

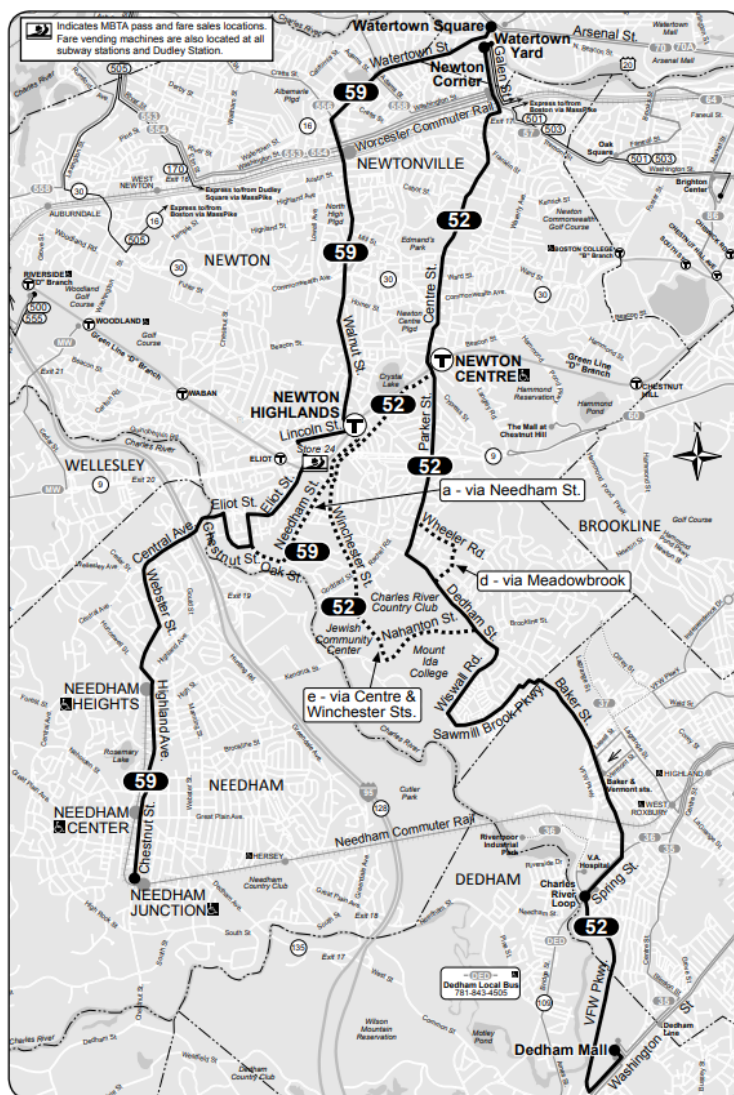
Route 59

Needham Junction – Watertown Square

Route Overview

Route 59 Needham Junction – Watertown Square is a Local route that connects Needham Junction to Watertown Square via Needham Center, Needham Heights, Newton Highlands, and Newtonville (see Figure 1). On weekdays, about half of trips serve the Needham Street retail corridor in Newton.

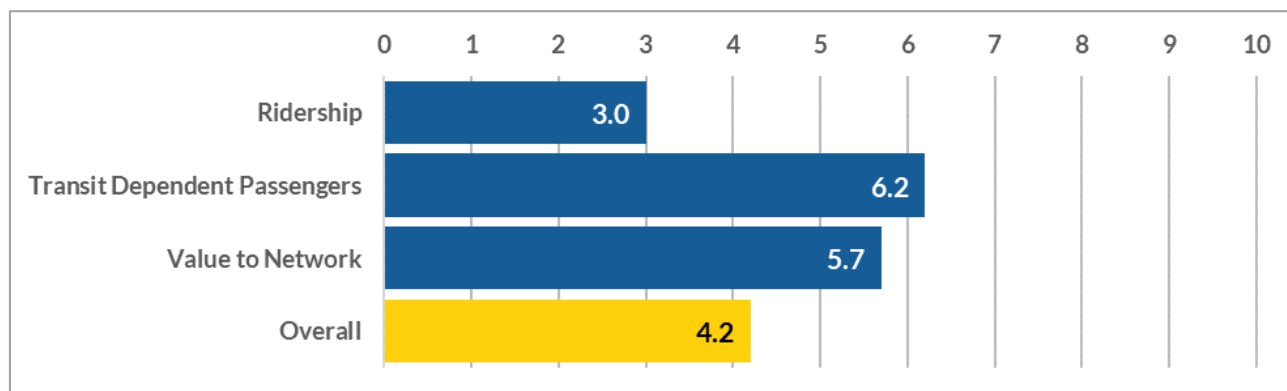
Figure 1 | Service Map



Network Importance

Route 59 is a less important route within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, Route 59 rates 3.0 in terms of ridership, 6.2 in terms of transit dependent ridership, and 5.7 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 4.2.

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



Service Patterns

Schedule

Route 59 provides infrequent weekday service, and very infrequent service on Saturdays and Sundays (see Table 1). On weekdays, Route 59 operates from 6:05 AM to 8:21 PM. Running inbound, Route 59 operates:

- Every 35 minutes from the start of service until 9:50 AM
- Mostly every 45 minutes, between 9:50 AM and 3:10 PM
- Mostly every 35 minutes, from 3:10 PM until the end of service.

Route 59 operates every 90 minutes on weekends, from 6:20 AM to 7:35 PM on Saturdays and from 7:05 AM to 6:51 PM on Sundays.

Route 59 does meet the MBTA's frequency standard on both weekdays and weekends. Route 59 operates every 35 minutes during the AM and PM peaks, versus the standard of every 30 minutes for Local routes. On Saturdays and Sundays, Route 59 operates every 90 minutes, significantly less than the standard of every 60 minutes. Route 59 also fails the span of service standard on Saturdays and Sundays, as the last trip from Watertown Square departs before 6:30 PM.

Table 1 | Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:05 AM to 8:21 PM			22/22
Sunrise	-	-	-	-
Early AM	6:05 AM to 6:59 AM	35	35	2/2
AM Peak	7:00 AM to 8:59 AM	35	35	3/4
Midday Base	9:00 AM to 1:29 PM	35 - 45	43	6/6
Midday School	1:30 PM to 3:59 PM	35 - 50	41	4/4
PM Peak	4:00 PM to 6:29 PM	30 - 40	35	4/5
Evening	6:30 PM to 8:21 PM	30 - 35	35	3/1
Late Evening	-	-	-	-
Night	-	-	-	-
Saturday	6:20 AM to 7:35 PM	90	90	9/9
Sunday	7:05 AM to 6:51 PM	90	90	8/8

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

Service Patterns

Pattern 59.0 makes up half of all weekday trips, and all weekend trips, operating from Needham Junction to Watertown Square via Elliot Street.

Pattern 59.2 makes up about half of trips, operating from Needham Junction to Watertown Square via the Needham Street retail corridor.

Weekday trips do not consistently alternate between the two patterns, with more frequent Needham Street trips running outbound in the morning as well as several instances in both directions where the same pattern runs back to back.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				22	9	8
59.0	Needham Junction	Watertown Square	Via Elliot Street	12	9	8
59.2	Needham Junction	Watertown Square	Via Needham Street	10	-	-
OUTBOUND				22	9	8
59.0	Watertown Square	Needham Junction	Via Elliot Street	11	9	8
59.2	Watertown Square	Needham Junction	Via Needham Street	11	-	-

Ridership

Route 59 has 1,156 boardings on weekdays, 307 passengers on Saturdays, and 230 passengers on Sundays. Weekend ridership versus weekday ridership is notably low compared to other Local bus routes in the MBTA network.

Ridership by Stop

Route 59 ridership is strongest at transfer points with the Green Line, Commuter Rail, and other Local bus services, as well as in neighborhood centers in Needham and Newton.

Running inbound on weekdays (see Figure 3):

- 95 passengers board and two alight at the first three stops at the Needham Junction Commuter Rail Station and in Needham Center.
- 141 passengers board and 19 alight at the 16 stops in Needham and Newton before Route 57's Elliot Street and Needham Street patterns diverge in Newton Upper Falls.
- Ridership is stronger on Needham Street (Pattern 59.2) than on Elliot Street (Pattern 59.0).
 - 55 passengers board and eight alight at the seven stops served by the Needham Street pattern.
 - 39 passengers board and 10 alight at the nine stops served by the Elliot Street pattern. Two thirds of the boardings on the Elliot Street pattern occur at Chestnut Street at Oak Street, which is the stop closest to retail and offices on Needham Street. This likely indicates that the majority of riders on Route 59 trips that run via Elliot Street are traveling from locations that are better served by the Needham Street pattern.
- 113 passengers board and 170 alight at Newton Highlands Station, where passengers can transfer to the Green Line. Half of Route 59 riders boarding in Needham and Newton Lower Falls alight at Newton Highlands.
- 37 passengers board and 44 alight at the 13 stops on Walnut Street between Newton Highlands and Newtonville.
- 26 passengers board and 39 alight at the two stops adjacent to the Newtonville Commuter Rail Station.
- 52 passengers board and 102 alight at the 12 stops between Newtonville Commuter Rail Station and Watertown Square.
- 167 passengers alight at the two stops serving Watertown Square.

Weekday outbound ridership patterns are similar to inbound patterns. Saturday and Sunday ridership patterns are also similar, though with significantly lower volumes.

Ridership by Trip

Route 59 has relatively low ridership per trip, except during weekday peak periods. On weekdays (see Figure 4 and Figure 5):

- Morning and AM peak ridership is strong in both directions, with inbound trips serving between 25 and 40 passengers and outbound trips generally serving between 30 and 45 passengers. The 7:10 AM outbound trip has the highest ridership of any Route 59 trip, with an average of 69 passengers.
- Mid-day ridership is lower in both directions, with trips serving between 15 and 25 passengers.
- Inbound ridership again increases during the late afternoon and PM peak, with generally serving between 30 and 35 passengers and the 4:55 PM trip serving 49 passengers. Outbound ridership increases somewhat, though no trip exceeds 30 passengers.
- Ridership declines in both directions after the PM peak, with all trips serving fewer than 15 passengers through the end of service.

Saturday and Sunday ridership is very low, with nearly all trips serving fewer than 20 passengers (see Figure 6-Figure 9). Weekday inbound ridership is slightly higher than outbound ridership in the morning, while outbound ridership is slightly higher than inbound ridership in the afternoon.

Figure 3 | Weekday Inbound Ridership by Stop Map

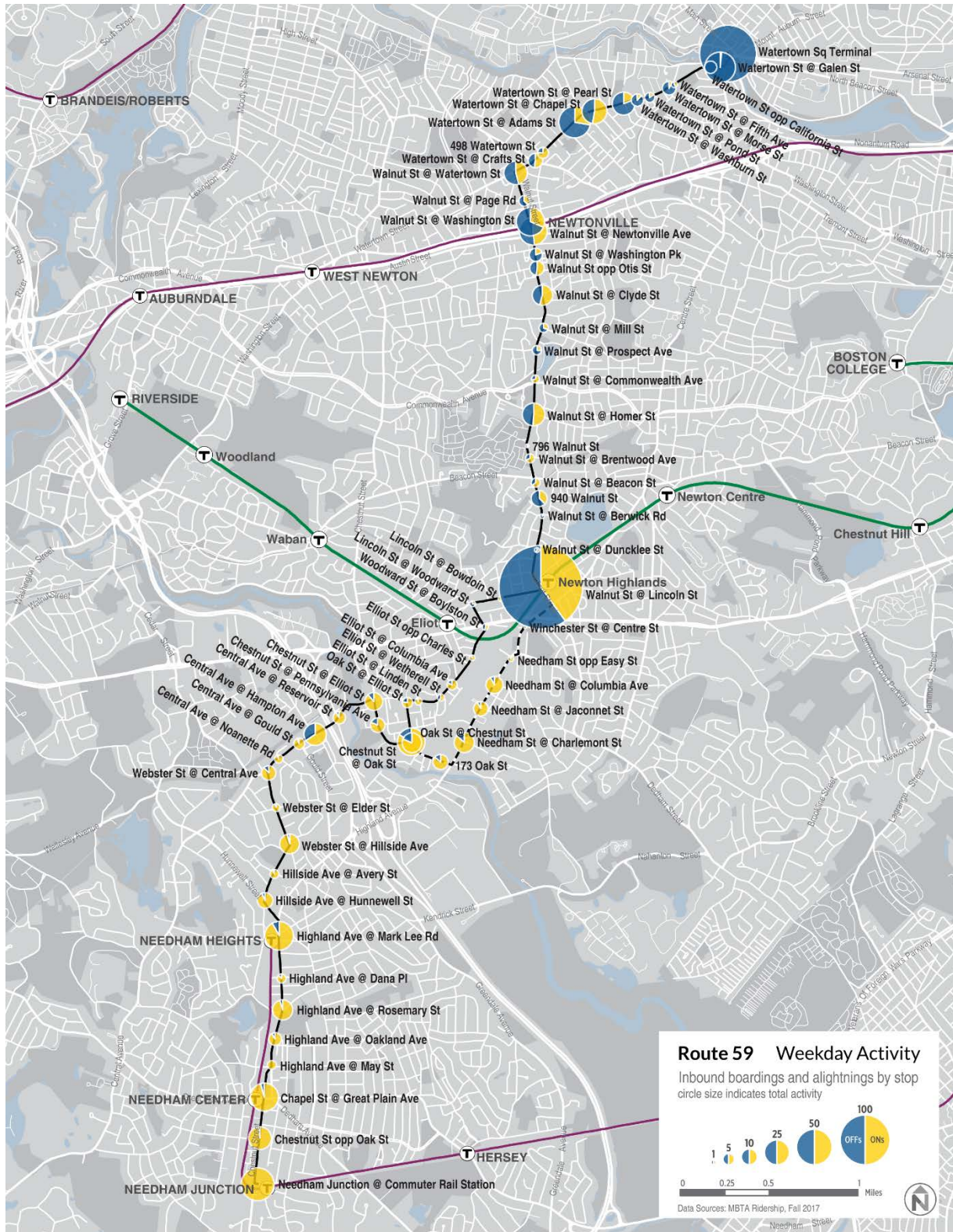


Figure 4 | Weekday Ridership by Trip: Inbound

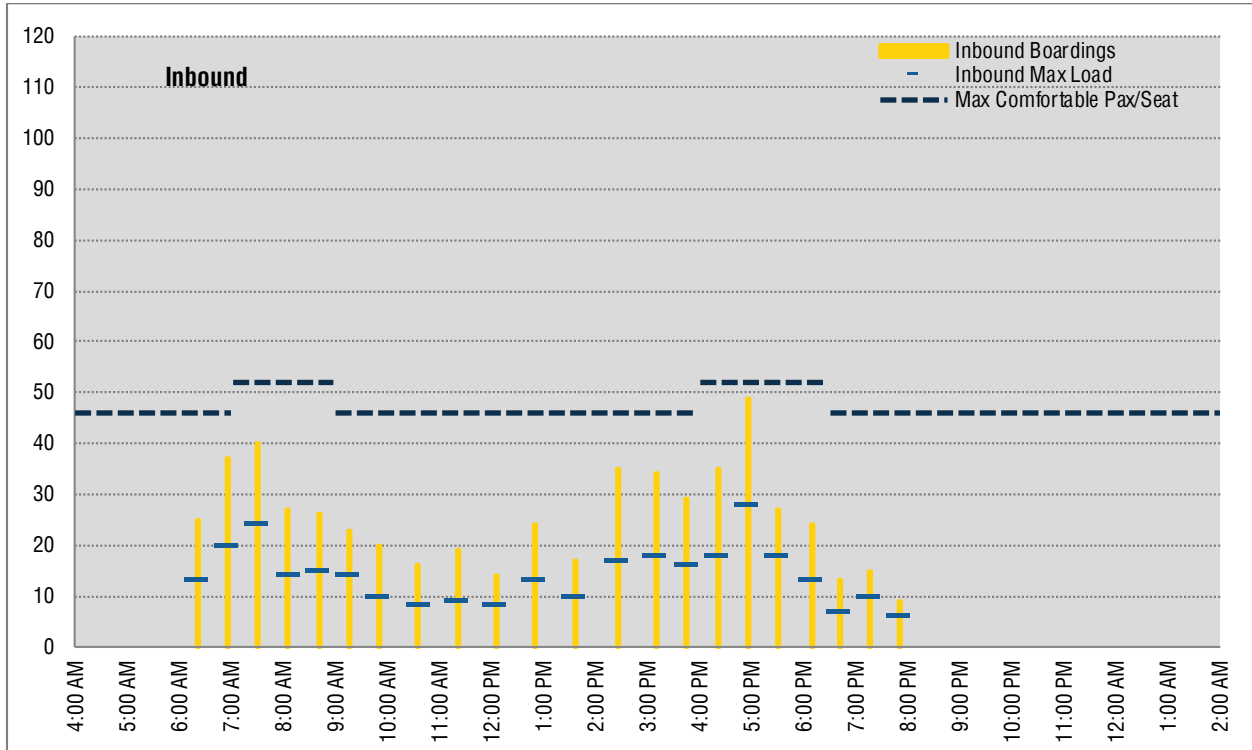


Figure 5 | Weekday Ridership by Trip: Outbound

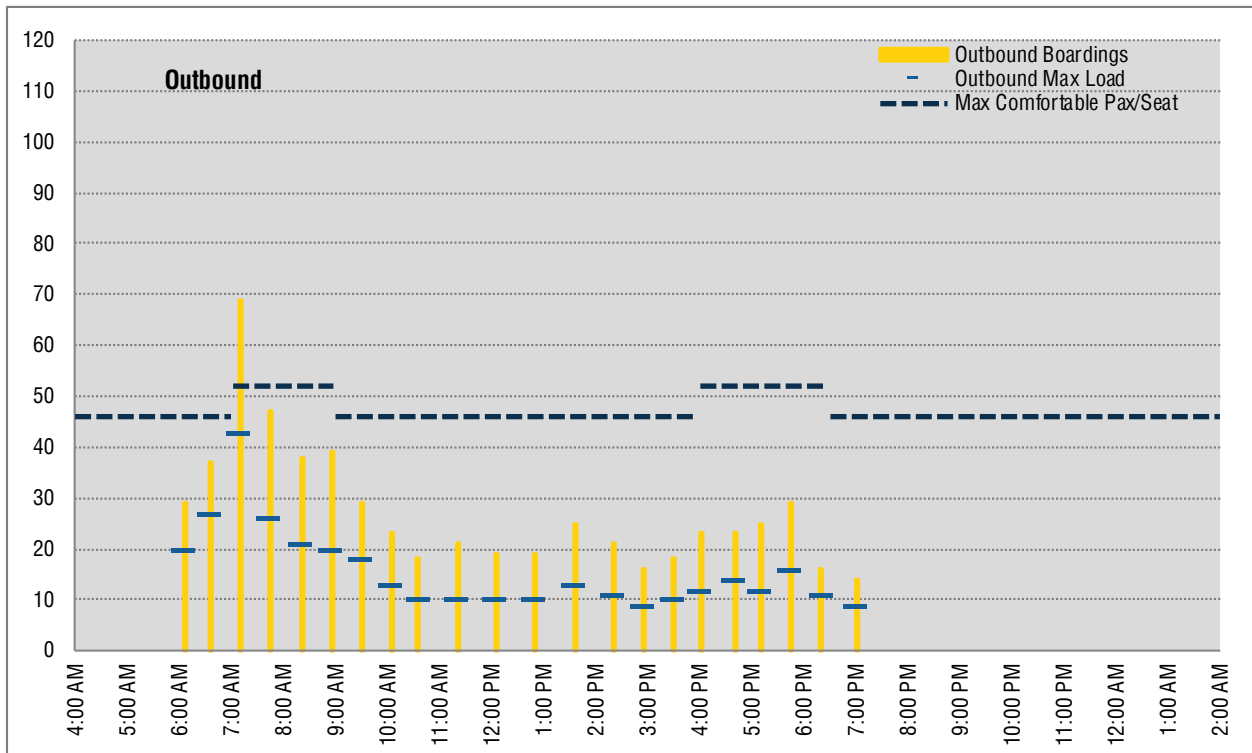


Figure 6 | Saturday Ridership by Trip: Inbound

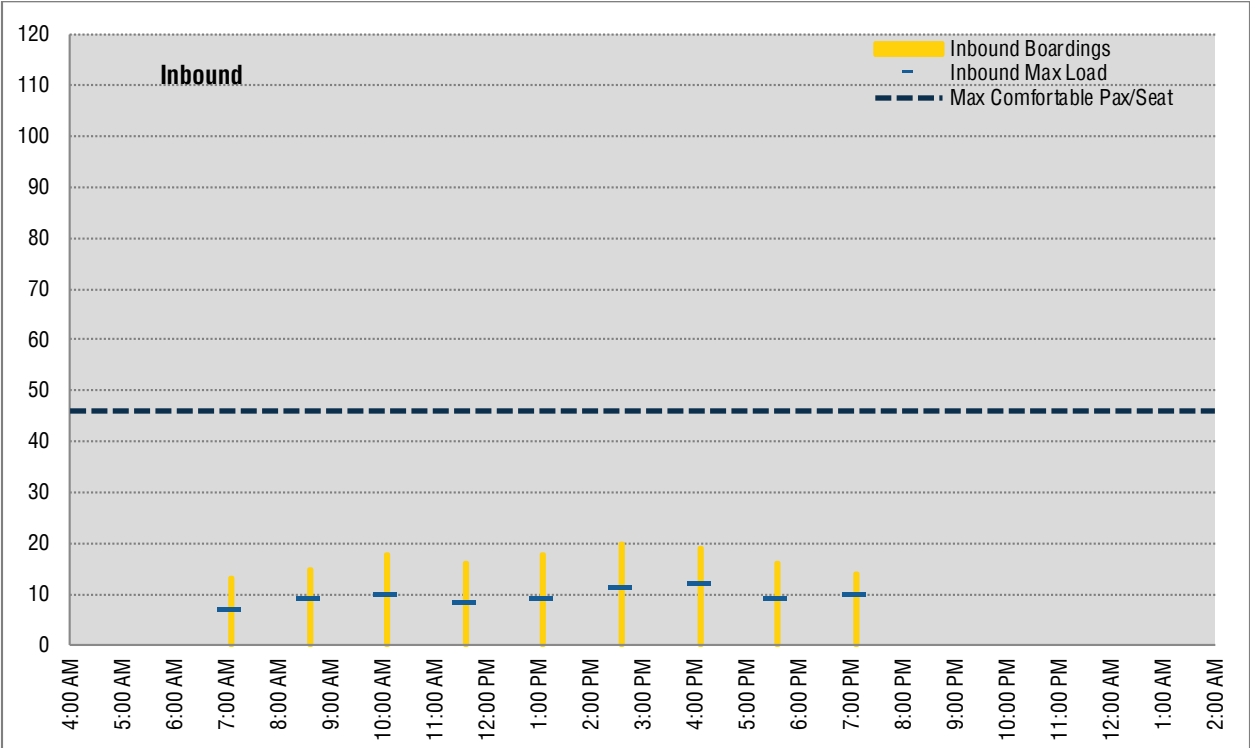


Figure 7 | Saturday Ridership by Trip: Outbound

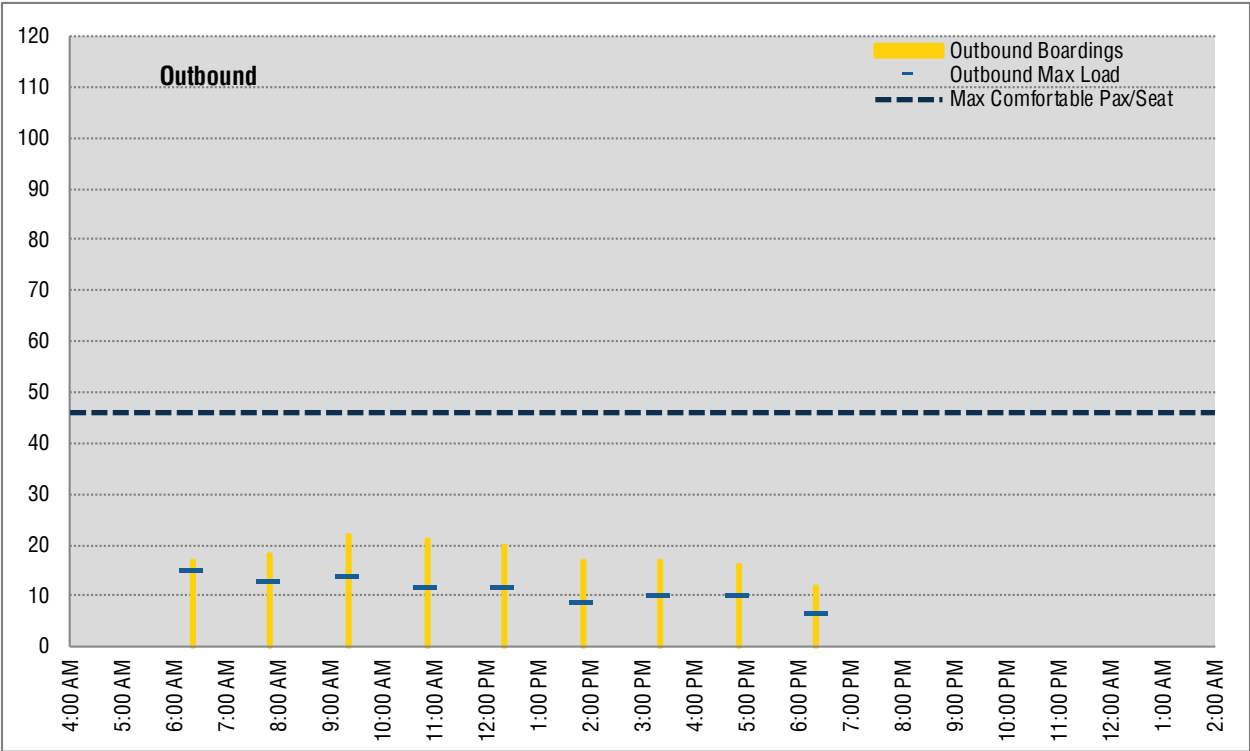


Figure 8 | Sunday Ridership by Trip: Inbound

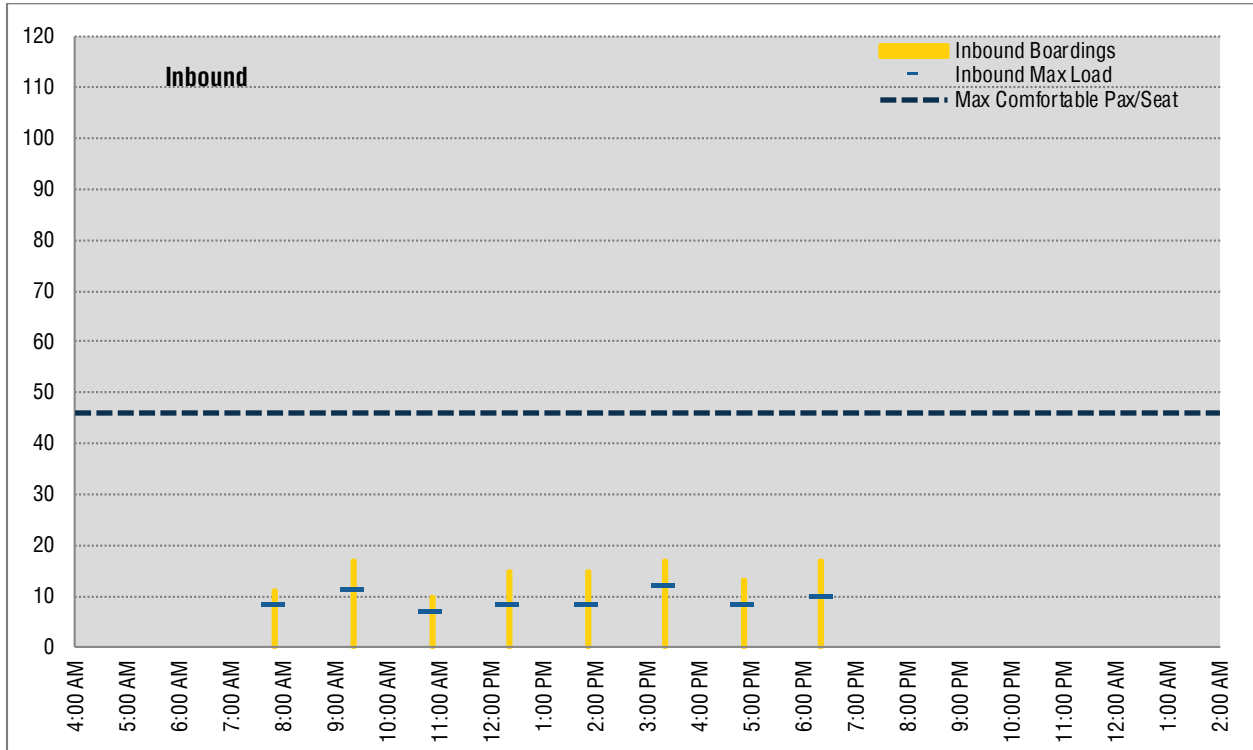
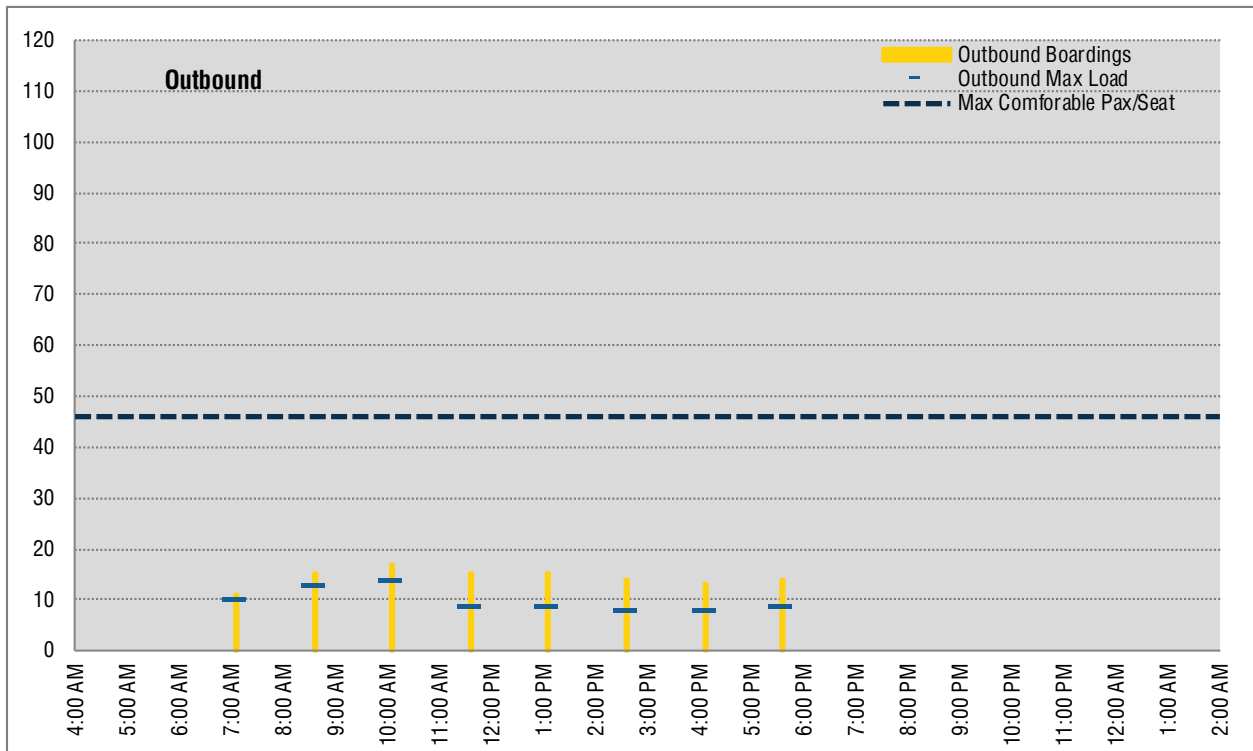


Figure 9 | Sunday Ridership by Trip: Outbound



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 59, 99.9% of passenger minutes are in comfortable conditions, which is above the minimum standard (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	99.9%	100%	100%

Reliability and Speed

Reliability

Route 59’s weekday reliability is significantly lower than on weekends. Route 59 has about average reliability on weekdays, with 66% of trips arriving on-time. On weekends, Route 59 performs well above average, with 78% of trips arriving on-time on Saturdays and 85% arriving on-time on Sundays. It is the second most reliable route of all routes operating on Sundays. (see Table 4)

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	66%	64%	66%	0%
Saturday	77%	83%	78%	-
Sunday	85%	83%	85%	-

Running Times

Route 59 arrives about 5 minutes late on most of its trips. Scheduled trip times are too short for all of service pattern 59.0’s trips after 7:30 AM, and all of service pattern 59.2’s trips before 5:30 PM.

Figure 10 | Scheduled & Median Travel Time by Trip: Pattern 59.0 Inbound

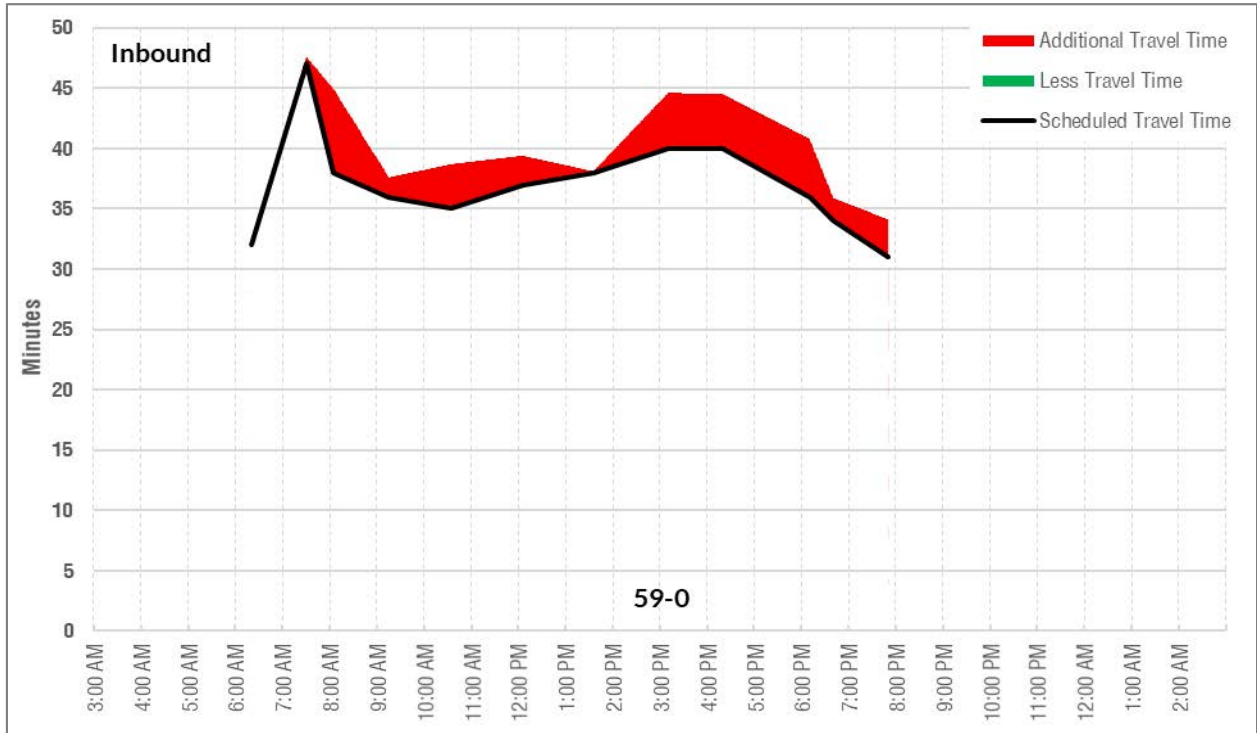


Figure 11 | Scheduled & Median Travel Time by Trip: Pattern 59.2 Inbound

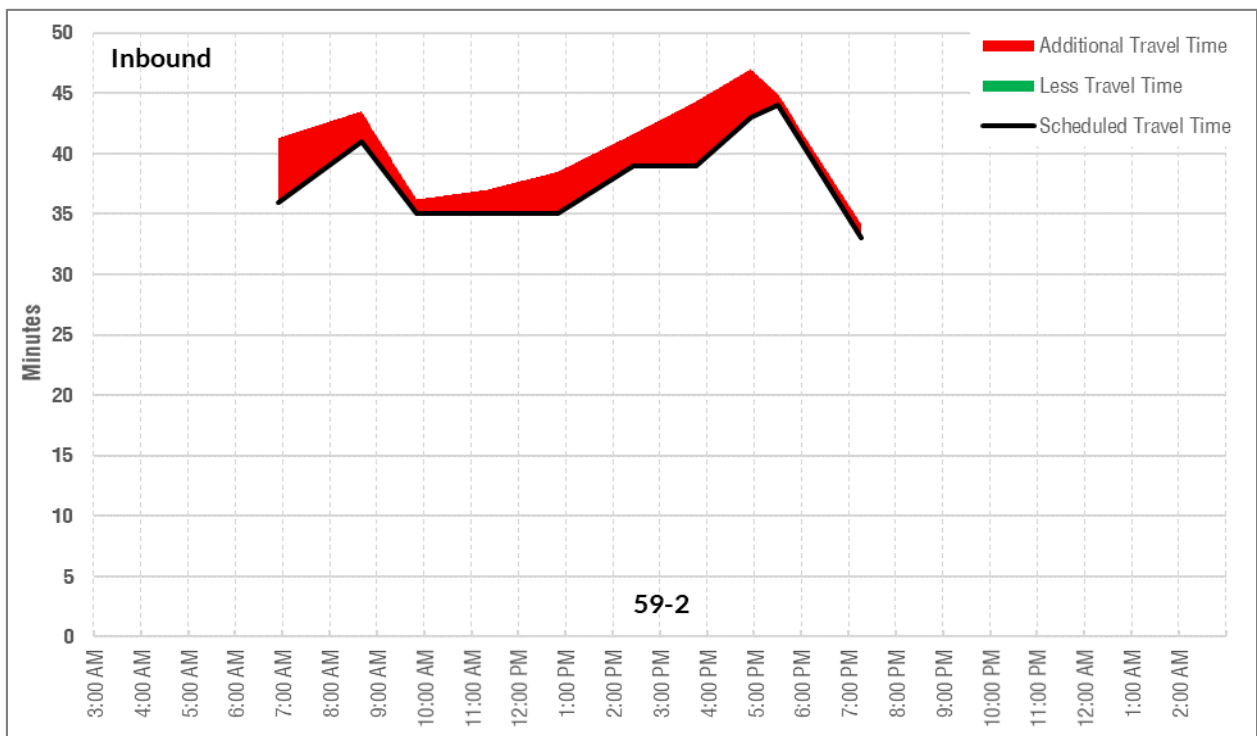


Figure 12 | Scheduled & Median Travel Time by Trip: Pattern 59.0 Outbound

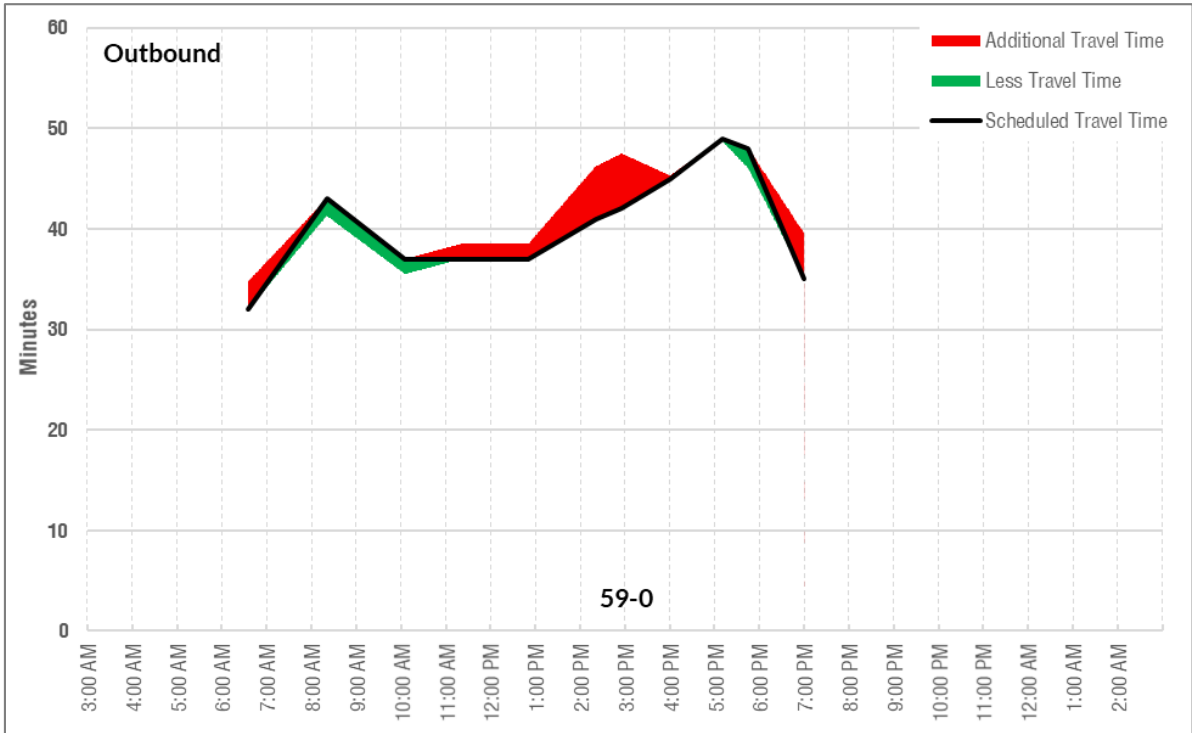
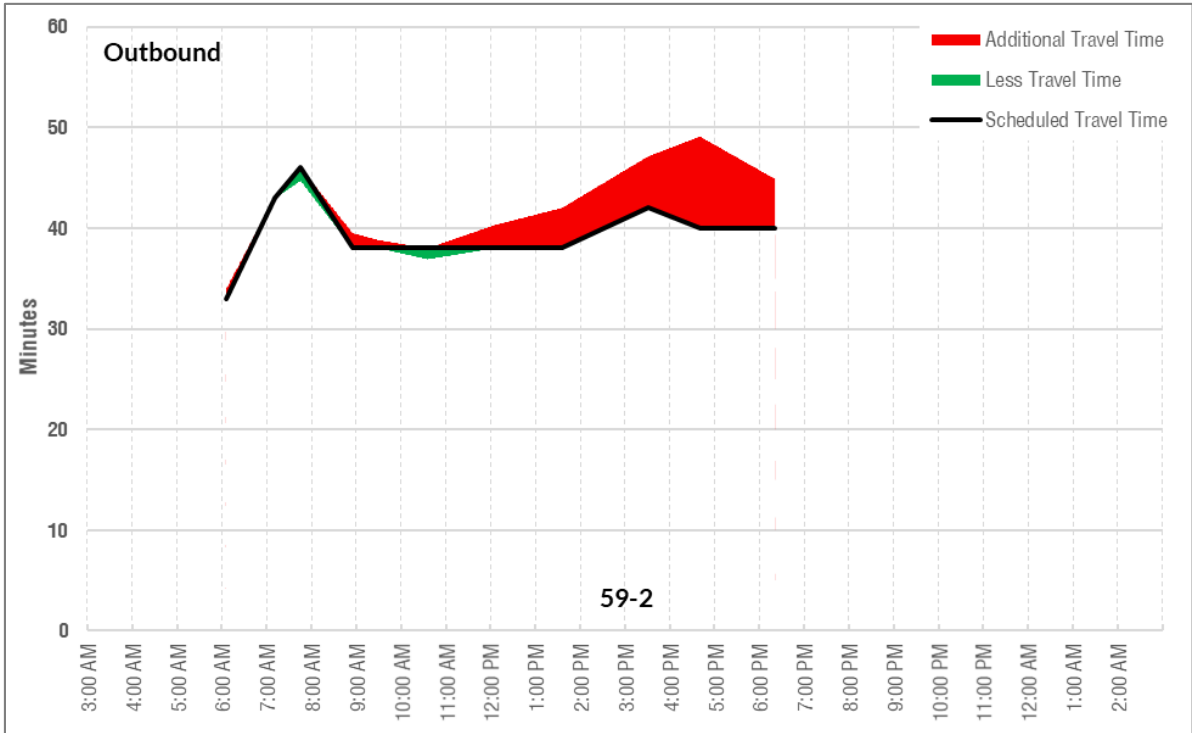


Figure 13 | Scheduled & Median Travel Time by Trip: Pattern 59.2 Outbound



Stop Spacing

Overall, Route 59 has well-placed stops. However, some stop spacing is inconsistent, and stops could be consolidated especially along the northern portion of the route between Newtonville and Watertown Square. The average stop spacing of Route 59 is 825 feet.

- Stops along Central Avenue are inconsistently spaced and some should be consolidated. The average stop spacing between Webster Street and Reservoir Street is 690 feet, with some stops spaced as closely together as 550 feet.
- Stops along the Elliot Street corridor are too closely spaced. This is a safe street for pedestrians. The average stop spacing along Elliot Street is 730 feet.
- The stops along Walnut Street between Berwick Road and Brentwood Avenue are too closely spaced, with an average spacing of 540 feet. This is also a safe street for pedestrians.
- Stops are very closely spaced in Newtonville, a dense and walkable commercial center. Stops can be consolidated along Walnut Street in this area, where some stops are currently spaced only 300-400 feet apart (i.e. Walnut Street at Newtonville Avenue to Walnut Street and Washington Street).
- There are too many stops along Watertown Street, another walkable corridor. The average stop spacing on this street is 630 feet.

Summary

Route 59 is one of the few MBTA bus routes that provides suburban crosstown service. Route 59 connects town centers in Newton and Needham to the Green Line, commuter rail, and the Watertown Square bus hub. Route 59, however, has somewhat poor reliability on weekdays and very limited service on weekends. Additionally, only about half of trips serve the growing Needham Street retail corridor.