

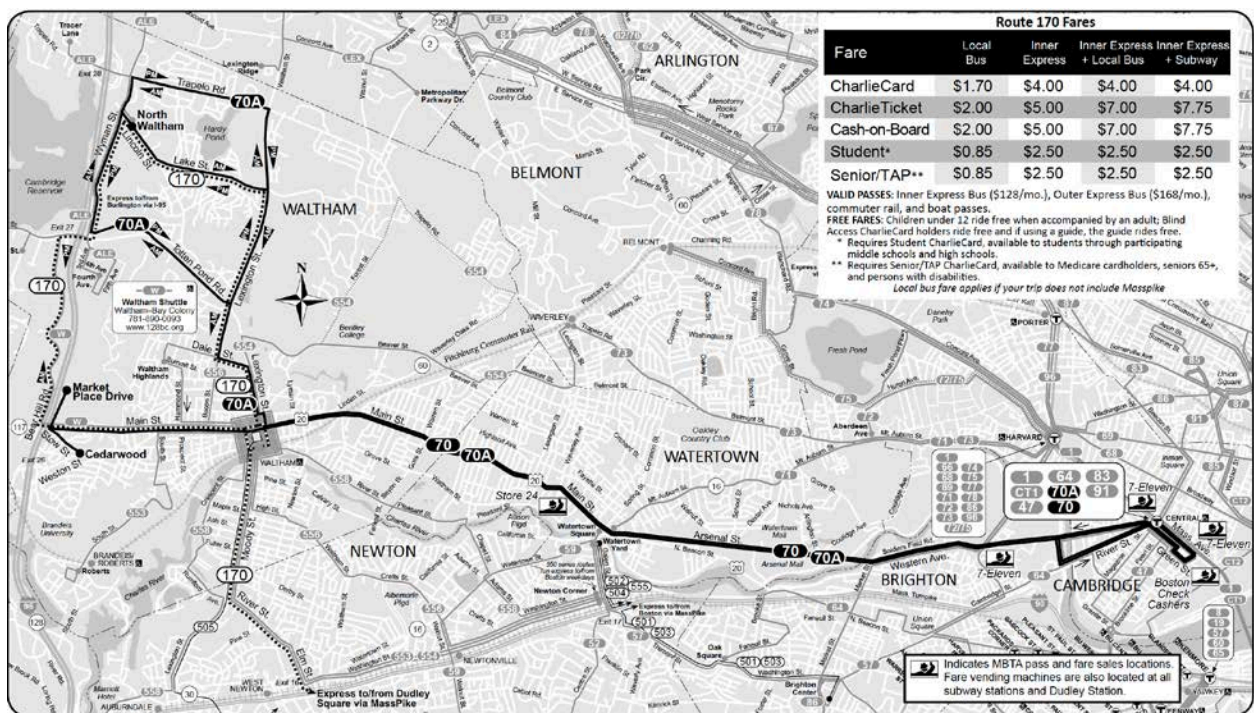
Route 170

Central Square, Waltham – Dudley Square

Route Overview

Route 170 Central Square, Waltham – Dudley Square is a Commuter route that provides reverse commute service (AM outbound and PM inbound) between Dudley Square and Waltham via Copley Square.

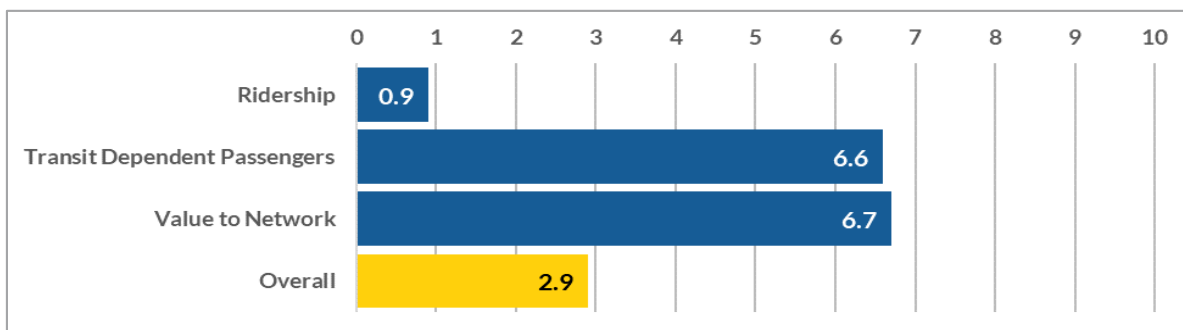
Figure 1 | Service Map



Network Importance

Route 170 has a low importance within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, Route 170 rates 0.9 in terms of ridership, 6.6 in terms of transit dependent ridership, and 6.7 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 2.9.

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



Service Overview

Schedule

Route 170 operates only on weekdays and provides two AM outbound trips and two PM outbound trips. The AM peak inbound trips depart at 6:15 AM and 6:40 AM, and two PM peak inbound trips depart at 3:55 PM and 4:55 PM (see Table 1).

Route 170 does not meet the MBTA’s Frequency Standards that specify that commuter routes should provide at least three trips in each direction.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:15 AM to 6:40 AM 3:55 PM to 6:11 PM	-	-	2/2
Sunrise	-	-	-	-
Early AM	6:15 AM to 6:40 AM	2 Trips	2 Trips	0/2
AM Peak	-	-	-	-
Midday Base	-	-	-	-
Midday School	3:55 PM to 3:59 PM	1 Trip	1 Trip	1/0
PM Peak	4:00 PM to 6:11 PM	1 Trip	1 Trip	1/0
Evening	-	-	-	-
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.

Service Patterns

All service operates consistently as described above in the Alignment section, with a single inbound and outbound service pattern (see Table 2).

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				2	-	-
170.3	Waltham Commuter Rail Station	Dudley Station	Counter-clockwise around North Waltham loop	2	-	-
OUTBOUND				2	-	-
170.0	Dudley Station	Waltham Commuter Rail Station	Clockwise around North Waltham loop	2	-	-

Ridership

Route 170 carries 110 passengers per weekday.

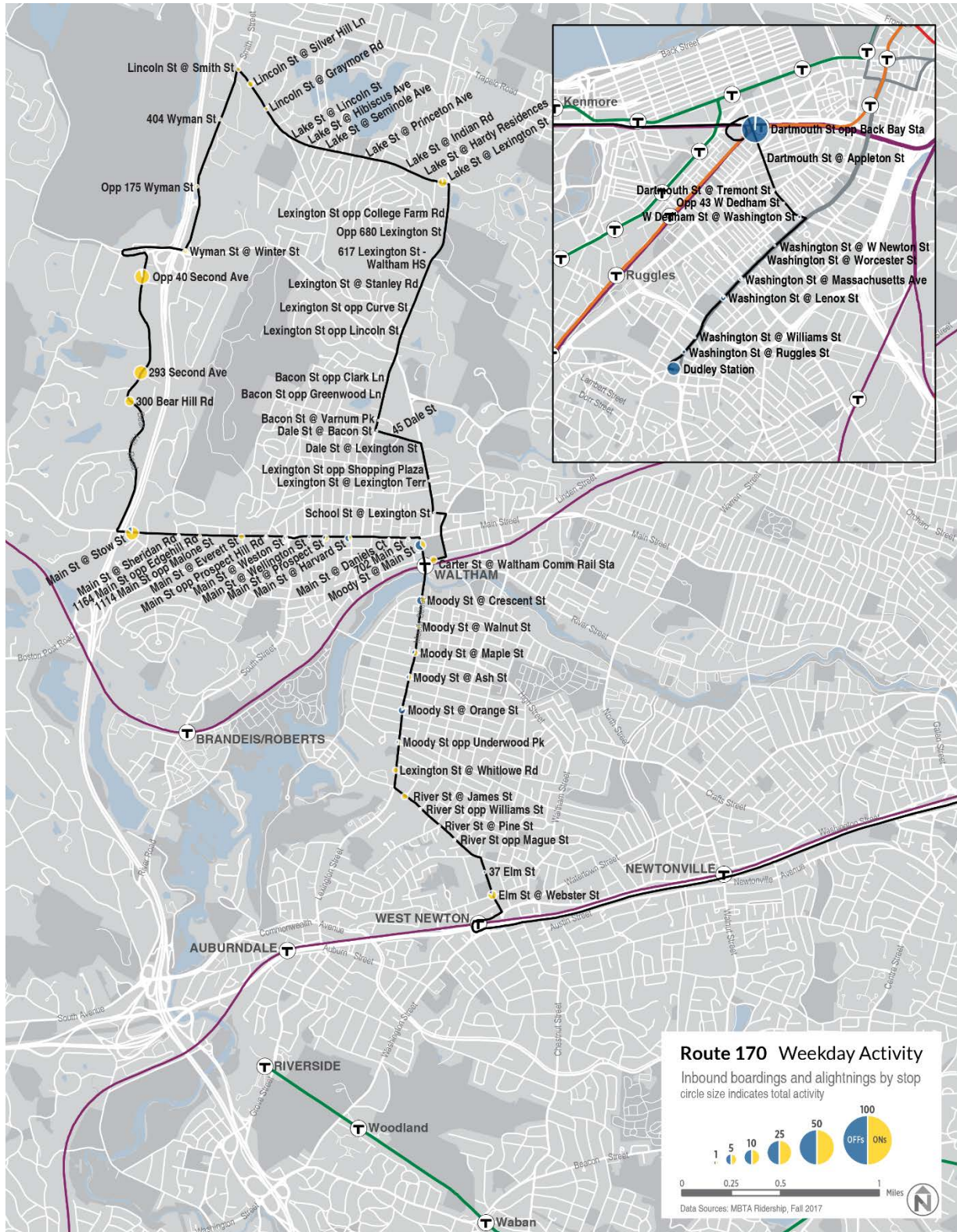
Ridership by Stop

Ridership is low at all stops along Route 170. On PM peak inbound trips (see Figure 3):

- Two passengers board at the first stop at Waltham Commuter Rail Station.
- Eight passengers board at the 28 stops on the North Waltham loop east of Route 128 before Second Avenue.
- 21 passengers board at the three stops on Second Avenue and Bear Hill Road west of Route 128. This is the only segment where Route 170 provides unique service.
- 11 passengers board and five alight along Main Street between Bear Hill Road and Central Square, Waltham.
- 13 passengers board and 10 alight at the 15 stops along Moody Street, Lexington Street, River Street and Elm Street between Central Square and the Mass Pike.
- 30 passengers alight at Back Bay Station.
- Only one passenger alights at the four stops between Back Bay Station and Washington Street.
- Only two passengers alight at the six stops along Washington Street before Dudley Station.
- Eight passengers alight at Dudley Station.

Ridership by stop patterns on AM outbound trips are essentially the reverse of PM inbound patterns.

Figure 3 | Weekday Inbound Ridership by Stop Map



Ridership by Trip

Route 170’s two AM inbound trips carry 24 and 30 passengers (see Figure 4) and its two PM outbound trips carry 35 and 21 passengers (see Figure 5).

Figure 4 | Weekday Ridership by Trip: Inbound

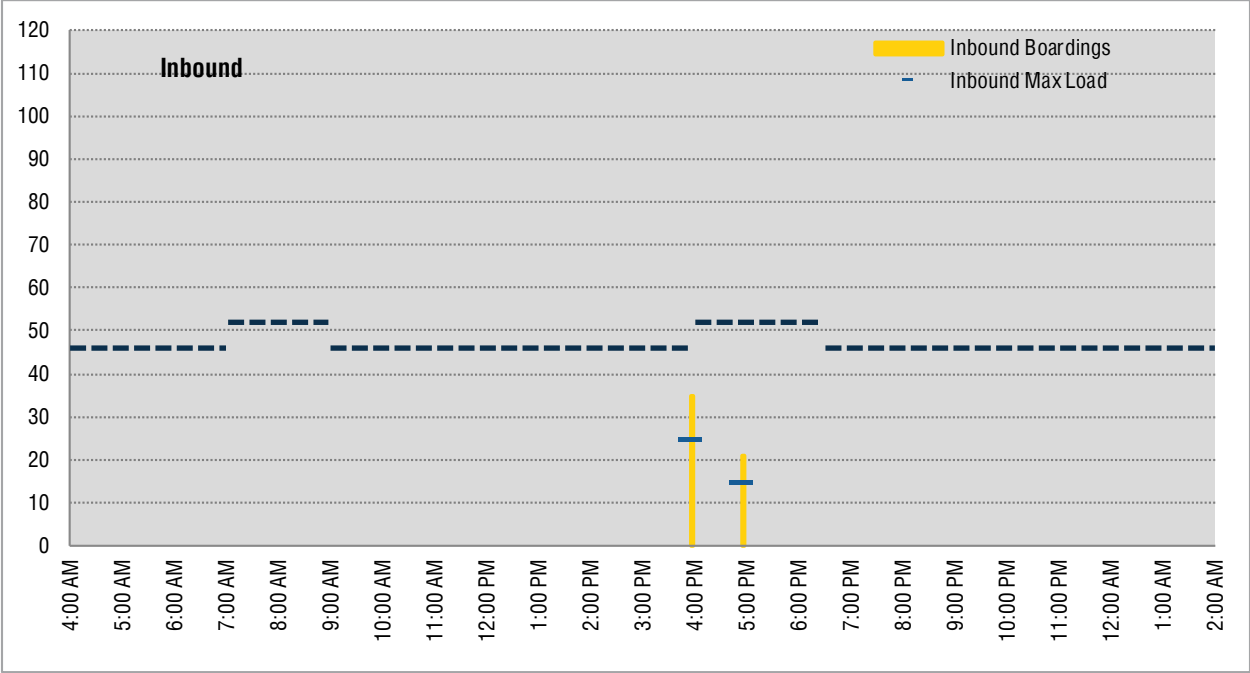
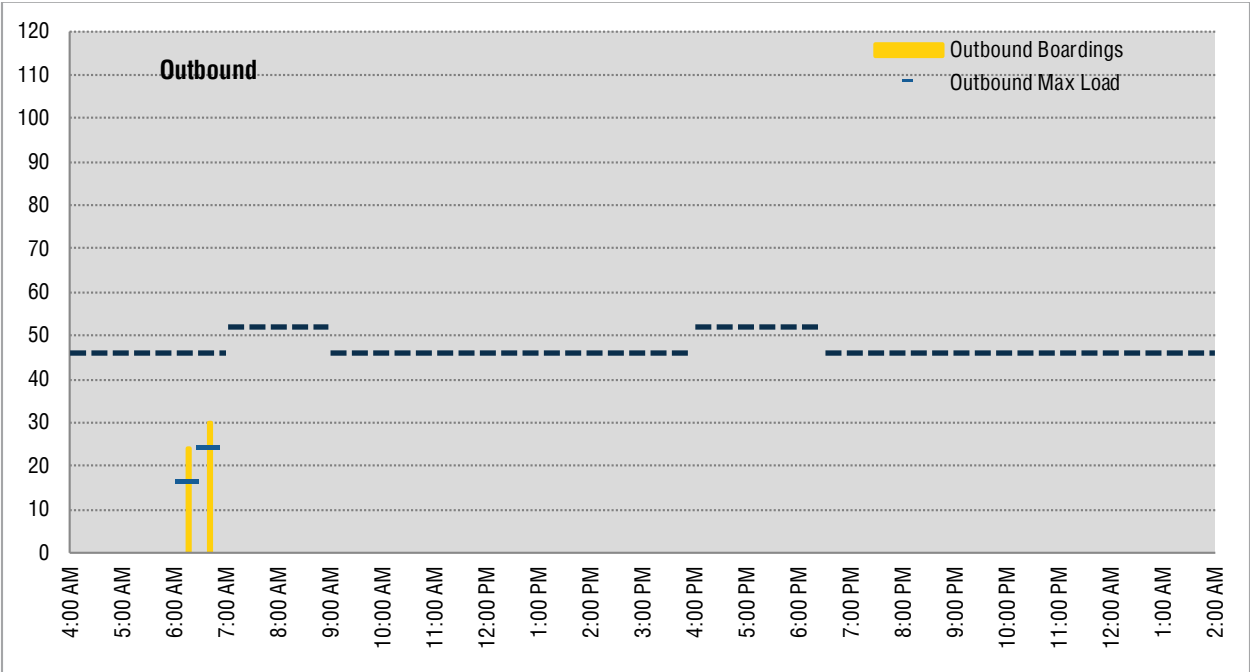


Figure 5 | Weekday Ridership by Trip: Outbound



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 170, 100% of passenger minutes are in comfortable conditions (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	100%	-	-

Reliability and Speed

Reliability

Route 170's overall reliability is very poor at only 52% (see Table 4). This is due to delays that are incurred along many parts of Route 170, including between Dudley Square and Copley Square, along the Mass Pike, and along Bear Hill Road.

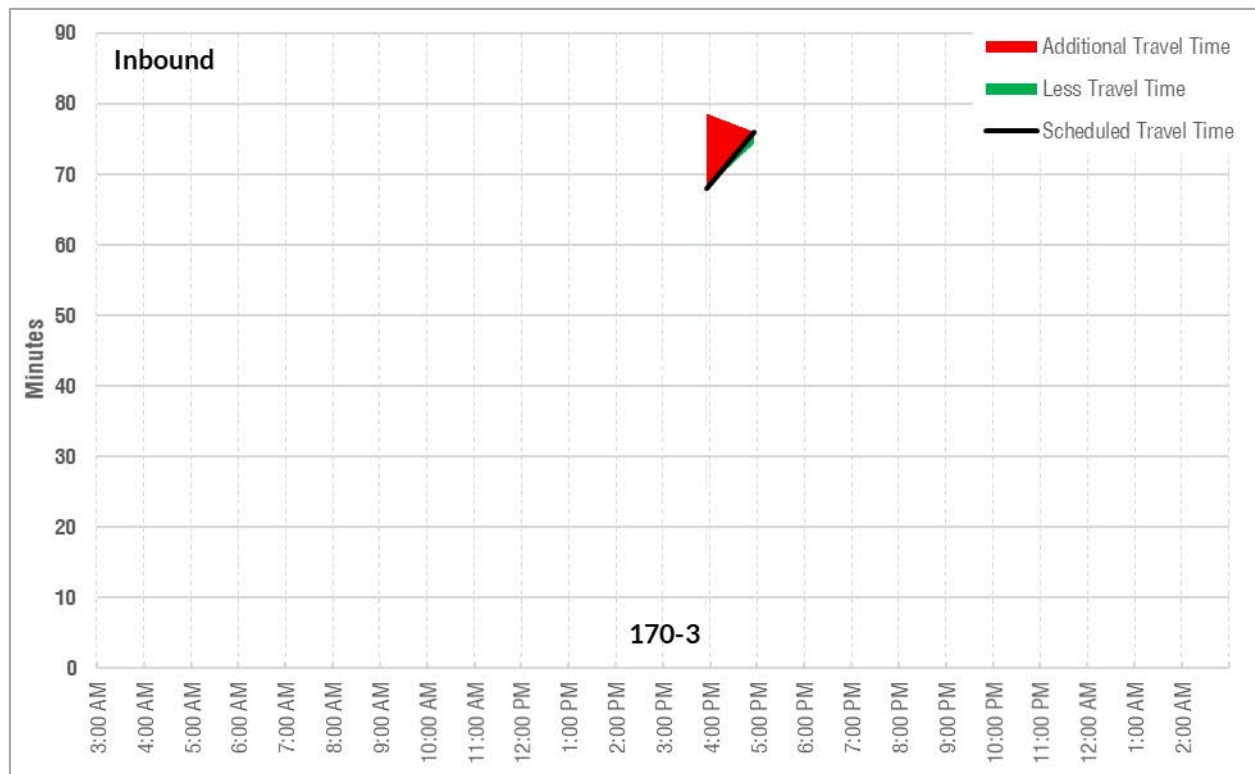
Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	53%	46%	52%	0.0%
Saturday	-	-	-	-
Sunday	-	-	-	-

Running Times

A major cause of on-time performance is that Route 170's scheduled running times are up to 10 minutes longer than scheduled times (see Figure 6).

Figure 6 | Scheduled & Median Travel Time by Trip: Route 170 Inbound



Stop Spacing

West of the Mass Pike, Route 170 has 5.7 stops per mile, which is slightly above the MBTA's guideline of four to five stops per mile in suburban areas.

Summary

Route 170 is a niche route that provides reverse commute service between Dudley Square and the Back Bay to Waltham, that carries moderate ridership. Its major issue is very poor on-time performance. It also does not meet the MBTA's service frequency guidelines for commuter routes of at least three trips in each direction.