

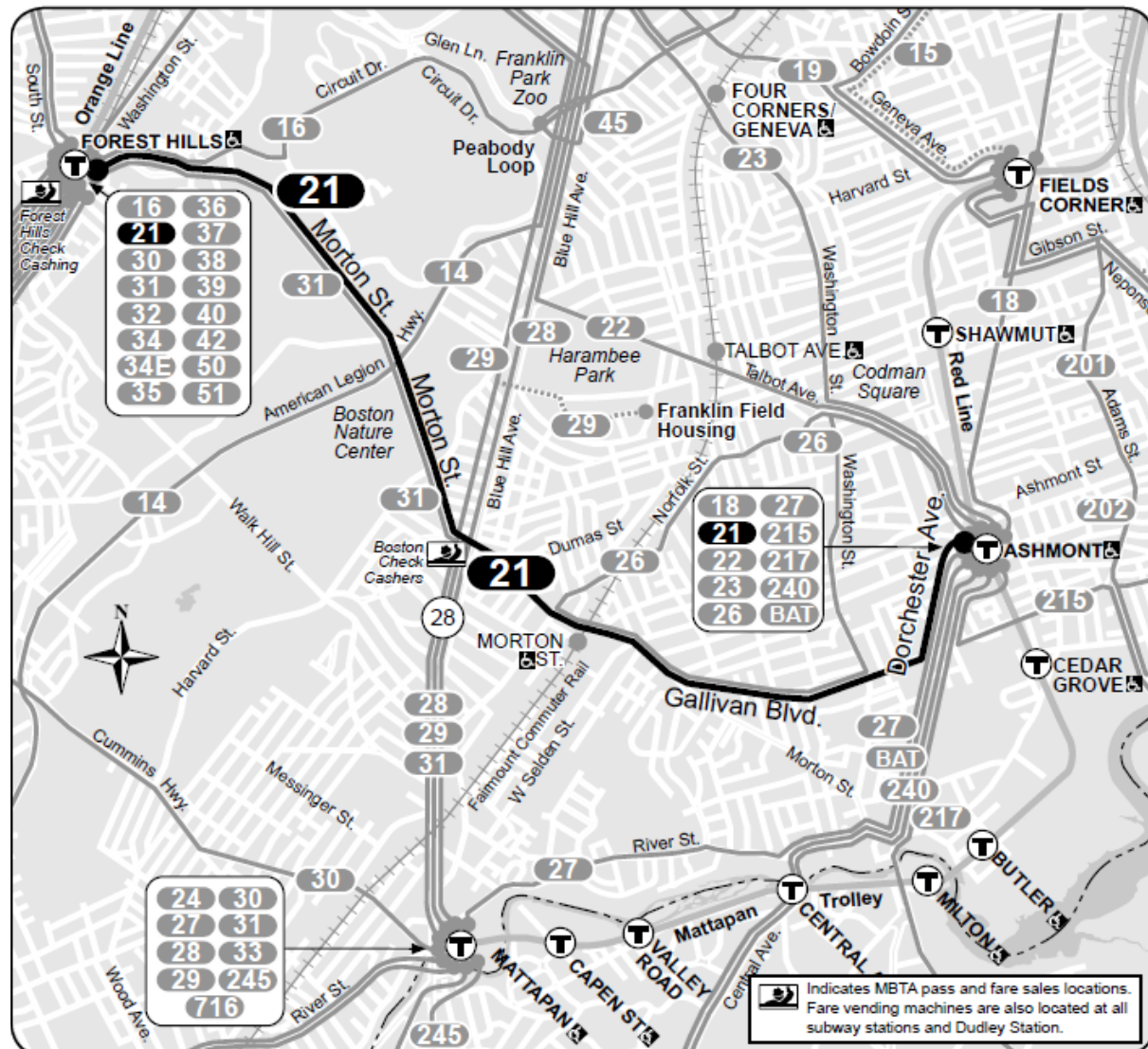
Route 21

Ashmont Station – Forest Hills Station

Route Overview

Route 21 is a Local route that operates between Ashmont Station and Forest Hills Station, designed to connect Dorchester residents with the Red Line and Orange Line. It operates largely along Gallivan Boulevard and Morton Street. Route 21 and Route 31 Mattapan Station – Forest Hills Station provide coordinated frequent service on Morton Street between Blue Hill Avenue and Forest Hills Station.

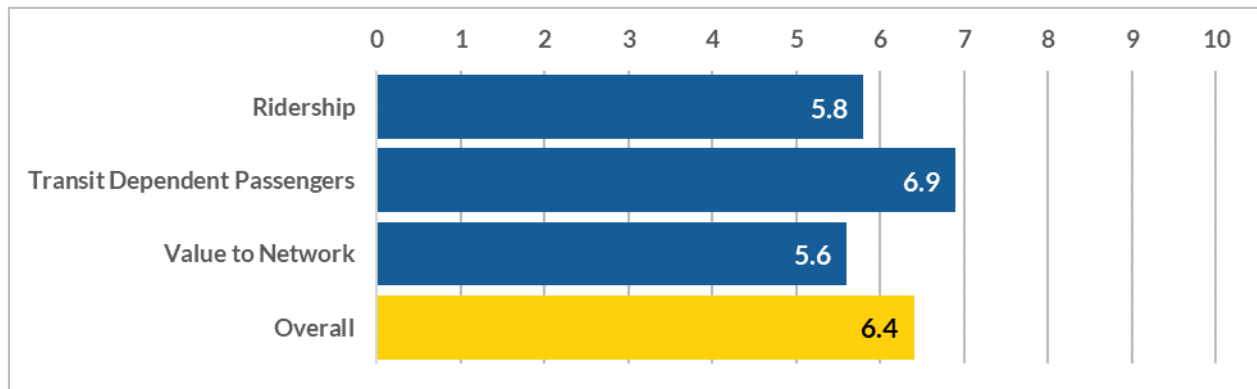
Figure 1 | Service Map



Network Importance

Route 21 is a relatively important route to the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 5.8 in terms of ridership, 6.9 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 6.4.

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



Service Patterns

Schedule

On weekdays, Route 21 operates from 4:38 AM to 12:52 AM (see Table 1). Inbound service starts about an hour before outbound service. From the beginning of service through 6:30 PM, average frequencies range from nine to 22 minutes. After 6:30 PM, frequency averages every 28 minutes until 10:00 PM, and then every 70 minutes through the end of service.

On Saturdays, service operates from 6:08 AM to 12:10 AM. Service operates every 45 minutes for most of the day, but with longer frequencies in the evening that range from 63 to 70 minutes.

On Sundays, service operates from 9:45 AM to 8:50 PM. Service operates hourly throughout the day.

Route 21 meets the MBTA's span of service standards for Local routes on all days. However, it does not meet the service frequency standards of every 60 minutes for evening service on weekdays or Saturdays, when service operates as infrequently as every 70 minutes.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	4:38 AM to 12:52 AM			62/63
Sunrise	4:38 AM to 5:59 AM	15	15	2/2
Early AM	6:00 AM to 6:59 AM	8 - 15	9	7/7
AM Peak	7:00 AM to 8:59 AM	9 - 22	14	10/9
Midday Base	9:00 AM to 1:29 PM	20 - 25	22	12/13
Midday School	1:30 PM to 3:59 PM	10 - 25	12	11/14
PM Peak	4:00 PM to 6:29 PM	13 - 21	15	10/10
Evening	6:30 PM to 9:59 PM	15 - 40	28	7/5
Late Evening	10:00 PM to 11:59 PM	30 - 70	70	2/2
Night	12:00 AM to 12:52 AM	1 Trip	1 Trip	1/1
Saturday	6:08 AM to 12:24 AM	45 - 70	46	23/24
Sunday	8:50 AM to 9:57 PM	60	60	13/13

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

Service Patterns

Route 21 operates consistently with a single service pattern used for inbound and outbound trips (see Table 2). Several school trip patterns were added to the Route 21 schedule in Fall 2018, after this document was developed.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				62	23	13
21.0	Ashmont Station	Forest Hills Station	Primary pattern	62	23	13
OUTBOUND				63	24	13
21.0	Forest Hills Station	Ashmont Station	Primary pattern	63	24	13

Ridership

Route 21 carries approximately 4,290 passengers on weekdays, 1,390 on Saturdays, but only 620 on Sundays.

Ridership by Stop

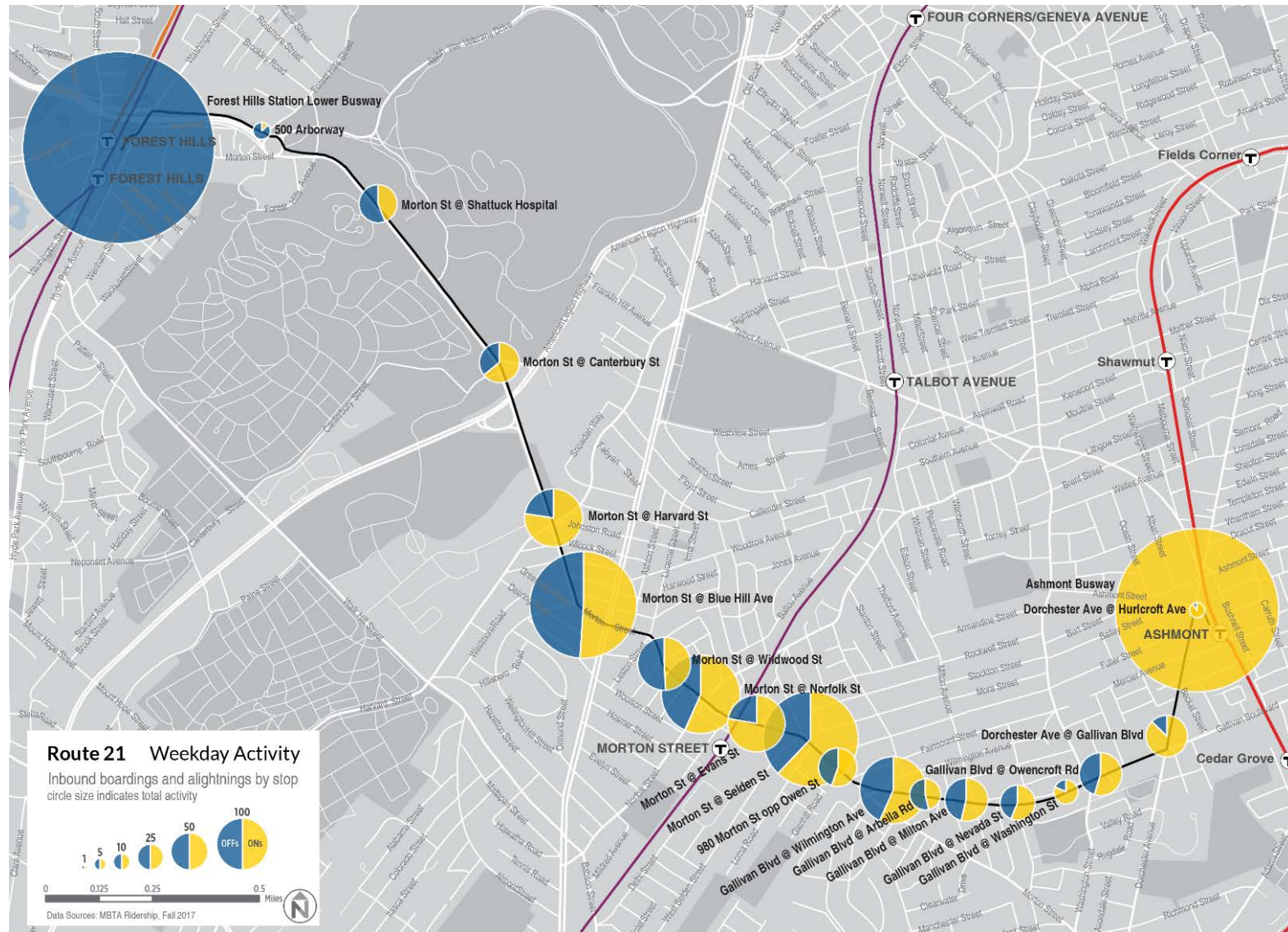
Route 21's highest ridership stops by far are Ashmont Station and Forest Hills Station. Most other ridership is at stops between Ashmont Station and Blue Hill Avenue, where the route serves dense residential areas in Dorchester. Ridership at stops between Blue Hill Avenue and Forest Hills Station is much lower as the route travels through Franklin

Park. On weekday inbound trips from Ashmont Station to Forest Hills Station (see Figure 3):

- 990 passengers, or 46% of all inbound passengers, board at Ashmont Station.
- Ridership at stops between Ashmont Station and Morton Street at Selden Street generally serve fewer than 40 boardings and 40 alightings. Exceptions include:
 - Dorchester Avenue at Gallivan Boulevard, with 60 boardings and 10 alightings.
 - Gallivan Boulevard at Wilmington Street, with 90 boardings and 70 alightings.
- 210 passengers board and 130 alight at Morton Street at Selden Street, which is close to Boston International High School.
- 120 passengers board and 100 alight at Morton Street at Norfolk Street. This is a transfer point with Route 26 Ashmont Station-Norfolk & Morton Belt Line.
- 220 passengers board and 210 alight at Morton Street at Blue Hill Avenue. This is a transfer point for Route 28 Mattapan Station – Ruggles Station, Route 29 Mattapan Station – Jackson Square Station, and Route 31 Mattapan Station – Forest Hills Station.
- 100 passengers board and 30 alight at Morton Street at Harvard Street, which is the last stop before the route enters Franklin Park.
- 64 passengers board and 61 alight at the three stops in Franklin Park before Forest Hills Station. This includes 24 boardings and 30 alightings at Shattuck Hospital.
- 1,360 passengers, or 62% of all inbound passengers, alight at Forest Hills Station.

Outbound ridership patterns are essentially the inverse of inbound patterns. Weekend patterns are also similar but with significantly lower passenger volumes.

Figure 3 | Weekday Inbound Ridership by Stop Map



Ridership by Trip

On weekdays, Route 21 has strong peak period ridership in both directions, when ridership per trip frequently ranges from 40 to 60 passengers (see Figure 4 and Figure 5). Most inbound trips between 6:00 AM and 7:00 PM carry loads that are very close to capacity, and some exceed the MBTA's loading standards. Midday ridership is significantly lower, and generally ranges from 20 to 30 passengers. In the evening, inbound ridership declines steadily from about 20 passengers at 7:00 PM to fewer than 10 on the last inbound trip at 12:20 AM. Outbound ridership is higher and stays at or above 20 passengers per trip until 8:00 PM. It then declines steadily to 10 passengers on the last trip at 12:40 AM.

On Saturdays, inbound trips generally carry around 30 passengers per trip and outbound trips generally carry 30 to 40 passengers per trip (see Figure 6 and Figure 7). Note that Saturday midday ridership per trip is higher than weekday ridership per trip, in large part because service only operates every 45 minutes.

On Sundays, ridership per trip is lower, with trips in both directions carrying 20 to 30 passengers for most of the day (see Figure 8 and Figure 9).

Figure 4 | Weekday Ridership by Trip: Inbound

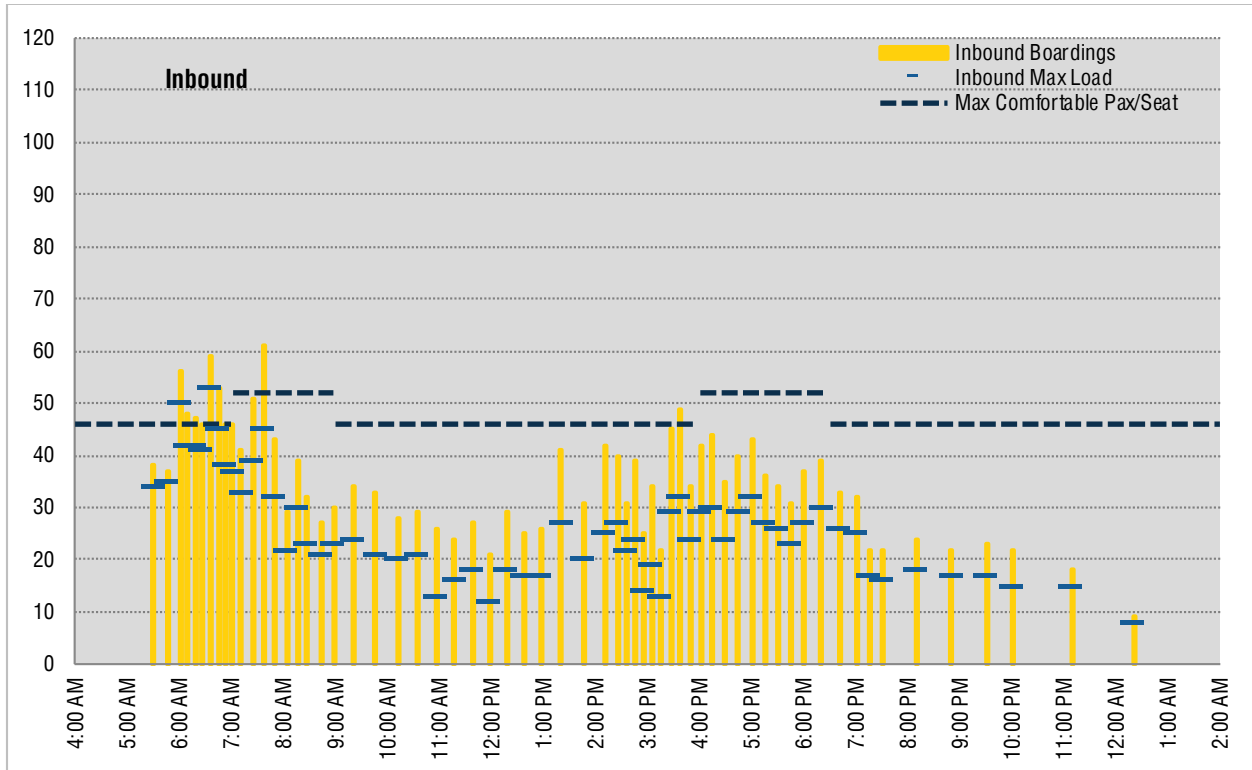


Figure 5 | Weekday Ridership by Trip: Outbound

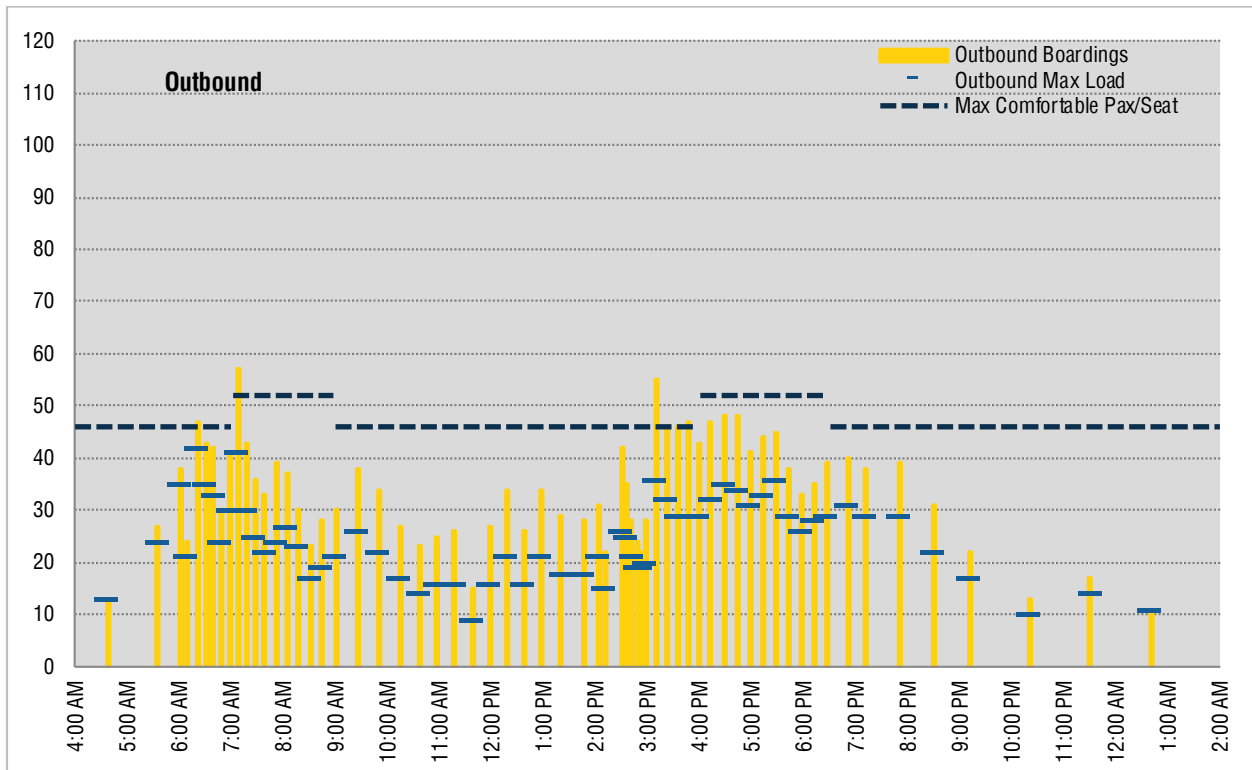


Figure 6 | Saturday Ridership by Trip: Inbound

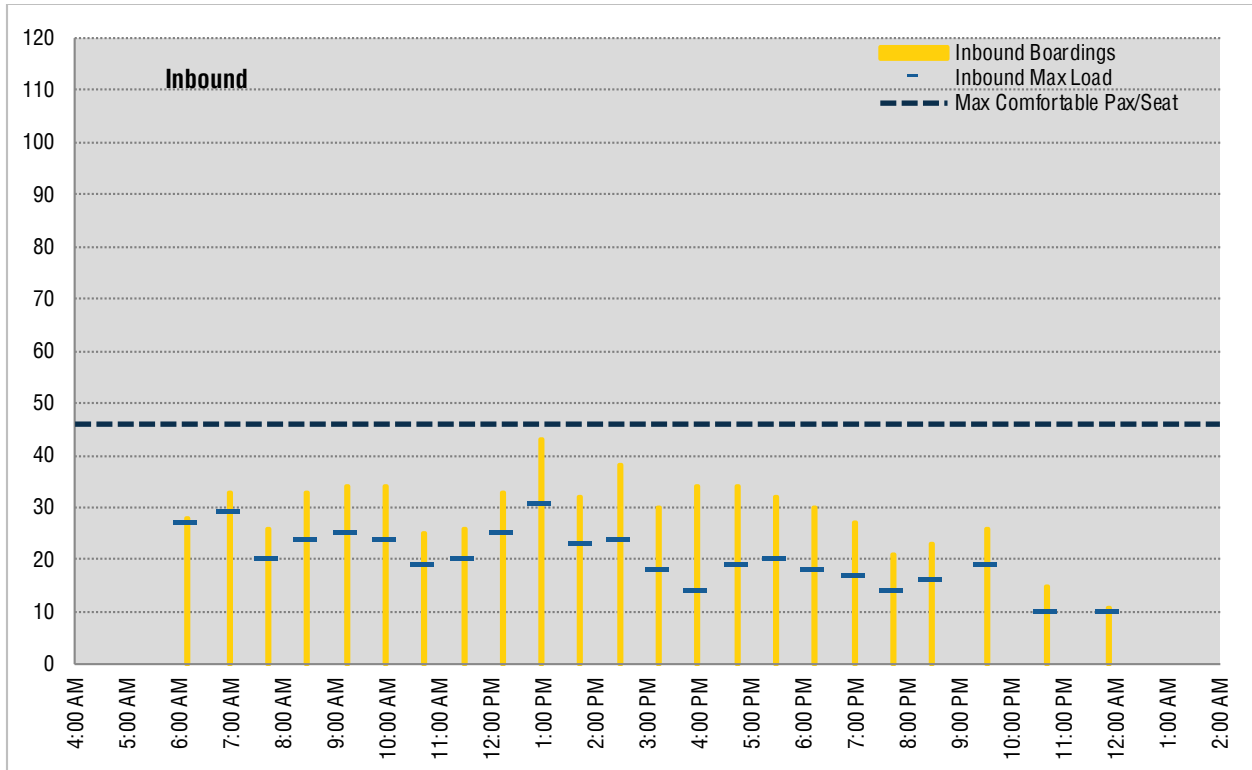


Figure 7 | Saturday Ridership by Trip: Outbound

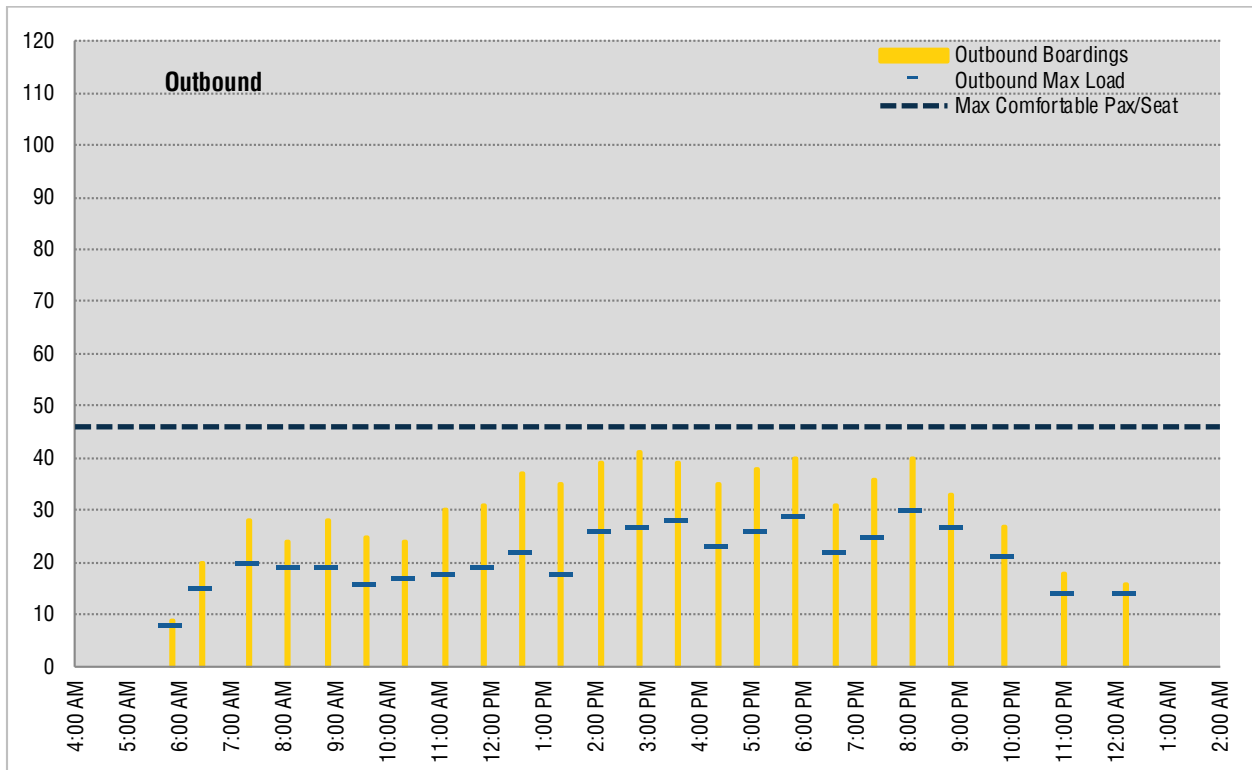


Figure 8 | Sunday Ridership by Trip: Inbound

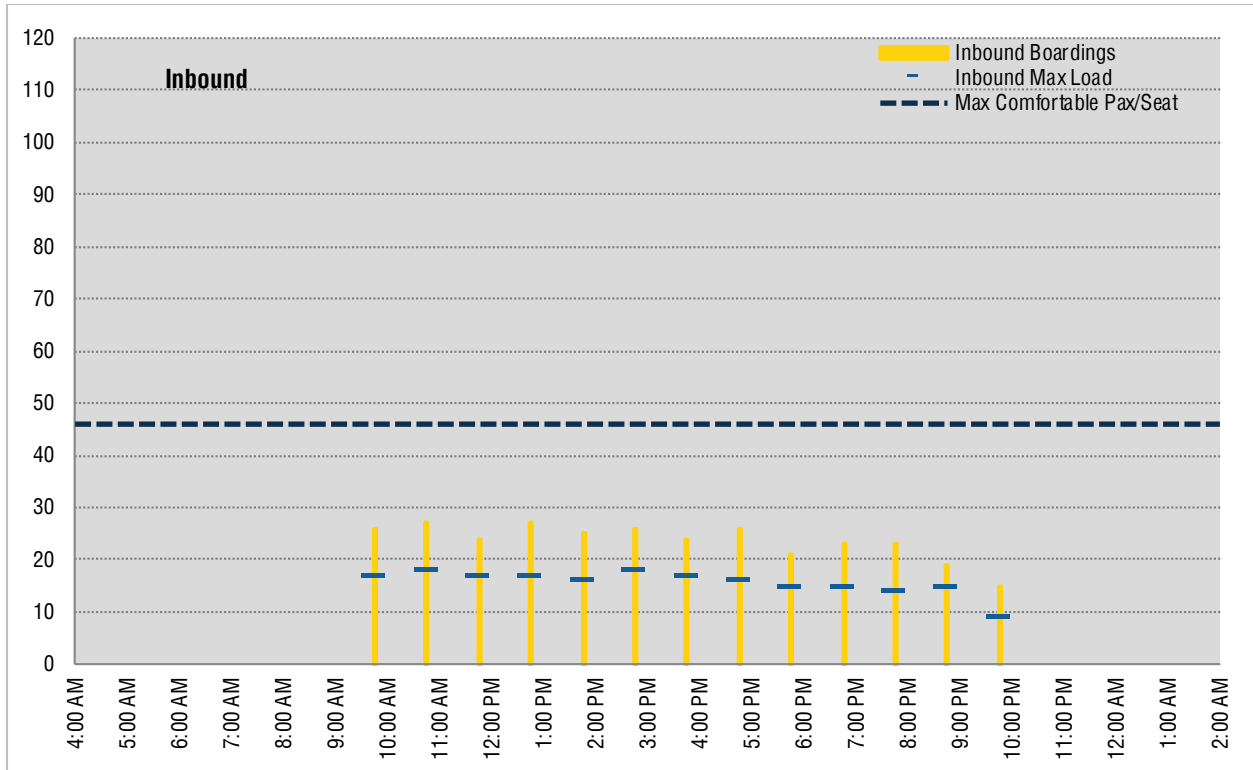
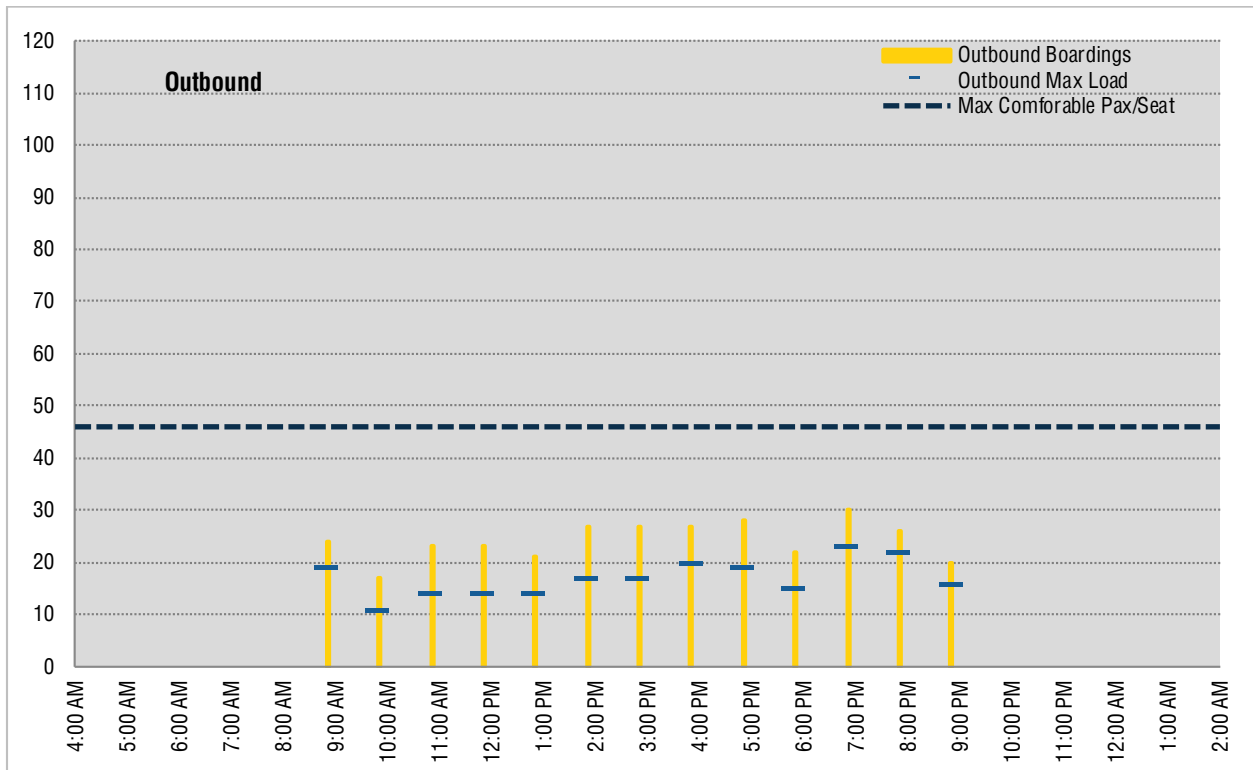


Figure 9 | Sunday Ridership by Trip: Outbound



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 21, 93% of passenger minutes on weekdays are in comfortable conditions, which is above the minimum standard of 92% but below the target of 96% (see Table 3). The below-target comfort levels are primarily due to the overcrowding on select trips that operate between 6:00 AM and 7:00 AM.

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
Minimum Standard	92%	92%	92%
Target	96%	96%	96%
Actual	93%	99.5%	100%

Reliability and Speed

Reliability

Route 21’s overall reliability is 70% on weekdays, 73% on Saturdays, and 78% on Sundays (see Table 4). Weekday and Saturday reliability meets or exceed the minimum standard of 70% but falls below the target of 75%. Sunday reliability exceeds the target of 75%.

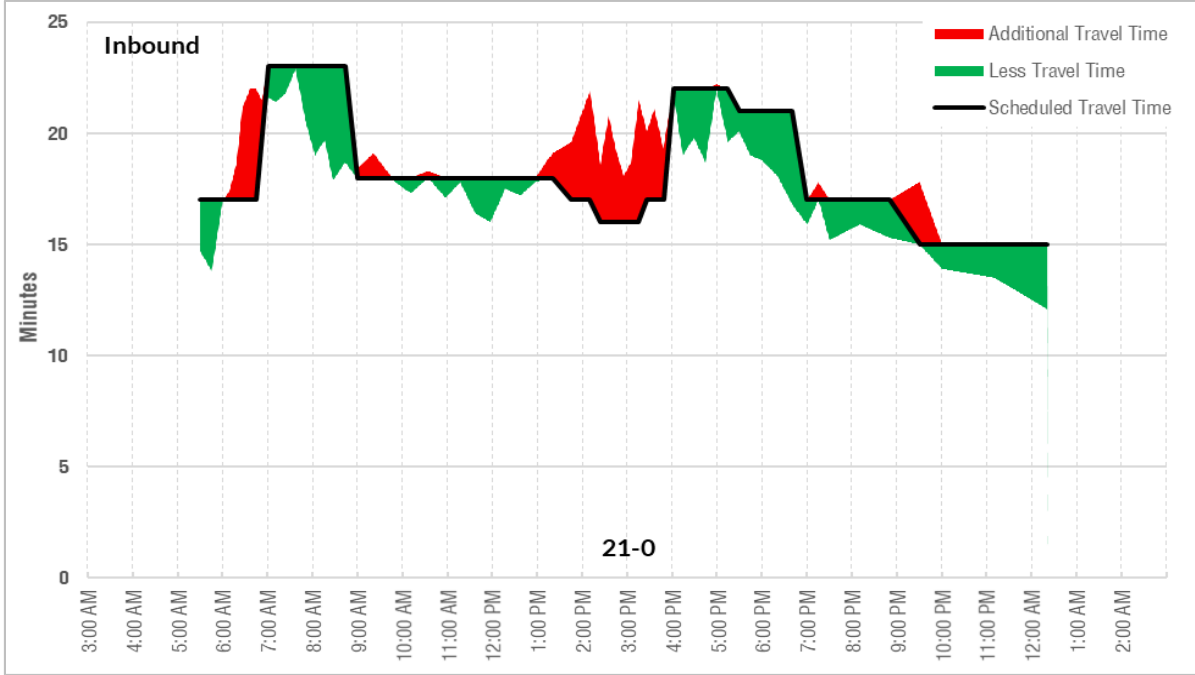
Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	69%	73%	70%	1.7%
Saturday	73%	73%	73%	-
Sunday	77%	80%	78%	-

Running Times

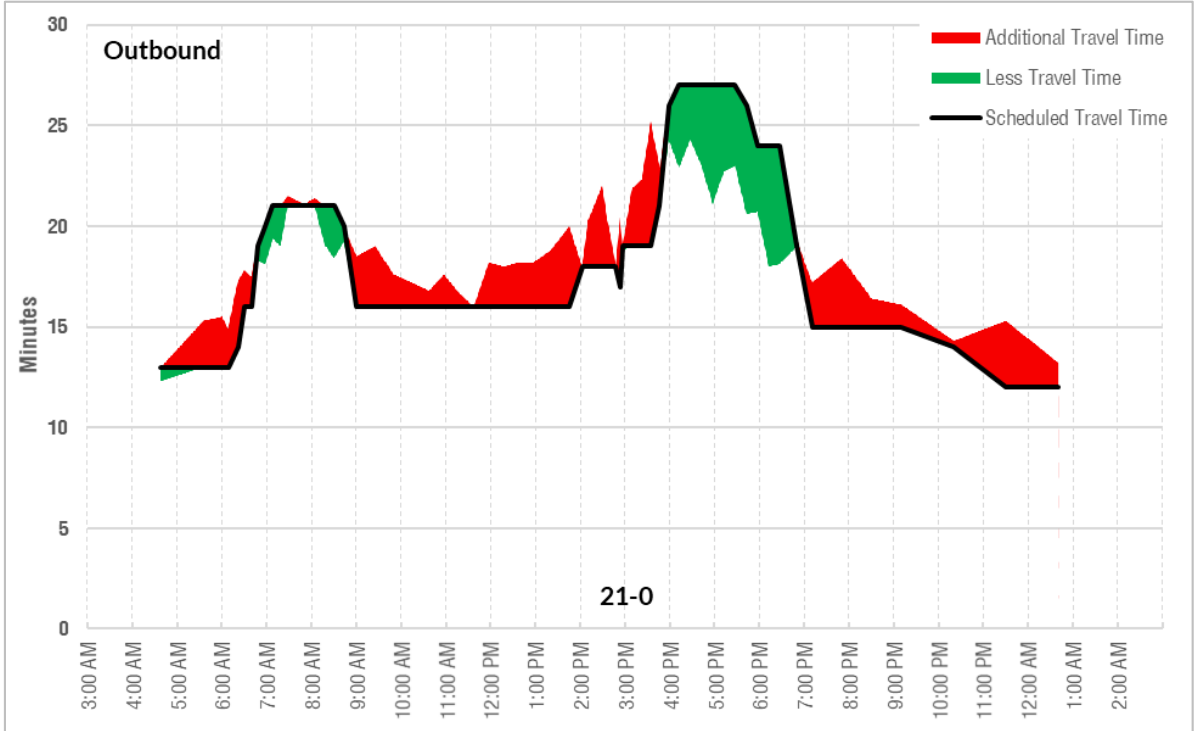
On inbound trips, actual running times vary from scheduled running times, with actual times longer between 6:00 AM and 7:00 AM and from 1:00 PM to 4:00 PM (see Figure 10). During these periods, actual times are up to five minutes longer than scheduled times. For most of the rest of the day, actual times are shorter, including in the peak periods, when shorter scheduled running times could enable better frequencies.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 21 Inbound



On outbound trips, actual running times are mostly longer than scheduled (see Figure 11). However, times are slightly shorter in the AM peak and up to six minutes shorter in the PM peak.

Figure 11 | Scheduled & Median Travel Time by Trip: Route 21 Outbound



Stop Spacing

Stops are spaced particularly closely along Route 21's core ridership area, between Dorchester Avenue and Blue Hill Avenue. This 1.4-mile segment has 13 stops, an average of nine stops per mile. Consolidating stops along this corridor would provide more reliable service and produce more consistent ridership activity at each stop.

Summary

Route 21 provides very direct connections to Ashmont Station and Forest Hills Station from dense neighborhoods in Dorchester. Its weekday ridership is very high, but Saturday ridership is only moderate and Sunday ridership is low. This is due, at least in part, to the infrequent weekend service that is provided.