

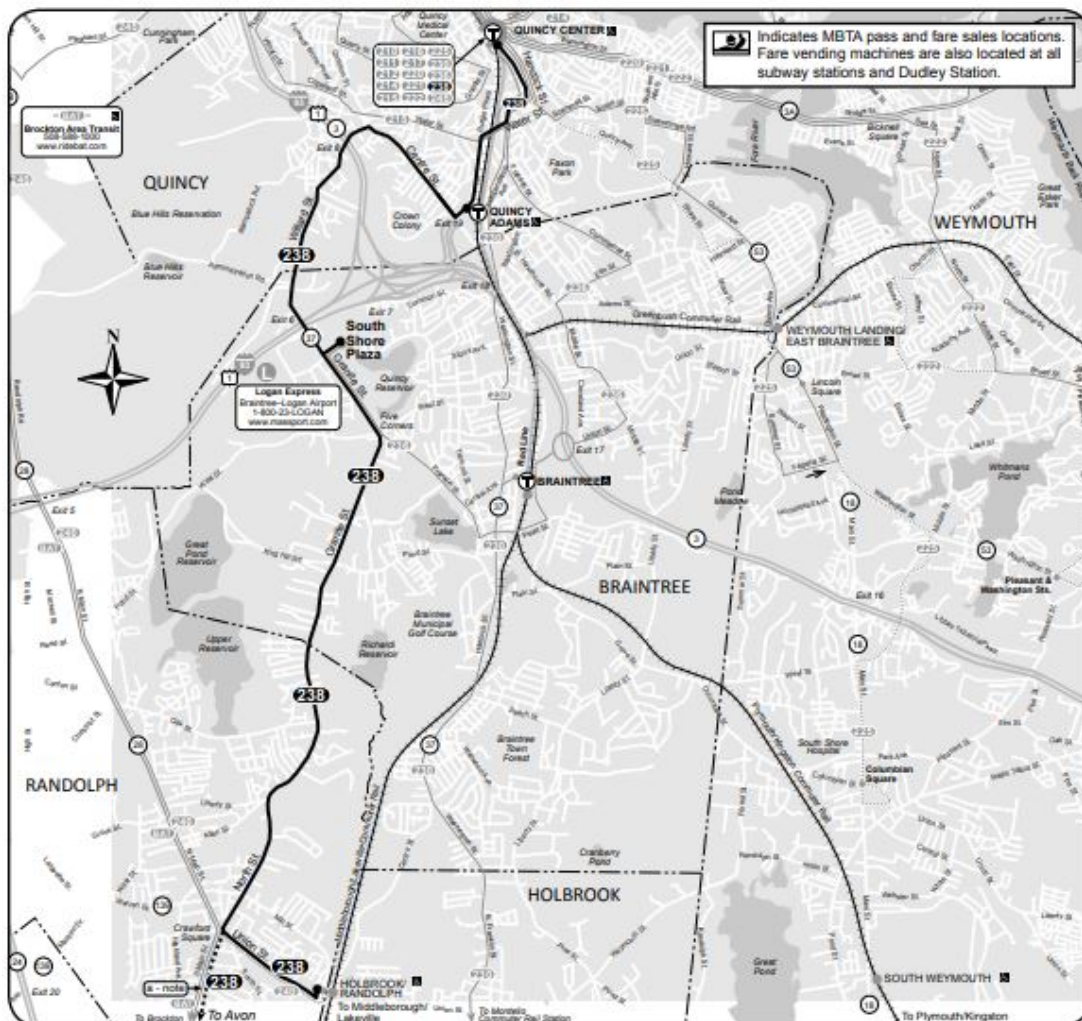
Route 238

Holbrook/Randolph Commuter Rail Station – Quincy Center Station

Route Overview

Route 238 Holbrook/Randolph Commuter Rail Station – Quincy Center Station is a local route that connects the Holbrook/Randolph Commuter Rail Station to Quincy Center Station, via South Shore Plaza and Quincy Adams Station (see Figure 1). Route 238 is one of two MBTA bus routes that connect Randolph to the Red Line, along with Route 240 Avon Square-Ashmont Station. It operates seven days per week.

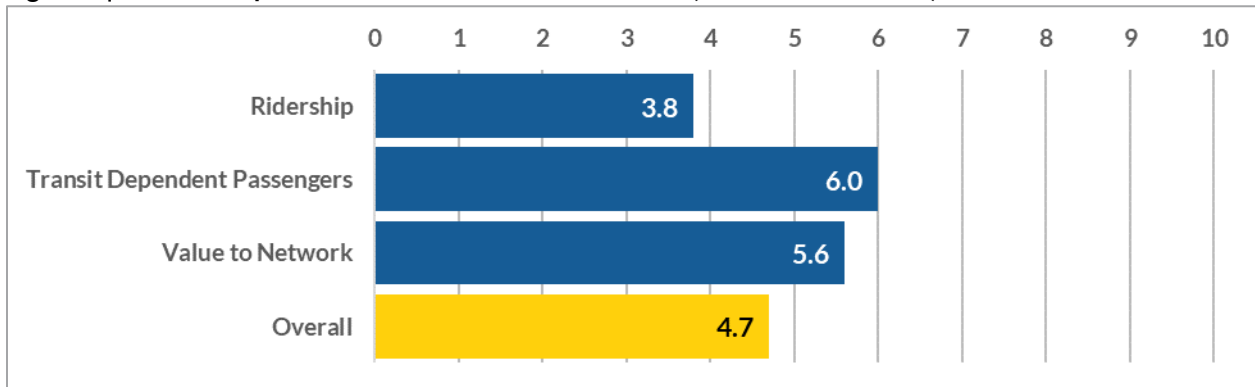
Figure 1 | Route 238 Service Map



Network Importance

Route 238 is moderately important to the overall network (see Figure 2). On a relative scale of 0 to 10, the route rates 3.8 in terms of ridership, 6.0 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% weighting to overall ridership and a 15% weight to both other measures, is 4.7.

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



Service Overview

Schedule

Route 238 provides infrequent weekday peak service and very infrequent weekday off-peak and weekend service (see Table 1). On weekdays, the route operates from 5:17 AM to 11:28 PM with the following frequencies:

- One sunrise round trip, departing outbound at 5:17 AM and returning inbound at 5:40 AM
- Every 25-30 minutes between 6:00 AM and 9:30 AM
- Inbound trips depart every 55-65 minutes from about 9:30 AM to 5:30 PM. Outbound trips run at similar frequencies from about 9:30 AM to 3:15 PM.
- From 3:15 PM to 7:15 PM, outbound trips run every 25-40 minutes. Inbound trips operate similar frequencies from 5:30 PM to 8:00 PM.
- From 8:00 PM to the end of service, both inbound and outbound trips depart about hourly.

On Saturdays, outbound service begins at 5:15 AM and inbound service begins at 7:27 AM, with service continuing until 11:31 PM. Trips depart about hourly – except between 2:15 PM and 3:15 PM, when outbound trips depart every half hour. On Sundays, outbound service begins at 6:30 AM and inbound service begins at 8:00 AM,

and with service continuing until 11:32 PM. Inbound trips depart every 75 minutes, while outbound trips depart every 60-80 minutes, but mostly every 75 minutes.

Route 238 meets the MBTA span of service guidelines for local routes on both weekdays and weekends. The route fails the frequency guidelines on all service days, specifically:

- Several weekday midday and evening trips depart more than 60 minutes apart, violating the weekday off-peak frequency guidelines for local routes.
- Several trips on Saturdays depart more than 60 minutes apart, violating the weekend frequency guidelines.
- All but one Sunday trip pair departs more than 60 minutes apart, violating the weekend frequency guidelines.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:17 AM to 11:26 PM			24/25
Sunrise	5:17 AM to 5:59 AM	1 trip	1 trip	1/1
Early AM	6:00 AM to 6:59 AM	20 - 53	25	2/3
AM Peak	7:00 AM to 8:59 AM	25 - 60	35	5/3
Midday Base	9:00 AM to 1:29 PM	45 - 65	60	4/4
Midday School	1:30 PM to 3:59 PM	25 - 65	50	3/4
PM Peak	4:00 PM to 6:29 PM	25 - 55	35	3/5
Evening	6:30 PM to 9:59 PM	25 - 65	50	4/4
Late Evening	10:00 PM to 11:26 PM	60 - 63	60	2/1
Night	-	-	-	-
Saturday	5:15 AM to 11:31 PM	30 - 65	60	17/19
Sunday	6:30 AM to 11:02 PM	60 - 80	70	13/14

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

Service Patterns

Pattern 238.9 is the primary service pattern, and operates between the Holbrook/Randolph Commuter Rail Station and Quincy Center Station via South Shore Plaza and Quincy Adams Station. This pattern runs primarily on Union Street, North Street, Granite Street, Willard Street, Centre Street, Burgin Parkway, and Hancock Street. All weekday trips run the primary service pattern – with the exception of the first outbound trip, one midday outbound trip, and most evening trips in both directions.

Route 238 also has three secondary patterns that operate almost exclusively on weekends (see Table 2):

- Pattern 238.7 runs three weekday trips, all Saturday trips, as well as all Sunday inbound trips before 3:30 PM and Sunday outbound trips after 1:40 PM. This pattern runs on a slightly shortened route that begins or ends at Crawford Square, rather than the Holbrook/Randolph Commuter Rail Station.
- Pattern 238.3 runs Sunday inbound trips after 3:30 PM and outbound trips between 7:30 AM and 1:40 PM, and the first weekday outbound trip of the day. The pattern begins at Avon Square, rather than the Holbrook/Randolph Commuter Rail Station. These trips supplant Route 240 Avon Square-Ashmont Station service in one direction between Avon Square and Crawford Square, which does not operate in both directions during these periods. Equipment is shared with Route 240 during these periods.
- Pattern 238.5 makes the first outbound trip each Sunday, and omits Quincy Adams Station and South Shore Plaza, and terminates at Crawford Square.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				24	17	13
238.3	Avon Square (East Main Street at West Main Street)	Quincy Center Station	Extended alignment to Avon Square	-	-	7
238.7	Crawford Square (North Street at Union Street)	Quincy Center Station	Short turn at Crawford Square	3	17	6
238.9	Holbrook/Randolph Commuter Station	Quincy Center Station	Primary pattern	21	-	-
OUTBOUND				25	19	14
238.3	Quincy Center Station	Avon Square (East Main Street at West Main Street)	Extended alignment to Avon Square	1	-	5
238.5	Quincy Center Station	Crawford Square (North Street at Union Street)	Short turn at Crawford Square; Omits Quincy Adams Station and South Shore Plaza	-	-	1
238.7	Quincy Center Station	Crawford Square (North Street at Union Street)	Short turn at Crawford Square	5	19	8
238.9	Quincy Center Station	Holbrook/Randolph Commuter Station	Primary pattern	19	-	-

Ridership

Route 238 carries about 1,750 riders on weekdays, 1,000 riders on Saturdays, and 600 riders on Sundays.

Ridership by Stop

Most passengers use Route 238 to access the Red Line and South Shore Plaza from residential neighborhoods in Randolph and South Quincy. On weekday inbound trips (see Figure 3):

- 372 passengers board and 50 passengers alight at the 22 stops within Randolph on Union Street and North Street. Half of these boardings occur at Crawford Square (North Street at Union Street). A further 20% of boardings occur at two other stops, the Holbrook/Randolph Commuter Rail Station and North Street opposite Liberty Street.
- 69 passengers board and 39 passengers alight at nine stops in South Quincy south of South Shore Plaza on Pond Street and Granite Street.
- 138 passengers board and 95 passengers alight at South Shore Plaza.
- 241 passengers board and 165 passengers alight at the 19 stops between South Shore Plaza and Quincy Adams Station. This part of the route serves both office parks and residential neighborhoods. About 75% alightings occur at the two stops before Quincy Adams Station.
- 17 passengers board and 339 passengers alight at Quincy Adams Station, the first opportunity to transfer to the Red Line from Route 238.
- 42 passengers board and 84 passengers alight at the seven stops between Quincy Adams Station and Quincy Center Station.
- 246 passengers alight at Quincy Center Station.

Trips to and from South Shore Plaza comprise a greater proportion of weekend trips than weekday trips. Otherwise, Route 238 ridership patterns are similar on weekdays and weekends.

Ridership by Trip

Route 238 has relatively strong ridership for a route with low frequency service, especially on weekdays. This pattern results in numerous trips with very high passenger loads compared to other suburban routes in the MBTA bus network.

On weekdays, inbound ridership is strong from the start of service until the middle of the PM Peak, and then decreases towards the end of service (see Figure 4 and Figure 5):

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- Trips during early morning and the AM peak all serve over 40 passengers, with the 6:40 AM trip serving 82 passengers and exceeding the MBTA passenger comfort standard.
 - Midday trips between 9:30 AM and 1:30 PM also have strong ridership for a suburban service, with most trips serving between 35 and 40 passengers.
 - Ridership again increases during the late afternoon, with trips serving between 45 and 60 passengers, though service is less frequent than during the morning.
 - Evening trips have lower ridership, generally between 10 and 25 passengers.

Weekday outbound ridership is stronger during PM peak than the AM peak, reflecting traditional commuting patterns. Otherwise, ridership patterns are similar to weekday inbound service

On Saturdays (see Figure 6 and Figure 7), inbound ridership is relatively consistent throughout service, with most trips serving between 20 and 30 passengers. Outbound ridership is stronger, with higher ridership during midday service. Trips between 12:00 PM and 3:00 PM serve between 40 and 60 passengers, and likely often have standing passengers.

Sunday ridership is consistent throughout service in both directions, with most trips serving between 20 and 30 passengers (Figure 8 and Figure 9). Ridership is weaker at the beginning and end of service in both directions, and one inbound trip at 6:00 PM serves about 45 passengers on average.

Figure 3 | Weekday Inbound Ridership by Stop Map

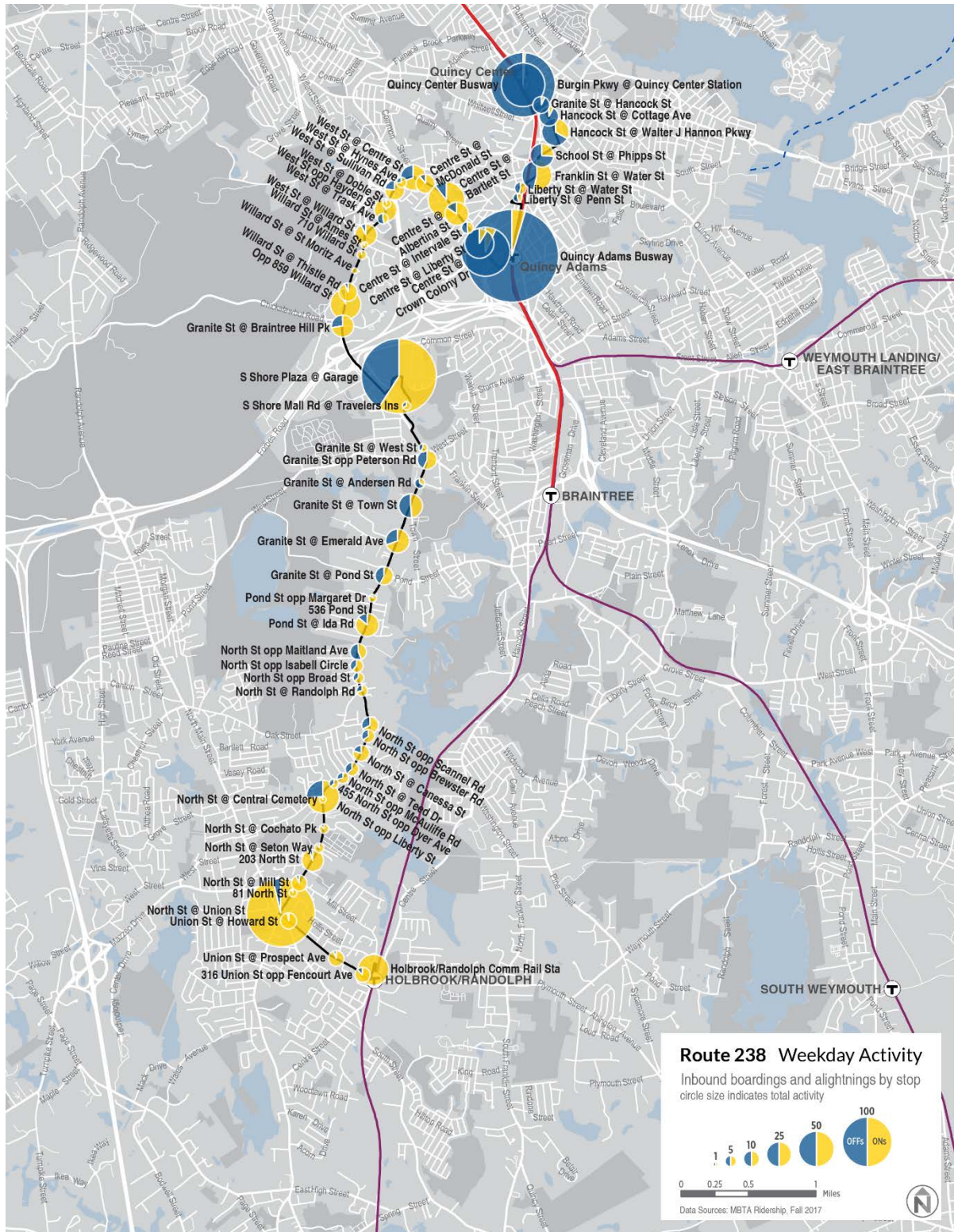


Figure 4 | Weekday Ridership by Trip: Inbound

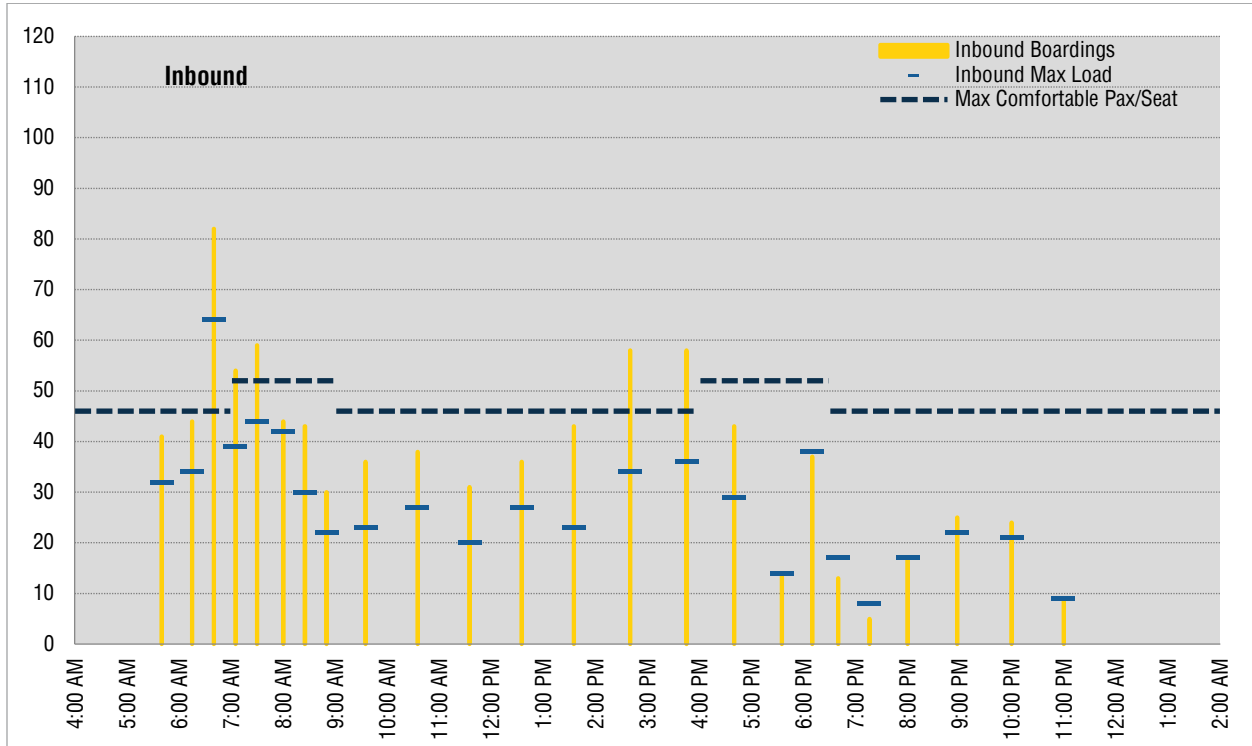


Figure 5 | Weekday Ridership by Trip: Outbound

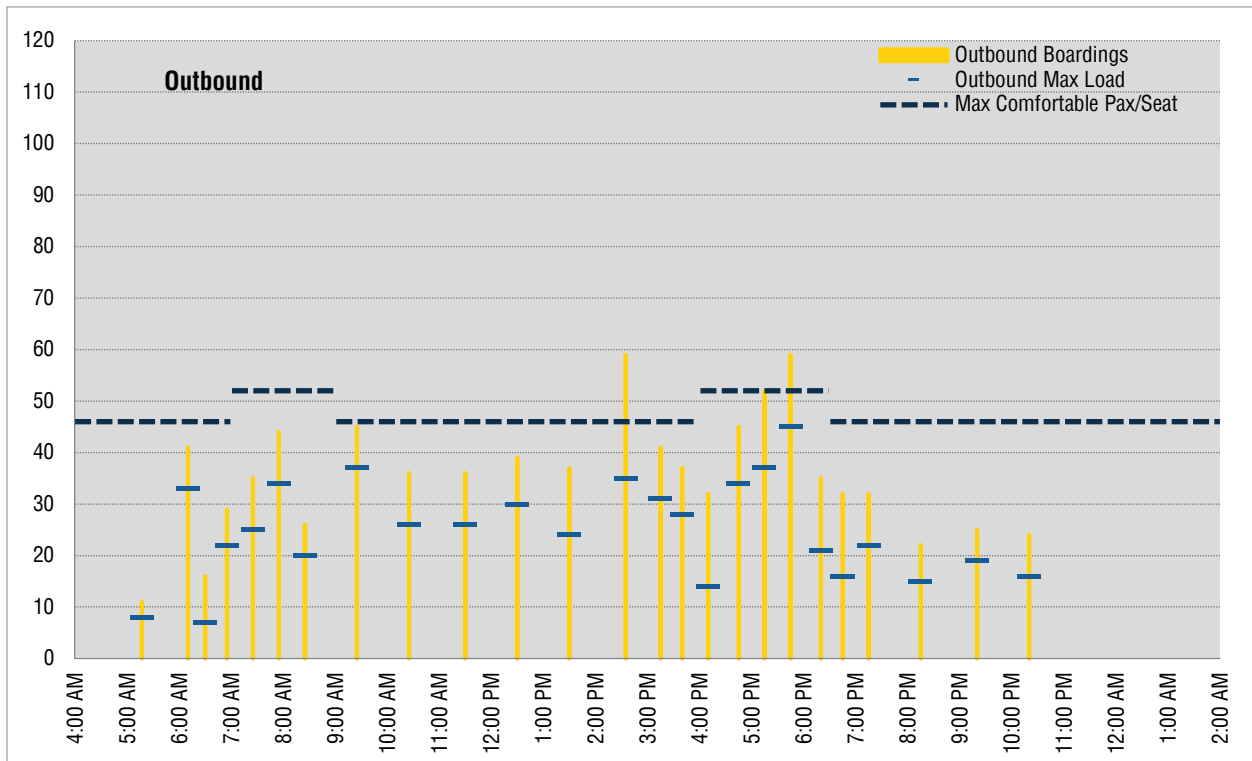


Figure 6 | Saturday Ridership by Trip: Inbound

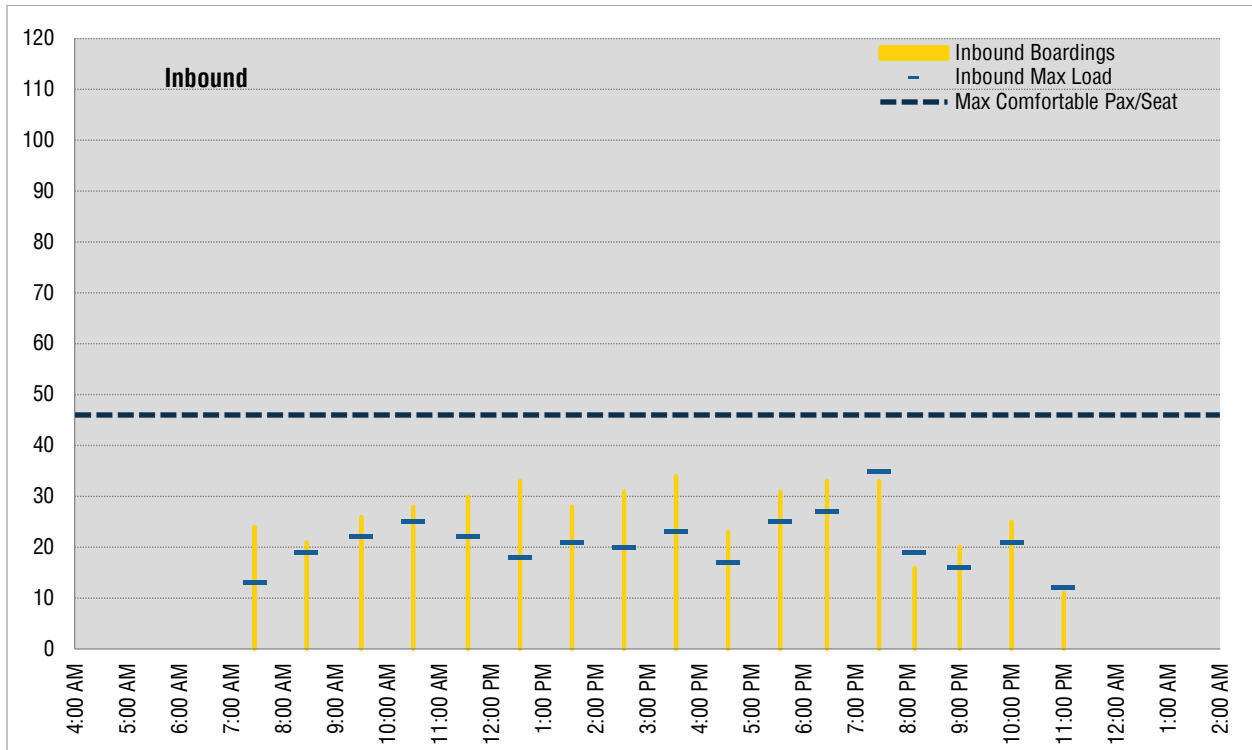


Figure 7 | Saturday Ridership by Trip: Outbound

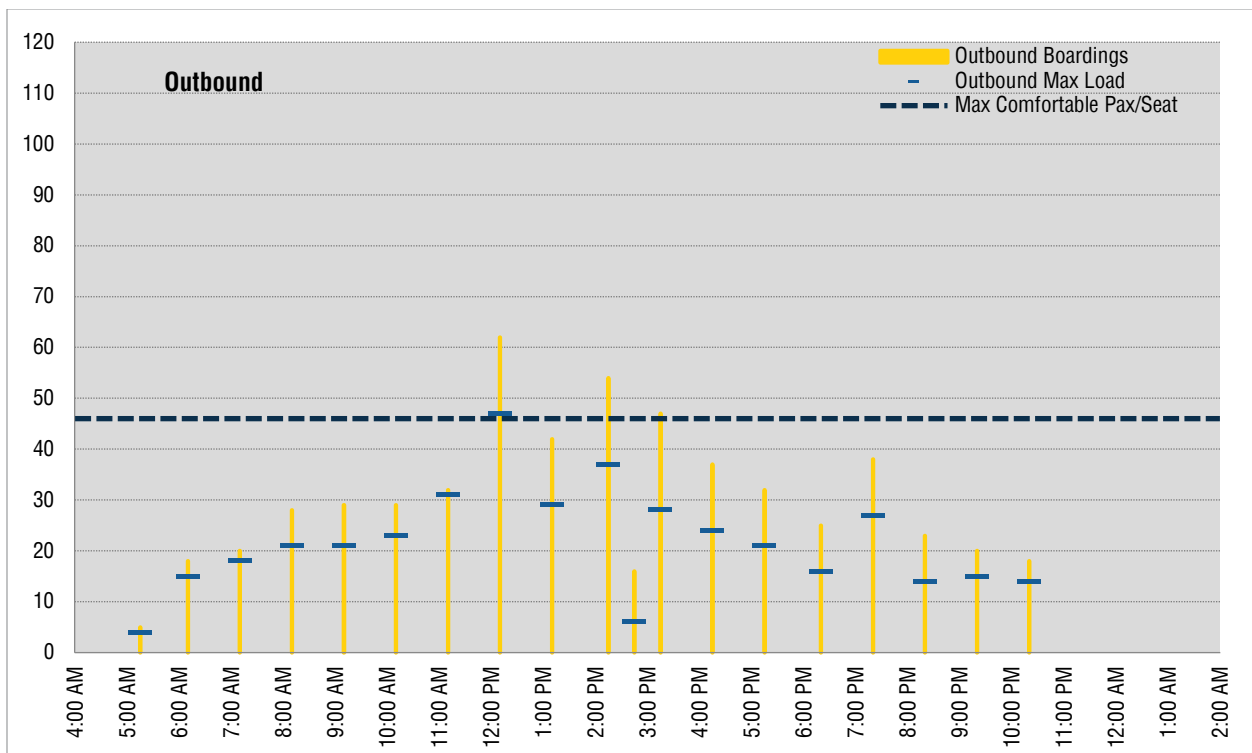


Figure 8 | Sunday Ridership by Trip: Inbound

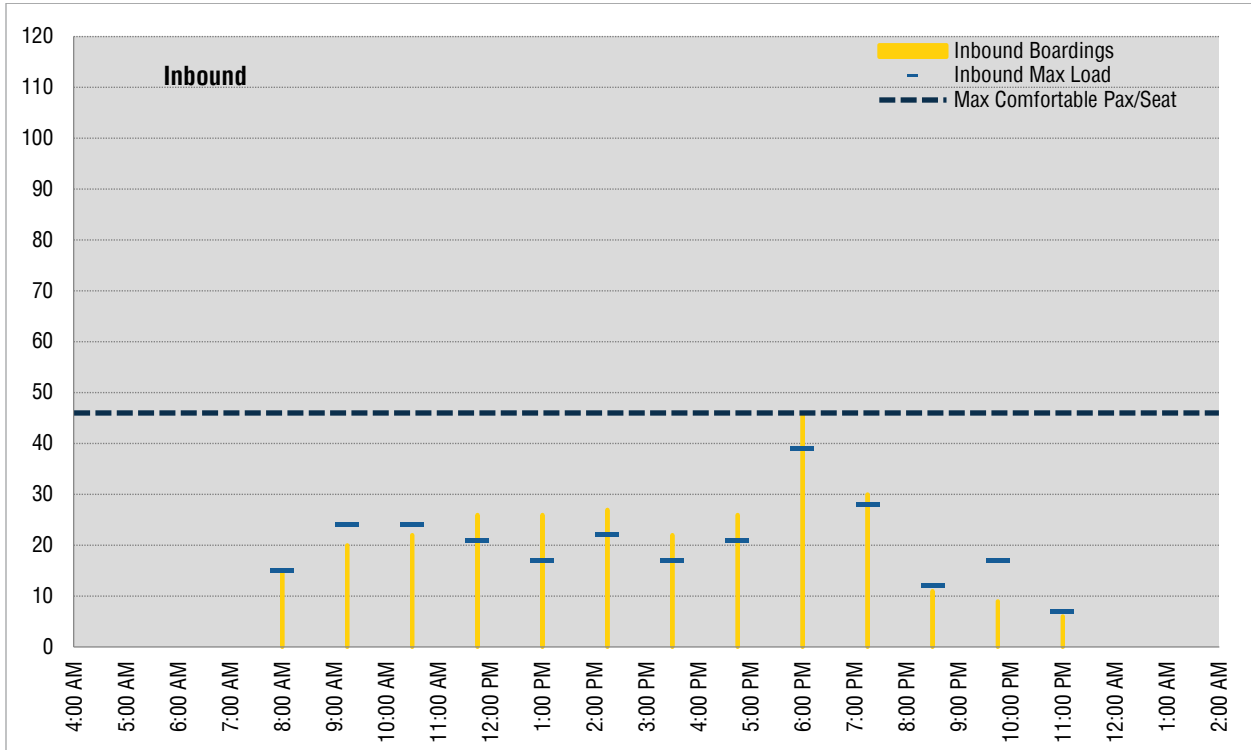
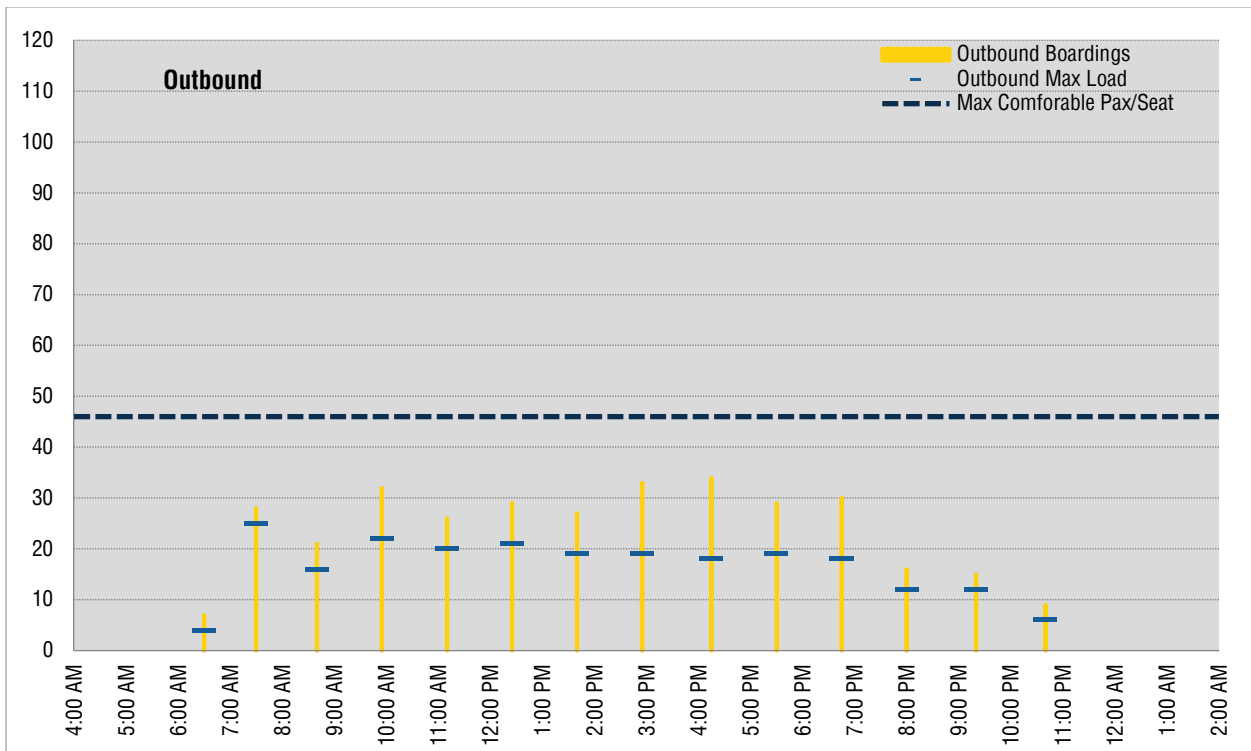


Figure 9 | Sunday Ridership by Trip: Outbound



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 Route 238, 98% of weekday passenger minutes are in comfortable conditions, which is above both the minimum standard and 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	98%	100%	98%

Reliability and Speed

Reliability

Route 238's reliability is particularly poor. Overall reliability is a 50% on weekdays, 53% on Saturdays, and 48% on Sundays (see Table 4). Given these scores, Route 238 fails to meet the minimum standard of 70% overall reliability on any of its days of service by a sizable margin.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	51%	42%	50%	0.2%
Saturday	54%	46%	53%	-
Sunday	48%	48%	48%	-

Running Time

The majority of trips made by Route 238's primary pattern feature excess travel time (see Figure 10 and Figure 11). This excess reaches as many as 8 minutes in the inbound direction and 12 minutes in the outbound direction. Inbound additional travel time is worst between 6:30 AM and 10:30 AM. Outbound additional travel time is worst between 4:00 PM and 5:30 PM. This is a major contributor to poor on-time performance.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 238 Inbound

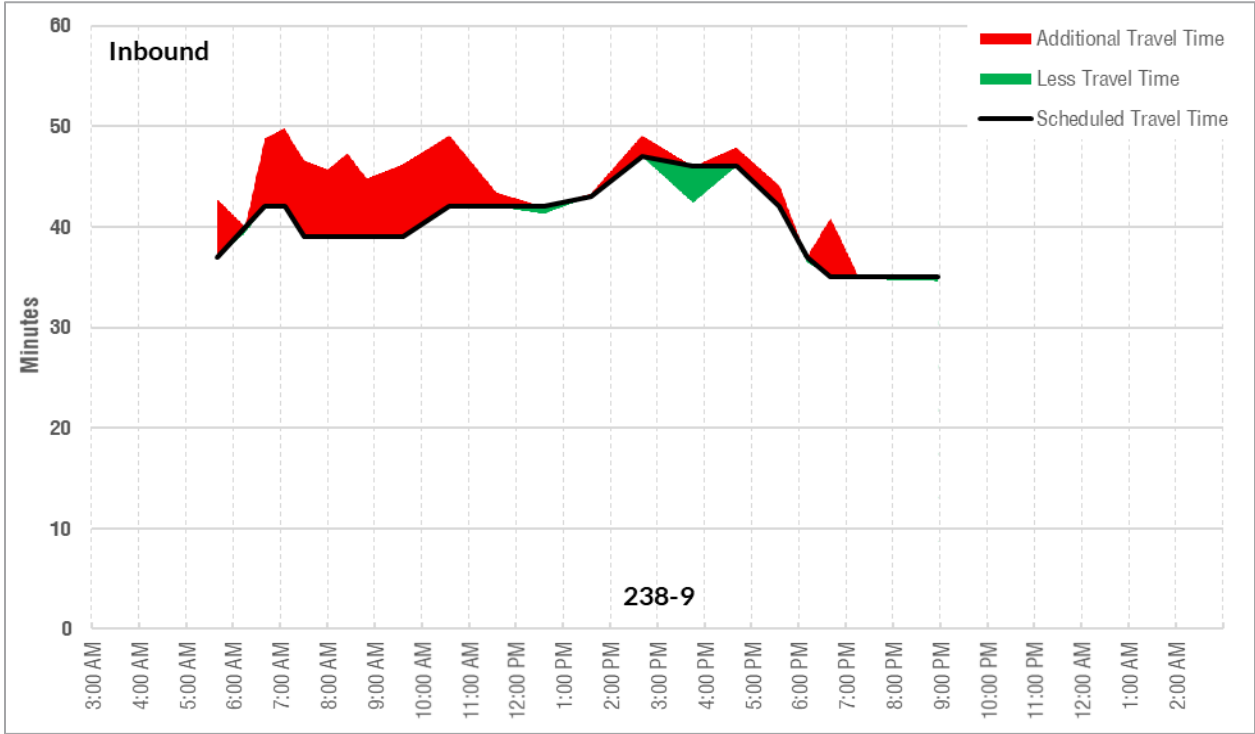
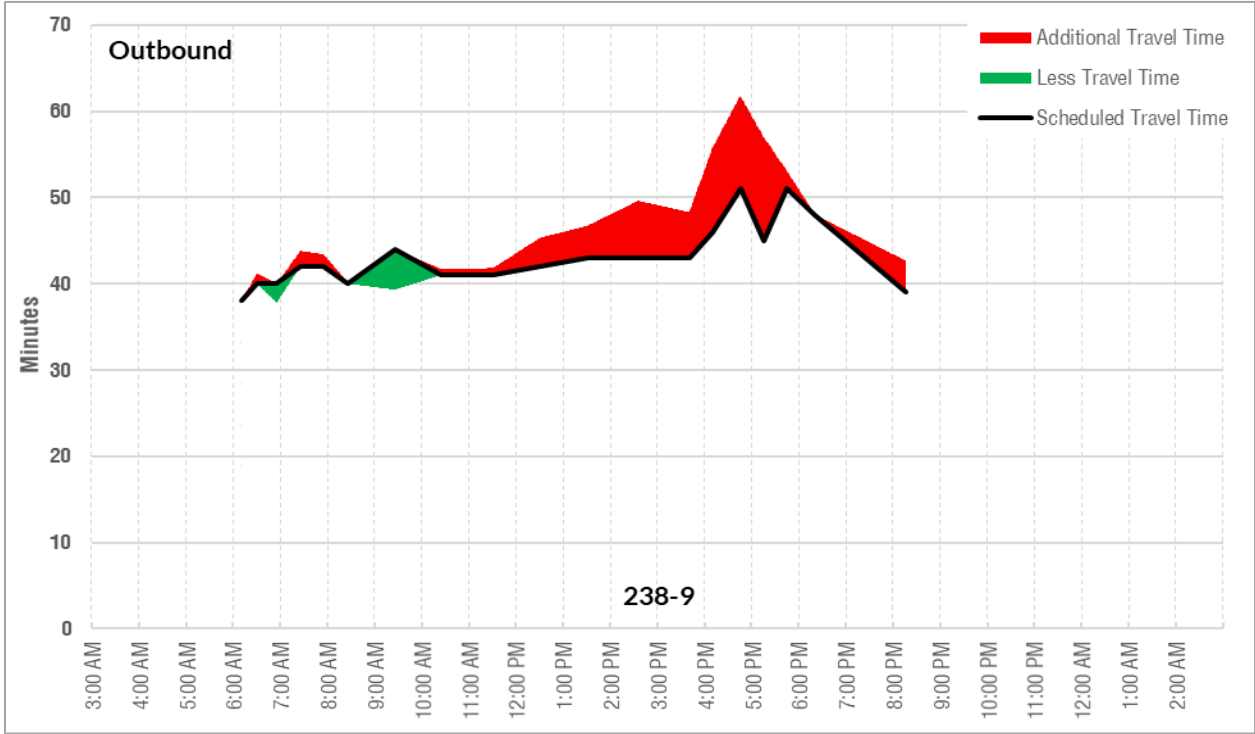


Figure 11 | Scheduled & Median Travel Time by Trip: Route 238 Outbound



Stop Spacing

Stop spacing along Route 238 ranges from one stop every 400 feet to one stop every 2500 feet. On average, stop spacing along Route 238 is 1050 feet, resulting in 5 stops per mile. This is on the upper end of the four to five stops per mile recommended for suburban areas within the MBTA guidelines. The North Street and West Street segments have particularly close stop spacing, with each seeing minimum stop spacing of 400 feet and an average stop spacing of 600 feet in both directions of travel.

Stop consolidation along these segments could make service faster and improve reliability.

Summary

Route 238 is one of two MBTA bus routes that connect Randolph to the Red Line, along with Route 240 Avon Square-Ashmont Station. The route has strong ridership given its low frequency and the suburban character of the neighborhoods it serves. Route 238 provides extremely unreliable service, and some of its trips likely suffer from crowding as a result. The route also has somewhat complicated service patterns on Sunday to share equipment with Route 240 between Crawford Square and Avon Square, though this complexity likely has a greater impact on Route 240 passengers than Route 238 passengers.