

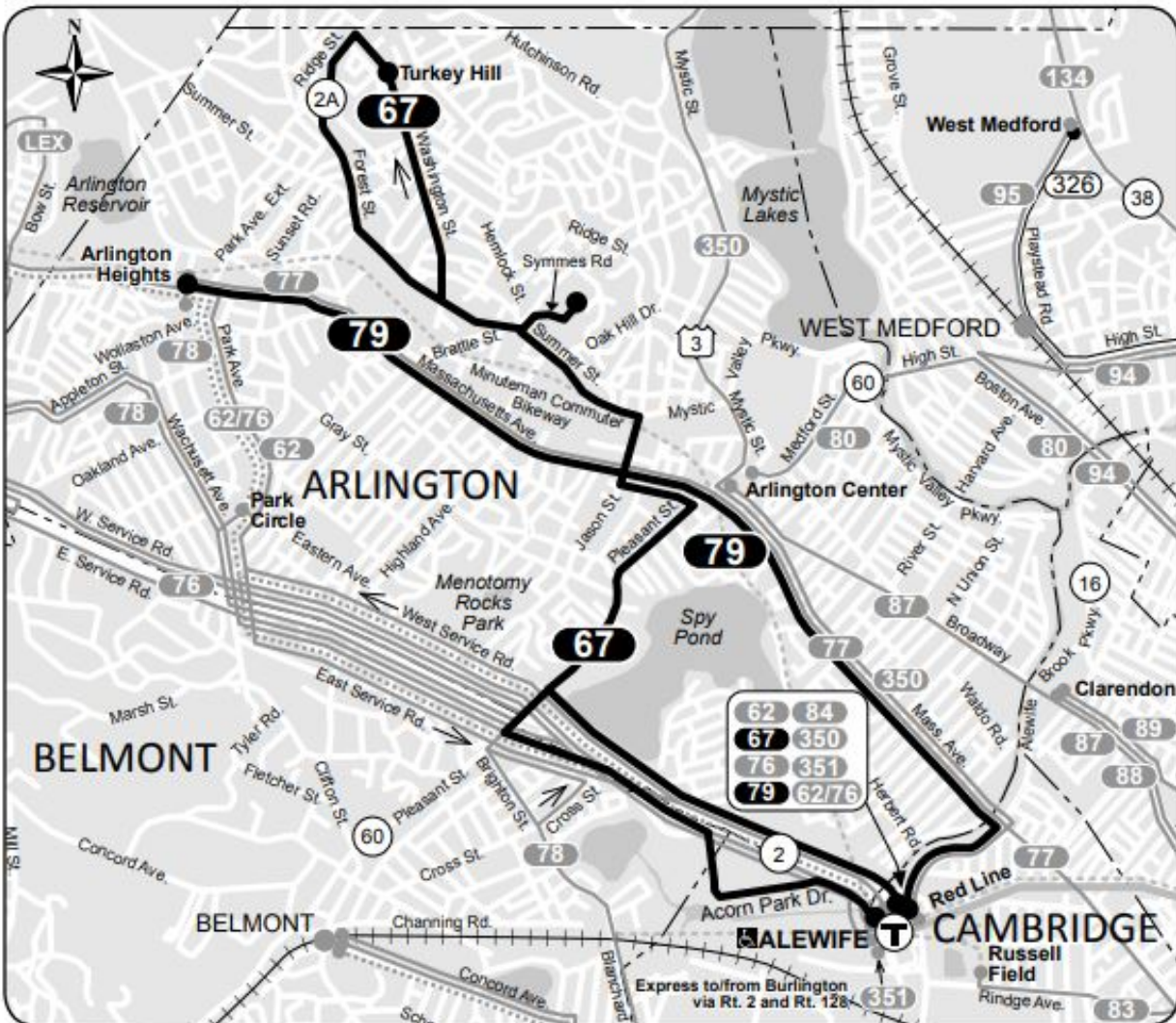
Route 79

Arlington Heights – Alewife Station

Route Overview

Route 79 Arlington Heights – Alewife Station is a Local route that operates weekday service between Arlington Heights and Alewife Station via Massachusetts Avenue and Alewife Brook Parkway (see Figure 1). It is very similar to Route 77 Arlington Heights-Harvard Station except that it operates to Alewife Station.

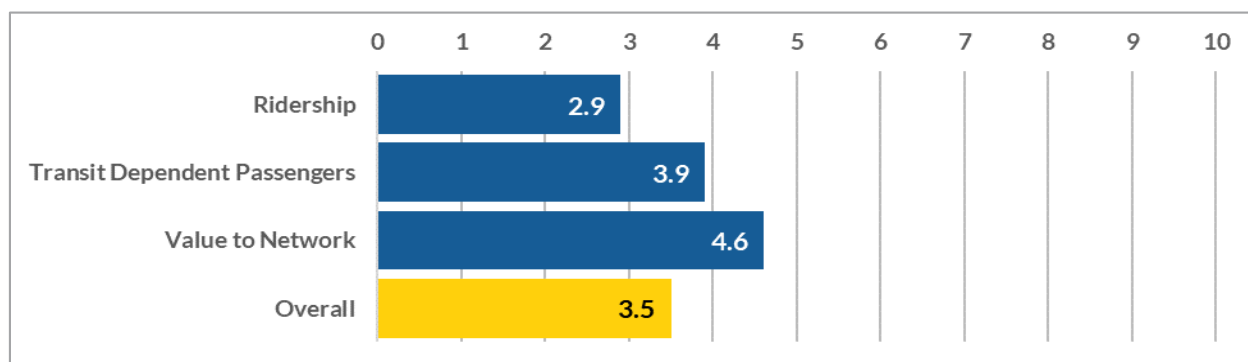
Figure 1 | Route 79 Service Map



Network Importance

Route 79 is of moderate importance to the overall network (see Figure 2). On a relative scale of 0 to 10, the route rates 2.9 in terms of ridership, 3.9 in terms of transit dependent ridership, and 4.6 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 3.5.

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



Service Overview

Schedule

Route 79 operates only on weekdays and provides infrequent service throughout most of the day (see Table 1). In more detail, service operates between 6:35 AM and 10:03 PM:

- Every 25 minutes from the beginning of service through 7:00 AM.
- Every 25 to 55 minutes between 7:00 AM and 9:00 AM, but mostly every 34 minutes.
- Every 30 to 55 minutes between 9:00 AM and 1:30 PM, but mostly every 45 minutes.
- Every five to 45 minutes during the Midday School period between 1:30 PM and 4:00 PM, but mostly every 20 minutes.
- Every 18 to 40 minutes during the PM Peak period between 4:00 PM and 6:30 PM, but mostly every 22 minutes.
- Every 20 to 45 minutes from 6:30 PM to the end of service at 10:03 PM, but mostly every 40 minutes.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:35 AM to 10:03 PM			31/29
Sunrise	-	-	-	-
Early AM	6:35 AM to 6:59 AM	25	25	1/0
AM Peak	7:00 AM to 8:59 AM	25 – 55	34	4/4
Midday Base	9:00 AM to 1:29 PM	30 – 55	45	6/6
Midday School	1:30 PM to 3:59 PM	5 – 45	20	8/6
PM Peak	4:00 PM to 6:29 PM	18 – 40	22	7/7
Evening	6:30 PM to 10:03 PM	20 – 45	40	5/6
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 79 fails to meet a number of MBTA service standards:

- Local routes serving high density areas should operate seven days a week whereas Route 79 only operates on weekdays. However, all Route 79 passengers are also served by Route 77.
- A significant amount of peak period service operates less frequently than the minimum standard of at least every 30 minutes.

Service Patterns

Most service operates the primary service pattern between Arlington Heights and Alewife Station as shown in Figure 1 (Pattern 79.0). Three inbound trips operate between Massachusetts Avenue at Appleton Street and Alewife Station that depart at 2:35 PM, 2:45 PM, and 2:55 PM (Pattern 79.1).

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				31	-	-
79.0	Arlington Heights	Alewife Station	Primary service pattern	28	-	-
79.1	Massachusetts Avenue at Appleton Street	Alewife Station	PM school trips	3	-	-
OUTBOUND				29	-	-
79.0	Alewife Station	Arlington Heights	Primary service pattern	29	-	-

Ridership

Route 79 carries 1,050 riders per weekday.

Ridership by Stop

Most riders use Route 79 to travel to and from the Red Line at Alewife Station. On weekday inbound trips (see Figure 3):

- 60 passengers board at the Arlington Heights Busway.
- 320 passengers board and 50 alight at the nine stops on Massachusetts Avenue before Arlington Center.
- 50 passengers board and 50 alight in Arlington Center.
- 90 passenger board and 120 alight at the eight stops on Massachusetts Avenue between Arlington Center and Alewife Brook Parkway.
- 310 passengers, or 72% of all inbound passengers, alight at Alewife Station. Those who transfer to the Red Line and are traveling to points inbound of Porter Station have travel times that are one minute longer than those who use Route 77 to connect with the Red Line at Porter Station. For the most part, it is likely that many inbound Route 79 riders use the route primarily when it arrives at their stop before a Route 77 bus, while outbound riders choose to use the service at Alewife. Some passengers may be traveling to or from work locations at Alewife as well as connections at Alewife to private shuttle services.

Outbound ridership is generally the reverse of inbound ridership.

Ridership by Trip

Ridership is very peak oriented. On weekday inbound trips (see Figure 4):

- Ridership ranges from 18 to 55 riders between 6:30 AM and 9:00 AM, with the highest ridership on the 7:30 AM trip.
- Midday ridership drops to about 10 riders per trip between 9:00 AM and 2:30 PM, before spiking on the three scheduled school trips at 2:35 PM (43 riders), 2:45 PM (37 riders), and 2:55 PM (22 riders).
- From 3:00 PM to 6:30 PM, ridership varies between 10 and 20 passengers per trip.
- After 6:30 PM, ridership is below five passengers on most trips.

On outbound trips (see Figure 5):

- The first two trips carry 38 and 28 passengers respectively. These are the highest ridership trips of the day, likely due to students going to Arlington High School.
- After those two trips and until just before 12:30 PM, ridership is very low, at fewer than 10 passengers per trip.

Figure 3 | Weekday Inbound Ridership by Stop Map

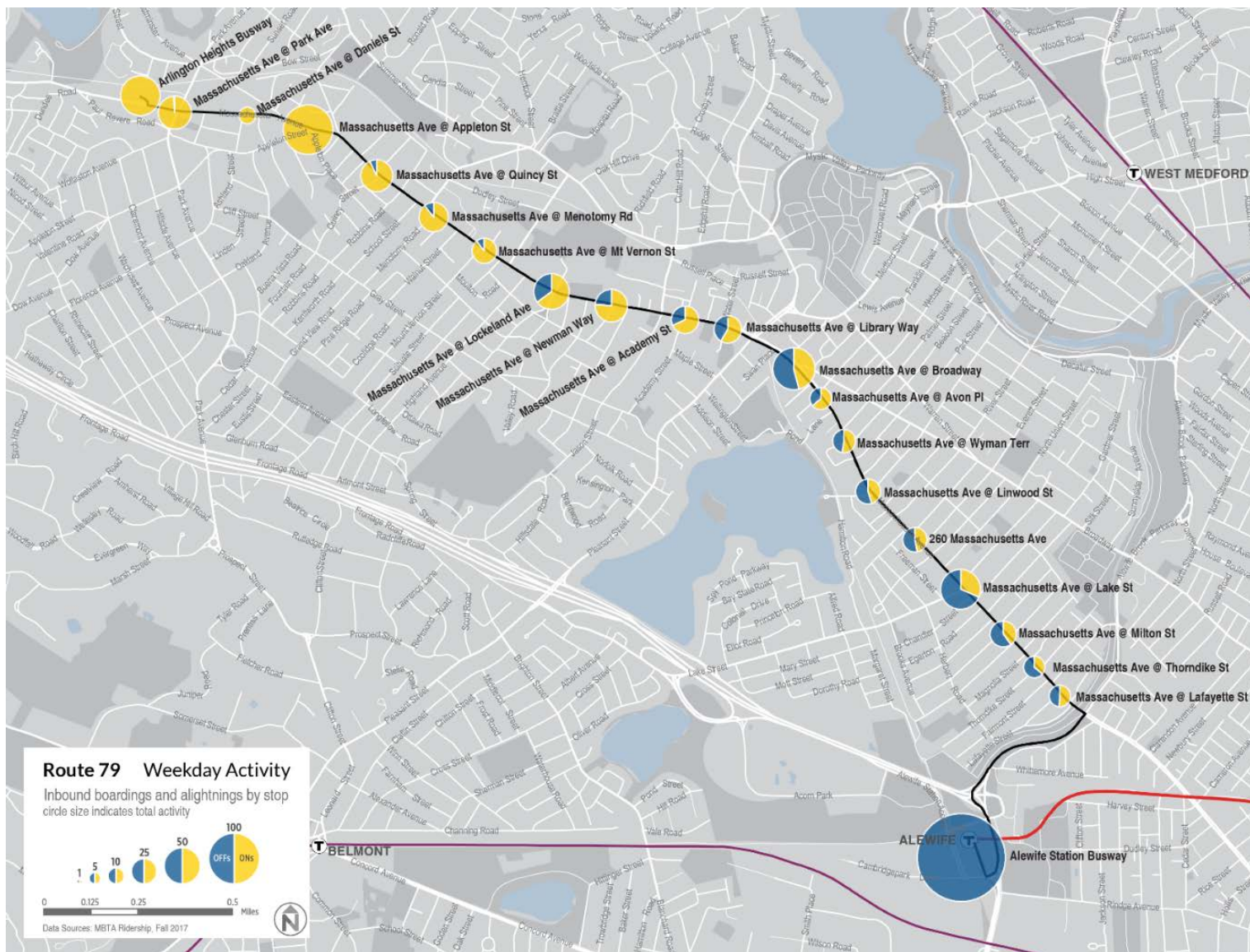


Figure 4 | Weekday Ridership by Trip: Inbound

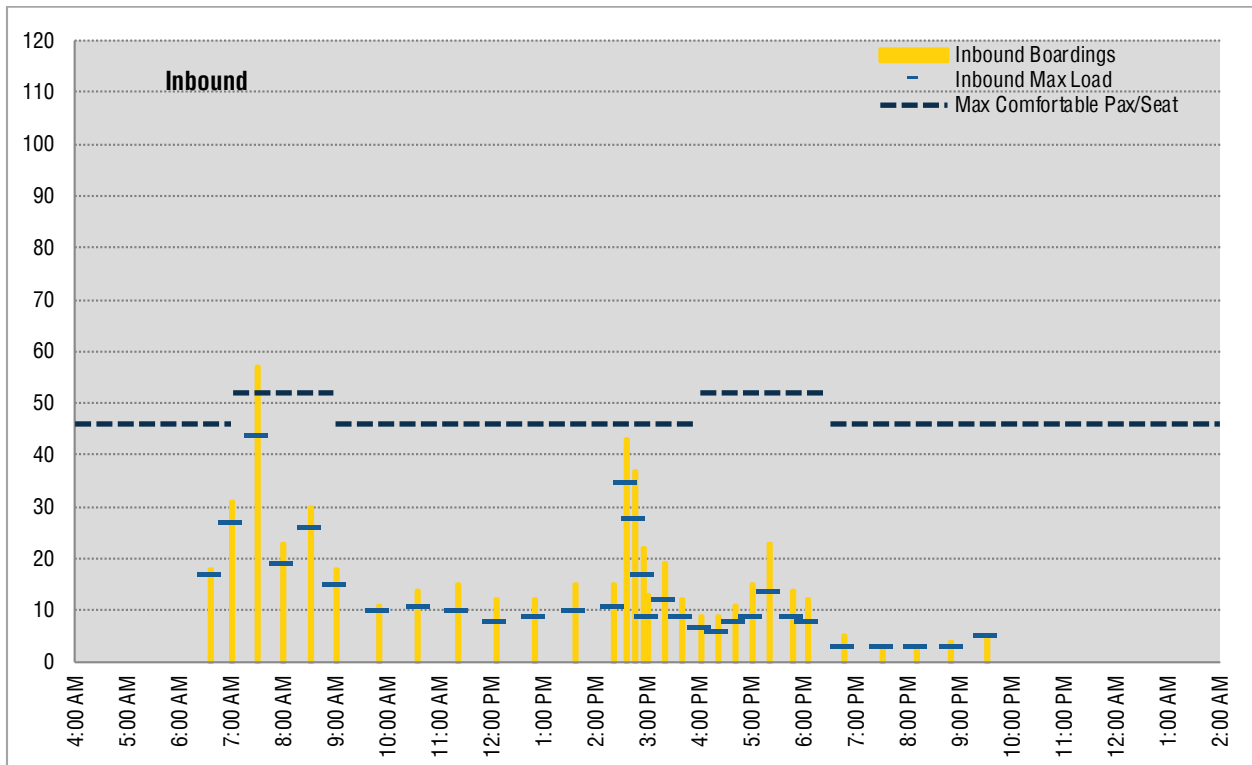
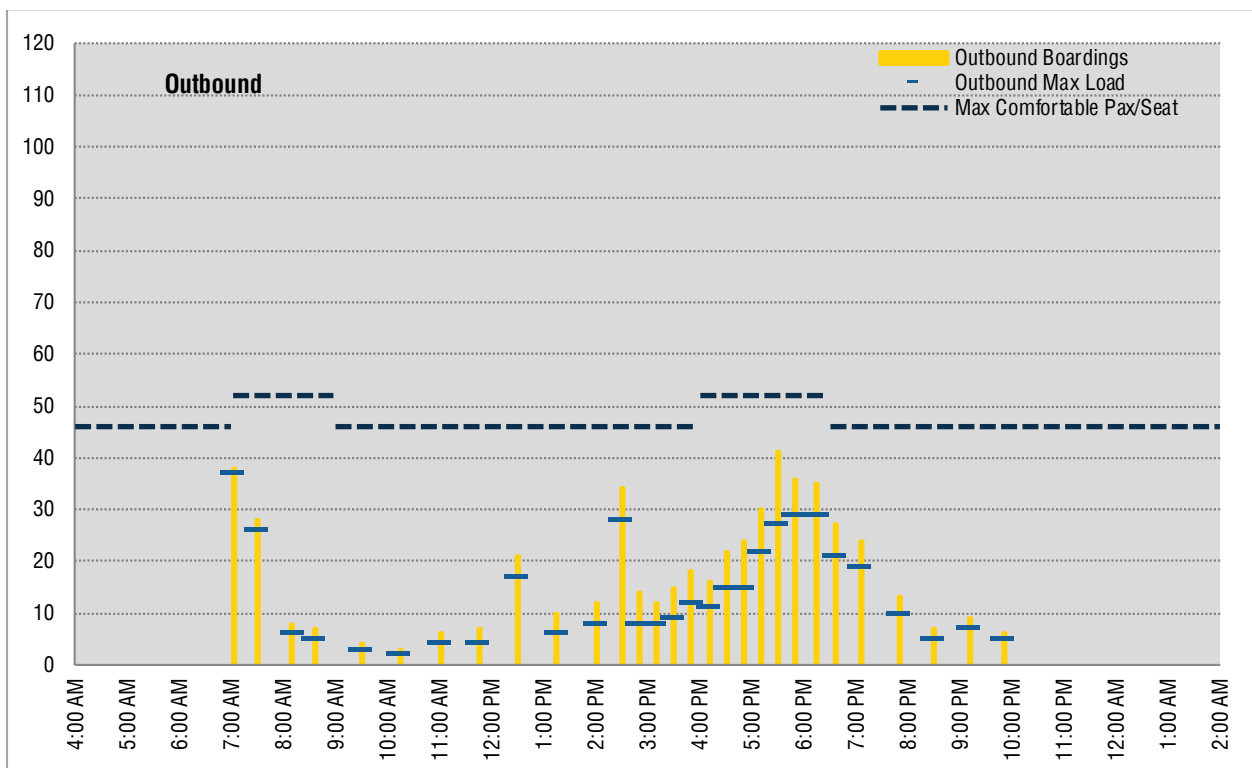


Figure 5 | Weekday Ridership by Trip: Outbound



- Ridership jumps to 20 passengers on the 12:30 PM trip, then drops back down below 10 passengers on all trips until 2:30 PM.
- There is then a spike to 34 riders on the 2:30 PM trip. This is also attributable to student ridership.
- From just before 3:00 PM to 5:30 PM, ridership increases steadily from 14 to 41 passengers per trip.
- Ridership then declines steadily to 13 passengers on the 7:50 PM trip and fewer than 10 passengers per trip after 8:00 PM.

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 79, 96% of passenger minutes are in comfortable conditions, which meets 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	96%	-	-

Reliability and Speed

Reliability

Route 79’s overall reliability is 71%, which is just above the minimum standard of 70% but below the target of 75%. However, dropped trips are a significant issue, with 3.4% of trips not run 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	70%	78%	71%	3.4%
Saturday	-	-	-	-
Sunday	-	-	-	-

Running Times

Actual running times on most trips are relatively close to scheduled running times, although slightly longer. The largest differences are in the peak periods when some trips run up to seven minutes longer (see Figure 6 and Figure 7).

Stop Spacing

Route 79 has approximately five stops per mile, which is within the MBTA's guideline of four to seven stops per mile in urban areas.

Figure 6 | Scheduled & Median Travel Time by Trip: Route 79 Inbound

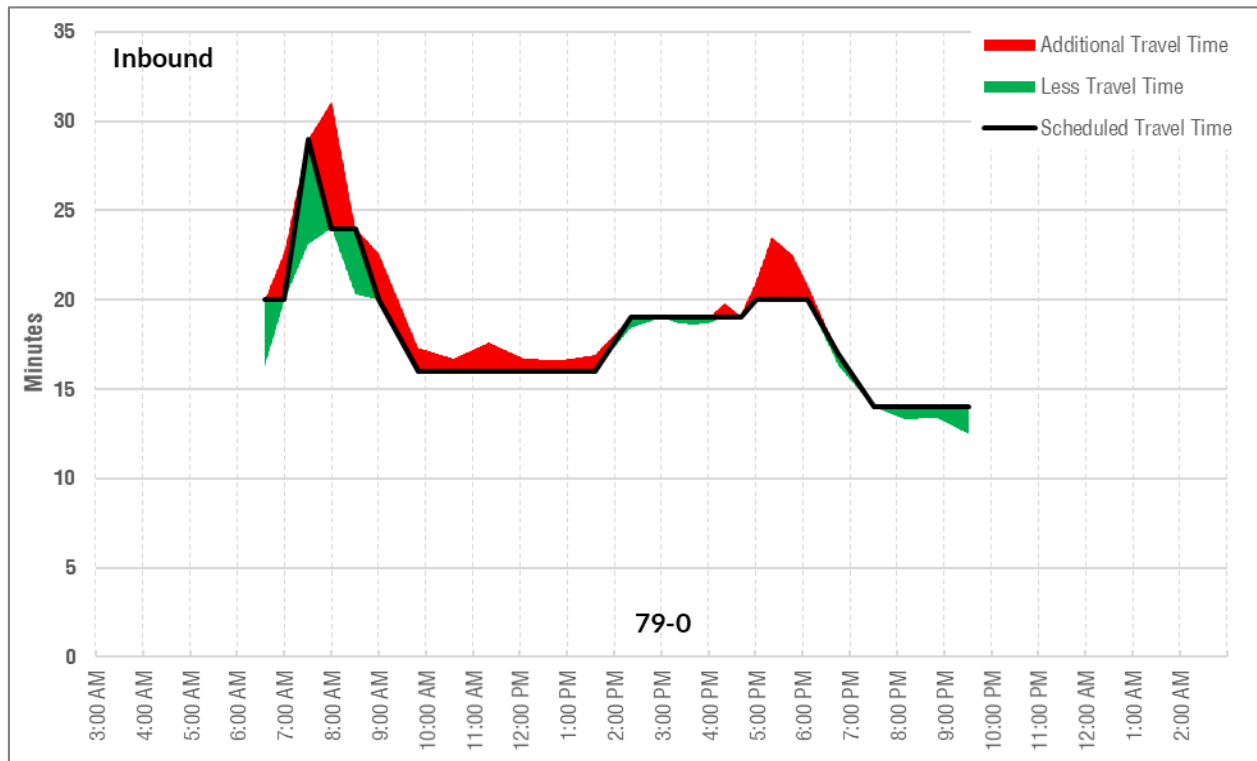
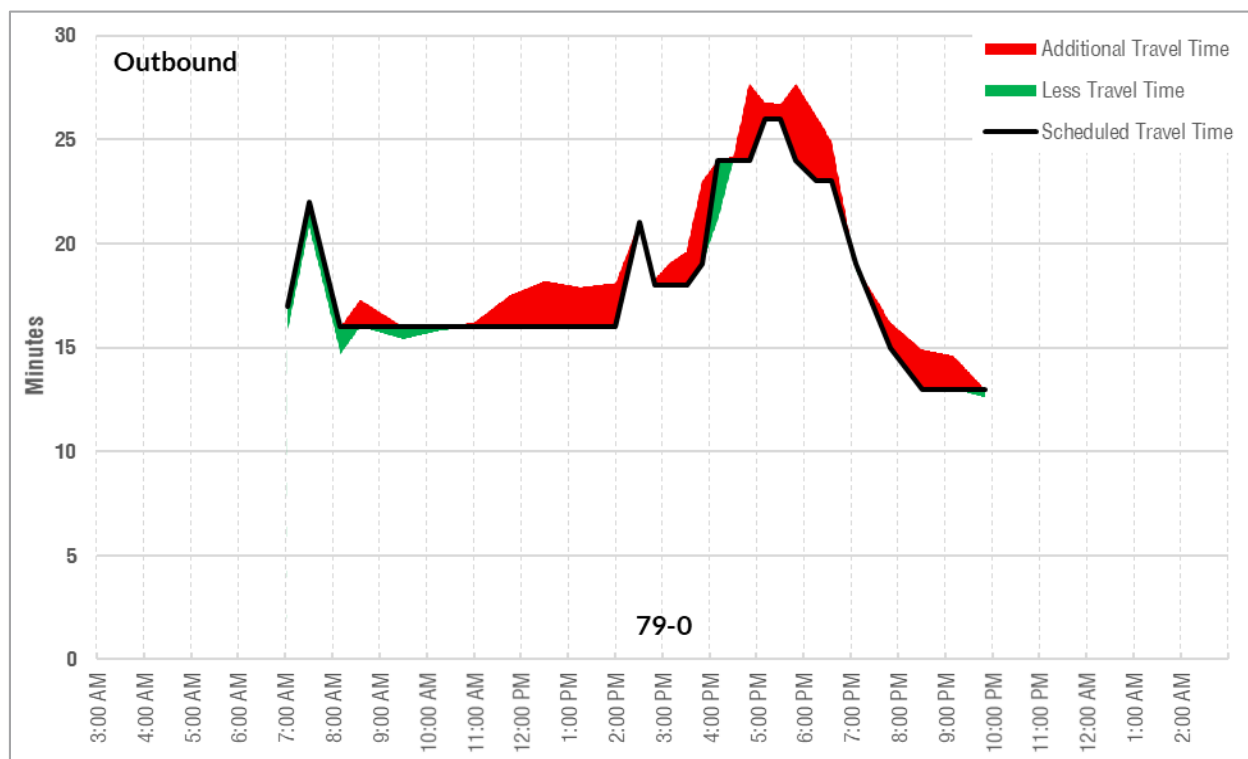


Figure 7 | Scheduled & Median Travel Time by Trip: Route 79 Outbound



Summary

Route 79 provides additional service to Route 77 along the Massachusetts Avenue corridor in Arlington. It provides a direct service to Alewife for nearby employment and connections to private shuttle services.

The route's major problem is its high percentage of dropped trips (over 3%). When it is necessary to drop trips, they are often taken from Route 79 because nearly all inbound riders are also served by Route 77, however outbound riders suffer from longer than scheduled frequencies when trips are dropped.