

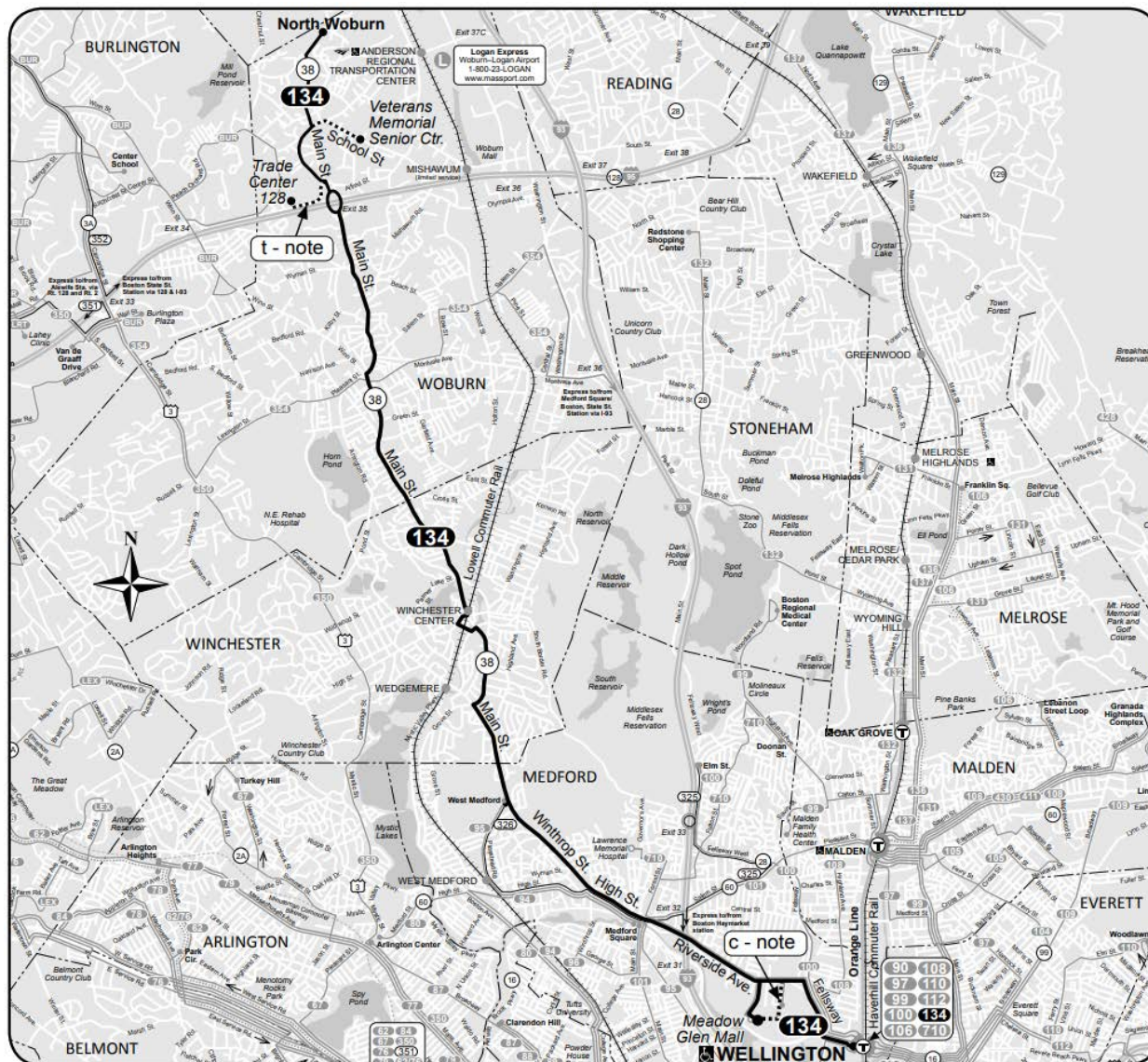
Route 134

North Woburn – Wellington Station

Route Overview

Route 134 North Woburn – Wellington Station is a Local route that operates between North Woburn and Wellington Station via Winchester and Medford, including Medford Square. It operates largely along State Highway Route 38.

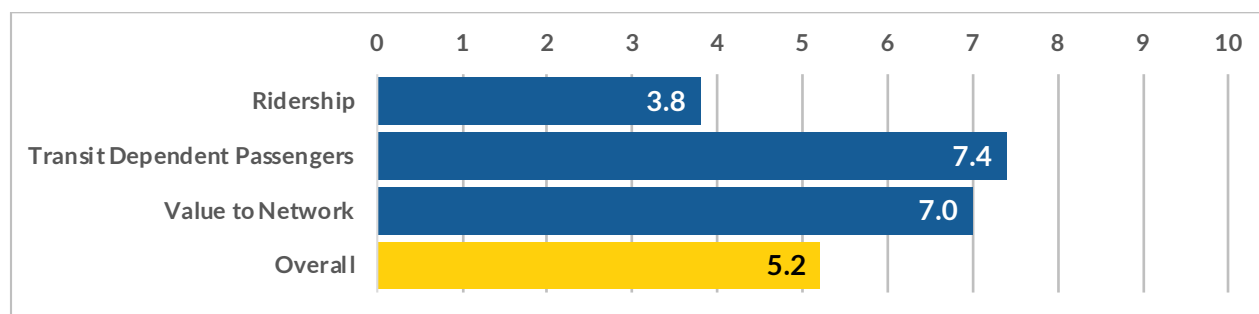
Figure 1 | Service Map



Network Value

Route 134 is of medium importance within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 3.8 in terms of ridership, 7.4 in terms of transit dependent ridership, and 7.0 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 measures, is 5.2.

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



Service Overview

Schedule

Route 134 operates seven days a week, on weekdays from 5:50 AM to 1:10 AM, on Saturdays from 6:15 AM to 1:16 AM, and on Sundays from 6:21 AM to 12:21 AM (see Table 1).

Table 1 | Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:50 AM to 1:10 AM			42/40
Sunrise	5:50 AM to 5:59 AM	1 trip	1 trip	1/1
Early AM	6:00 AM to 6:59 AM	5 - 50	25	2/3
AM Peak	7:00 AM to 8:59 AM	5 - 55	19	7/6
Midday Base	9:00 AM to 1:29 PM	5 - 60	30	10/9
Midday School	1:30 PM to 3:59 PM	5 - 55	16	7/6
PM Peak	4:00 PM to 6:29 PM	7 - 60	24	8/6
Evening	6:30 PM to 9:59 PM	15 - 60	46	4/5
Late Evening	10:00 PM to 11:59 PM	60	60	2/2
Night	12:00 AM to 1:00 AM	60	60	1/2
Saturday	6:15 AM to 1:16 AM	5 - 75	33	32/33
Sunday	6:21 AM to 12:21 AM	40 - 80	55	19/19

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

As described in more detail in the next section, service operates either between Woburn and Wellington Station or between Medford and Wellington Station. On weekdays:

- All service before approximately 6:00 AM and after 8:00 PM operates between Medford and Wellington Station.
- Between those times, service frequencies to and from Woburn are generally every 60 minutes on all days.
- Frequencies to and from Medford are very irregular. During the day, they generally range from two buses running at the same time (due to extra service to accommodate heavy student loads) to every 30 minutes and almost everything in between.
- Evening service, which only consists of service between Medford Square and Wellington, generally operates every 60 minutes.

On Saturdays, inbound service before 7:10 AM and all service after 7:30 PM operates between Medford and Wellington Station. Between those times, service frequencies to and from Woburn are generally every 60 minutes on all days and alternate with Medford trips that provide service approximately every 30 minutes between Medford and Wellington Station. Service after 7:30 PM between Medford and Wellington Station generally operates every 60 minutes.

On Sundays, all service operates approximately hourly. Service before approximately 10:45 AM and after 7:05 PM operates between Medford and Wellington Station and service between those times operates between Woburn and Wellington Station.

Route 134's service between Medford and Wellington Station meets the span of service and frequency guidelines on all days. However, peak period service to and from Woburn, which operates every 60 minutes, does not meet the frequency standard of 30 minutes.

Service Patterns

Route 134 operates with 18 different service patterns that makes service confusing and schedules irregular. On weekdays, there are four outer terminals: (1) North Woburn, (2) West Medford (Playstead Road and Winthrop Street, which is about five minutes north of Medford Square), (3) Medford High School, and (4) Medford Square. (see Table 2):

Weekdays

- Slightly less than half of all trips operate the full length of the route, and slightly more than half operate as short-turns between Medford and Wellington Station. During the day, short-turns mostly, but not always, alternate with full-length trips. Most evening service operates between Medford and Wellington Station.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				42	32	19
134.1	North Woburn	Wellington Station	Via Woburn Senior Center	1	-	-
134.2	North Woburn	Wellington Station	Via Woburn Senior Center and TradeCenter 128	1	-	-
134.3	North Woburn	Wellington Station	Via TradeCenter 128	7	-	-
134.4	Medford High School	Middlesex Avenue at First Street	Medford High School trip	3	-	-
134.5	North Woburn	Wellington Station	Via Meadow Glen Mall	6	13	-
134.6	West Medford (Winthrop Street at Playstead Road)	Wellington Station	Via Meadow Glen Mall	12	14	-
134.7	Medford Square	Wellington Station	Short-turn via Medford Square	6	5	10
134.9	Woburn Square	Wellington Station	Short-turn via Woburn Square	-	-	9
134.12	West Medford (Winthrop Street at Playstead Road)	Wellington Station	Via Commercial Street, Cambridge District Court	6	-	-
OUTBOUND				40	33	19
134.2	Wellington Station	North Woburn	Via TradeCenter 128, Woburn Senior Center	2	-	-
134.3	Wellington Station	North Woburn	Via TradeCenter 128	6	-	-
134.4	Middlesex Avenue at First Street	475 Winthrop Street	Medford HS school tripper	2	-	-
134.5	Wellington Station	North Woburn	Via Meadow Glen Mall	7	14	-
134.6	Wellington Station	West Medford (Winthrop Street at Playstead Road)	Via Winthrop Street, Medford Square, Meadow Glen Mall	10	13	-
134.7	Wellington Station	Medford Square	Short-turn via Medford Square	7	6	10
134.9	Wellington Station	Woburn Square	Short-turn via Woburn Square	-	-	9

- Many trips also include deviations to additional locations:
 - Four trips deviate to the Veteran’s Memorial Senior Center in Woburn.
 - 12 trips operate via Commercial Street and Cambridge District Court.
 - 16 trips operate via the 128 Trade Center.
 - Five trips operate to and from Winthrop Street at Brooks Street–Middlesex Avenue at Second Street. These are school trips that provide additional service to Medford High School.

Saturdays

- On Saturdays, service operates to the same outer terminals as on weekdays except Medford High School, which is not served.
- Full-length service operates between 7:00 AM and 7:30 PM. Short-turns operate before and after those times and alternative with full length trips in between.

Sundays

- On Sundays, there are two outer destinations: (1) Woburn Square and (2) Medford Square.
- Full-length service operates between 10:30 AM and 7:30 PM. Short-turns operate before and after those times.

Ridership

Route 134 serves 1,870 riders on weekdays, 980 riders on Saturdays, and 450 riders on Sundays.

Ridership by Stop

Route 134’s ridership is moderate between North Woburn and Winchester Center, very low between Winchester Center and Medford High School, and high between Medford High School and Wellington Station. Most passengers travel to and from Wellington Station. On inbound trips:

- 230 passengers board and 40 alight between North Woburn and Winchester Center.
- 20 passengers board and 10 alight in Winchester Center.
- Only 20 passengers board and five alight between Winchester Center and Medford High School.
- 180 passengers board at Medford High School and four alight. This is the second highest ridership stop on the route (after Wellington Station).

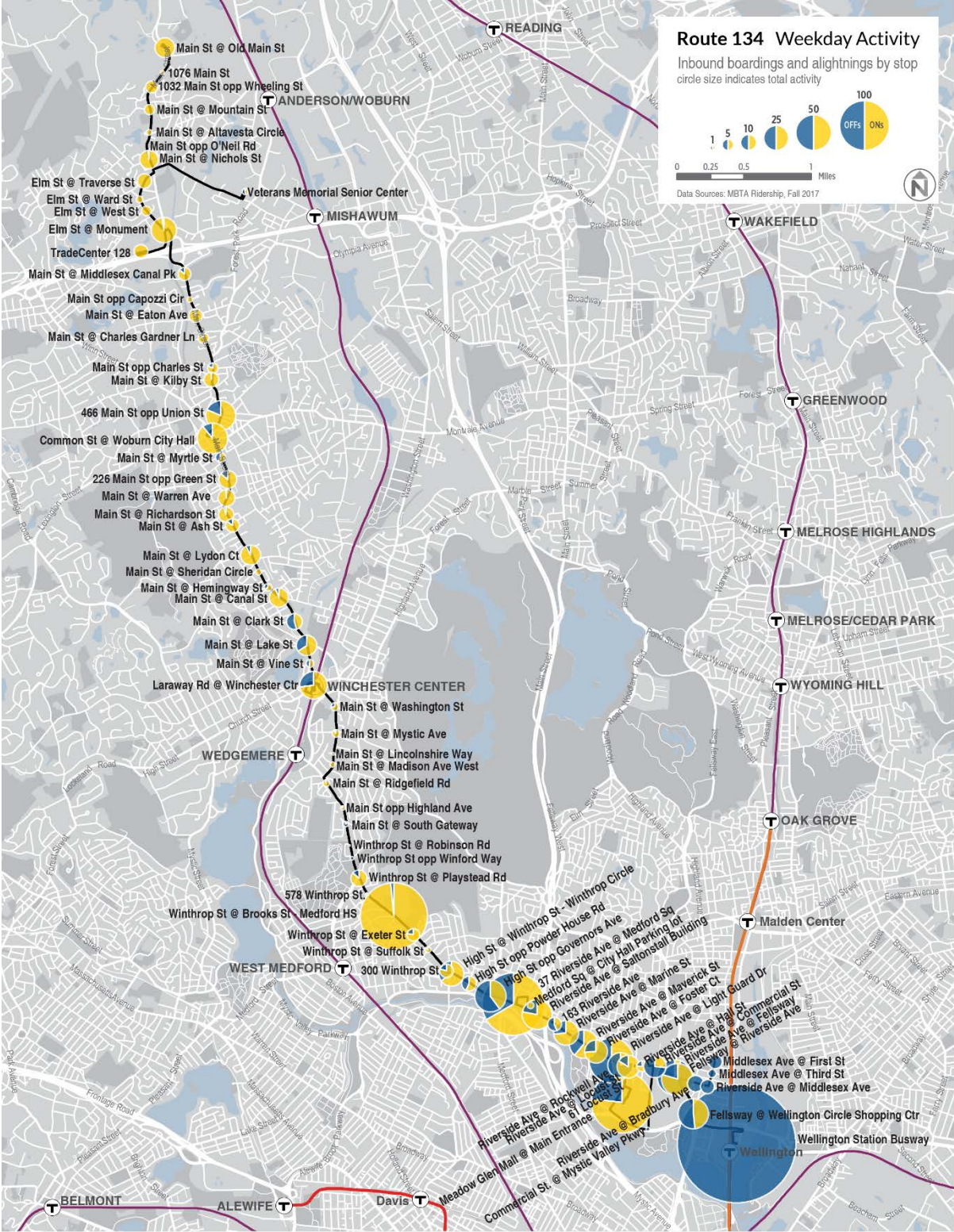
- 50 passengers board and 40 alight between Medford High School and Medford Square.
- 110 passengers board and 50 alight in Medford Square.
- 130 passengers board and 100 alight between Medford Square and the Meadow Glen Mall.
- 120 passengers board and 40 alight at the Meadow Glen Mall. This is the third highest ridership stop.
- 80 passengers board and 100 alight between the Meadow Glen Mall and Wellington Station.
- 580 passengers alight at Wellington Station. This is the highest ridership stop on the route.

Route 134's deviation services are poorly used:

- Only three inbound passenger uses the deviation service to the Veterans Memorial Senior Center.
- Only eight inbound passengers use the deviation to TradeCenter 128 and Middlesex Superior Court
- Fewer than one inbound passenger per day uses the deviation to the Cambridge District Court.

Saturday and Sunday ridership patterns are generally consistent and proportionately lower, but without the high ridership to and from Medford High School.

Figure 3 | Weekday Inbound Ridership by Stop Map



Ridership by Trip

On weekdays, inbound ridership is highest in the AM peak and midday school periods, and outbound ridership is highest in the early AM, AM peak and PM peak periods (see Figure 4 and Figure 5). This is atypical of traditional routes which usually have higher AM inbound ridership and higher PM outbound ridership. This indicates passengers are using the route to travel in both directions during peak times and reinforces that trip generators near Route 128 are attracting passengers accessing jobs and commercial centers. These peaks reflect typical work trip travel inbound in the AM peak and outbound in the PM peak, plus high school ridership in the opposite direction. Ridership during these periods generally ranges from 40 to 60 passengers per trip. However, due to turnover along the route, only two trips exceed maximum load standards and only by two passengers.

Midday trips carry much lower ridership. Trips that operate the full length of the route generally carry 20 to 35 passengers, while those that run short turns typically carry only 10 to 15 passengers. Ridership after 8:00 PM declines to an average of fewer than 10 passengers per trip.

On Saturdays, ridership is highest on midday trips between 8:00 AM and 6:00 PM that operate to and from North Woburn, and these trips carry 20 to 30 passengers (see Figure 6 and Figure 7). Ridership on short-turns is about two-thirds of those levels. As on weekdays, after 8:00 PM, ridership averages less than 10 passengers per trip.

On Sundays, ridership per trip patterns are similar as on Saturdays, but proportionately lower (see Figure 8 and Figure 9). Midday trips carry 10 to 25 passengers, and evening trips carry less than 10 passengers.

Figure 4 | Weekday Ridership by Trip: Inbound

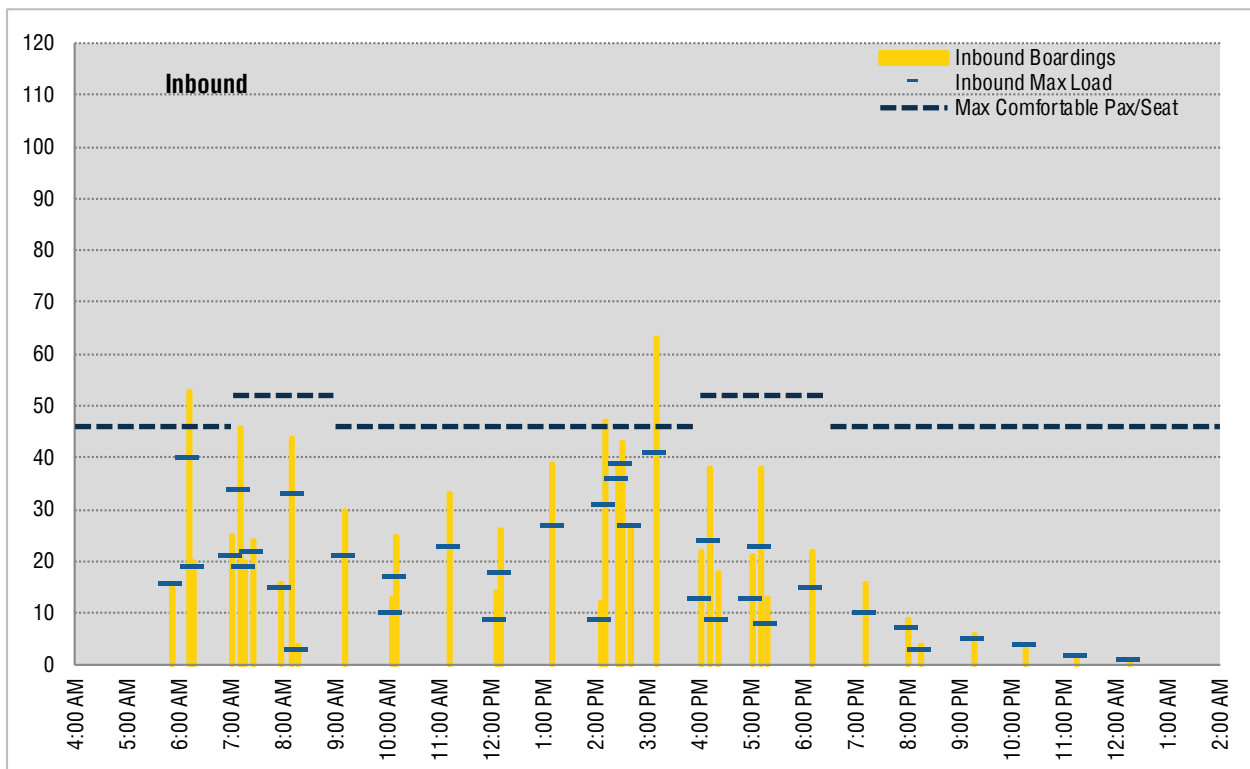


Figure 5 | Weekday Ridership by Trip: Outbound

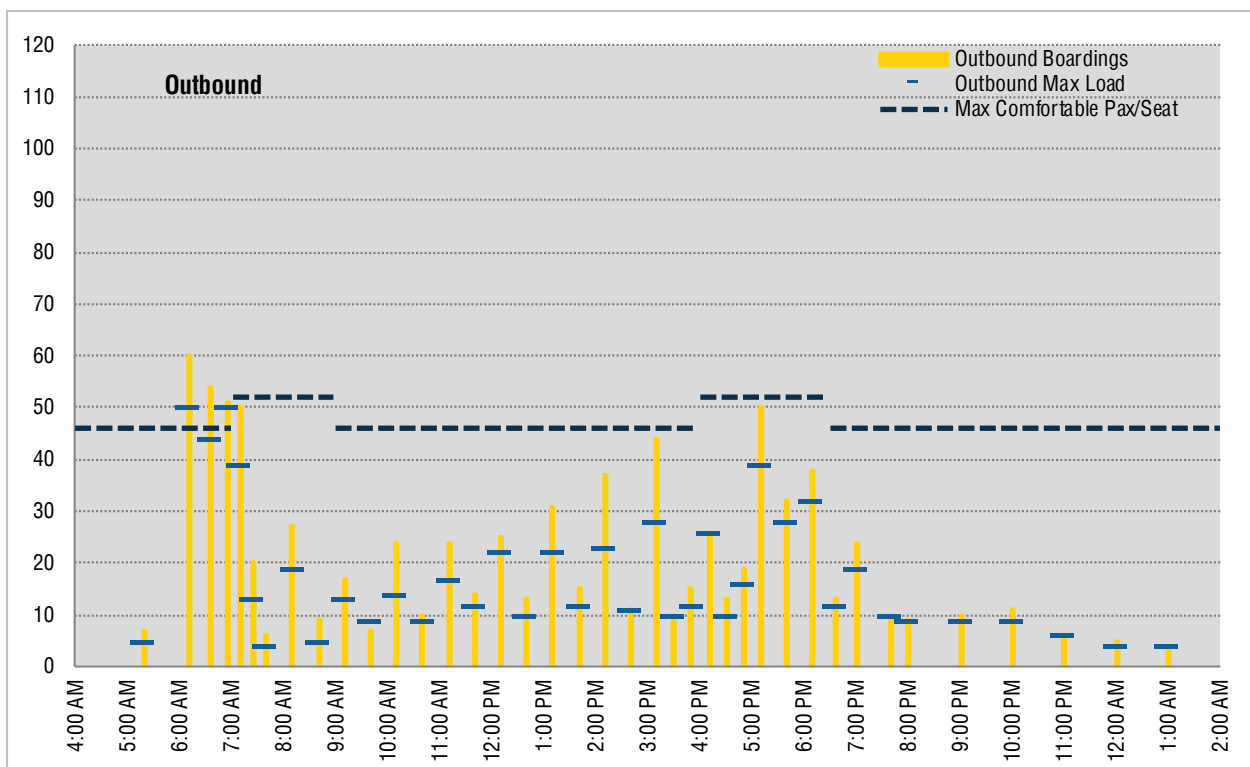


Figure 6 | Saturday Ridership by Trip: Inbound

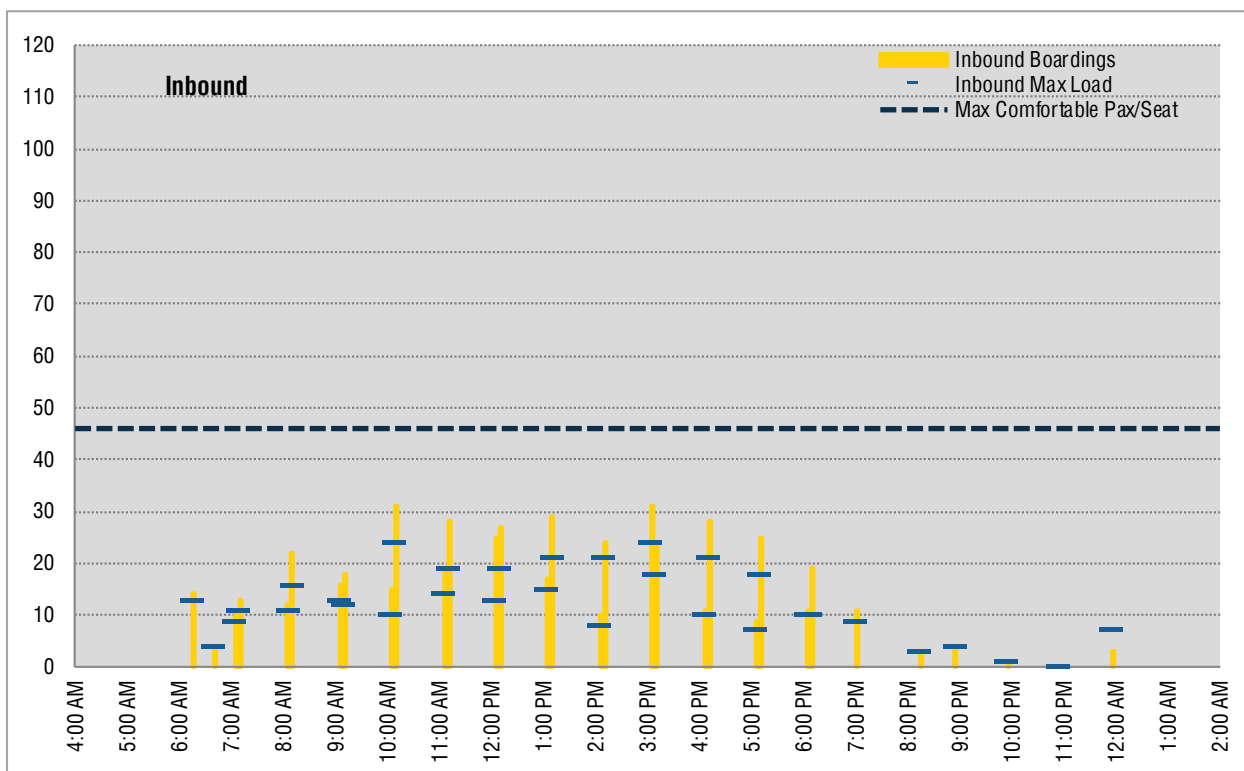


Figure 7 | Saturday Ridership by Trip: Outbound

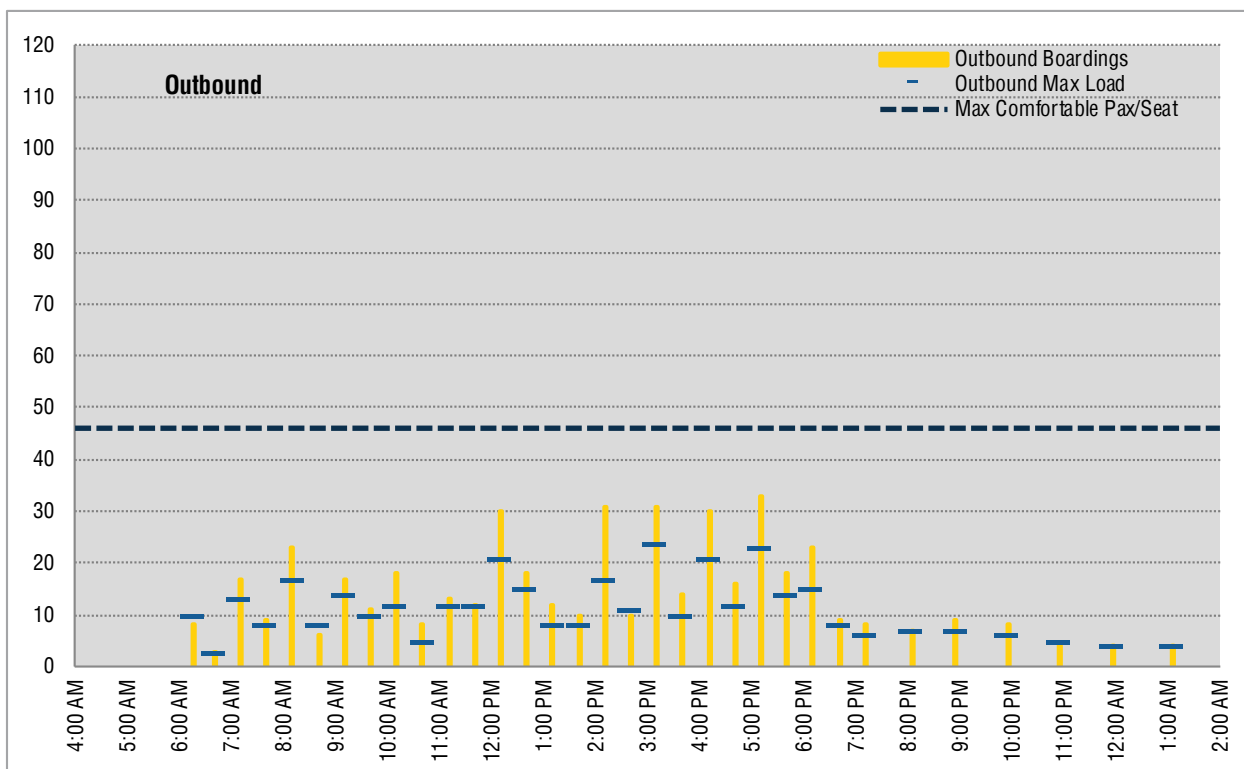


Figure 8 | Sunday Ridership by Trip: Inbound

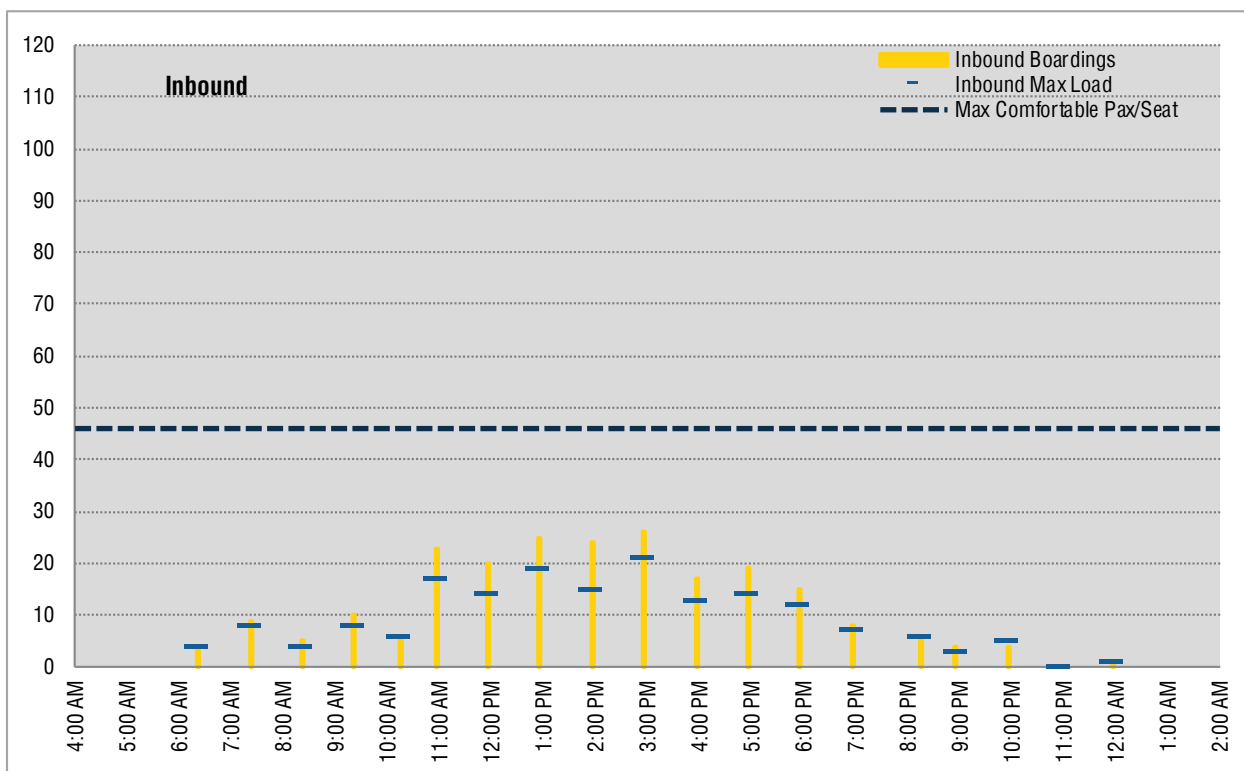
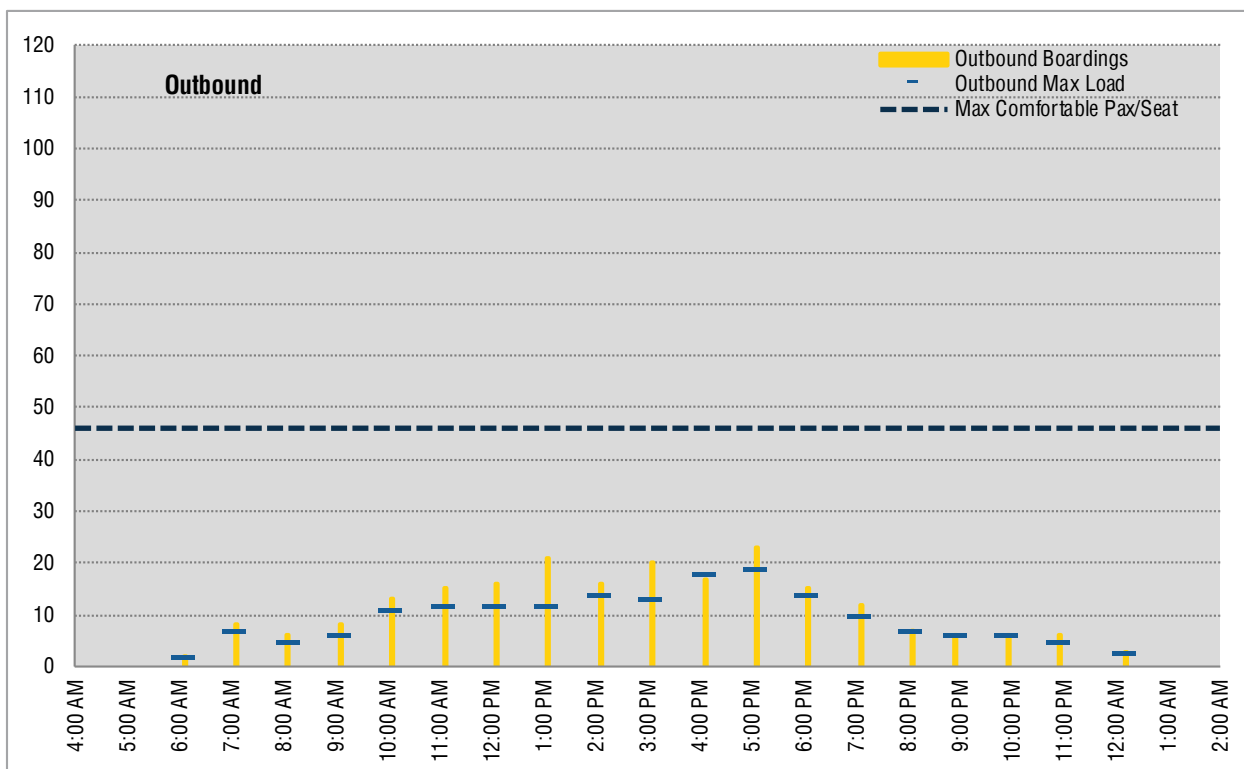


Figure 9 | Sunday Ridership by Trip: Outbound



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 134, 96.1% of passenger minutes on weekdays are in comfortable conditions, which is just above 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	96.1%	100%	100%

Reliability and Speed

Reliability

Route 134's on-time performance is 58% on weekdays, 67% on Saturdays, and 76% on Sundays (see Table 4). Weekday and Saturday performance is below the minimum standard of 70% for Local routes, while Sunday performance is above the target of 75%. As described in the next section, weekday on-time performance is poor because actual running times exceed scheduled running times for much of the day.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	58%	57%	58%	0.2%
Saturday	67%	67%	67%	-
Sunday	75%	79%	76%	-

Running Times

Route 134's actual running times are longer than scheduled times, only by a few minutes on most trips. Differences between actual running times and scheduled running times are less significant than on other routes.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 134 Inbound

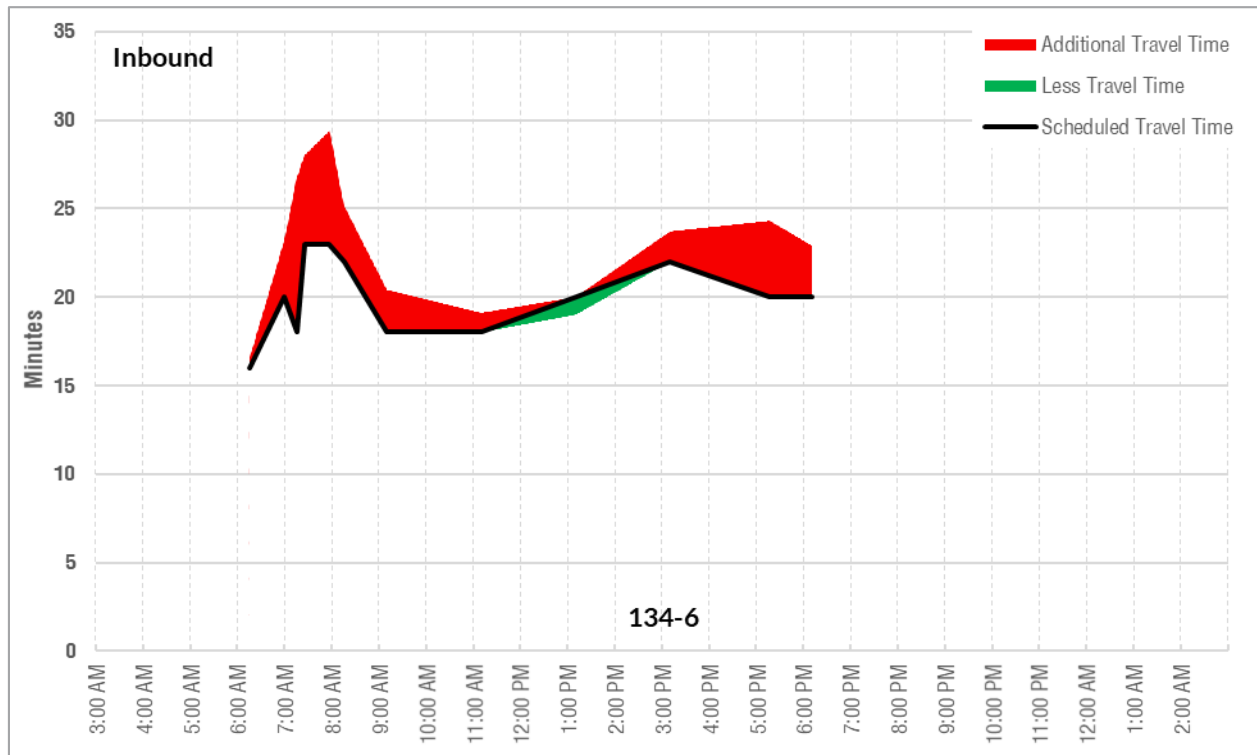
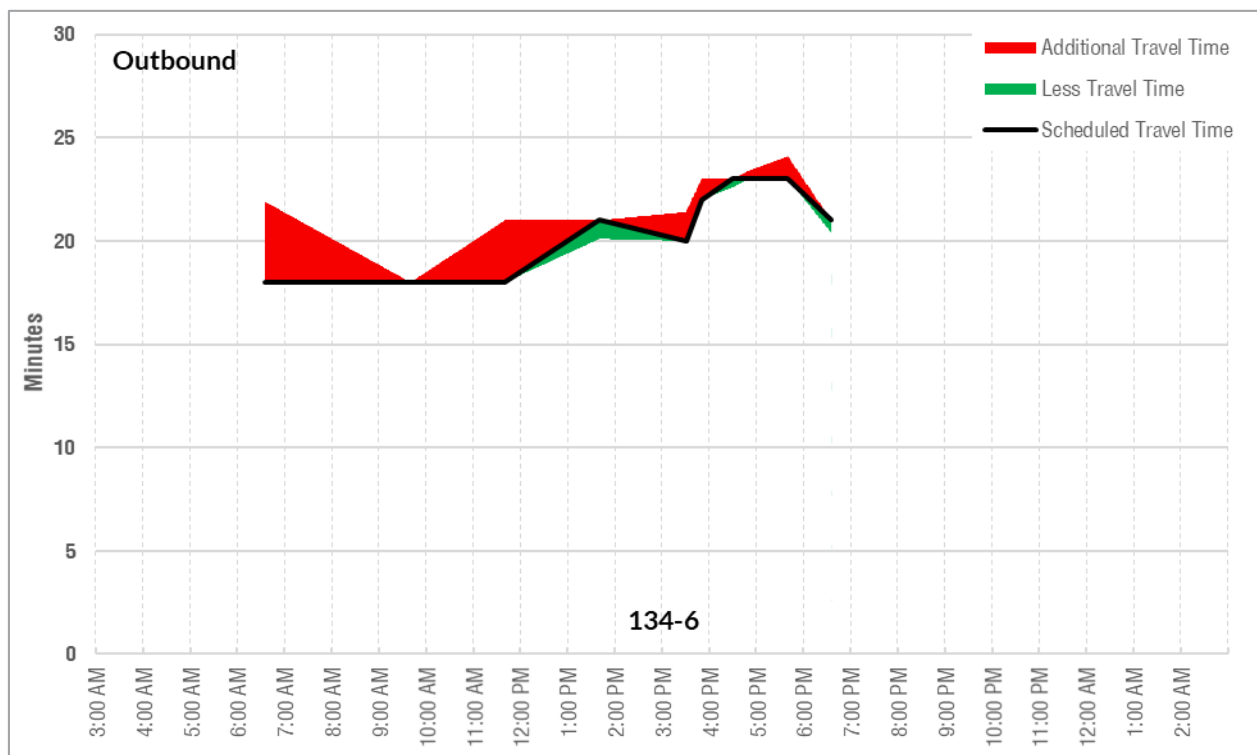


Figure 11 | Scheduled & Median Travel Time by Trip: Route 134 Outbound



Stop Spacing

Route 134 has an average of 7.4 stops per mile, which is higher than the MBTA standard of four to five in suburban areas. The consolidation of closely spaced stops would speed service and improve on-time performance. On Route 134, 38 of the 76 stops have fewer than five boardings. Such stops are perfect to start reviewing for consolidation.

Summary

Route 134 serves two distinctly different markets: 1) a suburban transit market between North Woburn and Medford and, 2) a more urban market in Medford. In both, the route is most heavily utilized by commuters, but at higher levels in Medford. Within Medford, there is also high ridership to and from Medford High School and the Meadow Glen Mall.

The route tries to serve the two different markets with an awkward and confusing mix of short and full length trips. It then adds further complexity with deviations to very low ridership locations. Overall, Route 134 is too complex.