

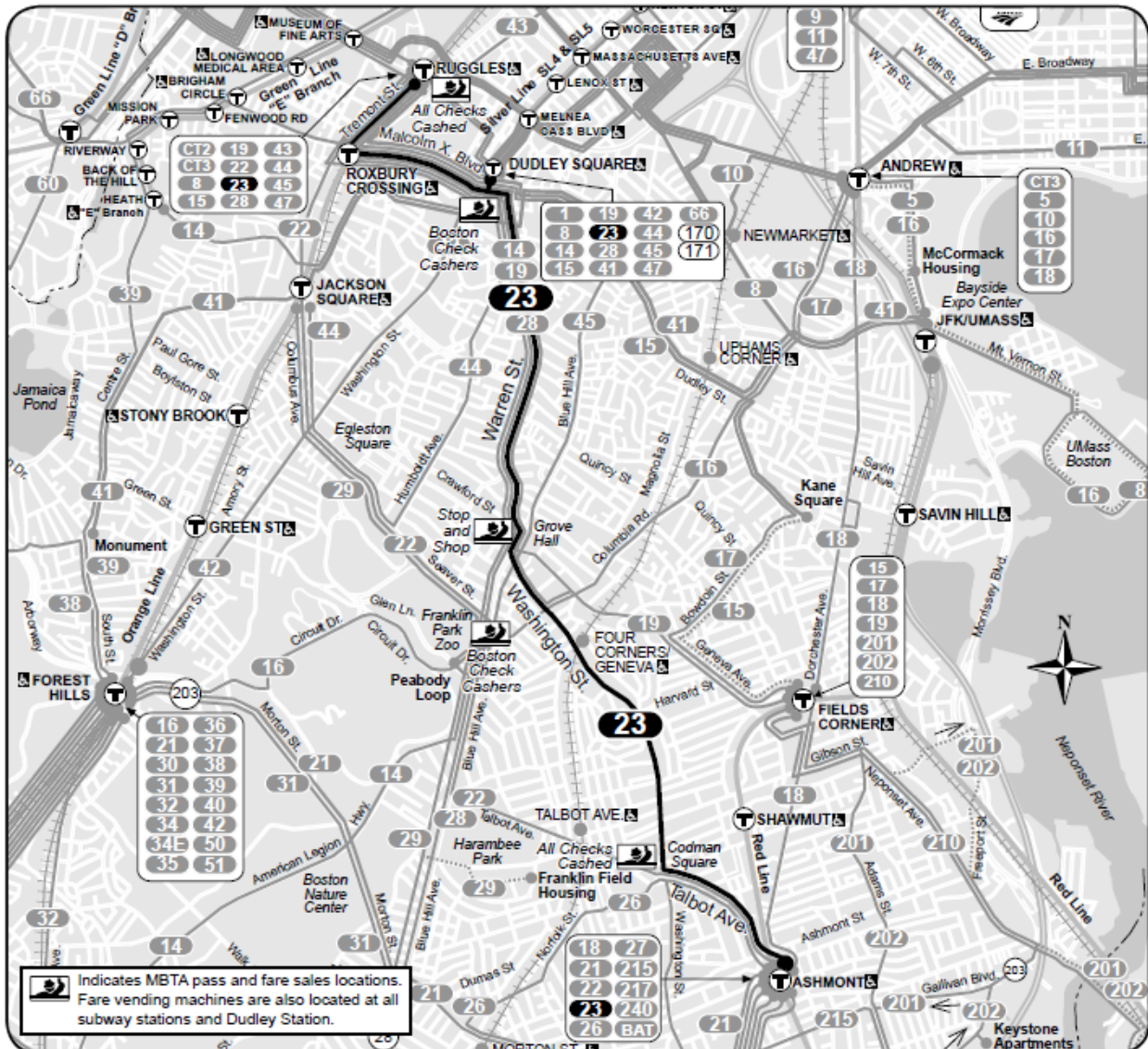
Route 23

Ashmont Station – Ruggles Station

Route Overview

Route 23 Ashmont Station – Ruggles Station is a Key Bus route that operates between Ashmont Station and Ruggles Station. It operates primarily via Talbot Avenue, Washington Street, Warren Street, Dudley Station, and Roxbury Crossing Station.

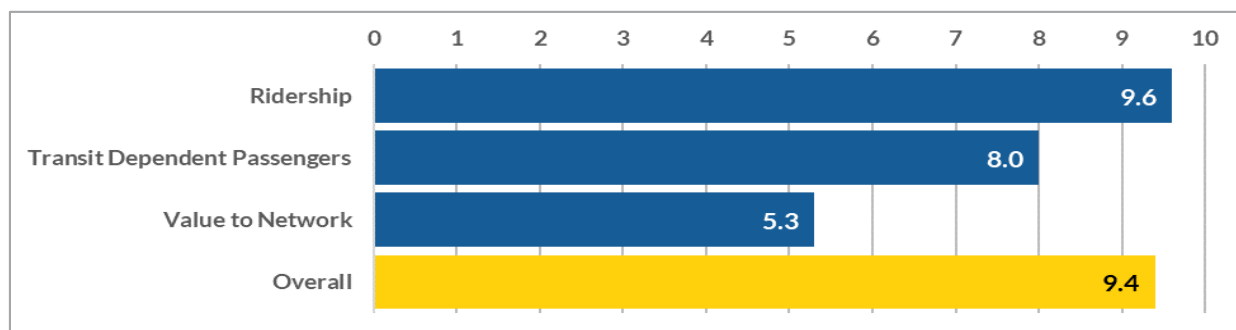
Figure 1 | Service Map



Network Importance

Route 23 is one of the MBTA's most important bus routes (see Figure 2). On a relative scale of 0 to 10, the route ranks 9.6 in terms of ridership, 8.0 in terms of transit dependent ridership, and 5.3 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 9.4.

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



Service Overview

Schedule

Route 23 provides frequent service for most of the day seven days a week (see Table 1).

Table 1 | Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	4:55 AM to 1:29 AM			124/126
Sunrise	5:09 AM to 5:59 AM	10 - 20	14	5/4
Early AM	6:00 AM to 6:59 AM	1 - 12	5	11/13
AM Peak	7:00 AM to 8:59 AM	6 - 8	7	18/17
Midday Base	9:00 AM to 1:29 PM	7 - 12	11	24/25
Midday School	1:30 PM to 3:59 PM	1 - 11	7	22/22
PM Peak	4:00 PM to 6:29 PM	7 - 9	9	17/18
Evening	6:30 PM to 9:59 PM	7 - 17	13	17/17
Late Evening	10:00 PM to 11:59 PM	17 - 20	19	6/6
Night	12:00 AM to 1:06 AM	17 - 27	21	4/4
Saturday	4:40 AM to 1:26 AM	10 - 30	13	92/93
Sunday	5:40 AM to 1:25 AM	16 - 25	19	65/64

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

On weekdays, service operates from 4:55 AM to 1:29 AM at the following frequencies:

- Every 10 to 20 minutes from the beginning of service through 6:00 AM.
- About five to seven minutes from 6:00 AM to 9:00 AM
- Every 11 or 12 minutes from 9:00 AM to 1:30 PM
- Every one to 11 minutes, but mostly every seven or eight minutes, from 1:30 PM to 4:00 PM
- Every eight to nine minutes from 4:00 PM to 7:00 PM
- Every 13 to 15 minutes from 7:00 PM until 10:00 PM
- Every 17 to 27 minutes, but mostly every 20 minutes, from 10:00 PM until the end of service

On Saturdays, service operates from 4:40 AM to 1:26 AM. Service operates every 10 to 17 minutes for most of the day, and 20 to 26 minutes after about 10:00 PM. On Sundays, service operates from 5:40 AM to 1:25 AM. For most of the day, it operates every 16 to 18 minutes.

Route 23 exceeds the MBTA span of service and frequency standards for Key Bus routes during all service periods except Saturday and Sunday evenings, with a few trips that operate up to 26 minutes apart, compared to the standard of every 20 minutes.

Service Patterns

On weekdays, all but three inbound trips and all but five outbound trips operate Pattern 23.0, which serves the full length of Route 23's alignment between Ashmont Station and Ruggles Station (see Table 2). Additional service patterns provide school trips on weekdays:

- Pattern 23.1 operates one outbound afternoon trip from Boston Latin Academy to Ruggles Station, then along the primary alignment to Ashmont Station.
- Pattern 23.2 operates two inbound trips and one outbound trip, providing short-turn service between Dudley Station and Ashmont Station only.
- Pattern 23.3 operates one outbound afternoon trip from Madison Park High School to Ruggles Station, then along the primary alignment to Ruggles Station.
- Pattern 23.4 operates two outbound morning trips between Dudley Station and Boston Latin Academy. Since the development of this document, this pattern was discontinued and replaced by service on Route 10 City Point – Copley Square and Route 66 Harvard Square – Dudley Station.
- Pattern 23.6 operates one inbound afternoon trip from Boston Latin Academy to Ruggles Station. Since the development of this document, this pattern was discontinued and replaced by service on Route 66 and Route 57 Watertown Yard or Oak Square – Kenmore Station.

All weekend service is provided with Pattern 23.0.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				124	92	65
23.0	Ashmont Station	Ruggles Station	Primary pattern	121	92	65
23.2	Ashmont Station	Dudley Station	Short-turns for additional capacity	2	-	-
23.6	Boston Latin Academy	Dudley Station	PM school trip	1	-	-
OUTBOUND				126	93	64
23.0	Ruggles Station	Ashmont Station	Primary pattern	121	93	64
23.1	Boston Latin Academy	Ashmont Station	PM school trip	1	-	-
23.2	Dudley Station	Ashmont Station	Short-turn for additional capacity	1	-	-
23.3	Madison Park High School	Ashmont Station	PM school trip	1	-	-
23.4	Dudley Station	Franklin Park Zoo	Serves Boston Latin Academy	2	-	-

Ridership

Route 23 carries approximately 11,810 passengers on weekdays, 6,520 on Saturdays, and 4,530 on Sundays. In terms of weekday ridership, it is the MBTA's fifth highest ridership bus route.

Ridership by Stop

Route 23's ridership is highest at Ashmont Station, Dudley Station, and Ruggles Station. Ridership at other stops, although much lower than at these stations, is still high (see Figure 3).

On weekday inbound trips:

- 1,700 passengers board at Ashmont Station, which is tied with Dudley Station as the highest ridership stop on the route.
- 620 passengers board at the three stops along Talbot Avenue between Ashmont Station and Washington Street.
- 1,180 passengers board and 540 alight at the five stops along Washington Street between Talbot Avenue and Bowdoin Street.
- 730 passengers board and 730 passengers alight along Washington Street between Bowdoin Street and Blue Hill Avenue.

- 700 passengers board and 380 passengers alight along Warren Street between Blue Hill Avenue and Quincy Street.
- 530 passengers board and 505 passengers alight along Warren Street between Quincy Street and Dudley Station.
- 300 passengers board and 1,400 passengers alight at Dudley Station. Dudley Station is tied with Ashmont Station as the highest ridership stop on the route.
- 90 passengers board and 220 passengers alight along Malcolm X Boulevard between Dudley Station and Madison Park High School.
- 14 passengers board and 270 passengers alight at Malcolm X Boulevard at Tremont Street, the closest stop to Roxbury Crossing Station.
- 11 passengers board and 90 alight at Tremont Street opposite Prentiss Street.
- 1,500 passengers a day alight at Ruggles Station, which is the third highest ridership stop on the route.

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

Ridership by Trip

On weekdays in both directions, ridership is highest in the late afternoon between 1:30 PM and 4:30 PM, when trips carry over 70 passengers (see Figure 4 and Figure 5). AM peak and late PM peak ridership is also high. During the AM peak, inbound trips carry over 60 passengers per trip, and a few outbound trips carry over 80 passengers. In the late PM peak, inbound trips carry over 50 passengers and outbound trips carry over 70 passengers. A number of inbound trips between 5:30 AM and 6:30 AM and outbound trips between 2:30 PM and 4:00 PM have average loads that exceed the MBTA's loading standards. When there are service disruptions, overcrowding on these trips becomes worse and other trips become overcrowded. In the evening, inbound ridership declines steadily from around 50 passengers at 6:00 PM to fewer than 10 passengers on the last trip at 1:06 AM. Outbound ridership is higher and stays at around 50 passengers per trip until 10:30 PM. It then declines steadily to 10 passengers on the last trip at 1:05 AM.

On Saturdays, inbound trips generally carry 30 to 50 passengers per trip and outbound trips generally carry about the same. Ridership is lower early and late (see Figure 6 and Figure 7).

On Sundays, ridership per trip is similar to Saturdays, with trips in both direction carrying 30 to 50 passengers between 9:00 AM and 9:00 PM, and fewer before and after those times (see Figure 8 and Figure 9). One difference, however, is very high ridership on the first inbound trips.

Figure 3 | Weekday Inbound Ridership by Stop Map

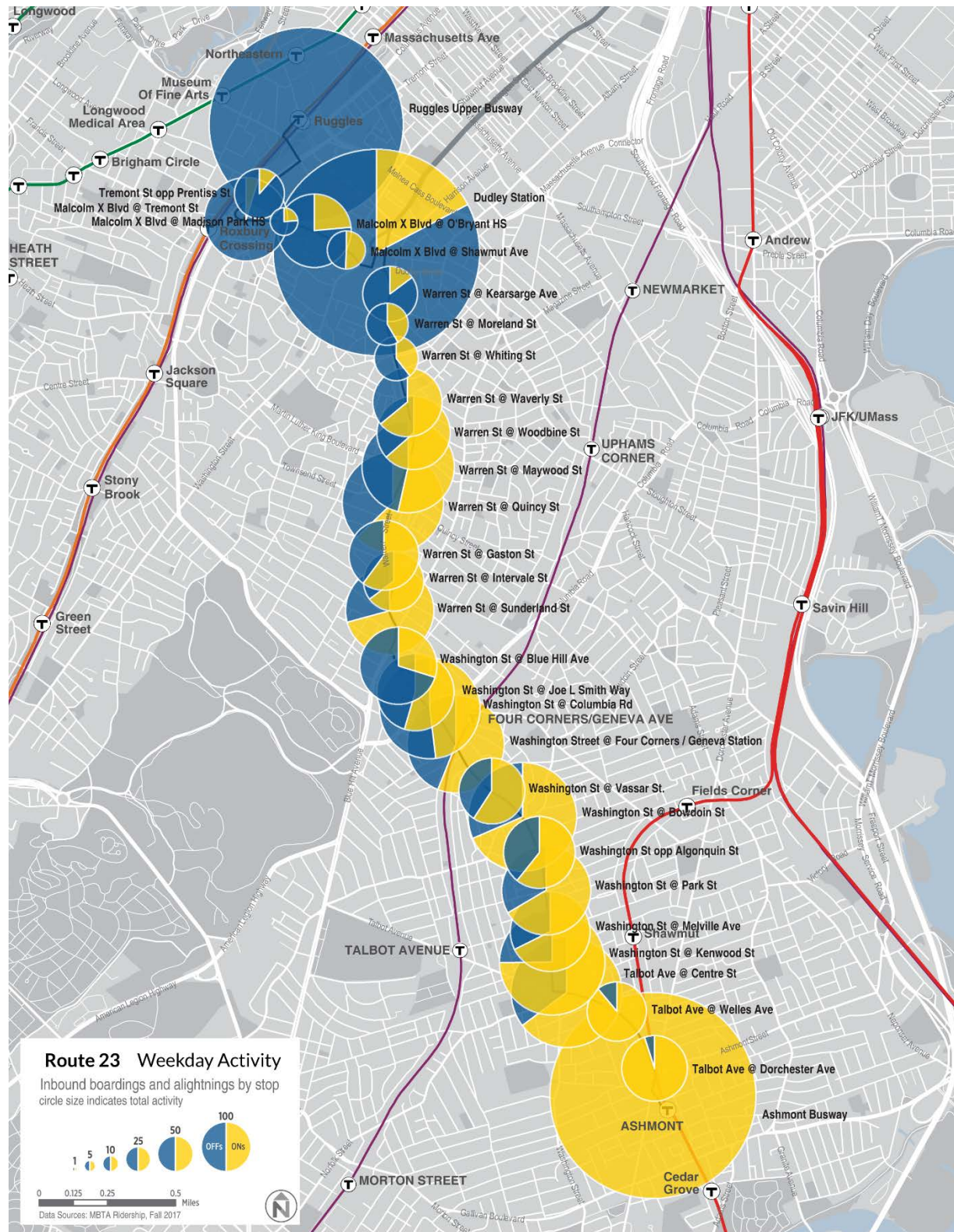


Figure 4 | Weekday Ridership by Trip: Inbound

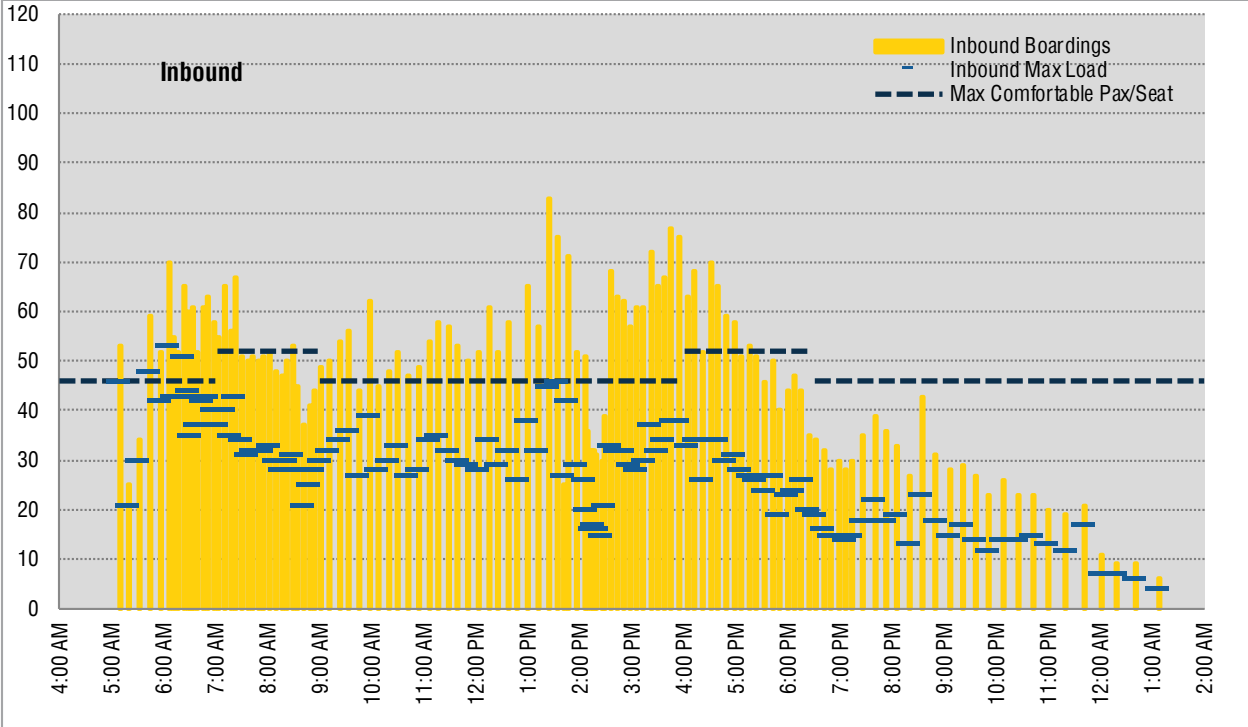


Figure 5 | Weekday Ridership by Trip: Outbound

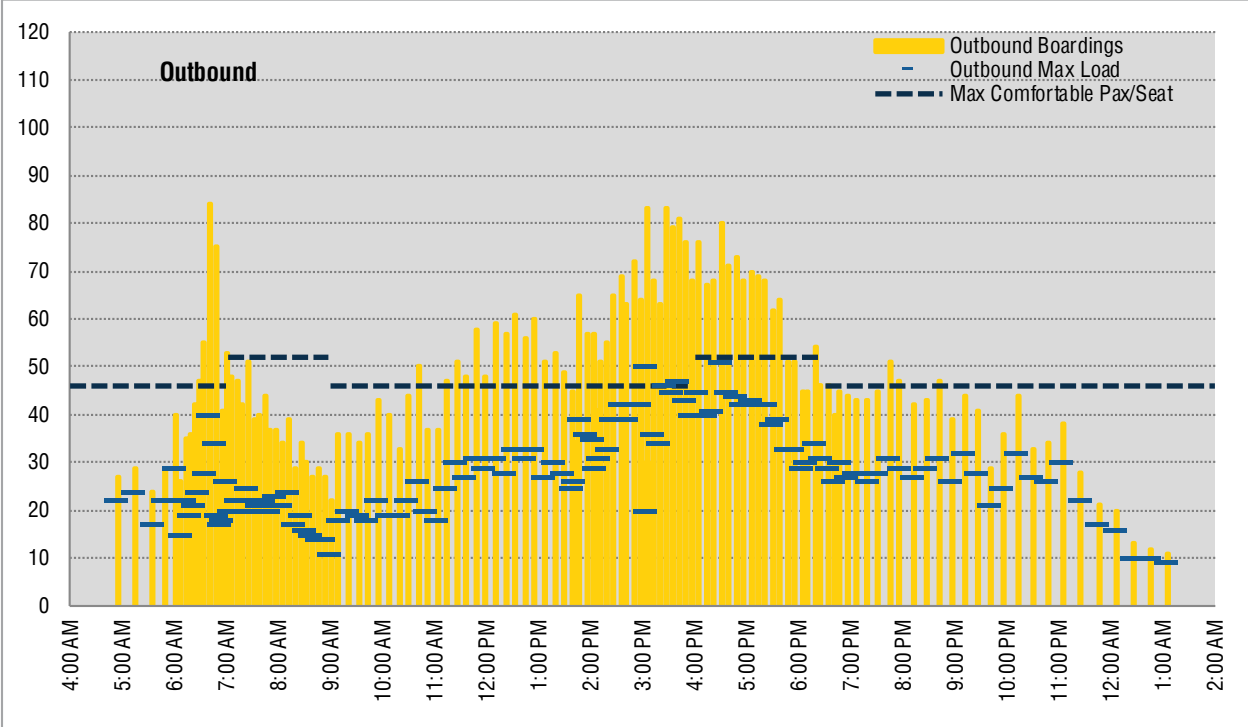


Figure 6 | Saturday Ridership by Trip: Inbound

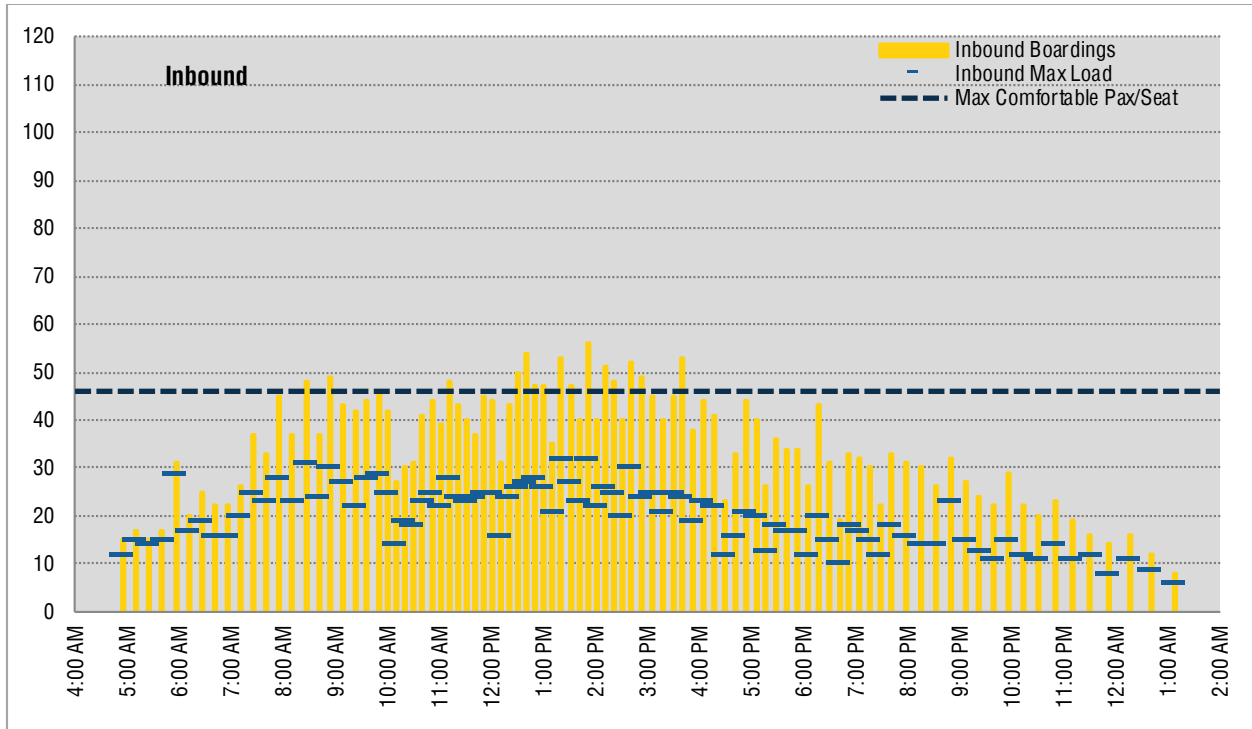


Figure 7 | Saturday Ridership by Trip: Outbound

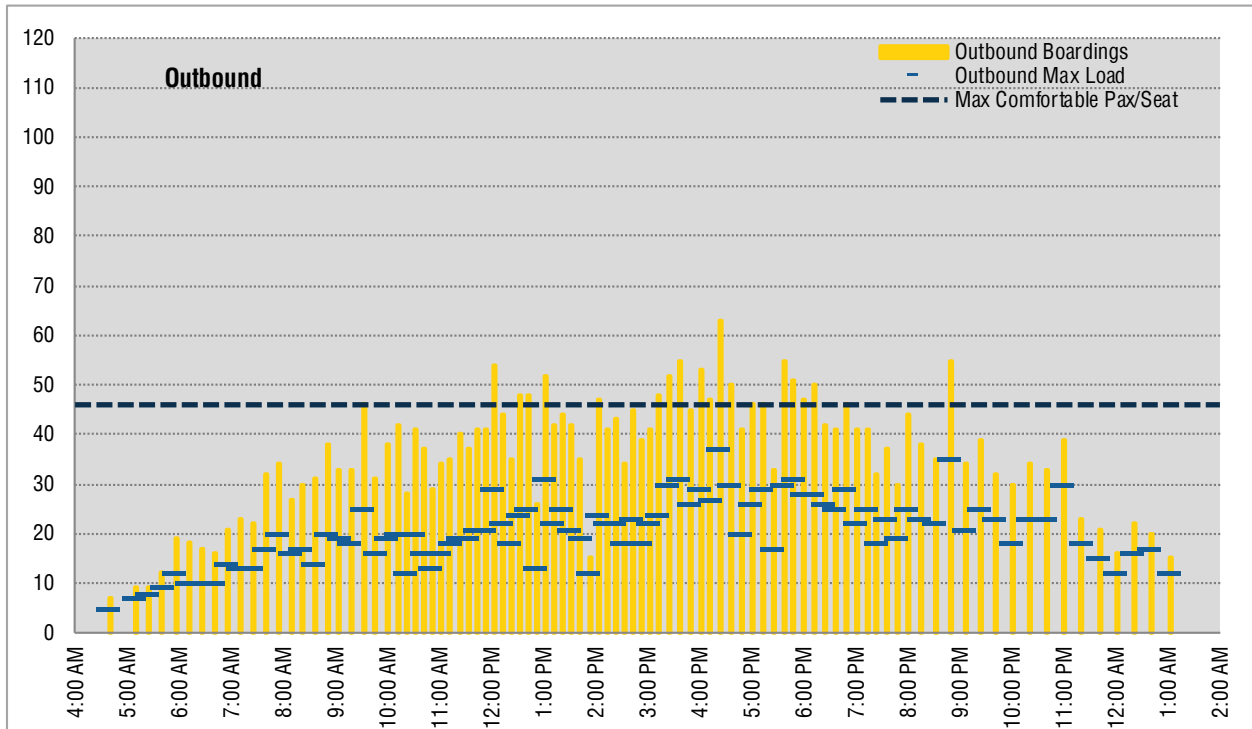


Figure 8 | Sunday Ridership by Trip: Inbound

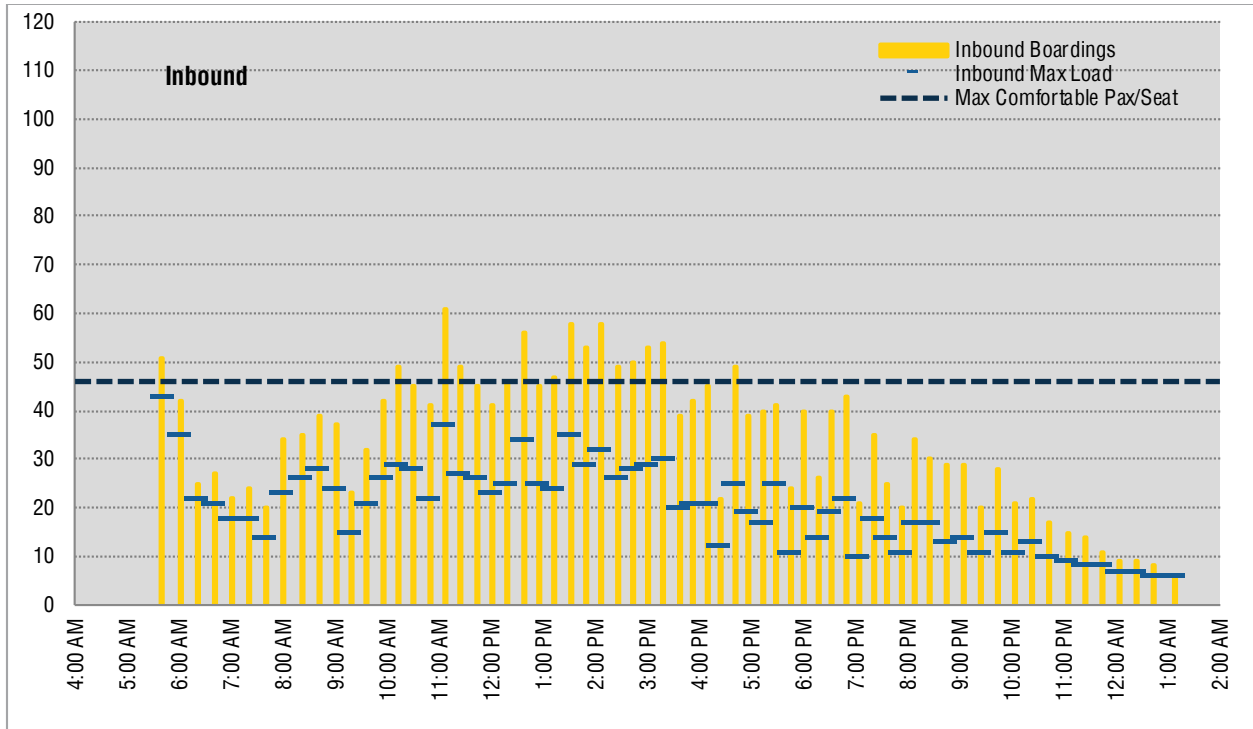
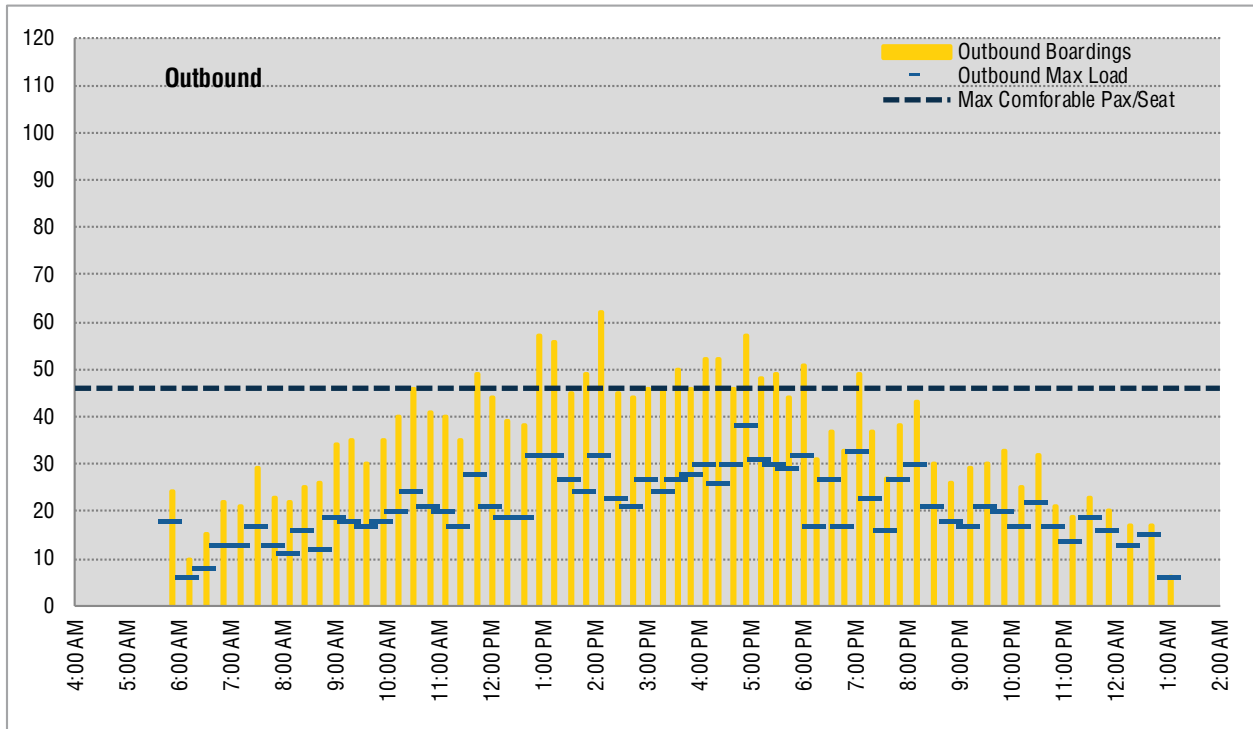


Figure 9 | Sunday Ridership by Trip: Outbound



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 23, 92.3% of passenger minutes are in comfortable conditions. This is just above the minimum standard of 92% but below the target of 96% (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	92.3%	98.9%	98.5%

Reliability and Speed

Reliability

Route 23's overall reliability is 74% on weekdays and 72% on Saturdays and Sundays (see Table 4). Reliability is slightly below the minimum standard of 75% for Key Bus routes, and below the target of 80%. Dropped trips are a problem, with 2.9% of trips not operated in 2017.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	73%	88%	74%	2.9%
Saturday	72%	70%	72%	-
Sunday	73%	68%	72%	-

Running Times

Route 23's actual running times are longer than scheduled running times throughout the day on weekdays. On inbound trips, the route's actual times are up to eight minutes longer in the AM peak and up to 13 minutes longer in the PM peak (see Figure 10). Outbound trips run about one to five minutes longer than scheduled through the morning, two to ten minutes longer during the late afternoon and PM peak, and two to five minutes longer through most of the evening (Figure 11).

Figure 10 | Scheduled & Median Travel Time by Trip: Route 23 Inbound

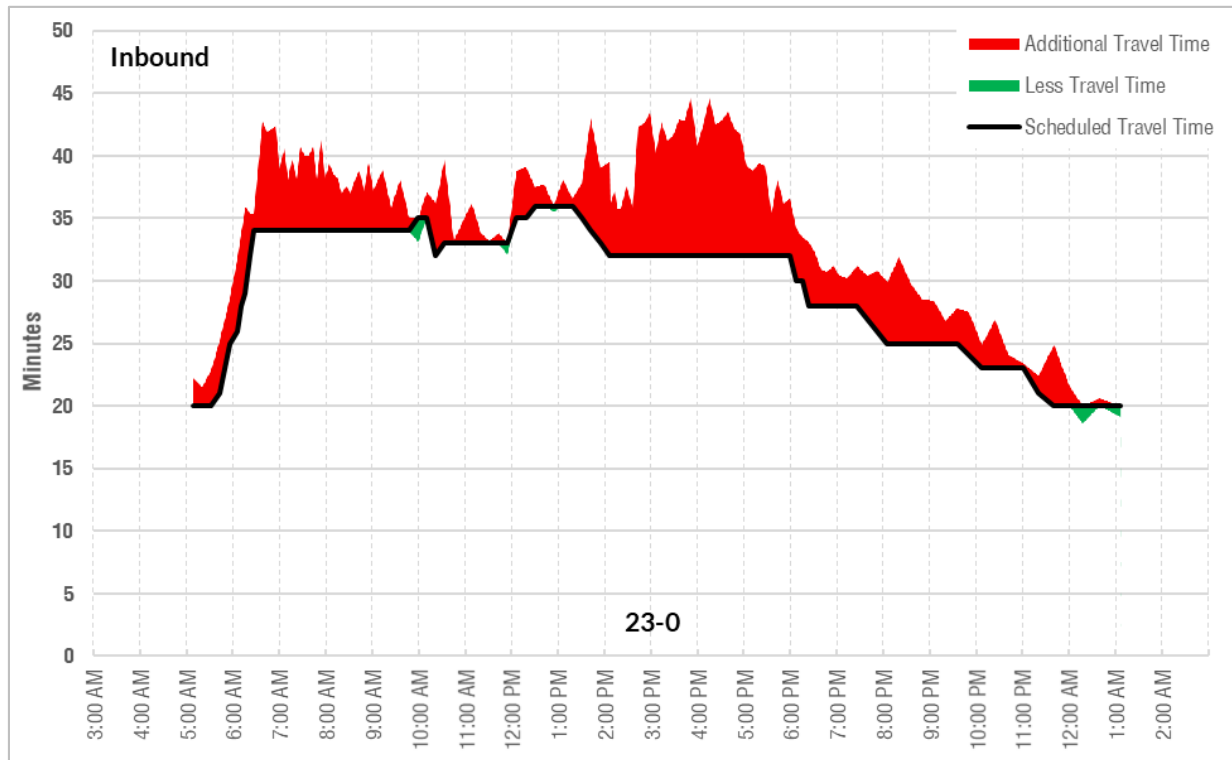
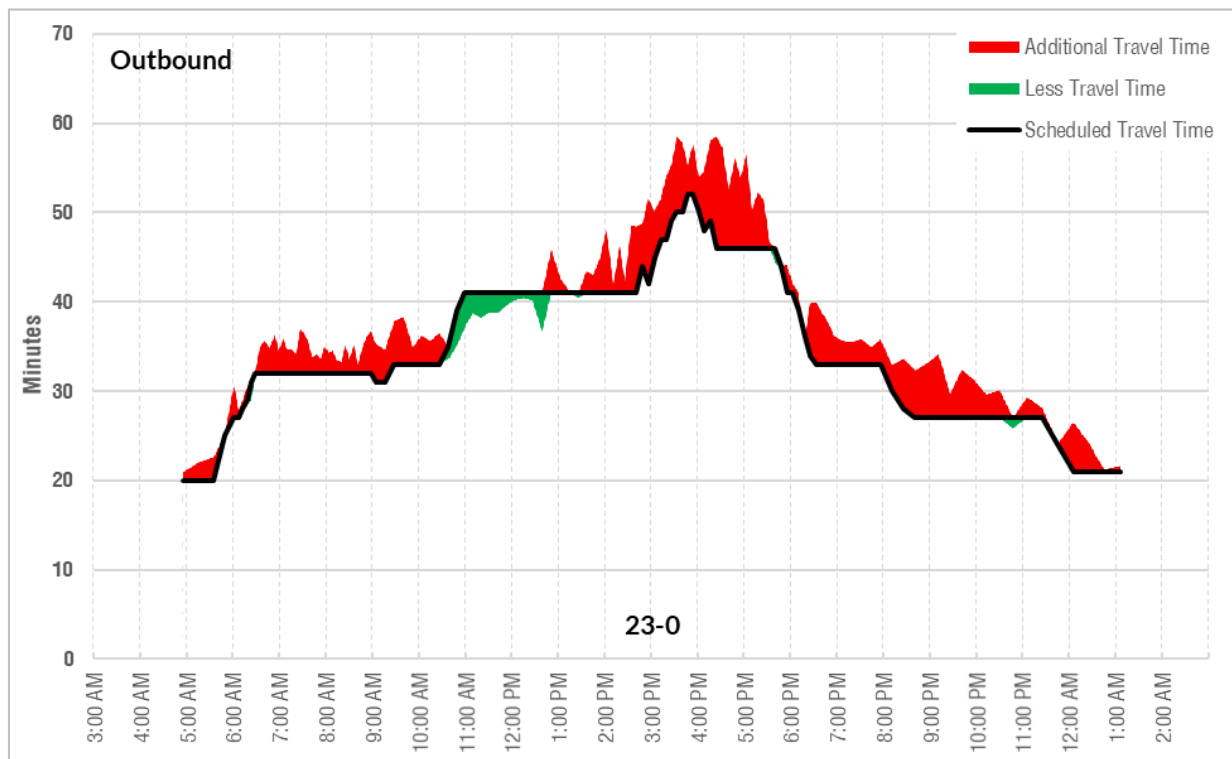


Figure 11 | Scheduled & Median Travel Time by Trip: Route 23 Outbound



Stop Spacing

Route 23 has an average of seven stops per mile, which is at the high end of the MBTA's guideline of four to seven stops per mile for Key Bus routes. Stop consolidation to reduce the number of stops could make service faster while still providing convenient access.

Summary

Route 23 provides very direct service between Ashmont Station and Ruggles Station, with very high ridership activity along the entire route. Overall, it performs reasonably well. However, performance could be better as reliability is below standard, the route's schedule does not match actual running times, and crowding is an issue on some early morning and late afternoon trips on weekdays.