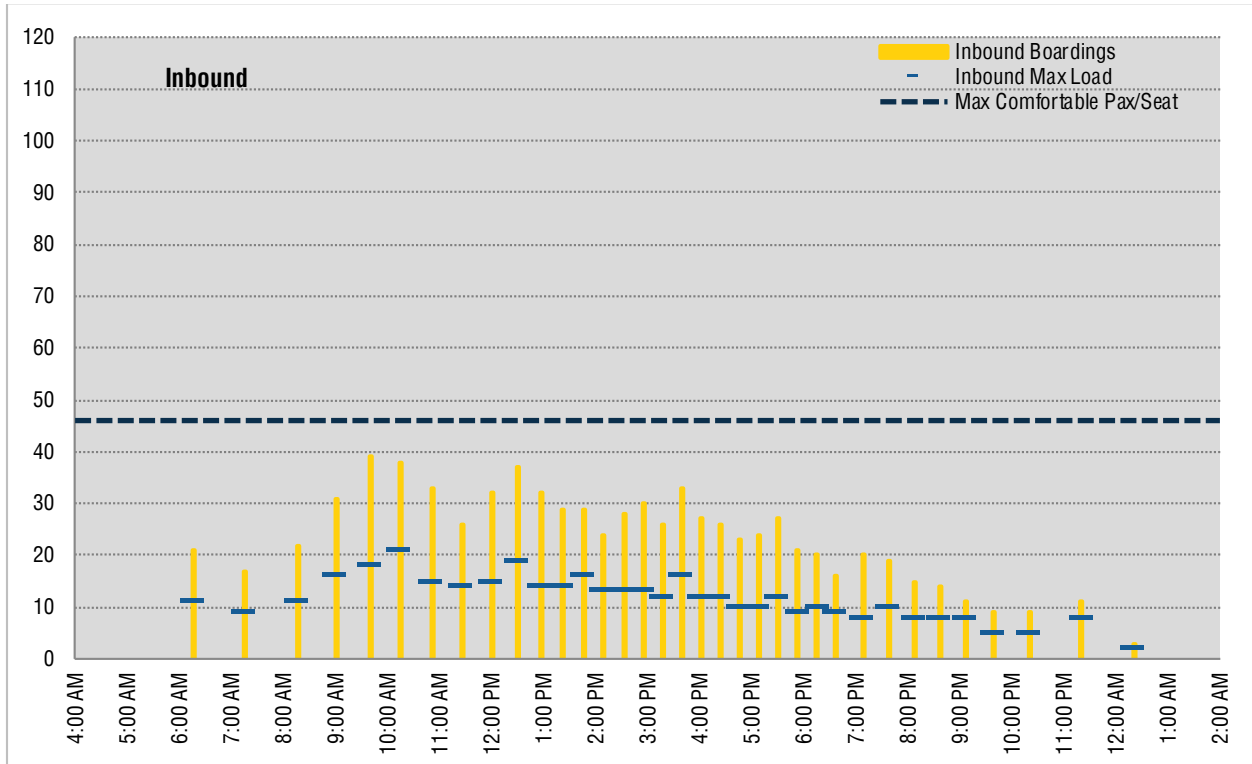


Figure 7 | Saturday Ridership by Trip: Outbound

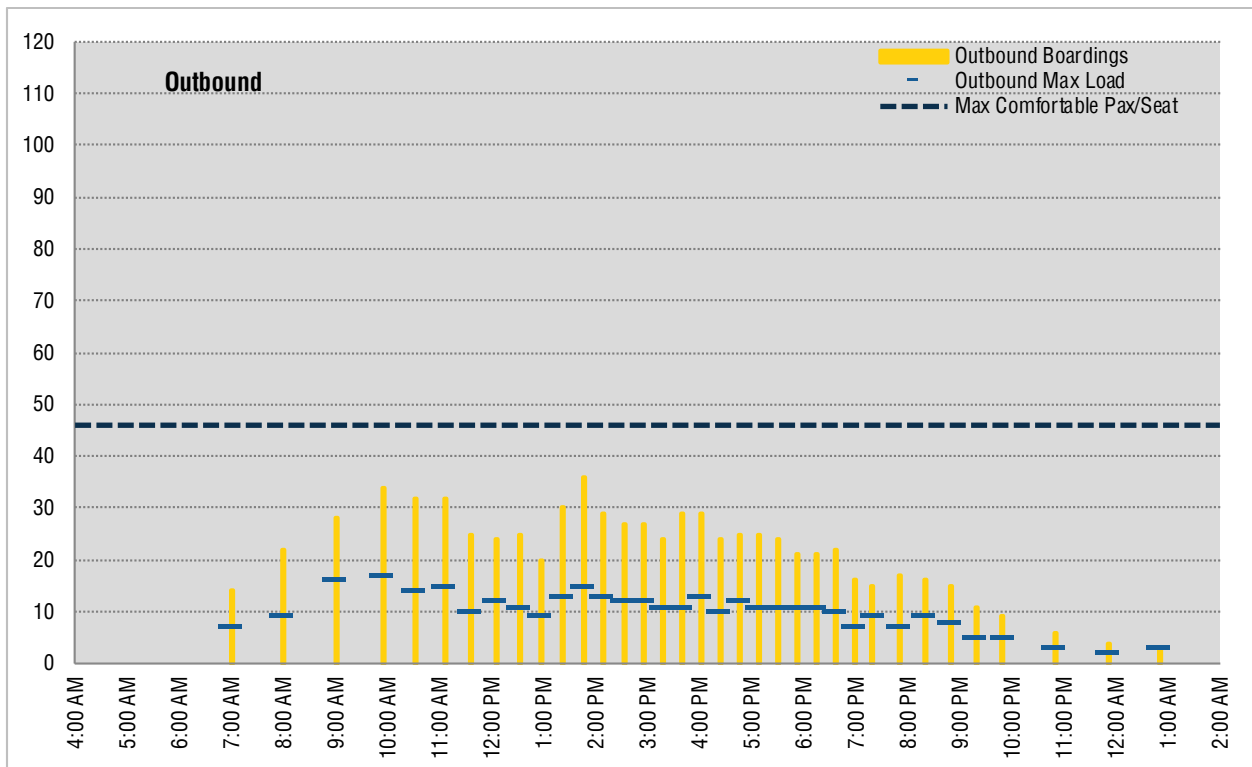


Figure 8 | Sunday Ridership by Trip: Inbound

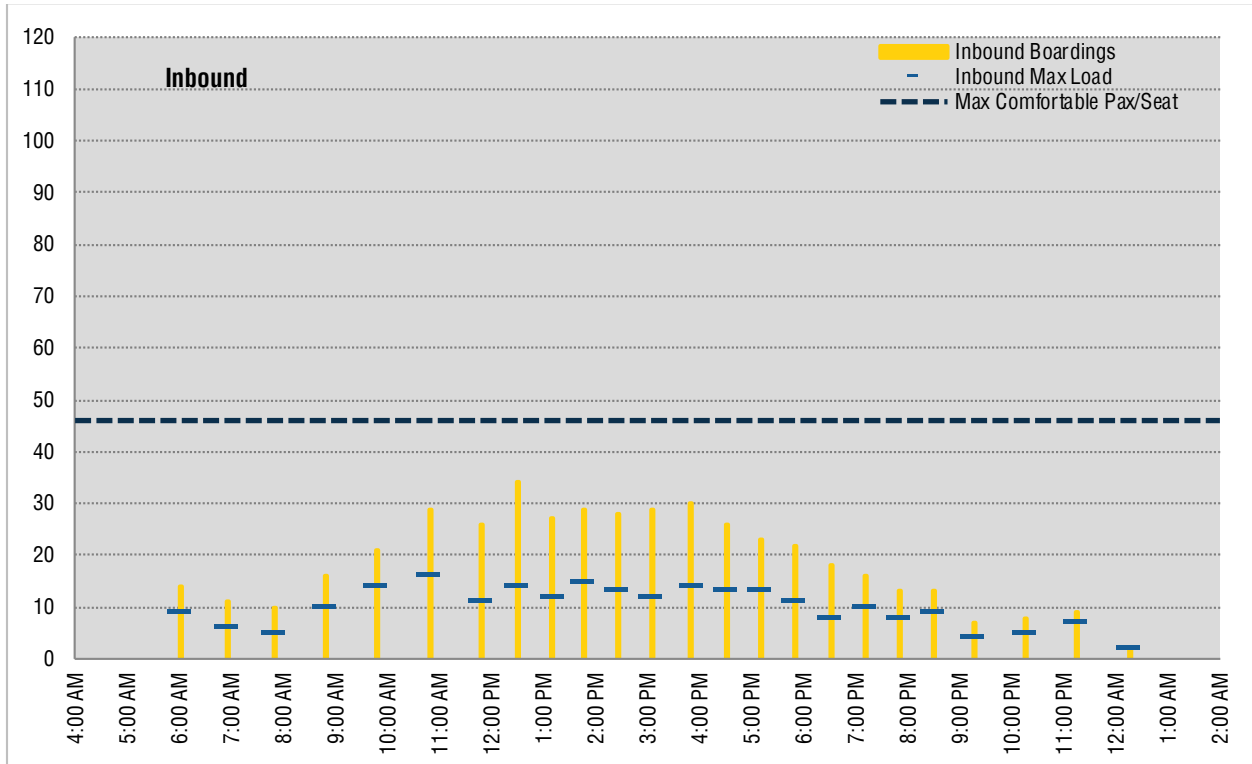
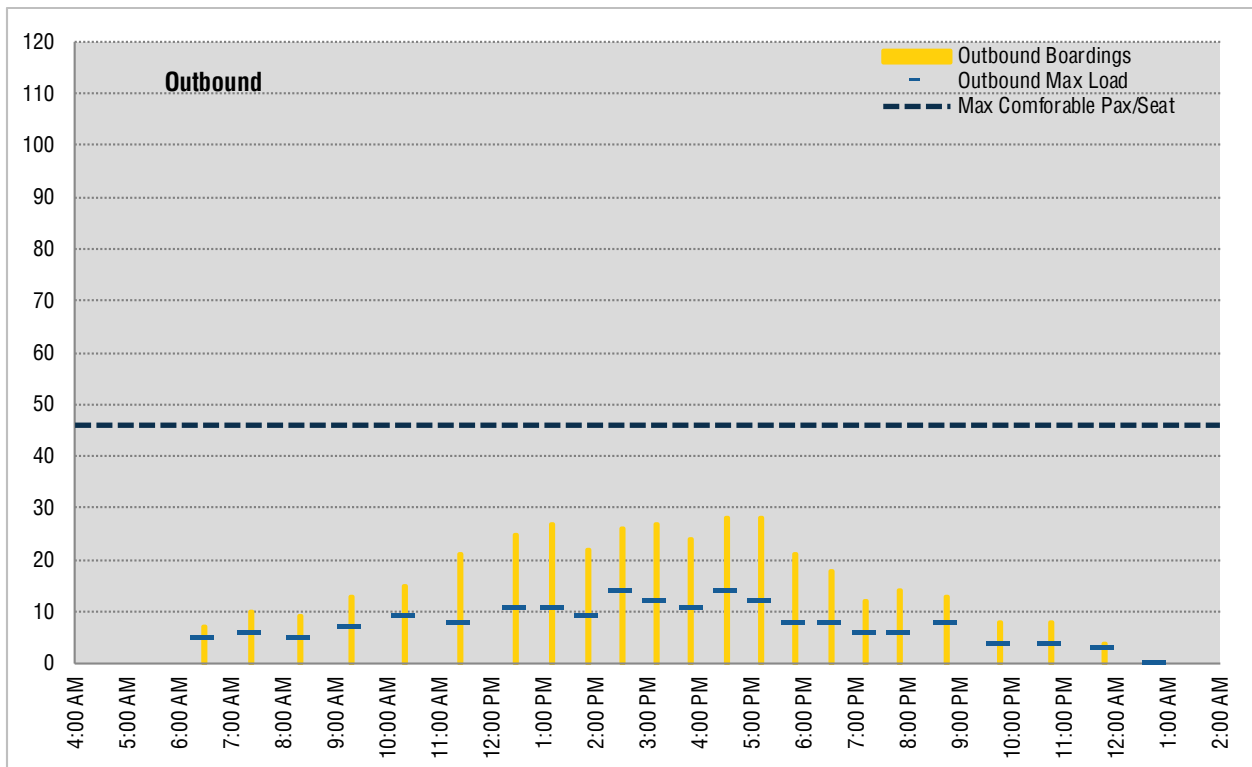


Figure 9 | Sunday Ridership by Trip: Outbound



Passenger Comfort

The MBTA desires that passengers travel in relatively comfortable conditions. At the same time, the MBTA's definition of comfort reflects the very high volume environment in which the MBTA operates, and that some passengers may have to stand for a portion of their trip. More specifically, at least 92% of passengers' travel times should be in comfortable conditions, and ideally, at least 96% of travel times should be in comfortable conditions. Comfortable conditions are considered to be 140% or less of seated capacity during high volume periods and 125% or less during other periods.

On weekdays, 99.3% of passenger minutes on Route 10 are in comfortable conditions, which is well above both the target of 96% (see Table 3). On Saturdays and Sundays, 100% of passenger minutes are spent in comfortable conditions.

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
Minimum Standard	92%	92%	92%
Target	96%	96%	96%
Actual	99.3%	100%	100%

Reliability and Speed

Reliability

On weekdays, Route 10 trips leave on-time 61% of the time and arrive on-time 76% of the time. This is the worst performance of all the routes serving South Boston, but better than the majority of the MBTA's local bus routes. Dropped trips are a moderate issue on this route, with 0.7% of trips not operated in Fall 2017. On weekends, 70% of Saturday trips are completed on time and on Sundays, only 62% of trips are completed on time.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	61%	76%	63%	0.7%
Saturday	66%	70%	66%	-
Sunday	70%	62%	69%	-

Many or most of the issues with mid-route reliability are due to differences between actual running time and scheduled running time, which are up to five minutes longer than scheduled for most of the day (see Figure 10 and Figure 11). Since the development of this document, the MBTA has updated Route 10 schedules to better reflect actual running times.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 10 Inbound

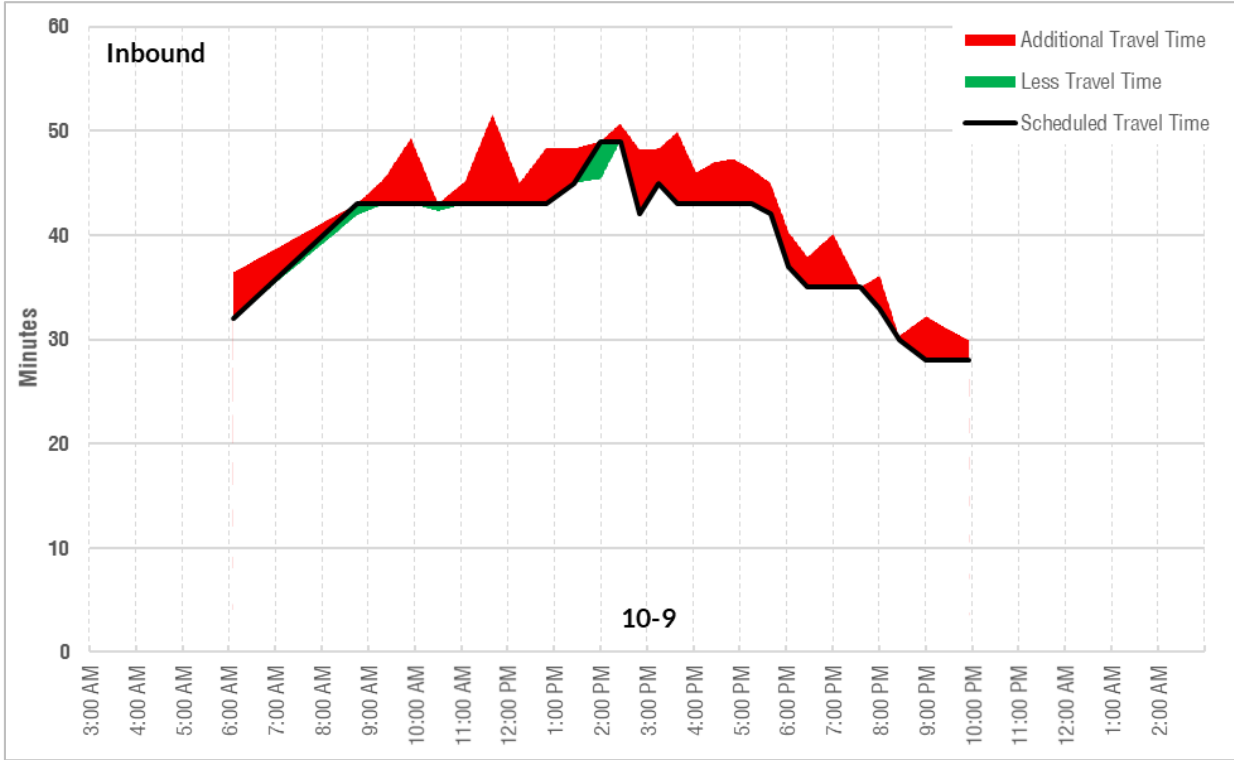
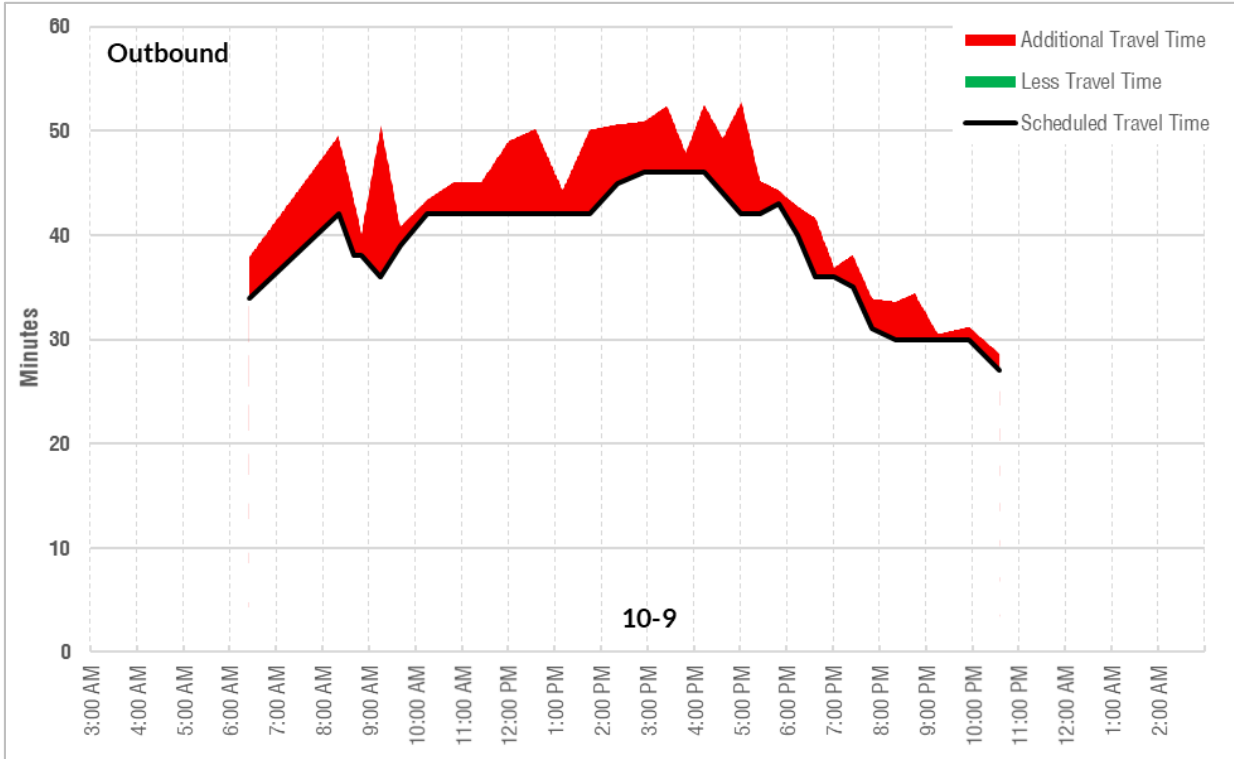


Figure 11 | Scheduled & Median Travel Time by Trip: Route 10 Outbound



Stop Spacing

On average, Route 10 stops are 760 feet apart, or seven per mile, at the high end of the four to seven stops per mile recommended for urban areas under MBTA guidelines. Customers can walk between stops with this spacing in about two to three minutes. As people will typically walk at least five minutes to access a local bus route, this spacing is unnecessarily close, and makes service slower and less reliable.

Stops are located extremely close together at two points along the route:

- Along East Broadway, stops at N Street and at M Street are only 450 feet apart. Both stops average up to one boarding per day.
- Along Dorchester Street, stops at 5th Street and at 6th Street are only 315 feet apart.

Summary

Route 10 provides important connections between South Boston, the Red Line, South Bay Center, Back Bay Station, and Copley Square. However, many of these connections provided by Route 10 are provided more effectively and frequently by other routes, which reduces ridership in South Boston. It is the lowest ridership route serving South Boston, aside from Route 5 City Point Terminal – McCormack Housing.