

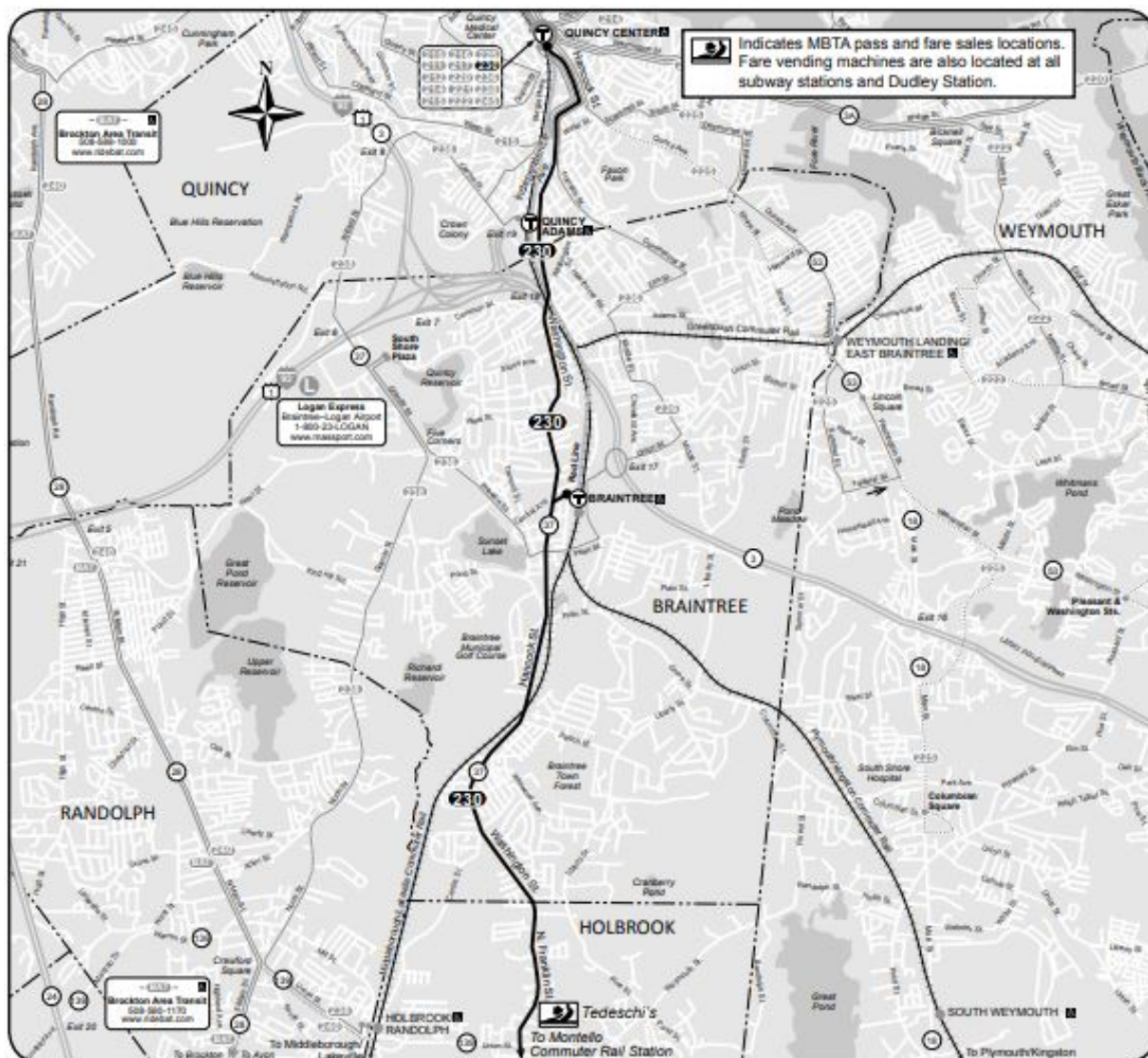
Route 230

Montello Commuter Rail Station – Quincy Center

Route Overview

Route 230 Montello Commuter Rail Station – Quincy Center is a Local route that operates between the Montello Commuter Rail Station in Brockton to Quincy Center Station, via Braintree Station (see Figure 1). Route 230 operates seven days per week.

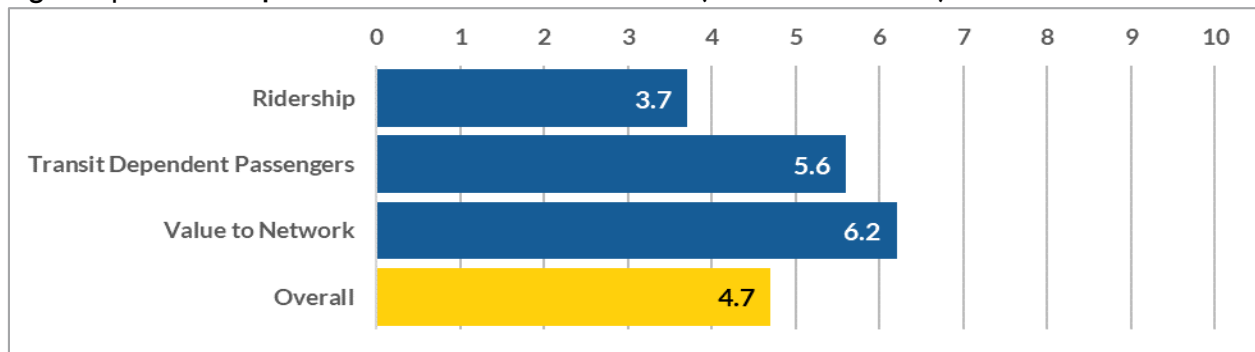
Figure 1 | Route 230 Service Map



Network Importance

Route 230 is moderately important within the overall system (see Figure 2). On a relative scale of 0 to 10, Route 230 rates 3.7 in terms of ridership, 5.6 in terms of transit dependent ridership, and 6.2 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 230 operates seven days a week, with somewhat frequent weekday early morning and peak period service and very infrequent weekday off-peak and weekend service (see Table 1). On weekdays, Route 230 operates from 5:05 AM to 12:12 AM with the following inbound frequencies:

- Two trips depart nearly simultaneously at the start of service, at 5:36 AM and 5:40 AM.
- Every 20 minutes from 5:50 AM to 7:10 AM, and then every 20 to 30 minutes between 7:10 AM and 9:45 AM.
- Every hour from 9:45 AM to 12:45 PM, followed by irregularly scheduled trips at 2:10 PM, 3:17 PM, and 3:56 PM.
- Every 25 to 31 minutes between 3:56 PM and 7:47 PM
- About every hour from 7:47 PM through the end of service.

On Saturdays, Route 230 operates from 6:05 AM to 12:13 AM with inbound trips departing about every hour. On Sundays, Route 230 operates from 7:00 AM to 12:54 AM with inbound trips departing every 90 minutes.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:05 AM to 12:12 AM			31/29
Sunrise	5:05 AM to 5:59 AM	4 - 25	15	3/3
Early AM	6:00 AM to 6:59 AM	20 - 25	20	3/3
AM Peak	7:00 AM to 8:59 AM	20 - 30	25	5/4
Midday Base	9:00 AM to 1:29 PM	30 - 85	60	5/5
Midday School	1:30 PM to 3:59 PM	30 - 85	40	3/3
PM Peak	4:00 PM to 6:29 PM	29 - 31	30	5/5
Evening	6:30 PM to 9:59 PM	25 - 60	48	5/4
Late Evening	10:00 PM to 11:59 PM	60	60	2/2
Night	12:00 AM to 12:12 AM	-	-	-/-
Saturday	6:05 AM to 11:44 PM	56 - 65	56	18/18
Sunday	7:00 AM to 12:15 AM	90	90	12/12

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

Route 230 meets the MBTA’s span of service guidelines on weekdays, Saturdays, and Sundays. Route 230 fails the service frequency guidelines on all service days:

- Weekday off-peak, where headways exceed the 60 minute standard on two occasions
- Saturdays, where headways exceed the 60 minute standard on three occasions
- Sundays, where headways exceed the 60 minute standard throughout service

Service Patterns

Route 230 operates three service patterns (see Table 2):

- Pattern 230.3 makes most Route 230 trips, running through Brockton, Holbrook, Randolph, Braintree and Quincy via Franklin Street, Washington Street, Hancock Street, and Independence Avenue.
- Pattern 230.5 makes midday trips on weekdays and Saturdays, diverting from Franklin Street to serve two stops at the Holbrook Court Apartments.
- Pattern 230.4 makes the first weekday roundtrip short turns at Braintree Station.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				31	18	12
230.3	Montello Station	Quincy Center Station	Primary pattern	24	13	12
230.4	Montello Station	Braintree Station	Short turn	1	-	-
230.5	Montello Station	Quincy Center Station	Serves Holbrook Court Apartments	6	5	-
OUTBOUND				29	18	12
230.3	Quincy Center Station	Montello Station	Primary pattern	26	16	12
230.4	Braintree Station	Montello Station	Short turn	1	-	-
230.5	Quincy Center Station	Montello Station	Serves Holbrook Court Apartments	2	2	-

Ridership

Route 230 carries about 1,600 riders on weekdays, 670 riders on Saturdays, and 400 riders on Sundays.

Ridership by Stop

MBTA riders primarily use Route 230 to access the Red Line (see Figure 3). On weekday inbound trips:

- 271 passengers board at the Montello Commuter Rail Station. This represents a third of all Route 230 boardings, and about half of all boardings before Route 230 first reaches the Red Line at Braintree Station.
- 266 passengers board and 61 passengers alight between Montello Commuter Rail Station and Braintree Station. Of the 48 stops along this segment, only three stops serve 15 or more boardings each weekday while 28 serve fewer than five boardings. Stops with 15 or more boardings each weekday include South Franklin Street at Holbrook High School, South Franklin Street at Plymouth Street in Holbrook Center, and Washington Street at Park Avenue in Braintree Highlands.
- 385 passengers alight at Braintree Station, which provides access to the Red Line. This represents 70% of all riders that board between Montello Commuter Rail Station and Braintree Station. 55 passengers board at Braintree Station and continue north towards Quincy Center.
- Ridership on Washington Street between Braintree Station and Independence Avenue is relatively low, with 50 boardings and 84 alightings across ten stops. The

highest ridership stops on this segment are Washington Street opposite Hobart Avenue, which is adjacent to Thayer Academy, and Washington Street at River Street in Braintree Square.

- Ridership is stronger on Independence Avenue, Franklin Street, and Hancock Street with 159 passengers boarding and 104 passengers alighting.
- 361 passengers alight at Quincy Center Station.

Weekday outbound ridership patterns are generally the inverse of weekday inbound patterns. Ridership patterns on weekends are similar to weekday patterns, with lower overall volumes.

Ridership at the Holbrook Apartments, which are directly served on weekday midday trips and on Saturdays, is very low. Stops at Holbrook Apartments average three boardings and two alightings on weekdays, and zero boardings and two alightings on Saturdays.

Ridership by Trip

Route 230 ridership by trip is strongest during weekday peak periods in the peak direction, many trips exceeding 40 passengers, and relatively weak during weekday off peak periods and on weekends. On weekday inbound trips (see Figure 4):

- Ridership is strong from the start of service through 8:30 AM, with nearly all trips serving 35 or more passengers. Trips between 6:00 AM and 7:00 AM all serve more than 50 passengers, but do not exceed MBTA comfort standards due to turnover at Braintree Station.
- Ridership between 8:30 AM and 4:30 PM is relatively consistent, with most trips serving around 20 passengers, apart from the 2:10 PM trip, which serves 42 passengers.
- Ridership by trip declines significantly through the end of service, with most trips serving around 10 passengers.

On weekday outbound trips (see Figure 5):

- Ridership is low from the start of service to 6:30 AM, with trips serving 10 or fewer passengers.
- Trips between 6:30 AM and 7:30 AM have somewhat higher ridership, with between 25 and 30 passengers.
- Ridership declines during the late morning and then begins to increase again in the early afternoon.
- Ridership is strongest between 2:00 PM and 6:30 PM, when most trips service more than 40 passengers.

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- Ridership begins to decline after 6:30 PM, with evening trips serving around 30 passengers and late evening trips serving around 20 passengers.

On Saturdays, inbound ridership is strongest before 12:00 PM, with trips serving between 20 and 35 passengers (see Figure 6). Ridership is lower in the afternoon and evening, apart from the 3:00 PM trip that serves 35 passengers. Saturday outbound ridership is low before 2:00 PM, with all trips serving less than 20 passengers (see Figure 7). Ridership increases in the afternoon, with trips serving between 20 and 35 passengers, and then declines somewhat in the evening. Sunday ridership trip patterns are similar to Saturday patterns, though with less volume.

Figure 3 | Weekday Inbound Ridership by Stop Map

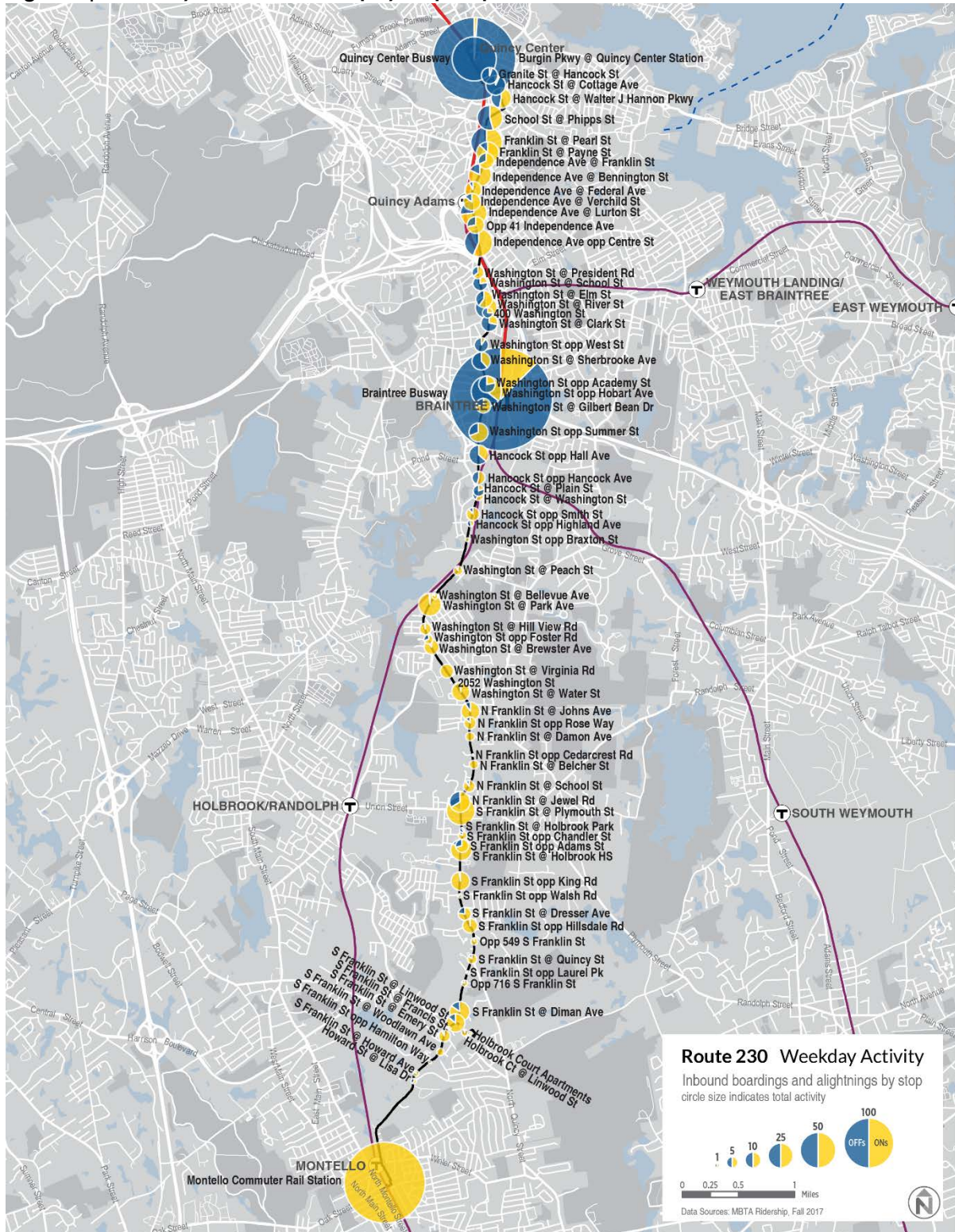


Figure 4 | Weekday Ridership by Trip: Inbound

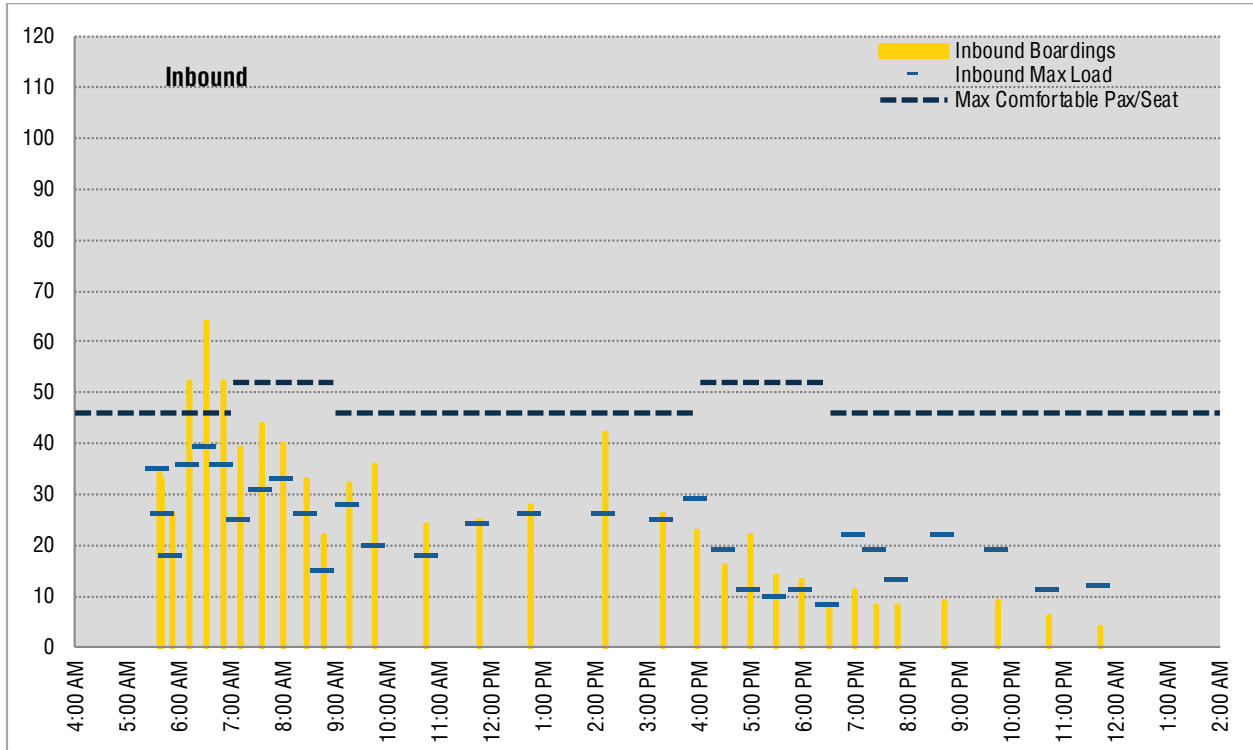


Figure 5 | Weekday Ridership by Trip: Outbound

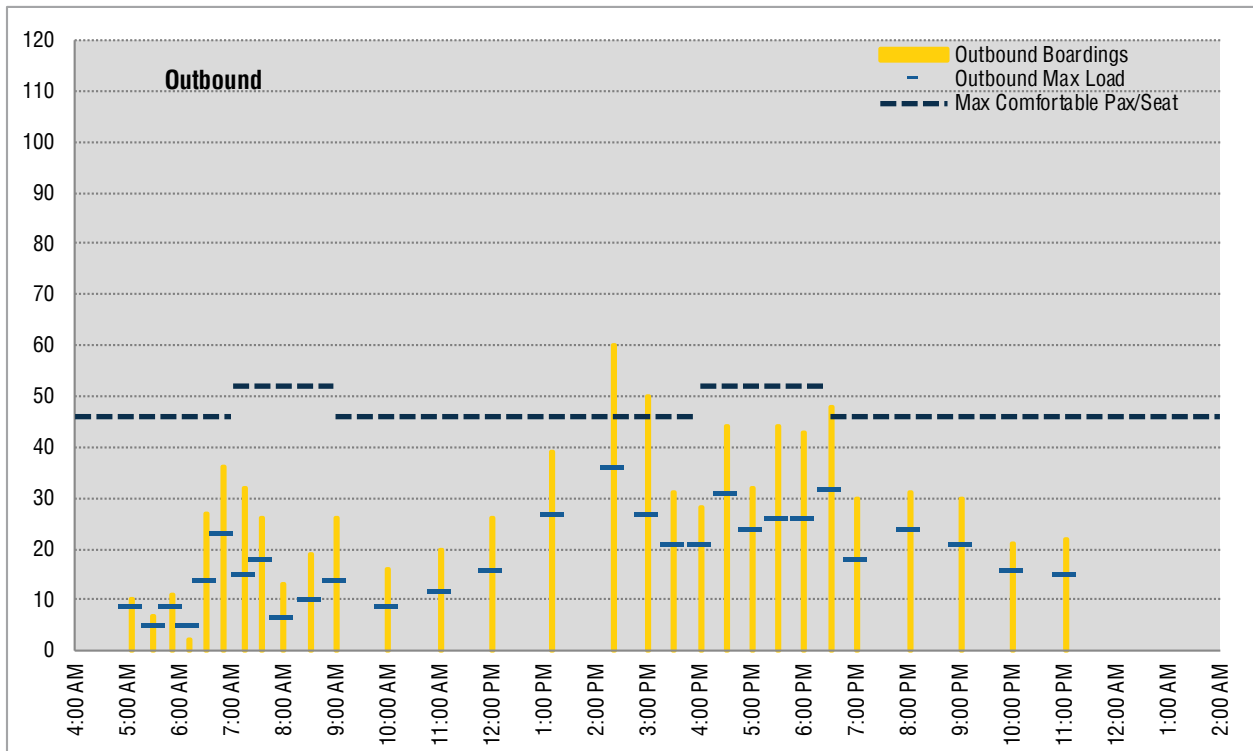


Figure 6 | Saturday Ridership by Trip: Inbound

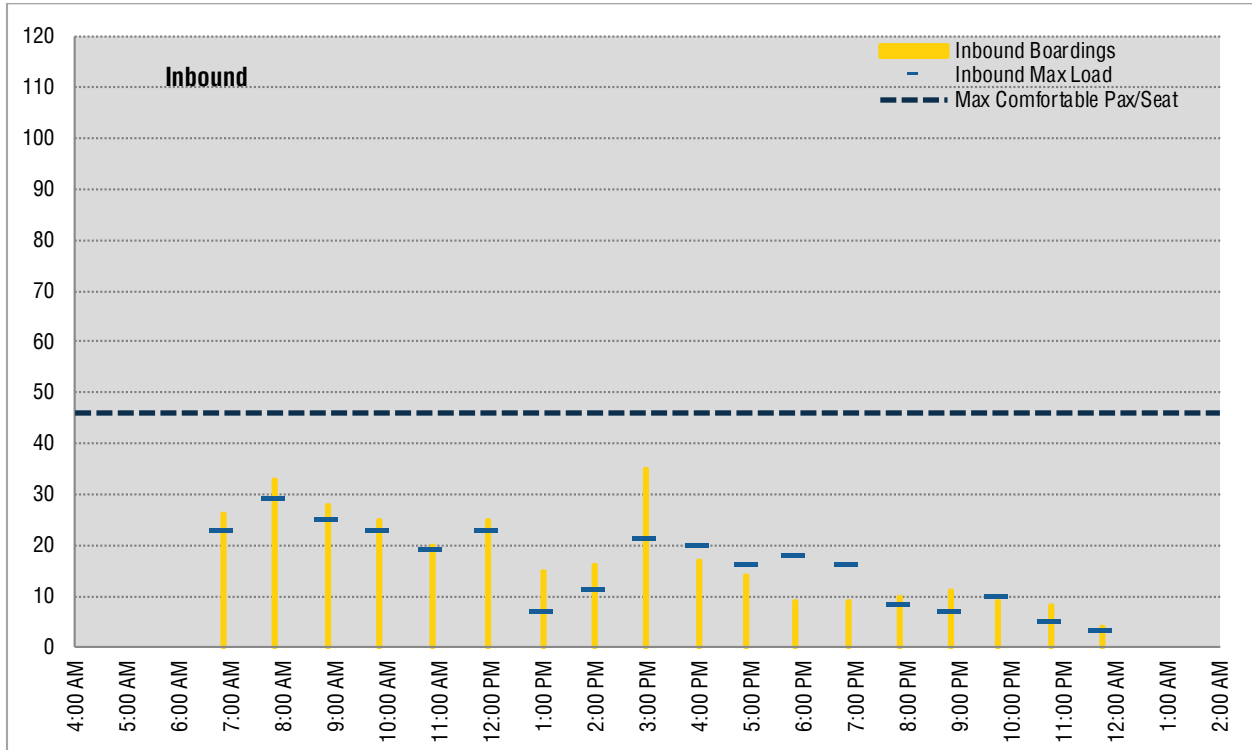


Figure 7 | Saturday Ridership by Trip: Outbound

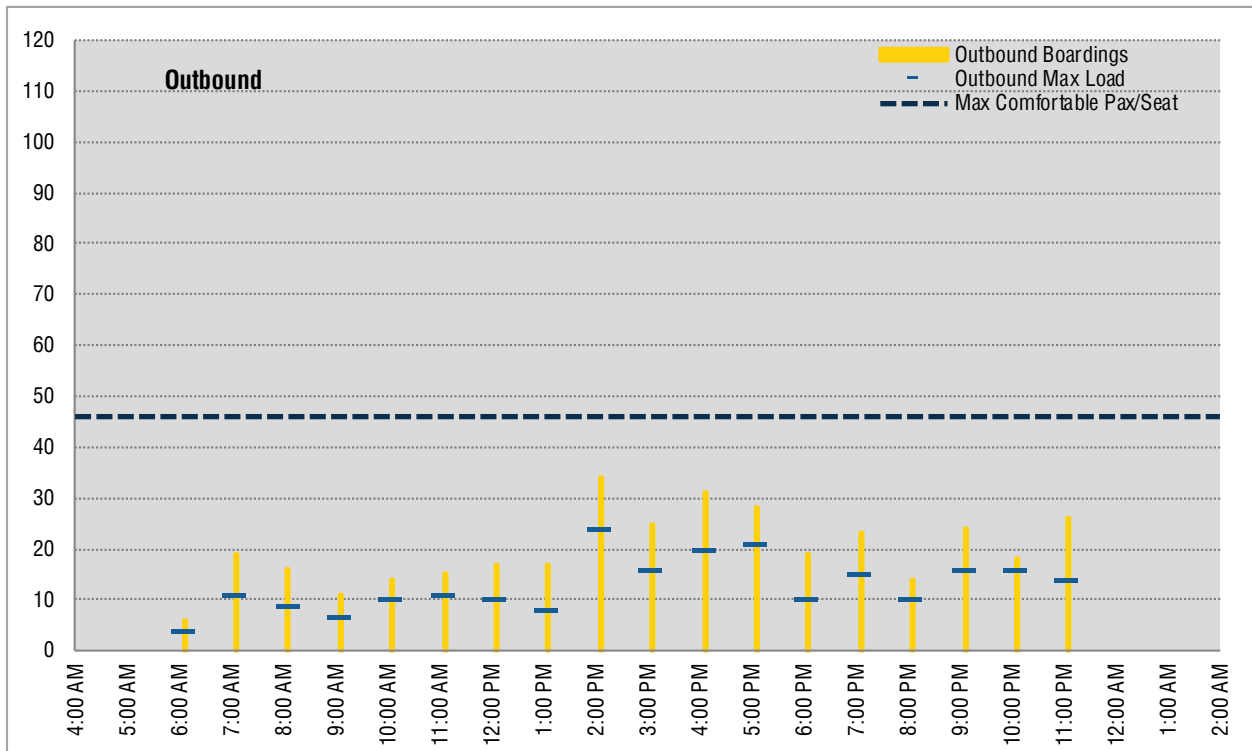


Figure 8 | Sunday Ridership by Trip: Inbound

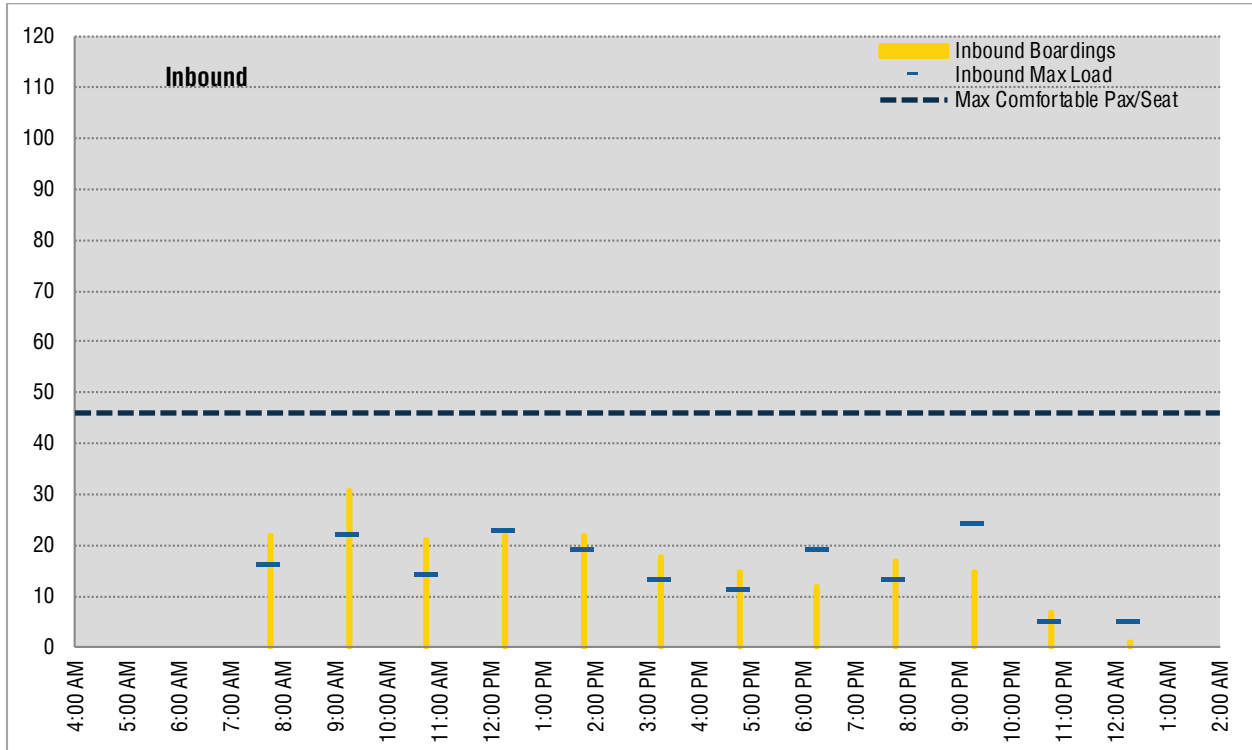
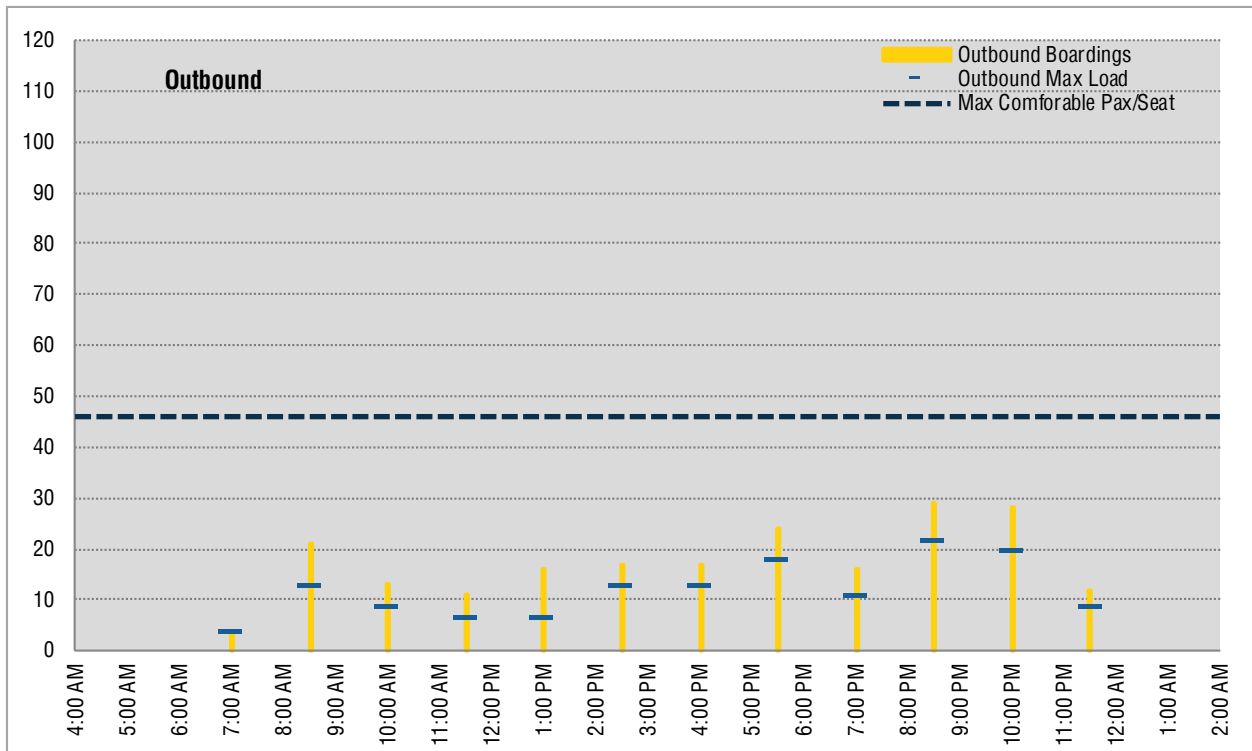


Figure 9 | Sunday Ridership by Trip: Outbound



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 230, 99% 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	99%	100%	100%

Reliability and Speed

Reliability

Route 230 features a poor overall weekday reliability of 51%. This is well below both the minimum standard of 70% and the target of 75%. Though overall reliability improves on Saturday and Sunday, both days still feature extremely poor on-time performance.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	52%	38%	51%	0.2%
Saturday	69%	55%	68%	-
Sunday	71%	92%	73%	-

Running Time

Nearly 100% of trips made by Route 230’s primary variant feature excess travel time. This time ranges from one to 12 minutes. Additional travel time is worst during the AM Peak period, between 6:30 AM and 8:40 AM, and during the PM Peak period between 4:00PM and 5:15PM. Route 230 even features addition travel time on runs made in the Late Evening and Night hours, between 9:00 PM and midnight, a period during which most routes manage to meet their scheduled travel times.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 230 Inbound

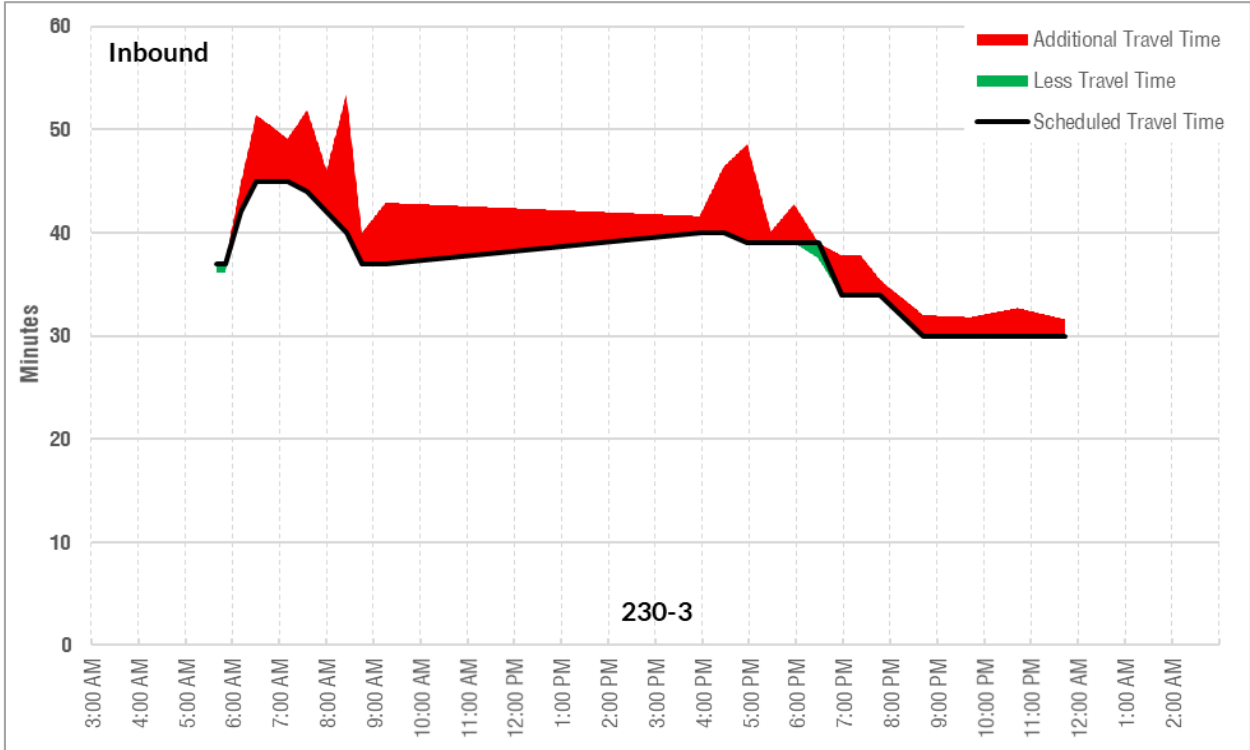
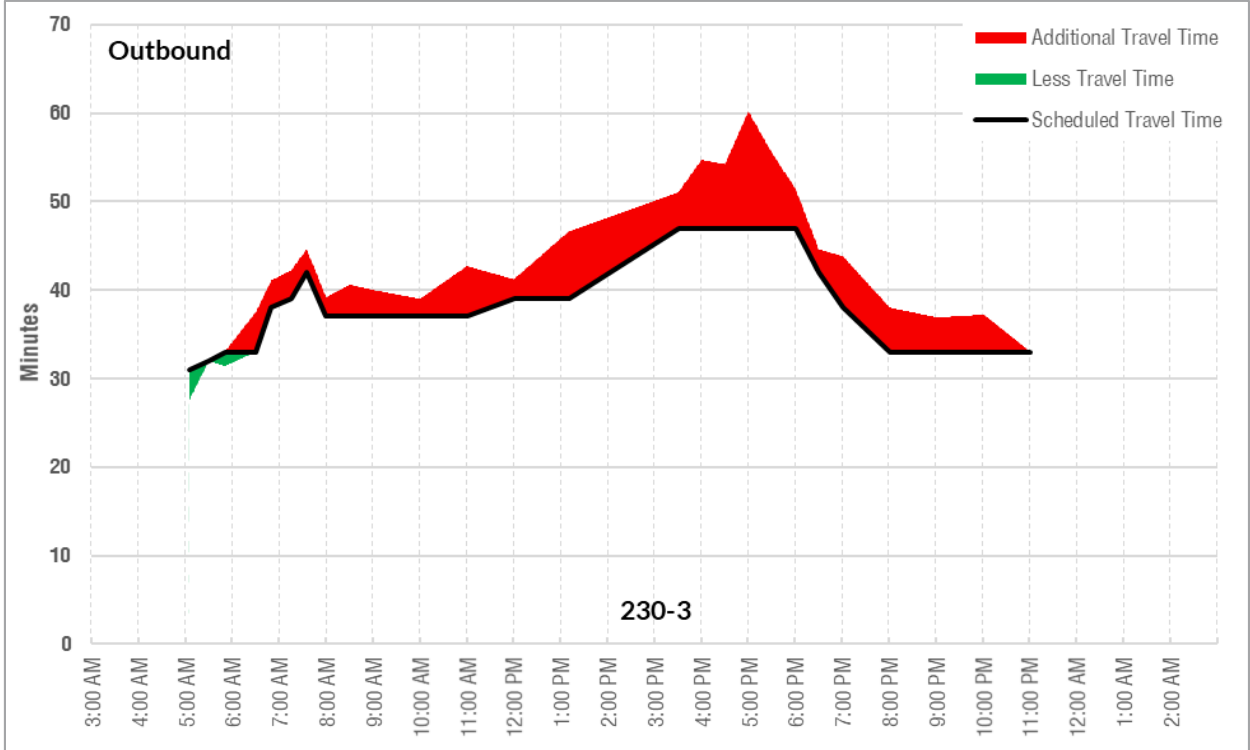


Figure 11 | Scheduled & Median Travel Time by Trip: Route 230 Outbound



Stop Spacing

Stop spacing along the portion of Route 230 connecting Montello Station and Braintree Station ranges from one stop every 500 feet to one stop every 1600 feet. The average stop spacing along this segment is 1020 feet (five stops per mile), which is reasonable spacing for an urban area route. However, for just how low the volume of boardings and alightings along this segment are, stop spacing should be stretched to better match Commuter route standards and demand.

Along the portion of Route 230 connecting Braintree Station and Quincy Center, stops are even more closely spaced, ranging from one stop every 500 feet to one stop every 1400 feet – resulting in an average stop separation of 850 feet (six stops per mile). While ridership volumes are higher along this section, 850 feet between stops is too small a walking distance, even along a local route, to optimize service.

Summary

Route 230 provides the primary MBTA bus connection between Brockton and the Red Line, and also serves residential neighborhoods in Holbrook and Braintree. The high levels of Route 230 ridership in Brockton is likely driven by Route 230's more frequent and lower cost service to the Red Line and Downtown Boston compared to commuter rail or Brockton Area Transit. Route 230's long distance on congested roadways, however, likely contributes to poor operating performance. Route 230 also serves a more local market between Braintree and Quincy Center, which makes it difficult to coordinate service with commuter express oriented demands from Brockton.