

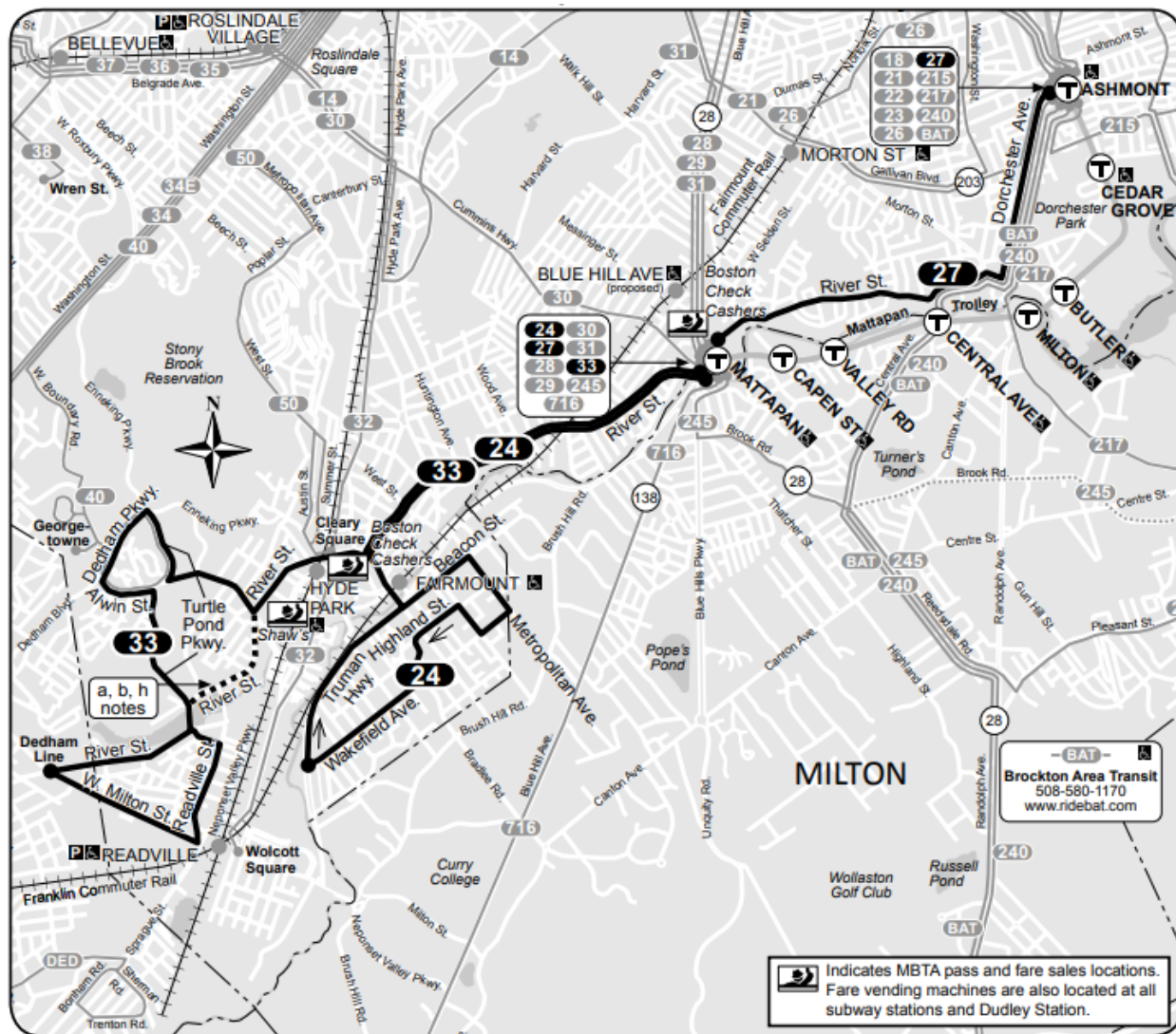
Route 27

Mattapan Station – Ashmont Station

Route Overview

Route 27 Mattapan Station – Ashmont Station is a Local route that primarily operates between Mattapan Station and Ashmont Station via River Street and Dorchester Avenue (see Figure 1). On weekday evenings and weekends, Route 27 is combined with Route 24 Wakefield Avenue & Truman Highway-Mattapan Station and operates between Hyde Park and Ashmont Station (as Route 24).

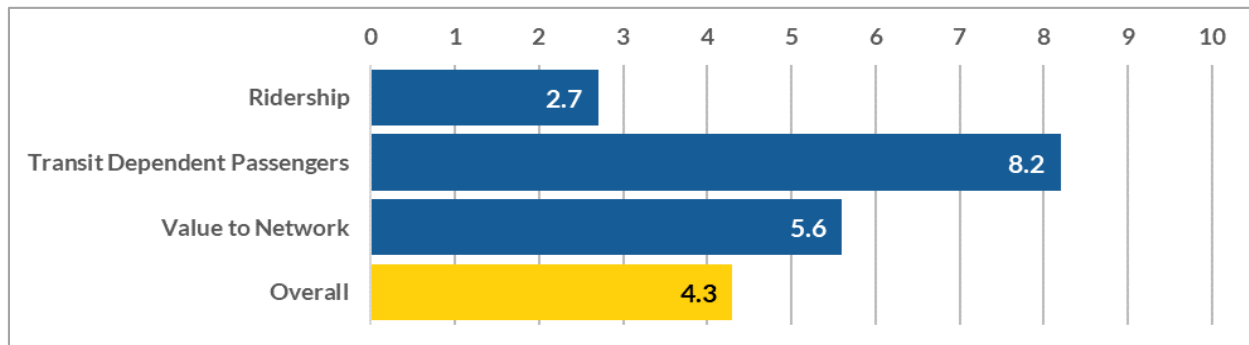
Figure 1 | Service Map



Network Importance

Route 27 is of moderate importance within the overall MBTA system (see Figure 2). On a relative scale of 0 to 10, the route rates 2.7 in terms of ridership, 8.2 in terms of transit dependent ridership, and 5.6 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 4.3.

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



Service Patterns

Schedule

Route 27 generally provides infrequent service on weekdays and Saturdays (see Table 1). On weekdays, including the evening service provided as Route 24, service operates from 5:15 AM to 12:47 AM:

- Every 30 minutes from the beginning of service through 1:30 PM.
- Every 14 to 35 minutes in the Midday School period, with an average frequency of 28 minutes.
- Every 30 to 35 minutes during the PM Peak period, but predominantly every 35 minutes.
- Every 30 to 65 minutes during the Evening period, but every 30 minutes from 6:30 PM to 7:30 PM and every 60 to 65 minutes from 7:30 PM to 10:00 PM. (This service operates as Route 24, which in the evening is a combination of Route 27 and Route 24 Wakefield Avenue & Truman Highway-Mattapan Station).
- Every 58 to 60 minutes during the Late Evening and Night periods, but mostly every 60 minutes. This service also operates as Route 24.

Table 1 | Schedule Statistics (Route 27 and Combined Route 24/27 Service)

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:15 AM to 1:04 AM			29/28
Sunrise	5:15 AM to 5:59 AM	30	30	2/1
Early AM	6:00 AM to 6:59 AM	30	30	2/2
AM Peak	7:00 AM to 8:59 AM	30	30	4/5
Midday Base	9:00 AM to 1:29 PM	30	30	9/9
Midday School	1:30 PM to 3:59 PM	14 – 35	28	5/5
PM Peak	4:00 PM to 6:29 PM	30 – 35	33	5/4
Evening	6:30 PM to 9:59 PM	30 – 65	49	5/5
Late Evening	10:00 PM to 11:59 PM	58 – 60	59	2/2
Night	12:00 AM to 1:04 AM	58	58	1/2
Saturday	5:40 AM to 1:04 AM	30 – 60	42	27/27
Sunday	9:35 AM to 8:55 PM	65	65	12/12

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

On Saturdays, service operates as Route 24 from 5:40 AM to 1:04 AM. Service operates every 30 to 60 minutes throughout the day. Most service operates every 40 minutes during the day, with 30-minute frequencies before 7:00 AM and 60-minute frequencies after 7:00 PM. On Sundays, service also operates as Route 24 and runs from 9:35 AM to 8:55 PM, operating every 65 minutes throughout the day.

When considered in combination with Route 24, Route 27 meets the MBTA’s span of service standards on all days. However, on weekdays during the PM, when trips operate up to 35 minutes apart, it does not meet the minimum standard of 30 minutes. In addition, it does not meet the frequency standard for Sundays, when service operates every 65 minutes versus the standard of 60 minutes (this service operates as Route 24).

Service Patterns

All Route 27 trips, which operate on weekdays during the day and early evening, operate in a consistent manner along River Street and Dorchester Avenue in both directions (see Table 2). On weekday evenings and weekends, service operates as a version of Route 24, which is a combination of Routes 24 and 27 that operates along Route 24’s alignment and then continues from Mattapan Station to Ashmont Station along the regular Route 27 alignment.

Since the development of this document, the MBTA has added an additional school trip to the Route 27 schedule.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				35	26	12
27.0	Mattapan Station	Ashmont Station	Primary pattern	29	-	-
24.2	Truman Highway at Wakefield Avenue	Ashmont Station	Evening and weekend combination of Routes 24 and 27	6	26	12
OUTBOUND				34	26	12
27.0	Ashmont Station	Mattapan Station	Primary pattern	28	-	-
24.2	Ashmont Station	Truman Highway at Wakefield Avenue	Evening and weekend combination of Routes 24 and 27	6	26	12

Ridership

Route 27 carries 810 passengers during the day and early evening on weekdays. Evening service on Route 24 serves 130 passengers along Route 27’s alignment, meaning that total weekday ridership between Mattapan Station and Ashmont Station is 940 passengers. Saturday ridership on Route 24 between Mattapan Station and Ashmont Station is 730 passengers, and Sunday ridership is 300 passengers.

Ridership is low, in large part, due to overlap from other routes:

- Route 240 Avon Line-Ashmont Station, which operates along the same alignment between River Street at Central Avenue (near the Mattapan High Speed Line’s Central Avenue Station) and Ashmont Station.
- Route 217 Quincy Center Station-Ashmont Station, which operates along the same alignment between the intersection of Dorchester Avenue at Adams Street and Ashmont Station.

With these two routes operating along much of the same alignment, the only unique service that Route 27 provides is along a 1.2 mile segment of River Street between Mattapan Station and Central Avenue.

Some of Route 27’s ridership also comes from its function as a relief route for Mattapan Line customers when the rail line is experiencing operational disruptions. As a result, it is possible that Route 27’s day-to-day ridership varies significantly.

Ridership by Stop

Most Route 27 ridership is to and from Mattapan Station and Ashmont Station. On weekday inbound trips (see Figure 3):¹

- 180 passengers, or 41% of all inbound riders, board at Mattapan Station.
- 250 passengers board and 130 alight at the 17 stops between Mattapan Station and Ashmont Station. The highest ridership at any given stop is fewer than 50 boardings, and most stops have fewer than 20.
- 300 passengers, or 71% of all inbound riders, alight at Ashmont Station.

Ridership by Trip

Route 27 carries very light loads on all trips, with 20 or fewer passengers on nearly all trips in both directions (see Figure 4 and Figure 5). On weekday inbound trips:

- From the start of service until 6:45 AM, typical loads are about 20 passengers per trip.
- The highest passenger load occurs on the 6:45 AM inbound trip, with 28 passengers, just before the start of the AM peak.
- Ridership drops to seven to 15 riders per trip between 8:00 AM and 5:00 PM.
- Ridership then drops further to below 10 riders per trip after 5:00 PM.

On weekday outbound trips (see Figure 5):

- Ridership averages fewer than 10 passengers per trip on the first two trips, at 5:30 AM and 6:00 AM.
- It then increases to around 12 to 15 passengers per trip during the 6:30 AM and 7:00 AM trips.
- Between 7:30 AM and 3:00 PM, ridership per trip is generally below 10 passengers per trip.
- Between 3:00 PM and the end of service, most trips carry 10 to 17 passengers.

¹ For ridership information between Mattapan Station and Ashmont along River Street on weekday evenings and weekends, see the Route 24 route profile.

Figure 3 | Weekday Inbound Ridership by Stop Map

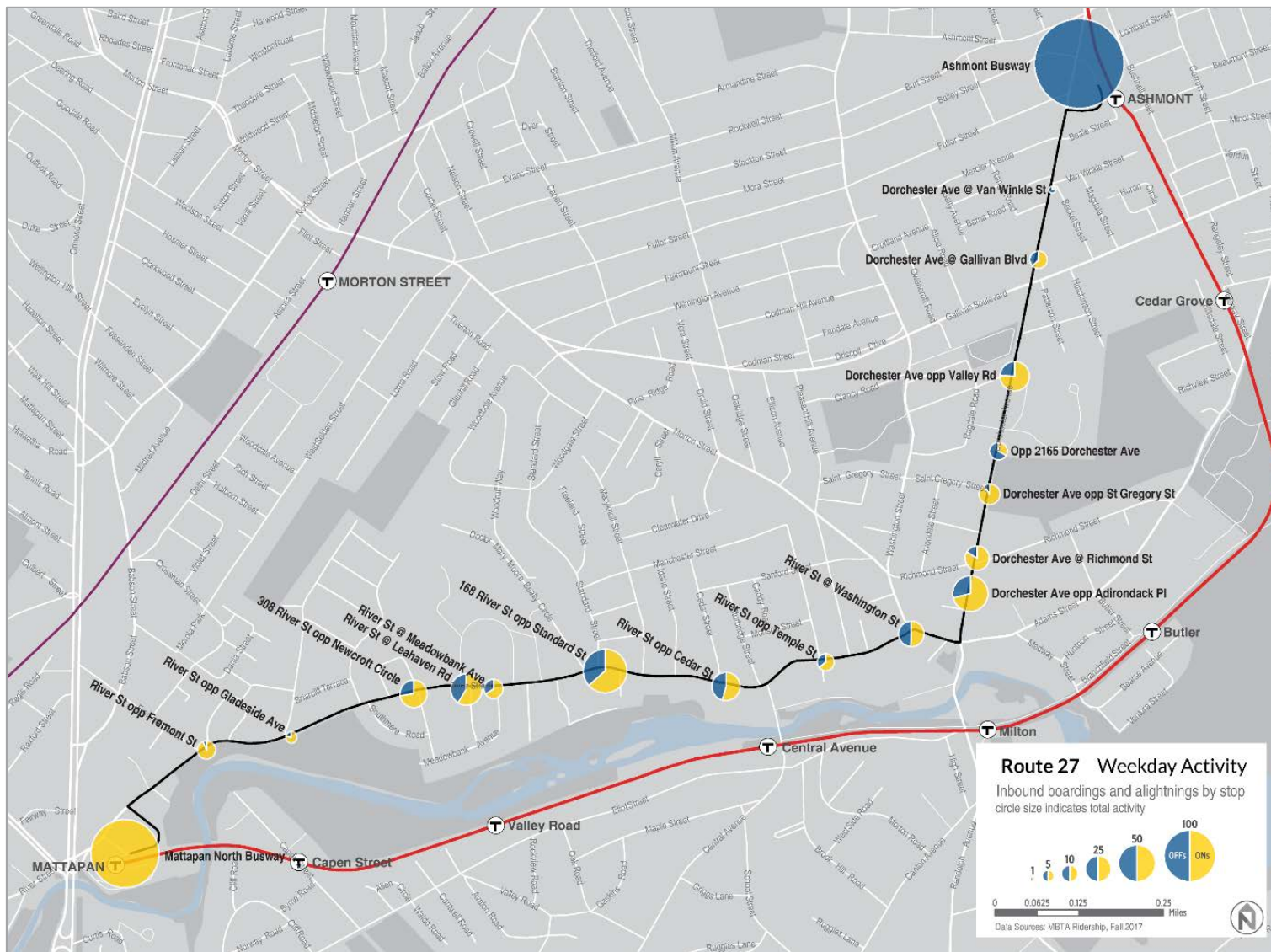


Figure 4 | Weekday Ridership by Trip: Inbound

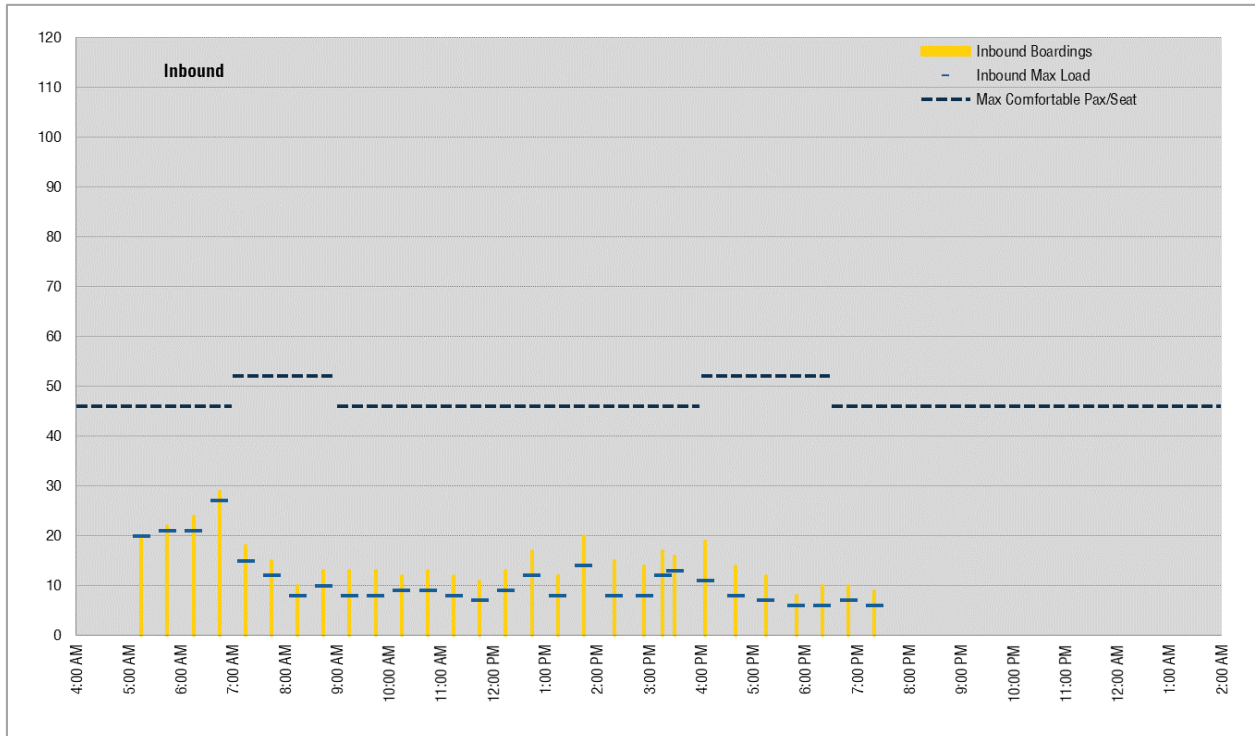
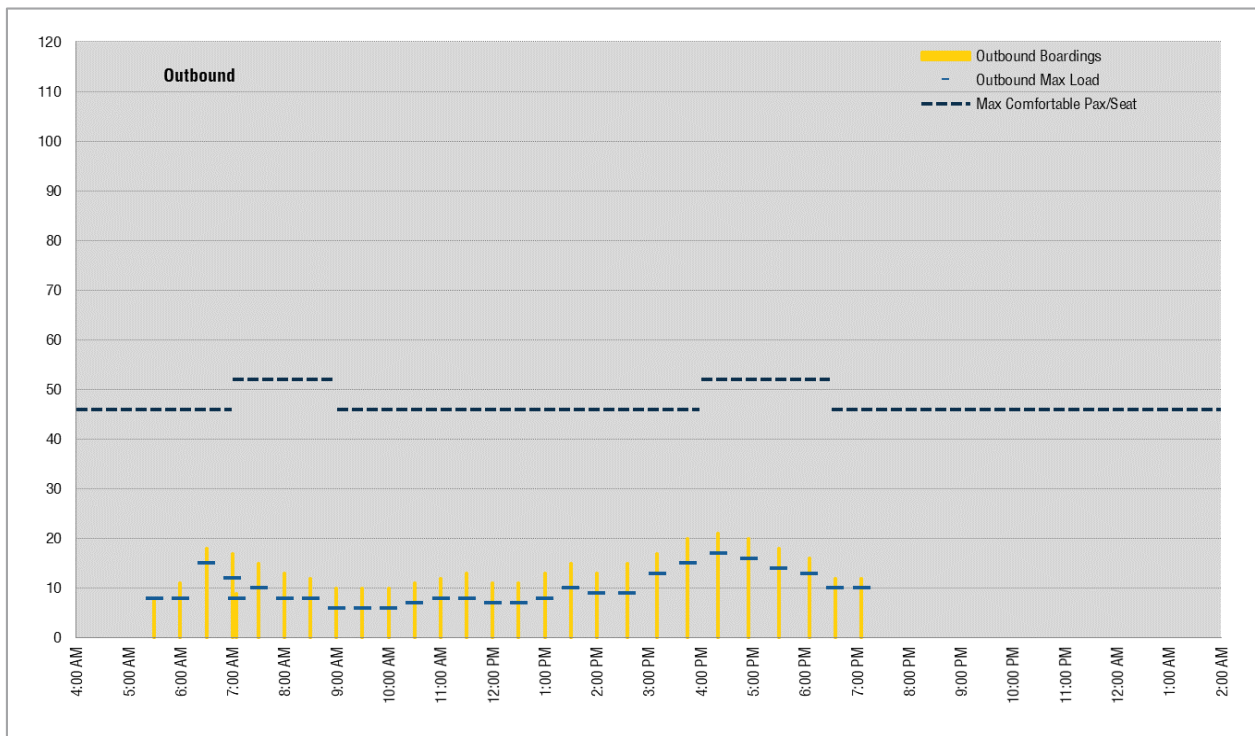


Figure 5 | Weekday Ridership by Trip: Outbound



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. 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 27, 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 27's reliability is very poor, with overall on-time performance at only 55%, which is well below the MBTA's minimum standard of 70% for Local routes (see Table 4). Dropped trips are also an issue, with 0.4% of trips dropped in Fall 2017.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	55%	55%	55%	0.4%
Saturday	-	-	-	-
Sunday	-	-	-	-

Running Times

One cause of Route 27's poor on-time performance is that actual running times are longer than scheduled running times (see Figure 6 and Figure 7). However, the differences are smaller than on many other routes, with actual running times generally longer by one to three minutes.

Figure 6 | Scheduled & Median Travel Time by Trip: Route 27 Inbound

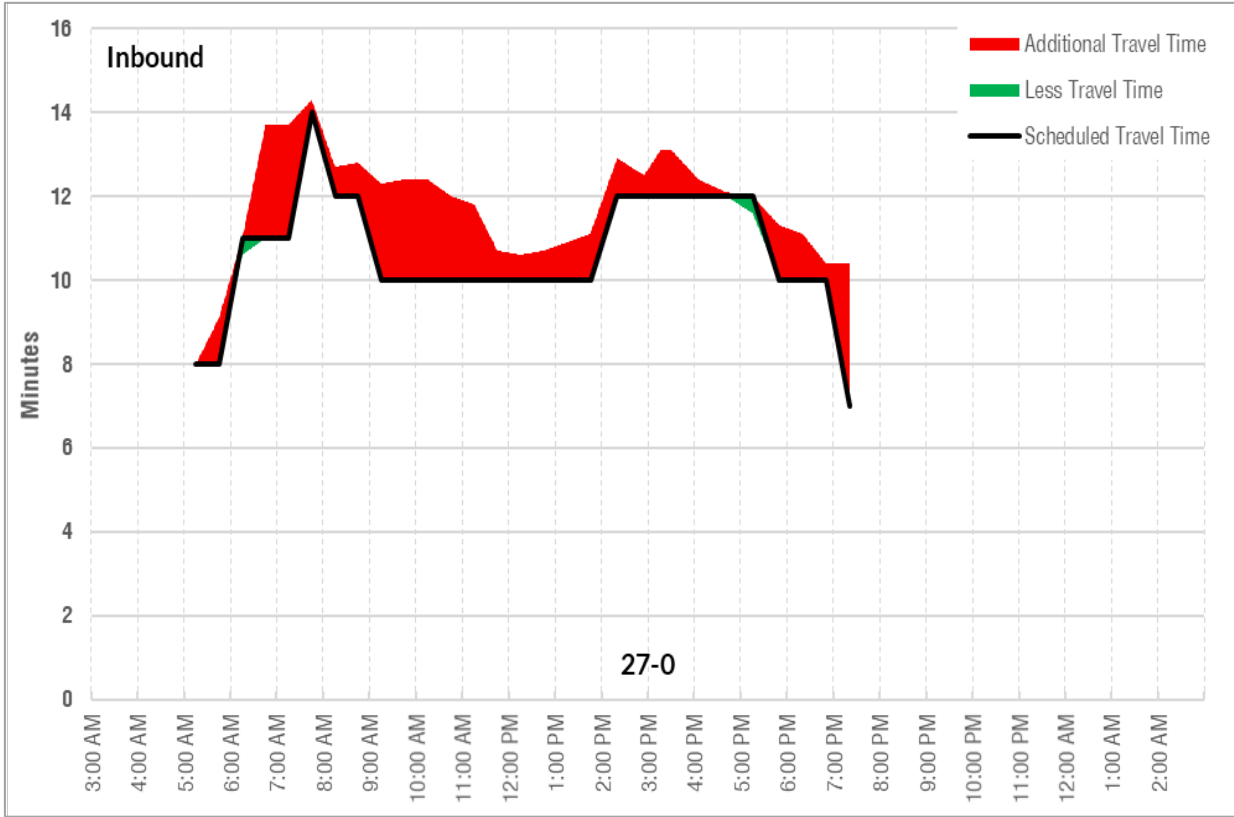
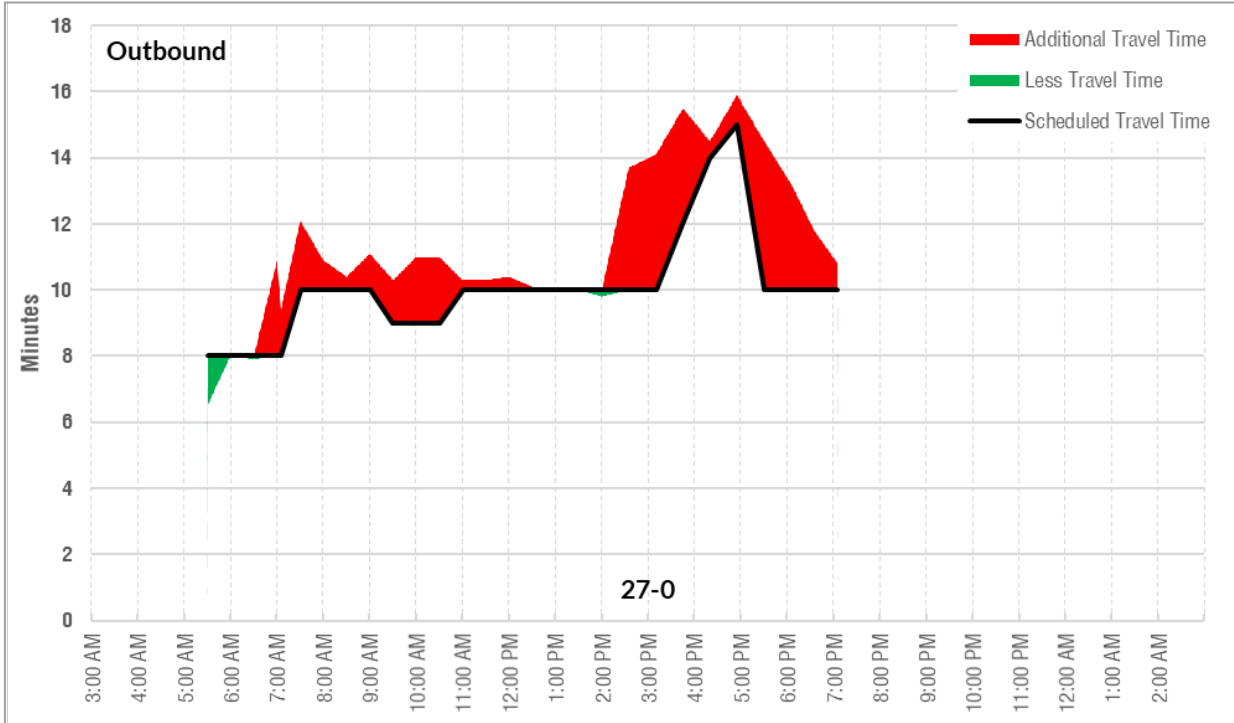


Figure 7 | Scheduled & Median Travel Time by Trip: Route 27 Outbound



Stop Spacing

Route 27 has an average of 7.8 stops per mile between Ashmont Station and Mattapan Station, which is in excess of the four to seven stops per mile recommended for urban areas under MBTA guidelines. The following stops are spaced especially closely:

- Three inbound stops on River Street, at Newcroft Circle, Leahaven Road, and Meadowbank Avenue, are spaced an average of 250 feet apart.
- Three outbound stops on Dorchester Avenue, at St. Gregory Street, Mother Julia Road, and Richmond Street, have average stop spacing of about 200 feet.

Stop consolidation could make service faster and improve reliability.

Summary

Route 27 provides a very limited amount of unique service (along River Street between Mattapan Station and Central Avenue). As a result of duplication with other routes and limited demand in its service area, ridership is low.