

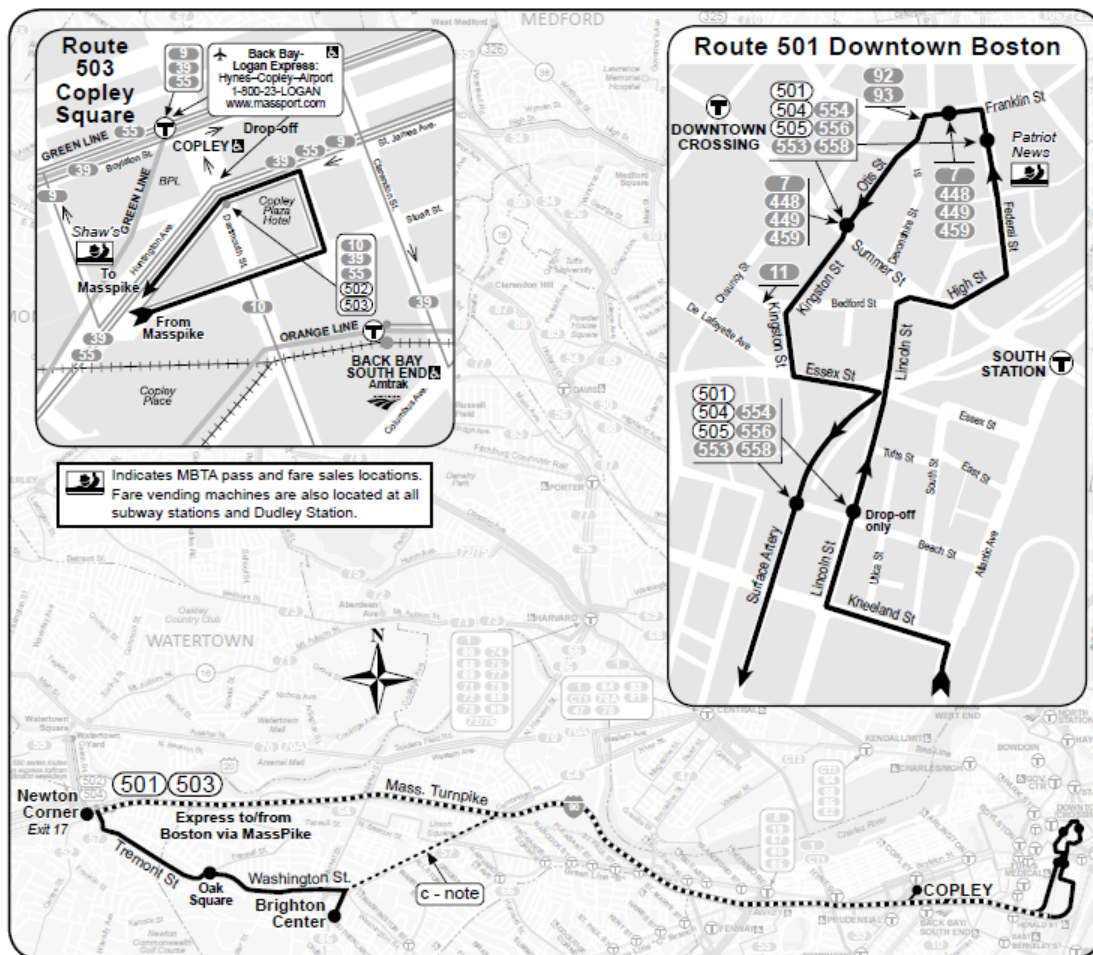
Route 501

Express Bus—Brighton Center – Downtown Boston

Route Overview

Route 501 Brighton Center – Downtown Boston is an Express route that operates between Brighton Center and downtown Boston via Newton Corner and the Mass Pike (see Figure 1). The outer section of the route overlaps a large portion of Key Bus Route 57/57A.

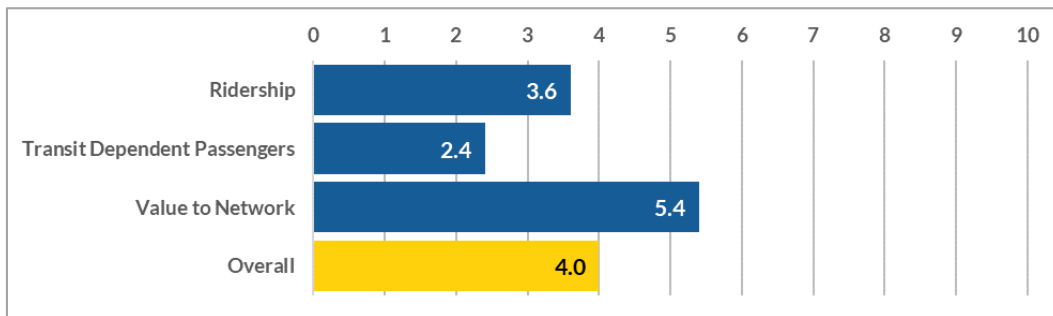
Figure 1 | Service Map



Network Importance

Route 501 is of moderately low importance within the overall MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 3.6 in terms of ridership, 2.4 in terms of transit dependent ridership, and 5.4 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% weighting to overall ridership and a 15% weight to both other measures, is 4.0.

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



Service Overview

Schedule

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:20 AM to 10:02 AM 2:35 PM to 8:05 PM			43/41
Sunrise	-	-	-	-
Early AM	6:20 AM to 6:59 AM	6 - 10	7	6/3
AM Peak	7:00 AM to 8:59 AM	6-11	7	17/12
Midday Base	9:00 AM to 9:30 AM	12 - 15	15	3/1
Midday School	2:35 PM to 3:59 PM	24 - 63	43	2/4
PM Peak	4:00 PM to 6:29 PM	4 - 24	12	13/17
Evening	6:30 PM to 7:35 PM	16 - 27	27	2/4
Late Evening	-	-	-	-
Night	-	-	-	-
Saturday	-	-	-	-
Sunday	-	-	-	-

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

Route 501 operates only on weekdays, from 6:20 AM to 10:02 AM and 2:35 PM to 8:05 PM (see Table 1). AM inbound service operates:

- Every 10 minutes until 6:40 AM.
- Every five to six minutes from 6:40 AM to 8:27 AM, but mostly every six minutes.
- Every 10 to 15 minutes from 8:27 AM to 9:30 AM

PM outbound service operates:

- Every 20 to 25 minutes from 3:05 AM to 4:10 PM.
- Every 12 minutes from 4:10 PM to 4:22 PM.
- Every seven to eight minutes from 4:22 PM to 6:05 PM.
- Every 10 to 15 minutes from 6:05 PM to 7:05 PM and then a final trip at 7:35 PM.

Route 501 exceeds the span of service and frequency standards for Commuter routes.

Service Patterns

Route 501 operates with the following patterns:

- All AM peak inbound and PM peak outbound trips operate between Brighton Center and Downtown Boston via Newton Corner as shown with the solid line in Figure 1 and via the Mass Pike.
- All AM peak outbound and nine of 15 PM peak inbound trips operate between the Mass Pike and Newton Corner via Cambridge Street as show in Figure 1 with the dotted line labeled “c-note.” These, in effect, are deadhead trips.
- Eight of 15 PM inbound trips operate to Brighton Center via Newton Corner. There is no particular pattern with which PM inbound trips operate via either Cambridge Street or Newton Corner.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				43	-	-
501.0/.1	Winship Street at Union Street	Downtown Boston	Via Newton Corner	34	-	-
501.3	Winship Street at Union Street	Downtown Boston	Via Union Square	9	-	-
OUTBOUND				41	-	-
501.0	Downtown Boston	Winship Street at Union Street	Via Union Square	16	-	-
501.1	Downtown Boston	Winship Street at Union Street	Via Newton Corner	25	-	-

Ridership

Route 501 is the MBTA’s highest ridership Commuter route and carries 1,760 passengers per weekday.

Ridership by Stop

Functioning as a traditional Express route, most of Route 501’s inbound ridership occurs along Washington Street in Brighton Center and the majority of passengers alight in Downtown Boston. In the inbound direction:

- 90 passengers board at the first stop in Brighton Center.
- Along Washington Street, 485 passengers board and 7 alight.
 - 100 passengers board at Washington Street at Brock Street
 - 100 passengers board at Washington Street at Montfern Avenue
- 220 passengers board and 10 alight along Tremont Street.
- Fifty passengers board and fewer than 10 alight along Cambridge Street on the nine PM trips that operate along that alignment.

Outbound ridership is generally the reverse of inbound ridership. One exception, however, is higher AM outbound ridership along Cambridge Street, at 190 boardings and 20 alightings. This is primarily student ridership to Brighton High School.

Ridership by Trip

As expected for a Commuter route, Route 501 ridership is heavily oriented toward AM inbound and PM outbound trips. AM inbound ridership is heavily concentrated

between 7:30 AM and 8:30 AM, and PM outbound ridership between 4:00 PM and 7:00 PM (see Figure 4 and Figure 5). In more detail:

- No trips, on average, have loads that exceed the MBTA's maximum load standards.
- Inbound trips between 7:30 AM and 8:30 AM generally carry loads in excess of 40. However, nearly all other trips carry loads that are less than 30, which indicates that more service is provided than is necessary to meet demand.
- The first inbound trip at 6:30 AM carries 27 passengers, which indicates that there is demand for earlier service.
- The last outbound trip has the highest ridership of all outbound service, with 41 passengers. This indicates demand for later service.

Figure 3 | Weekday Inbound Ridership by Stop Map

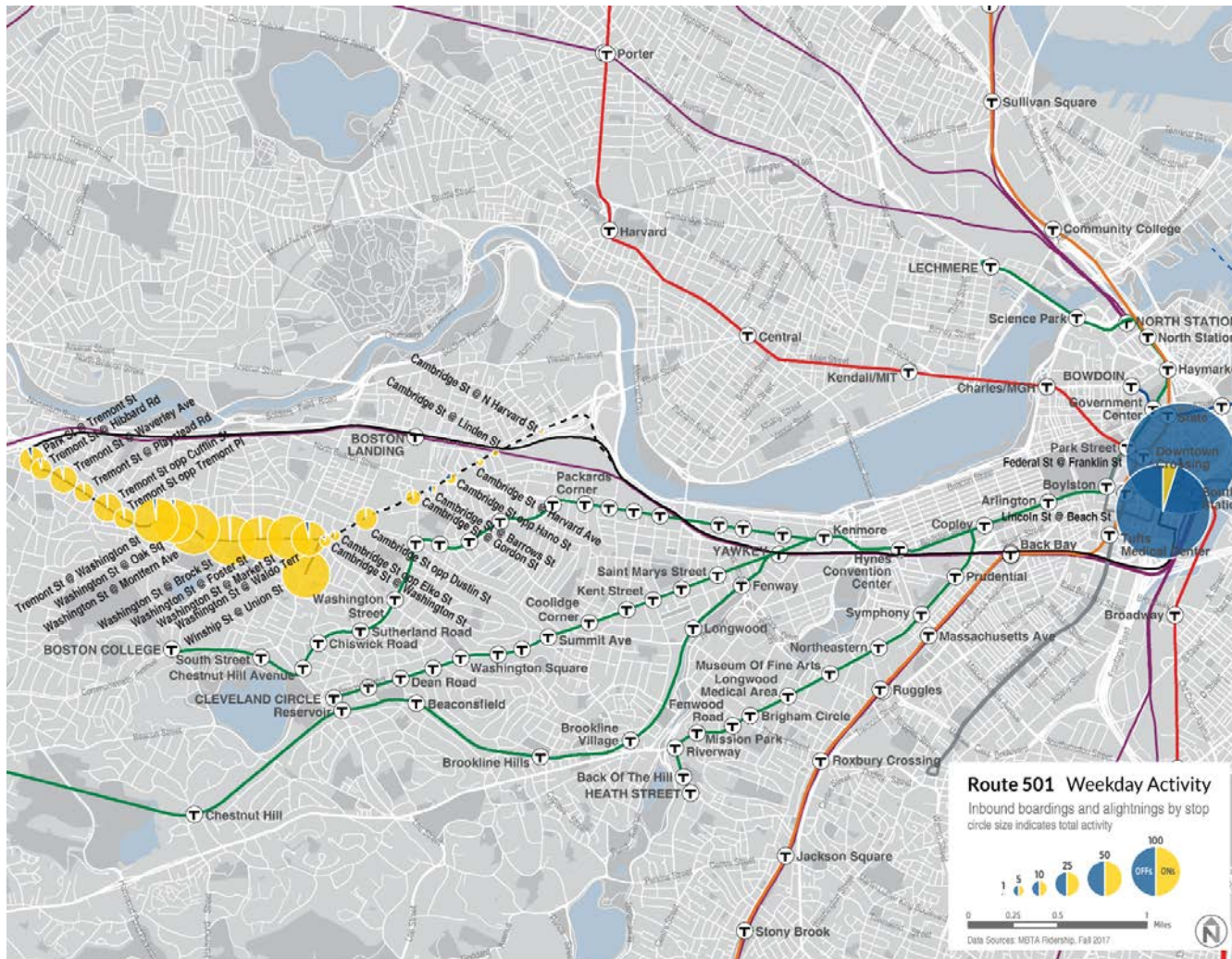


Figure 4 | Weekday Ridership by Trip: Inbound

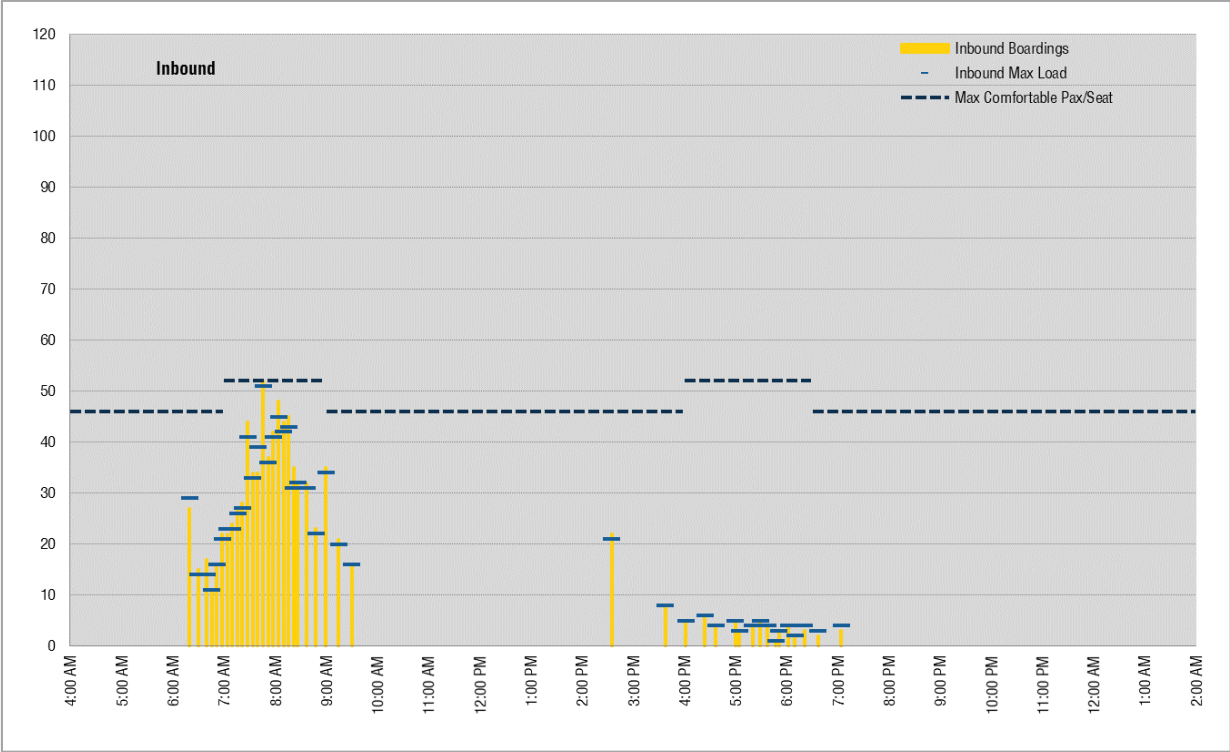
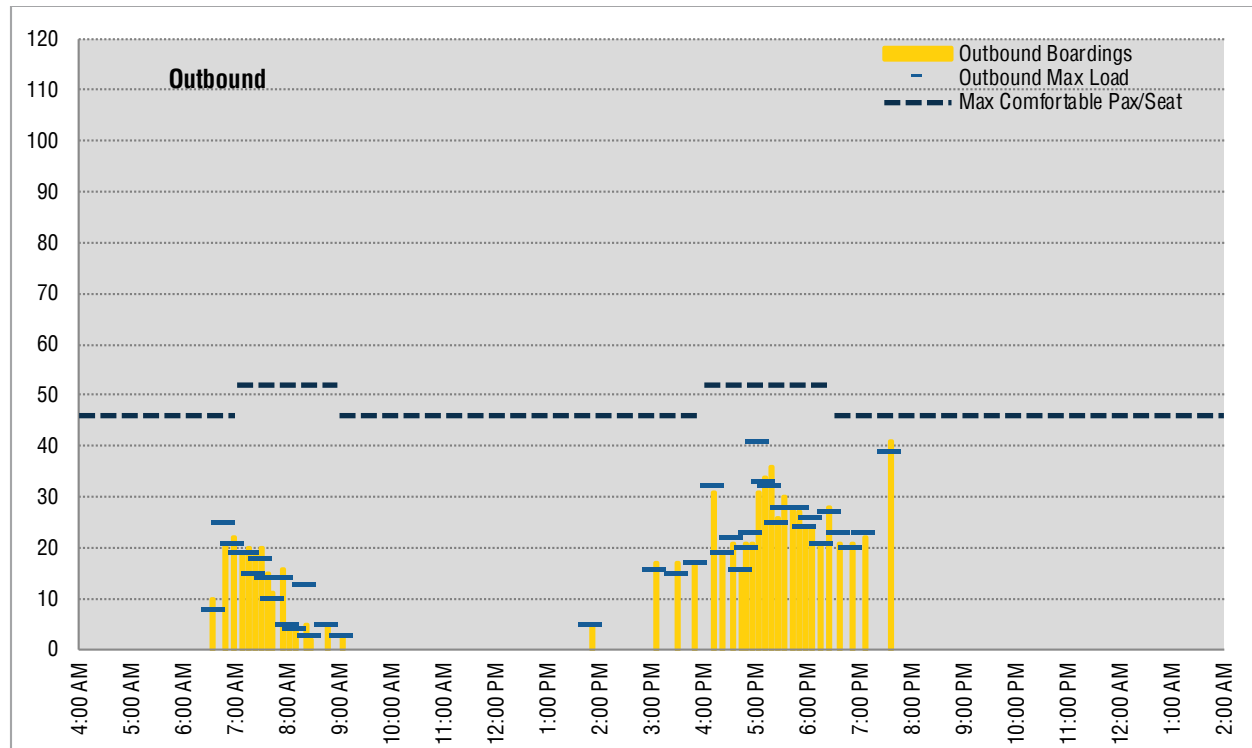


Figure 5 | Weekday Ridership by Trip: Outbound



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 Route 501, 92.3% of passenger minutes are in comfortable conditions, which is just above the minimum standard but below the target (see Table 3).

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
Minimum Standard	92%	92%	92%
Target	96%	96%	96%
Actual	92.3%	-	-

Reliability and Speed

Reliability

Route 501 is the MBTA's second most reliable Commuter route with overall reliability of 73% (see Table 4). This is above the MBTA's minimum standard of 70% but below the target of 75%. Dropped trips, however, are an issue, with 1.1% of trips dropped in the Fall of 2017.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	74%	65%	73%	1.1%
Saturday	-	-	-	-
Sunday	-	-	-	-

Running Times

Route 501 trips generally run close to scheduled times, although there are variances in both directions with some differences of up to seven minutes (see Figure 6 and Figure 7).

Figure 6 | Scheduled & Median Travel Time by Trip: Route 501 Inbound

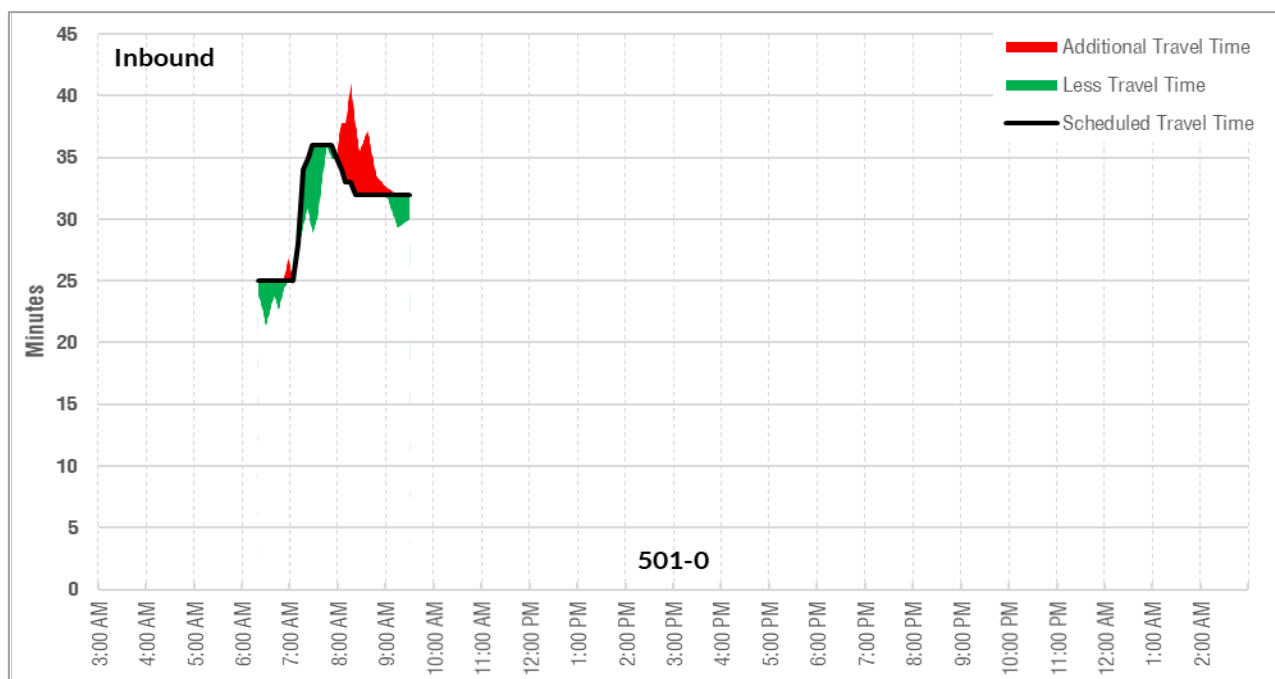
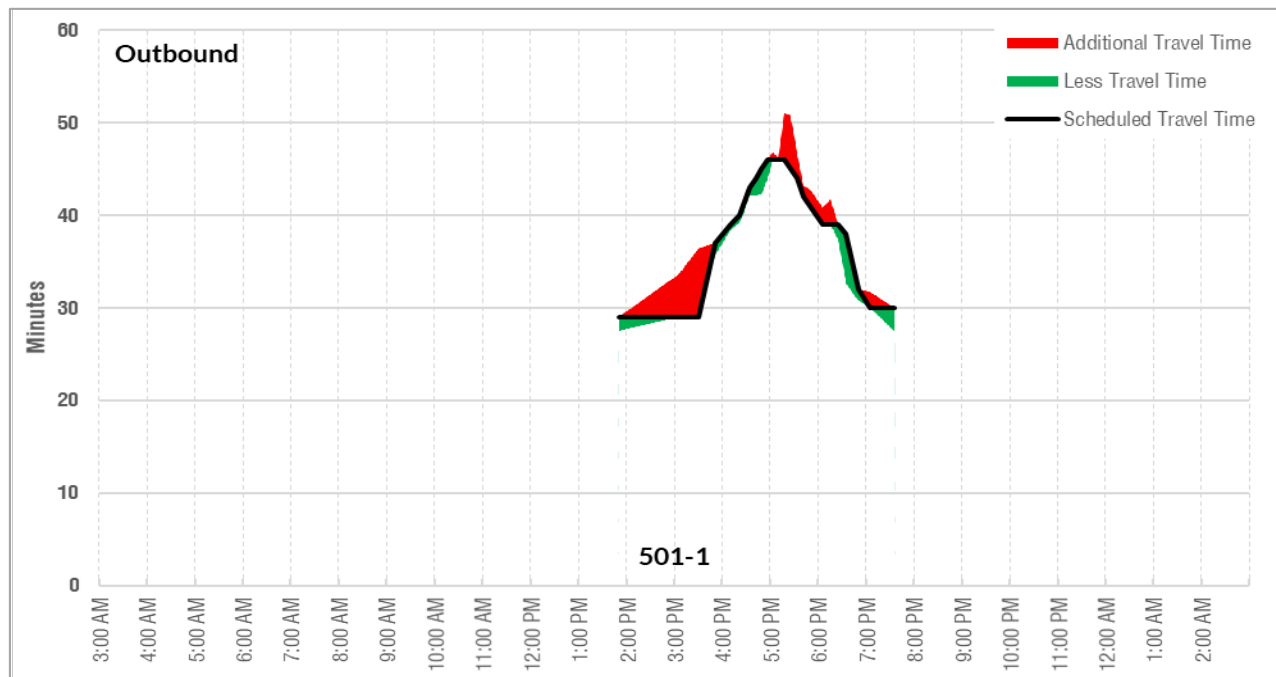


Figure 7 | Scheduled & Median Travel Time by Trip: Route 501 Outbound



Stop Spacing

Stops are closely spaced along Route 501's Washington/Tremont corridor, where there are 13 stops along the 1.7 mile alignment, an average stop spacing of 690 feet.

The southernmost stops along Cambridge Street are also closely spaced. There is an average of 375 feet between the stops along Cambridge Street between Winthrop Street and Dustin Street.

Summary

Route 501 is the MBTA's second highest ridership Commuter route, and overall performs well. However, there are some issues with the route, which include:

- There appears to be demand for earlier and later service.
- Stops are too close together in some areas.
- PM inbound schedules are inconsistent.
- On-time performance is below the MBTA's target level.