

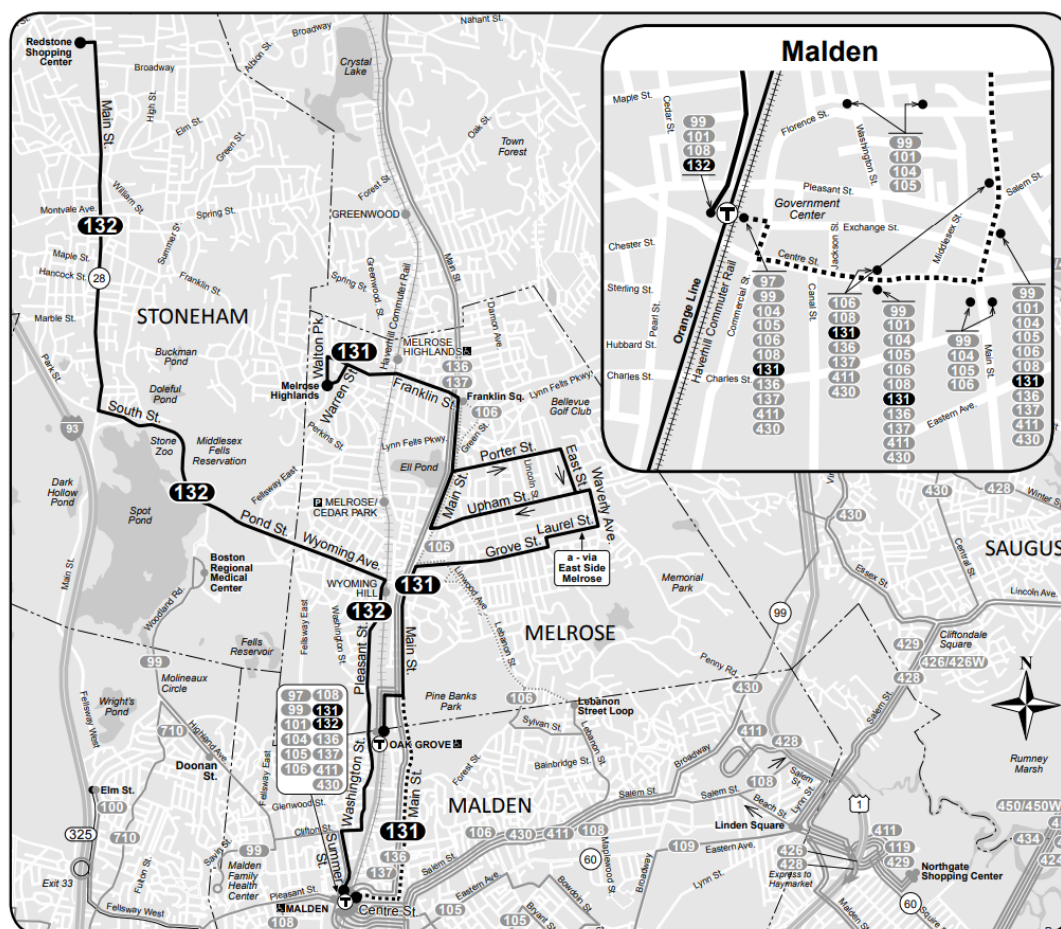
Route 131

Melrose Highlands – Oak Grove

Route Overview

Route 131 Melrose Highlands – Oak Grove is a Commuter route that connects Melrose with the Oak Grove Orange Line station. Route 131 provides neighborhood circulation in Melrose, before traveling south along Main Street to connect with rapid transit. Select trips continue south to serve Malden Center. Route 131 shares the majority of its alignment with Routes 136/137 Reading Depot - Malden Center Station, which connect Malden Center with the communities of Wakefield and Reading via the Main Street corridor in Melrose.

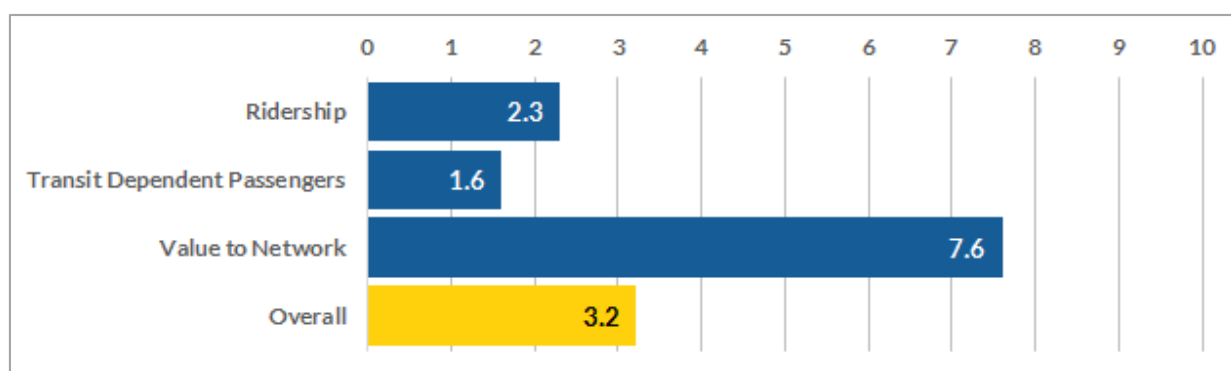
Figure 1 | Service Map



Network Importance

Route 131 is a less important, low ridership route with few transit dependent passengers, but provides above average value to the MBTA network due to the high rate of transfers to other services and unique riders (see Figure 2). On a relative scale of 0 to 10, Route 131 rates 2.3 in terms of ridership, 1.6 in terms of transit dependent ridership, and 7.6 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). The overall score, which gives a 70% weighting to overall ridership and a 15% weight to both other measure, is 3.2.

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



Service Patterns

Schedule

As a Commuter route, Route 131 provides moderately frequent service during the AM peak and PM peak and infrequent service during all other times (see Table 1). On weekdays, service operates from 6:00 AM to 9:45 AM and from 11:45 AM to 7:17 PM with the following frequencies:

- Every 15 to 25 minutes from the start of service at 6:25 AM to the end of AM peak at 9:00 AM, but mostly every 20 minutes.
- No service is provided between 9:45 AM and 11:45 AM.
- Between 12:45 PM and 4:00 PM, service operates predominantly every 60 minutes.
- Service increase to every 20 minutes during the PM peak and through the end of service at 7:17 PM.

No Saturday or Sunday service is provided.

Route 131 meets the MBTA's Span of Service Standards for Commuter routes, which require weekday service between 7:00 AM and 9:00 AM and between 4:00 PM and 6:30

PM. Route 131 also meets the MBTA’s Frequency Standards for Commuter routes, which require three trips in each peak direction.

Table 1 | Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:00 AM to 7:17 PM			23/23
Sunrise	-	-	-	-
Early AM	6:00 AM to 6:59 AM	20	20	2/3
AM Peak	7:00 AM to 8:59 AM	15 – 25	20	6/6
Midday Base	9:00 AM to 1:29 PM	20 – 155	79	4/3
Midday School	1:30 PM to 3:59 PM	55 – 60	58	2/3
PM Peak	4:00 PM to 6:29 PM	20 – 55	21	7/7
Evening	6:30 PM to 7:17 PM	19 – 20	20	3/2
Late Evening	-	-	-	-
Night	-	-	-	-
Saturday	-	-	-	-
Sunday	-	-	-	-

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

Service Patterns

Route 131 has four distinct service patterns (see Table 2).

- Pattern 131.0 makes up about half of all trips, operating on the primary service alignment, which is predominantly oriented along the Main Street corridor between Melrose Highlands and Oak Grove, with a mid-route deviation to serve the residential neighborhood along Potter, Upham, and Grove Streets.
- Pattern 131.1 makes four midday outbound trips, operating between Malden Center, Oak Grove, and Melrose Highlands, while serving Melrose via Grove Street, Laurel Street, and Upham Street. This service pattern is unique in serving both Oak Grove station and Malden Center Station, while the primary service alignment and others serve either Oak Grove station or Malden Center Station alone.
- Pattern 131.2 makes two evening inbound trips (departing at 6:57 PM and 7:17 PM) and two outbound early morning trips (departing at 6:00 AM and 6:20 AM) operating a more direct service pattern between Melrose Highlands and Malden Center Station. These trips skip Oak Grove station and serve the Main Street corridor directly to Malden Center.
- Pattern 131.3 operates as a complement to Pattern 131.1, running three inbound midday trips between Melrose Highlands and Malden Center Station, but skipping Oak Grove station.

- Pattern 131.4 makes six outbound trips in the AM peak and nine inbound trips in the midday and PM peak and operates as a reverse-commute pattern geared towards service-sector workers who work at retail establishments on Main Street or healthcare workers at Melrose-Wakefield Hospital. Pattern 131.4 operates between Melrose Highlands and Oak Grove station along the Main Street corridor.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				24	-	-
131.0	Warren Street at Melrose Street	Oak Grove Station	Primary pattern	10	-	-
131.2	Warren Street at Melrose Street	Malden Center Station	Via Main Street, no service to Melrose East Side	2	-	-
131.3	Warren Street at Melrose Street	Malden Center Station	Midday inbound trips via Oak Grove	3	-	-
131.4	Warren Street at Melrose Street	Oak Grove Station	Midday/PM peak reverse commute service via Main Street	9	-	-
OUTBOUND				24	-	-
131.0	Oak Grove Station	Warren Street at Melrose Street	Primary pattern	12	-	-
131.1	Malden Center Station	Warren Street at Melrose Street	Midday outbound trips via Oak Grove	4	-	-
131.2	Malden Center Station	Warren Street at Melrose Street	Via Main Street, no service to Melrose East Side	2	-	-
131.4	Oak Grove Station	Warren Street at Melrose Street	AM peak reverse commute service via Main Street	6	-	-

Ridership

Route 131 serves 662 riders per weekday, relatively high for an MBTA Commuter route.

Ridership by Stop

As a Commuter route, Route 131 primarily sees most boarding in Melrose and most alightings at Oak Grove Station in the inbound direction (see Figure 3). Relatively few boardings and alightings occur at Malden Center, on the select trips operated on patterns 131.1, 131.2, and 131.3. On weekday inbound trips:

- About 15 passengers board at Route 131's northern terminus, at Warren Street at Melrose Street.
- Franklin Street at Greenwood Street serves a significant number of riders (23 daily boardings) because of its proximity to the Melrose Highlands Rail Station on the Haverhill Line.
- There is low ridership activity on the segment between Franklin Street at Ashland Street and Main Street at Melrose Street, with just 46 boardings and two alightings between the five stops on this segment.
- Ridership activity is dispersed evenly throughout the Melrose neighborhood circulation; among 23 stops on this segment, Route 131 serves 152 daily boardings and seven daily alightings.
- The Main Street corridor, between Lebanon and Grove Streets, serves little ridership, with nine daily boardings and three daily alightings on the five stops of this segment.
- Main Street at Wyoming Avenue is the largest boarding generator on Route 131, with 44 daily boardings and 5 daily alightings.
- The Main Street corridor between Wyoming Avenue and Oak Grove Station generates relatively little ridership, with just 26 daily boardings and four daily alightings on its six stops.
- Oak Grove sees an average of 264 daily alightings on inbound trips, about 85% of Route 131's total alightings, indicating a significant transfer pattern to the Orange Line at Oak Grove to access regional destinations.
- Because comparatively few trips on Route 131 end at Malden Center – five daily inbound trips versus 19 daily trips ending at Oak Grove – just 19 daily riders alight the bus there per day. The Main Street corridor between Oak Grove and Malden Center is the least-popular segment on Route 131; no stop on this corridor serves more than three daily riders.

Outbound ridership is roughly the reverse of inbound ridership on weekdays.

Ridership by Trip

As is typical on a Commuter route, on Route 131 activity is highest in the inbound direction during the AM and in the outbound direction in the PM. Most trips do not carry standing loads, and on even the highest ridership trips, overcrowding is not a problem. Passenger turnover is low, with most passengers riding the full length of Route 131 to and from Oak Grove or, less frequently, Malden Center. As a result, maximum loads are nearly as high as total ridership by trip. On weekday inbound trips (see Figure 4):

-
- The first two trips, at 6:25 AM and 6:45 AM, carry moderate passenger loads of 25 and 35 riders, respectively.
 - During the AM peak, typical loads peak at about 40 riders on the 7:25 AM and 7:45 AM trips before falling to about 20 riders by the 8:25 AM trip.
 - Passenger loads of fewer than 10 riders per trip are typical throughout the remainder of inbound service after the AM peak.

On weekday outbound trips (see Figure 5):

- Ridership activity is low throughout the early morning, am peak, and midday periods, with passenger loads typically below 10 riders per trip.
- During the PM peak, ridership increases substantially, with most trips serving 15 to 30 riders per trip.
- Passenger loads peak during the latter half of the PM peak period, with loads of 35 to 40 passengers per trip on the three trips between 5:45 PM and 7:00 PM.

Figure 3 | Weekday Inbound Ridership by Stop Map



Figure 4 | Weekday Ridership by Trip: Inbound

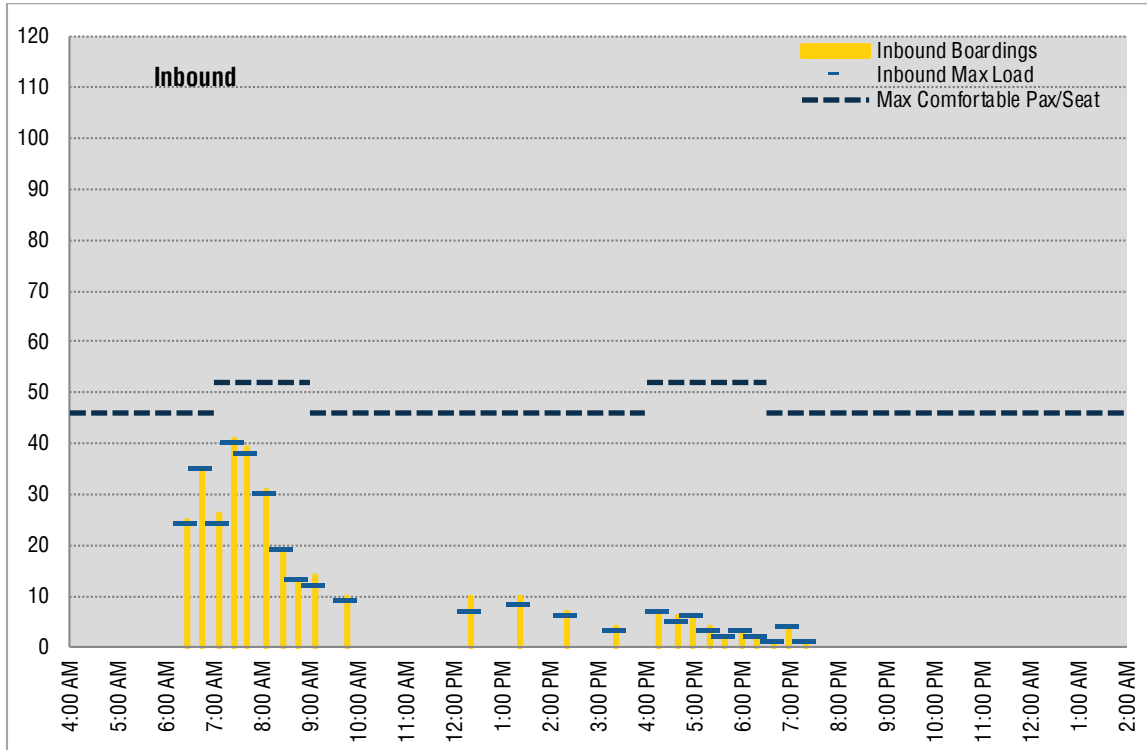
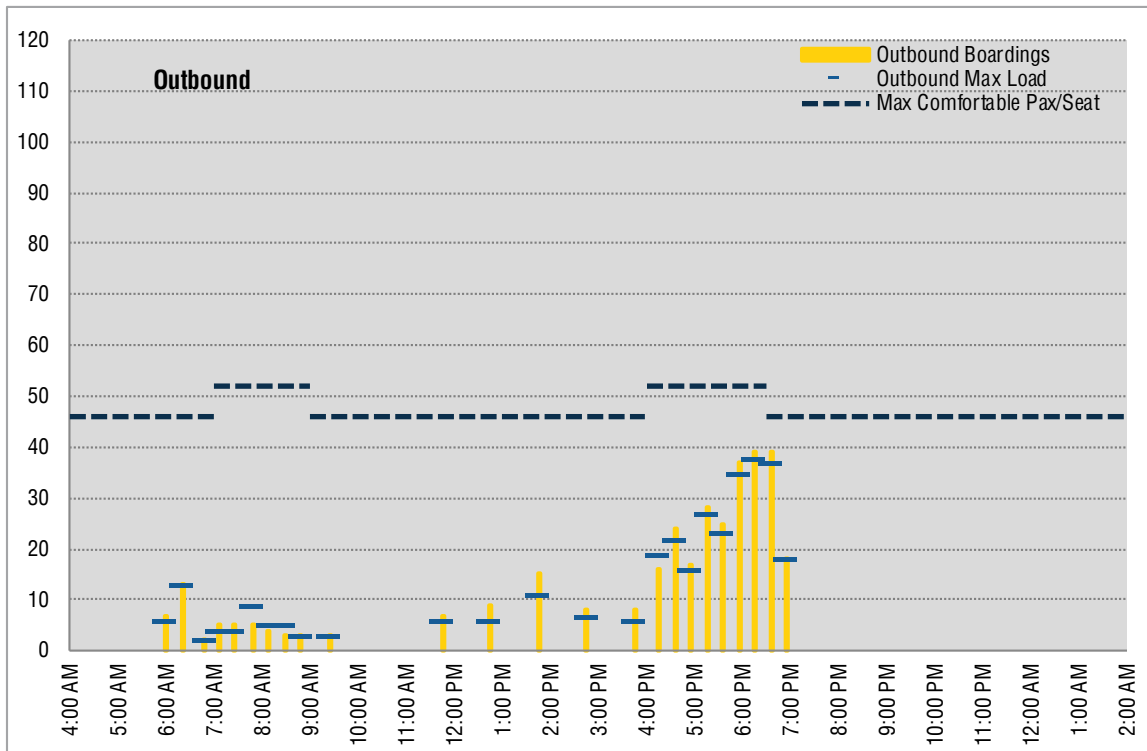


Figure 5 | Weekday Ridership by Trip: Outbound



Passenger Comfort

The MBTA has a goal 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 agency operates, and that some passengers may have to stand for a portion of their trip. Comfortable conditions are defined as 140% or less of seated capacity during high volume periods and 125% or less during other periods. Based on these definitions, at least 92% of passengers’ travel times should be in comfortable conditions, and at least 96% of travel times should be in comfortable conditions.

On Route 131, 98% of passenger minutes are in comfortable conditions, which is above both the minimum standard and overall 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%	-	-

Reliability and Speed

Reliability

Route 131 is less reliable than many other MBTA services. During weekdays, 60% of trips depart on-time and 60% of the trips arrive on-time at end of Route 131 (see Table 4). This falls below the MBTA non-key bus reliability minimum of 70% and well below the agency’s target of 75%. As described in the next section, poor on-time performance is largely due to actual running times that exceed scheduled running times.

Table 4 | Reliability

SERVICEDAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	60%	60%	60%	0.2%
Saturday	-	-	-	-
Sunday	-	-	-	-

Running Times

Route 131’s on-time performance in the inbound direction is poorest for midday trips on Pattern 131.3 and during PM peak trips on Pattern 131.4. During these times, actual travel times exceed scheduled travel times by about three minutes. In the outbound direction, actual travel times exceed scheduled travel times by two to three minutes on Pattern 131.0 trips throughout the day, and Pattern 131.1 for midday trips. Overall, Route 131 trips consistently take longer than scheduled travel time in both directions, on

different route patterns, and throughout the day (see Figure 6 through Figure 11). This is a major reason that on-time performance is poor.

Figure 6 | Scheduled & Median Travel Time by Trip: Route 131-0 Inbound

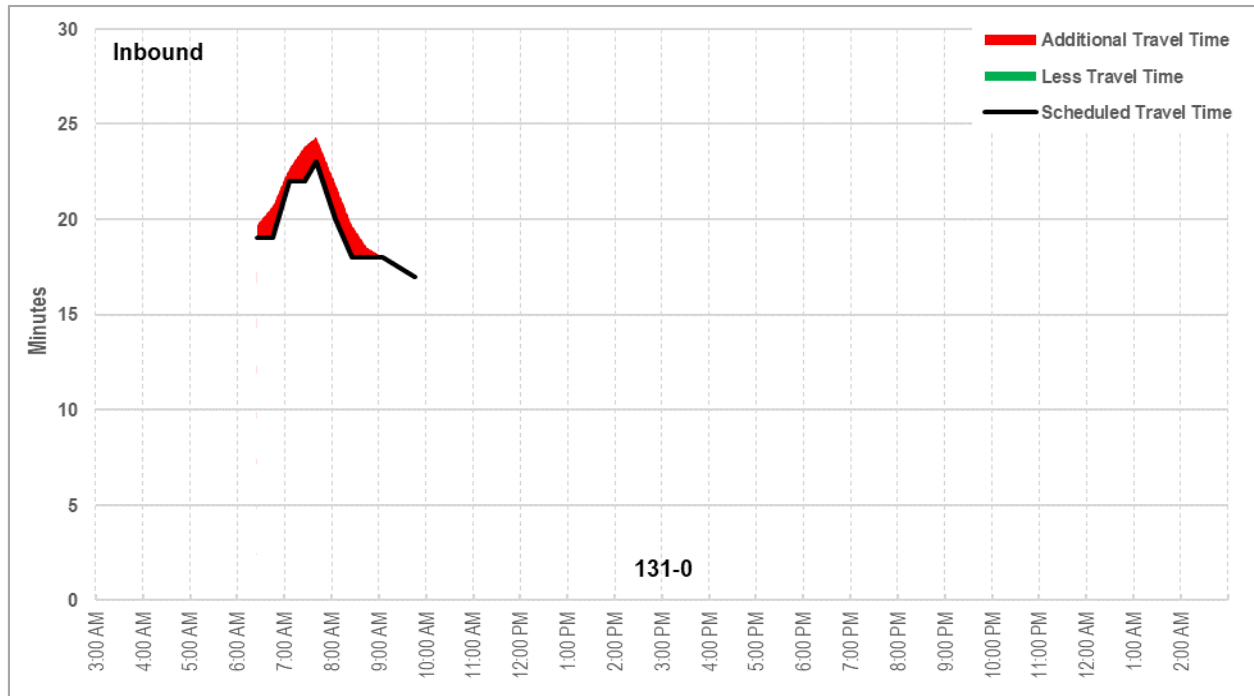


Figure 7 | Scheduled & Median Travel Time by Trip: Route 131-3 Inbound

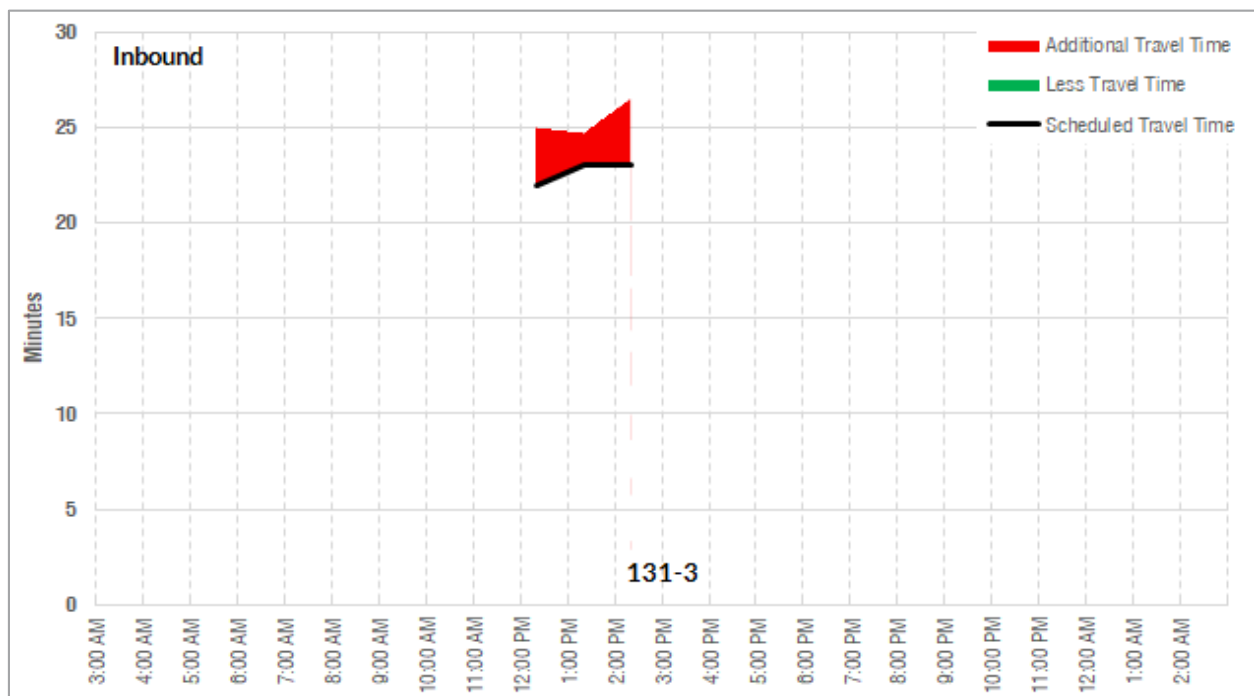


Figure 8 | Scheduled & Median Travel Time by Trip: Route 131-4 Inbound

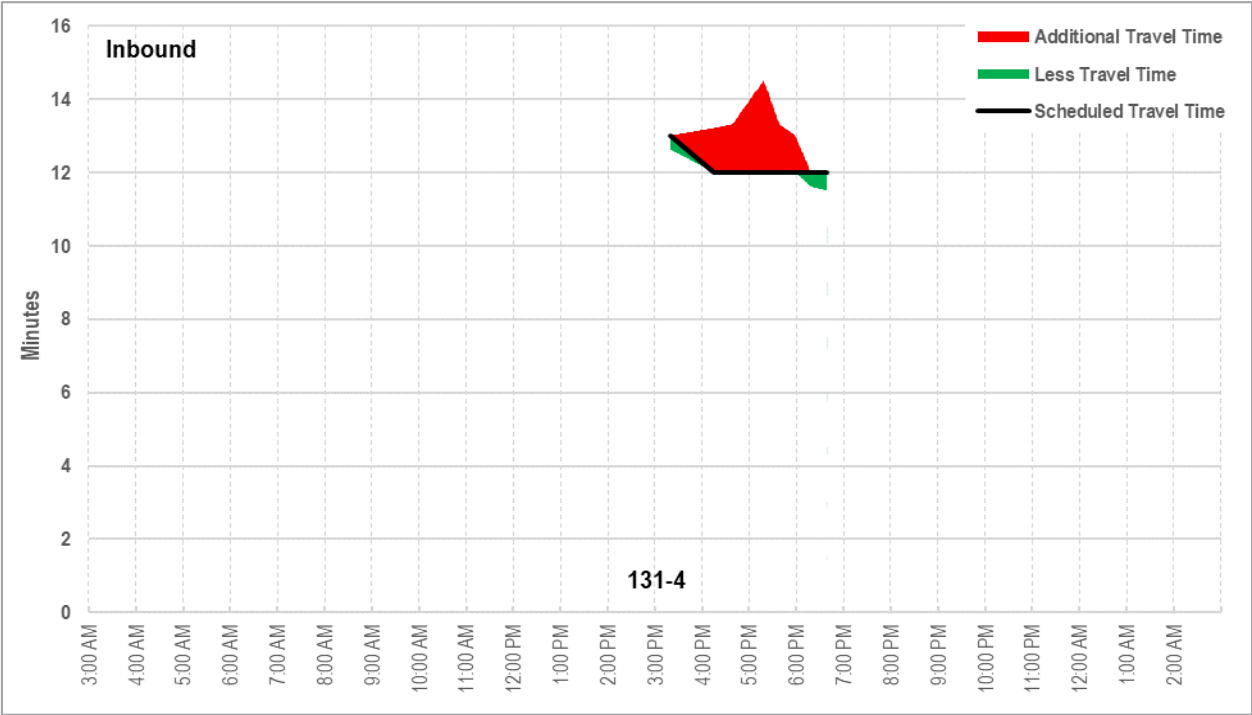


Figure 9 | Scheduled & Median Travel Time by Trip - Route 131-0 Outbound

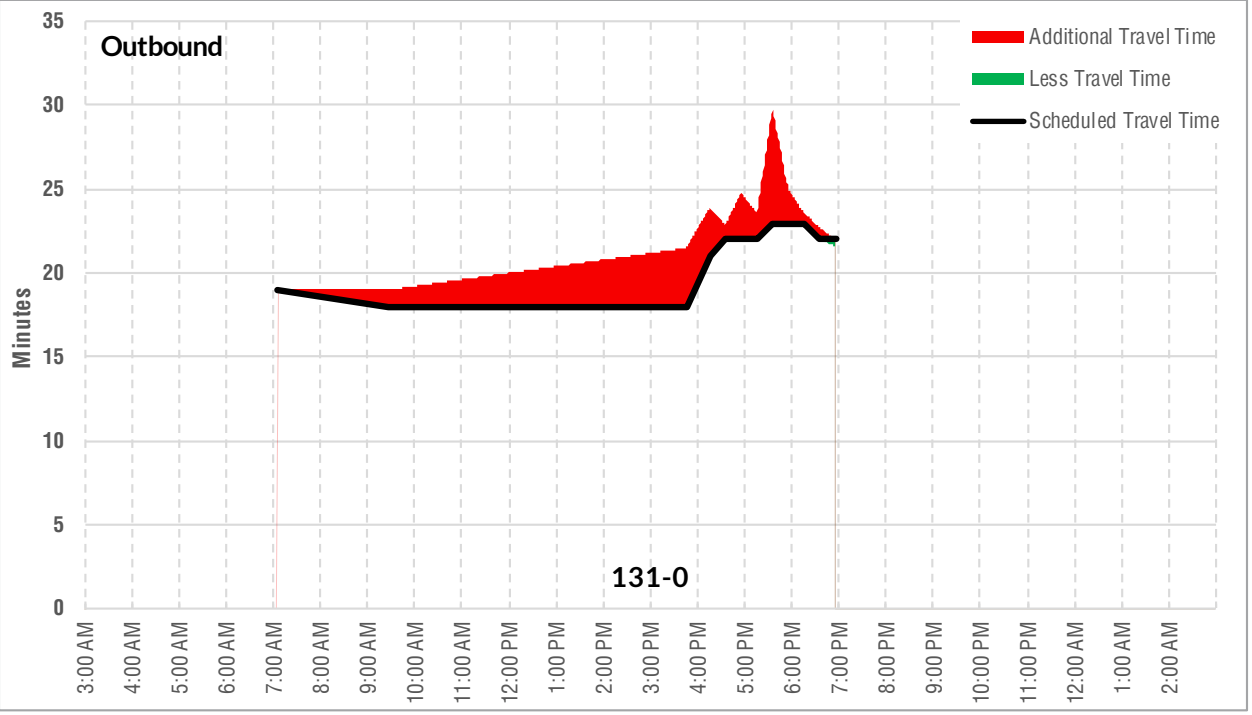


Figure 10 | Scheduled & Median Travel Time by Trip: Route 131-1 Outbound

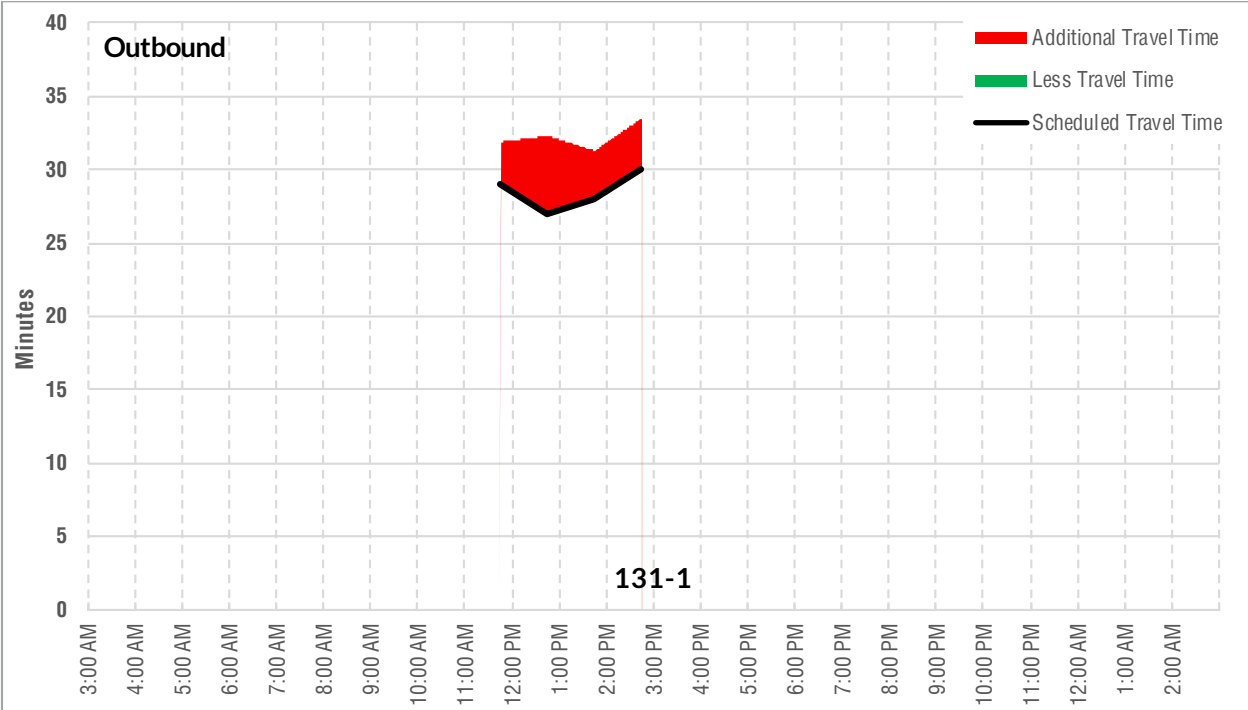
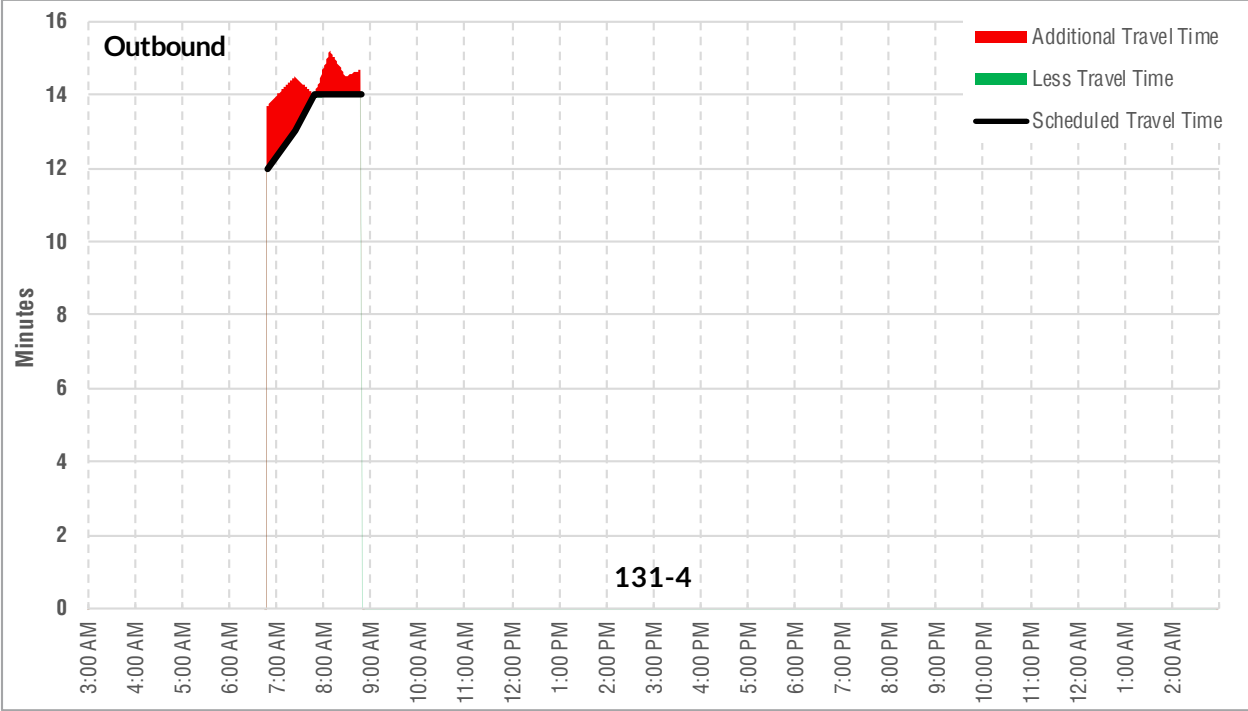


Figure 11 | Scheduled & Median Travel Time by Trip: Route 131-4 Outbound



Stop Spacing

Route 131 has about 9.4 stops per mile. This equates to an average stop spacing of 560 feet, or only a two-minute walk between stops. Several stops are closer than 500 feet apart, and some are as close as 300 feet apart. Some of the closest stop pairs include:

- Grove Street & Walnut Street, Grove Street & Linwood Avenue – 470 feet
- Grove Street & Florence Avenue, Grove Street & Swains Pond Avenue – 320 feet
- Laurel Street corridor, between 6th Street and Waverly Avenue – average stop spacing is 300 feet for outbound stops, 400 feet for inbound stops

This stop spacing is higher than the MBTA's standard of four to seven stops per mile for Commuter routes, and it may contribute to slow service or on-time performance issues.

Summary

Route 131 provides Commuter service and neighborhood circulation to Melrose in areas that are not otherwise served by MBTA service. Route 131's two most prominent weaknesses include unnecessarily close stop spacing and its range of service patterns that create additional complexities for riders. With hourly frequencies outside of peak hours, Route 131's frequency is low, which makes service less attractive to potential riders.