

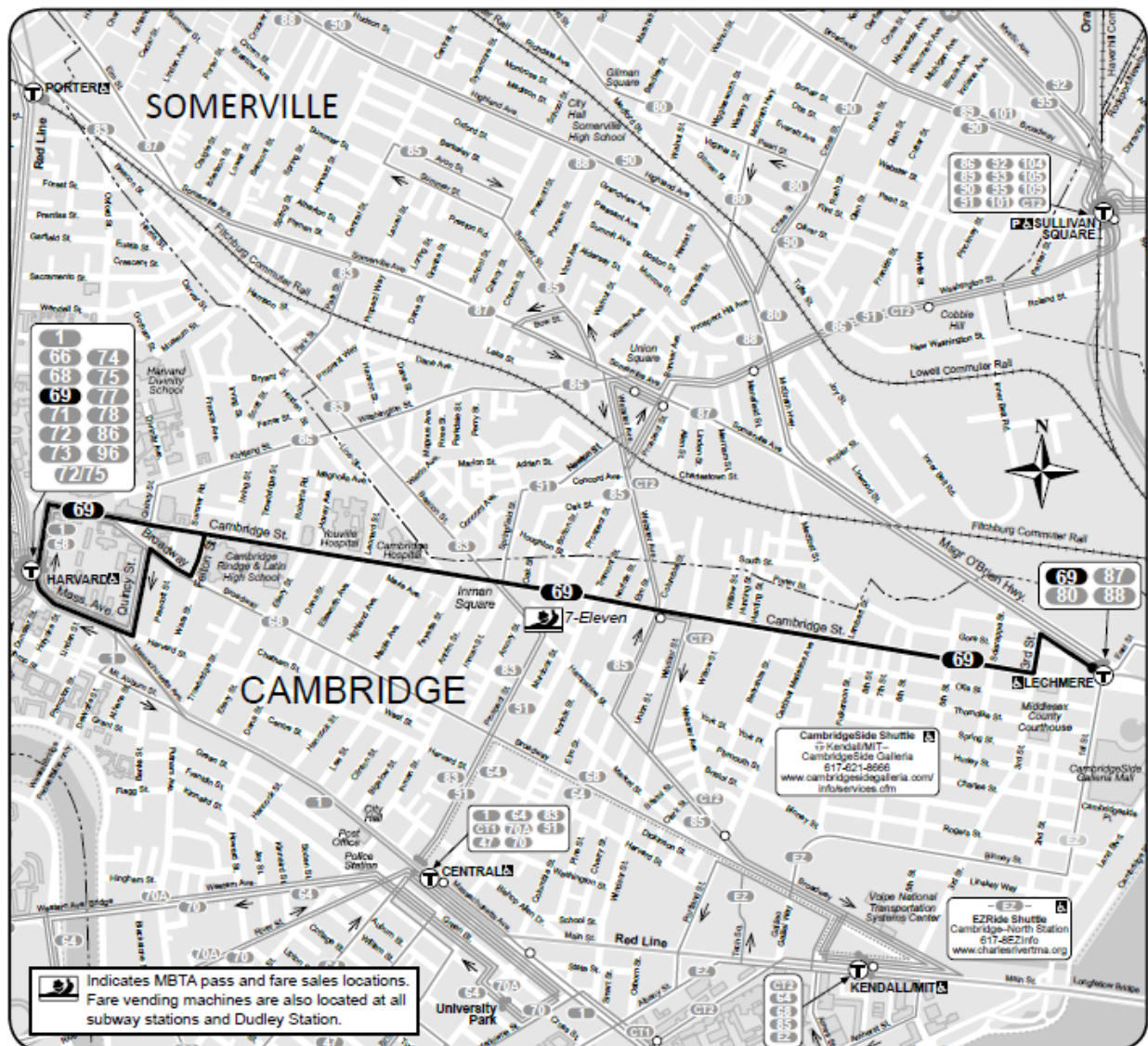
Route 69

Harvard Square – Lechmere Station

Route Overview

Route 69 Harvard Square – Lechmere Station is a Local bus route that connects Harvard Station on the Red Line and Lechmere Station on the Green Line via Inman Square (see Figure 1). It primarily operates on Cambridge Street, and operates seven days a week.

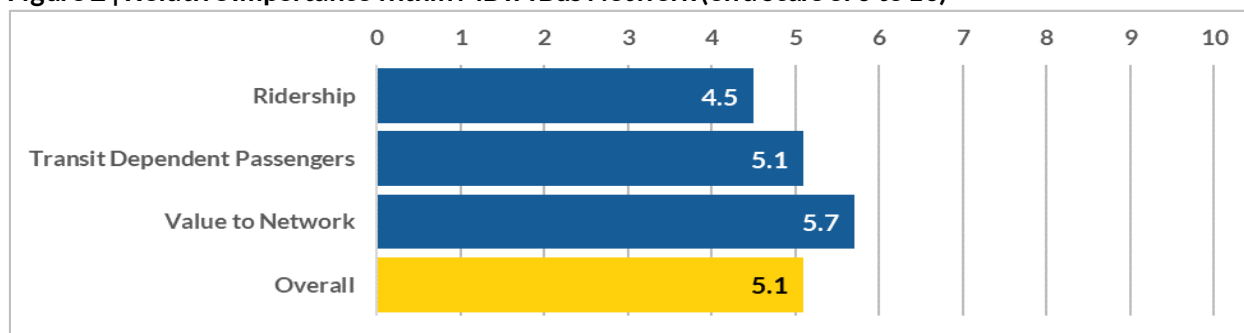
Figure 1 | Route 69 Service Map



Network Importance

Route 69 is moderately important to the overall network (see Figure 2). On a relative scale of 0 to 10, the route rates 4.5 in terms of ridership, 5.1 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% weight to overall ridership and a 15% weight to both other measures, is 5.1.

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



Service Overview

Schedule

Route 69 provides moderately frequent service during the day and infrequent service in the evening and on weekends (see Table 1). On weekdays, service operates from 5:25 AM to 1:11 AM with the following frequencies:

- Every 25 to 30 minutes from the beginning of service until 6:00 AM, but mostly every 28 minutes, and every 20 to 30 minutes between 6:00 AM and 7:00 AM, but mostly every 23 minutes.
- Every 10 to 20 minutes during the AM Peak, but mostly every 13 minutes.
- Every 17 to 25 minutes from 9:00 AM to 1:30 PM, but mostly every 24 minutes.
- Every 10 to 25 minutes during the Midday School period, but mostly every 15 minutes.
- Every 10 to 20 minutes during the PM Peak, but mostly every 20 minutes during PM peak.
- Every 20 to 50 minutes from 6:00 PM through the end of service, but mostly every 40 minutes on average.

On Saturdays, it operates from 5:15 AM to 1:25 AM with an average frequency of 26 minutes. Sunday service runs from 6:05 AM to 1:09 AM with an average frequency of 38 minutes.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:25 AM to 1:11 AM			53/52
Sunrise	5:25 AM to 5:59 AM	25 - 30	28	2/1
Early AM	6:00 AM to 6:59 AM	20 - 30	23	2/2
AM Peak	7:00 AM to 8:59 AM	10 - 20	13	10/10
Midday Base	9:00 AM to 1:29 PM	17 - 25	24	11/11
Midday School	1:30 PM to 3:59 PM	10 - 25	15	10/9
PM Peak	4:00 PM to 6:29 PM	20	20	8/8
Evening	6:30 PM to 9:59 PM	20 - 40	37	5/6
Late Evening	10:00 PM to 11:59 PM	40	40	3/3
Night	12:00 AM to 1:11 AM	40 - 50	45	2/2
Saturday	5:15 AM to 1:25 AM	18 - 40	26	44/45
Sunday	6:05 AM to 1:09 AM	30 - 60	38	29/30

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

Route 69 meets the span of service and frequency standards for Local routes on all days and at all times.

Service Patterns

Nearly all service operates the route’s primary service pattern (Pattern 69.0). The only exception is two inbound school trips that depart from Cambridge Rindge and Latin School at 2:34 PM and 2:47 PM (Pattern 69.1). These trips skip the three stops between Harvard Square and the school.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				53	44	45
69.0	Massachusetts Avenue at Holyoke Street	Lechmere Station	Primary service pattern	51	44	29
69.1	Cambridge Street at Trowbridge Street	Lechmere Station	Cambridge Rindge and Latin School; Skips first three stops from Harvard	2	0	0
OUTBOUND				52	45	30
69.0	Lechmere Station	Massachusetts Avenue at Holyoke Street	Primary service pattern	52	45	30

Ridership

Route 69 carries 2,550 riders on weekdays, 1,490 riders on Saturdays, and 910 riders on Sundays.

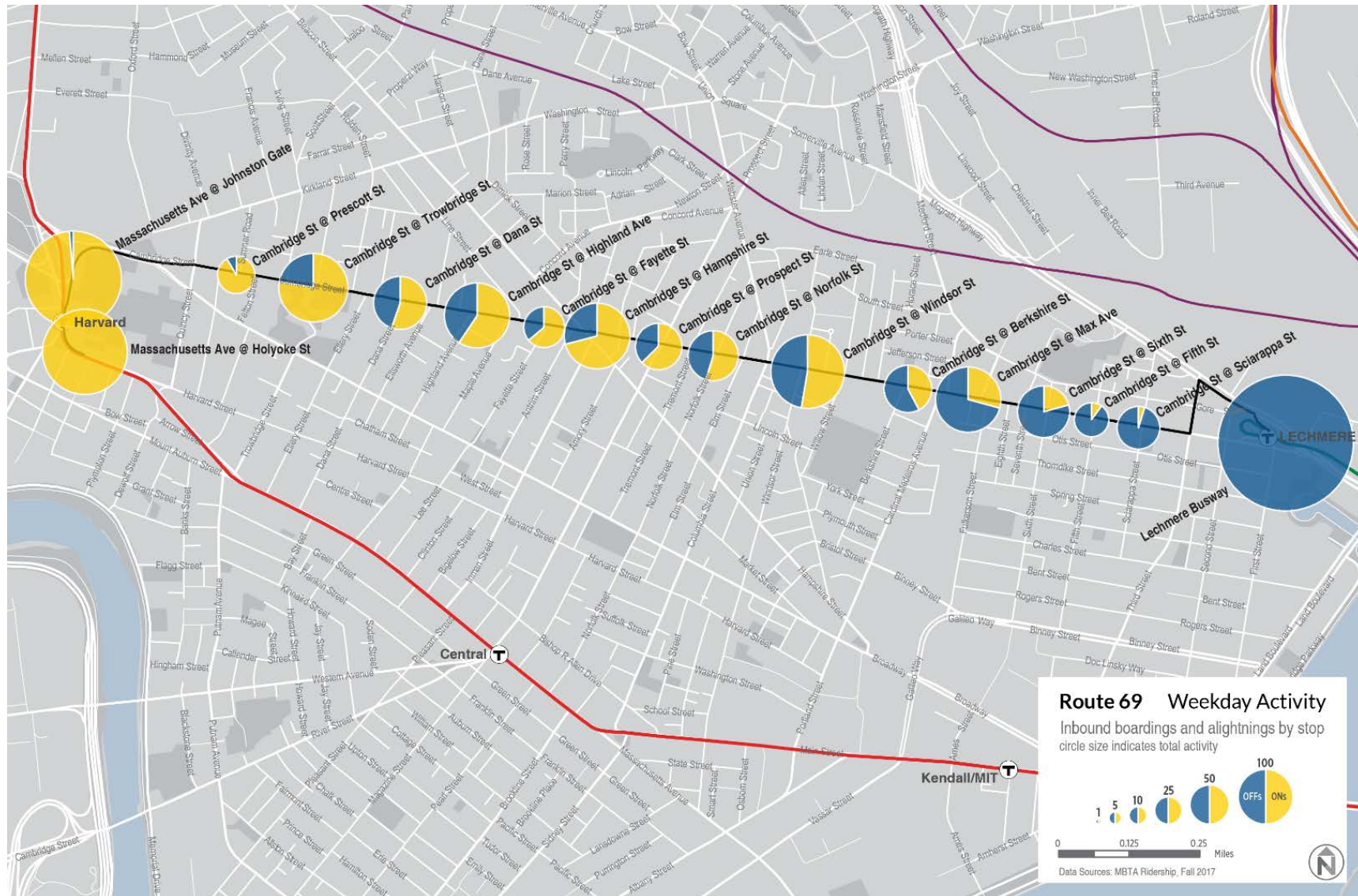
Ridership by Stop

With the exception of the ends of the line, combined boardings and alightings by stop are spread fairly evenly along Route 69 (see Figure 3). On weekday inbound trips (to Lechmere Station):

- The first two stops, Massachusetts Avenue at Holyoke Street and Massachusetts Avenue at Johnston Gate, have a combined 550 boardings, or 43% of all inbound boardings.
- The seven stops along Cambridge Street between Prescott Street and Prospect Street, a major crosstown corridor through Cambridge and into Somerville, serve a total of 500 boardings and 230 alightings.
- The seven stops along Cambridge Street between Prospect Street and Sciarappa Street serve a total of 250 boardings and 440 alightings.
- 625 passengers alight at Lechmere Station, representing 48% of all inbound alightings.

Outbound ridership is generally the reverse of inbound ridership on weekdays. Weekend boardings and alightings by stop mirror weekday patterns, although with smaller volumes: Saturday and Sunday ridership volumes are roughly 60% and 35% of weekday volumes, respectively.

Figure 3 | Weekday Inbound Ridership by Stop Map



Ridership by Trip

Route 69 weekday ridership is moderate throughout the day (see Figure 4). On inbound trips:

- Ridership on trips before 7:00 AM is low, with no trip carrying over 15 passengers.
- Between 7:00 AM and 9:00 AM, trips carry between 22 and 40 riders. The 8:45 AM trip has the highest morning ridership with 40 riders.
- Midday ridership volumes are lower, but relatively constant with most trips between 9:00 AM and 2:00 PM carrying around 20 passengers.
- Between 3:00 PM and 5:00 PM, trips carry about 35 passengers each.
- Ridership then spikes to 45 passengers on the 5:10 PM trip before dropping back down to 35 passengers on the 5:30 PM trip.
- Ridership decreases from 35 passengers at 5:30 PM to 15 riders at 10:30 PM.
- From 11:00 PM onward, no trip carries more than 10 passengers.
- Maximum loads are below 30 on all trips.

On weekday outbound trips (see Figure 5):

- Trips before 7:00 AM carry between 12 and 18 passengers.
- Ridership spikes to 42 riders on the 7:30 AM trip and remains relatively high until 8:10 AM when it drops to 22 riders. It then spikes again on the 8:30 AM trip carrying 38 riders.
- Trips between 9:00 AM and 1:30 PM each carry an average of 22 passengers.
- Ridership between 1:30 PM and 6:30 PM ranges from 22 to 40 riders, with the highest ridership on the 5:45 PM trip.
- Ridership steadily decreases with each trip from 40 passengers at 5:45 PM to 12 riders at 10:30 PM.
- From 11:00 PM onward, no trip carries more than 10 passengers.
- Maximum loads are below 30 on all trips.

On Saturdays, inbound ridership is generally consistent between 10:30 AM and 5:00 PM, when trips generally carry around 25 riders. Outbound ridership is also consistent from 8:30 AM to 7:00 PM, with most trips carrying about 20 riders (see Figure 6 and Figure 7).

Sunday ridership patterns are similar, but with slightly lower volumes. Inbound ridership is highest between 11:00 AM and 4:30 PM, with most trips carrying about 22 riders. Outbound ridership is highest between 10:00 AM and 7:00 PM, with most trips carrying about 22 riders (see Figure 8 and Figure 9). No weekend trips on Route 69 exceed the maximum load threshold.

Figure 4 | Weekday Ridership by Trip: Inbound

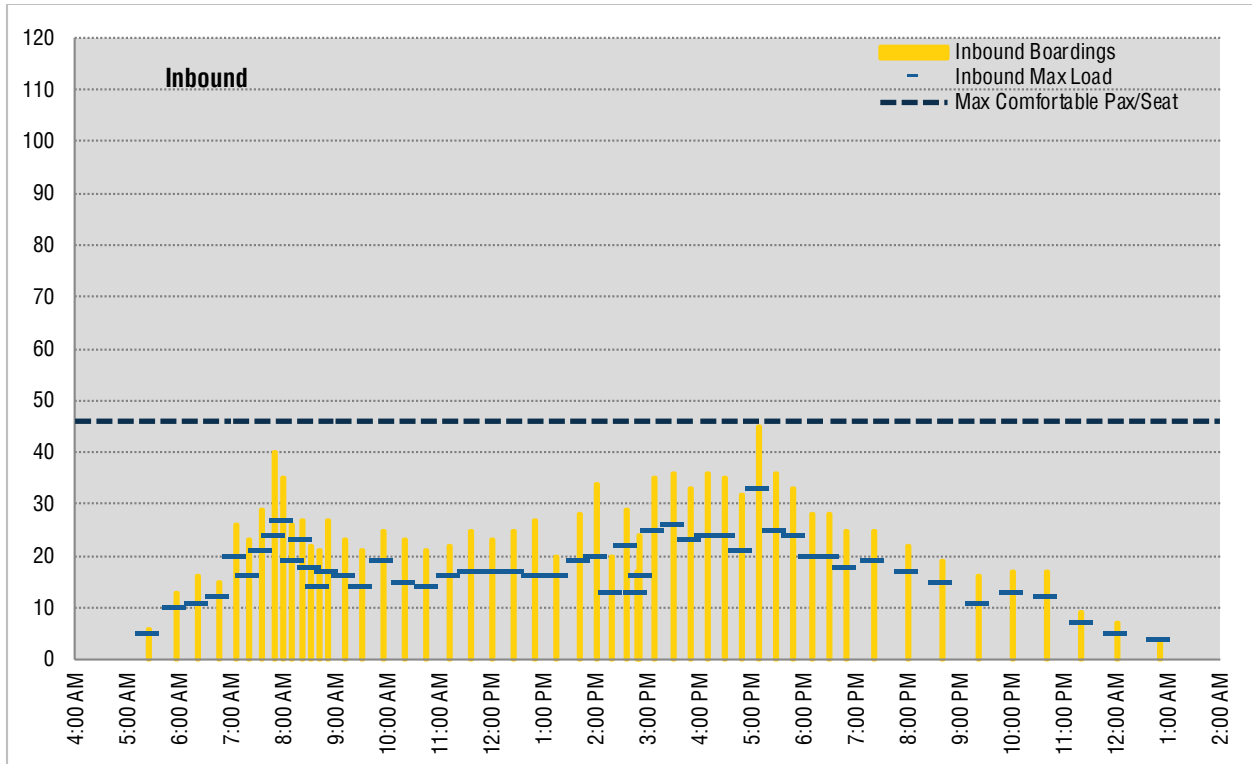


Figure 5 | Weekday Ridership by Trip: Outbound

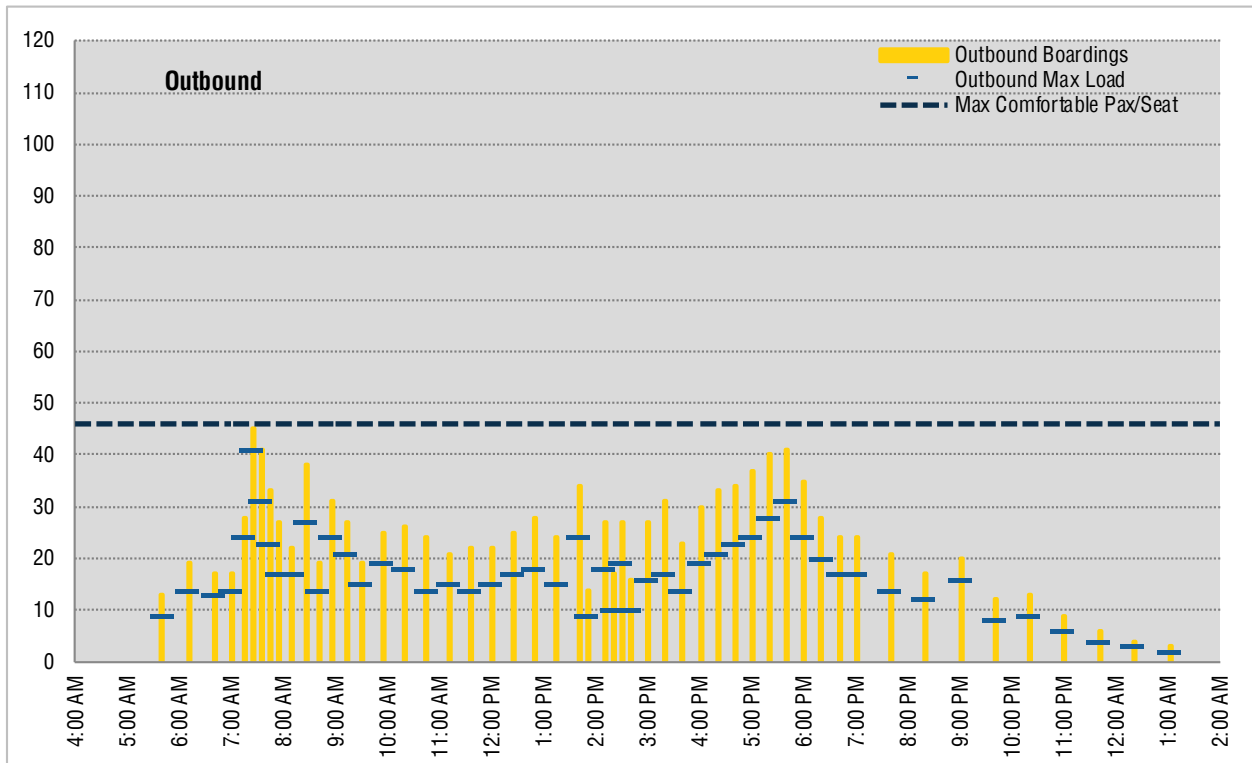


Figure 6 | Saturday Ridership by Trip: Inbound

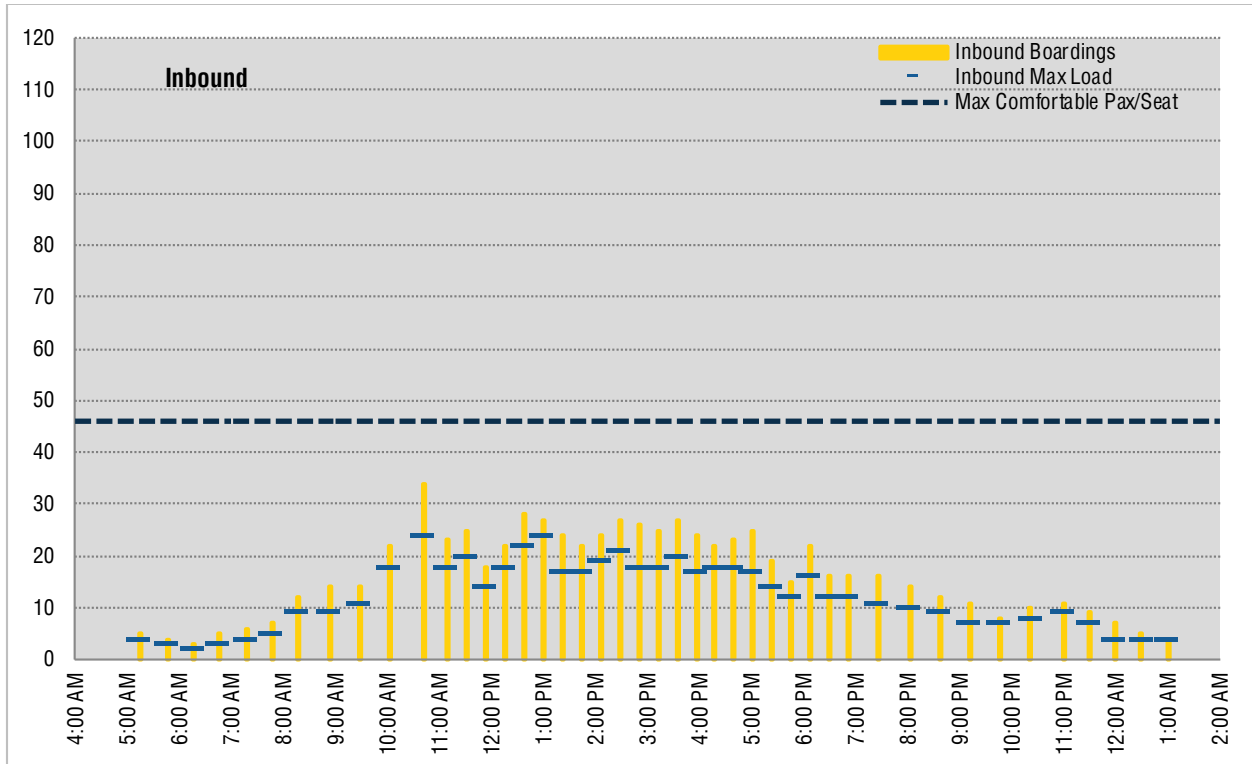


Figure 7 | Saturday Ridership by Trip: Outbound

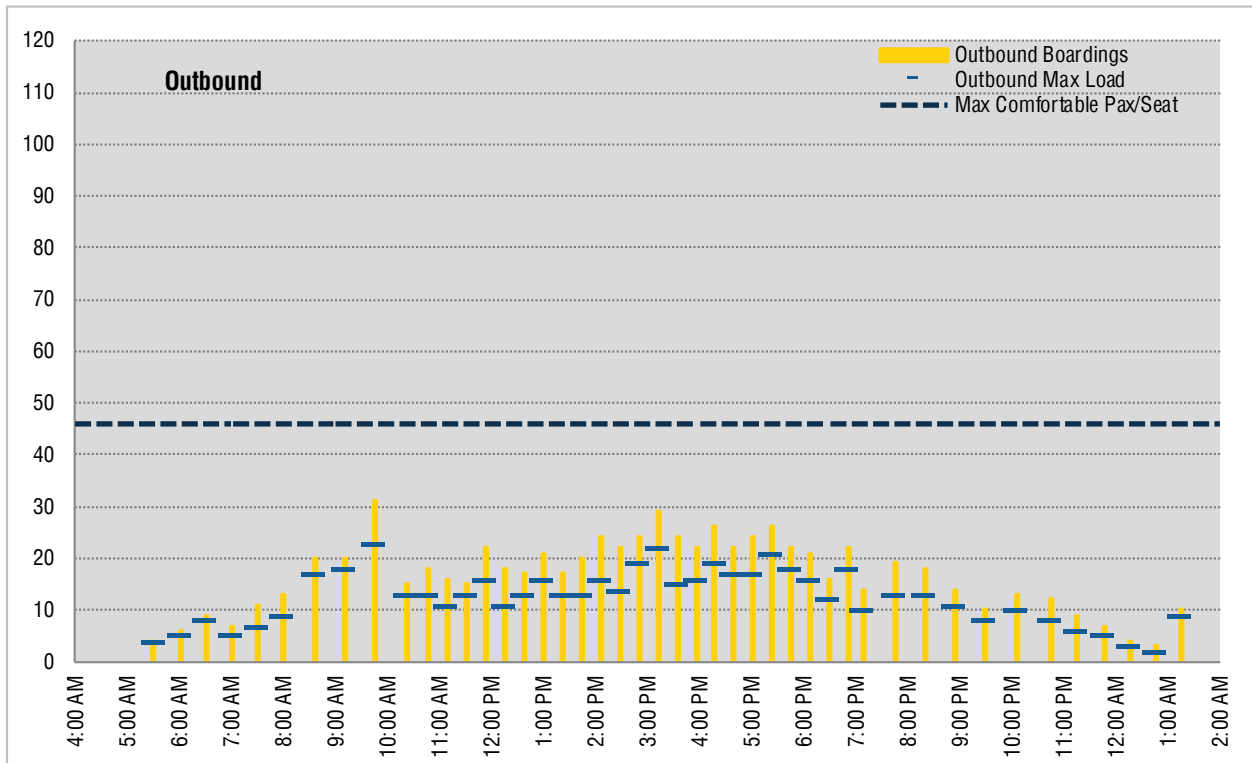


Figure 8 | Sunday Ridership by Trip: Inbound

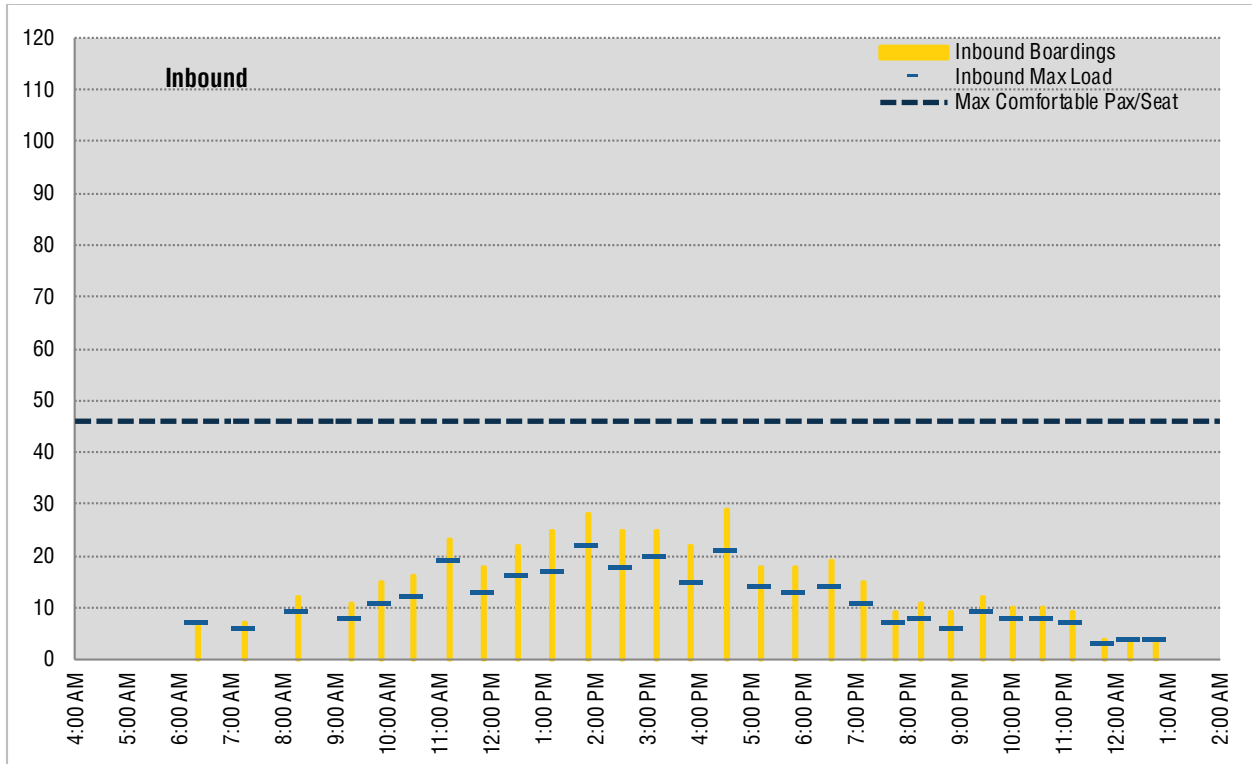
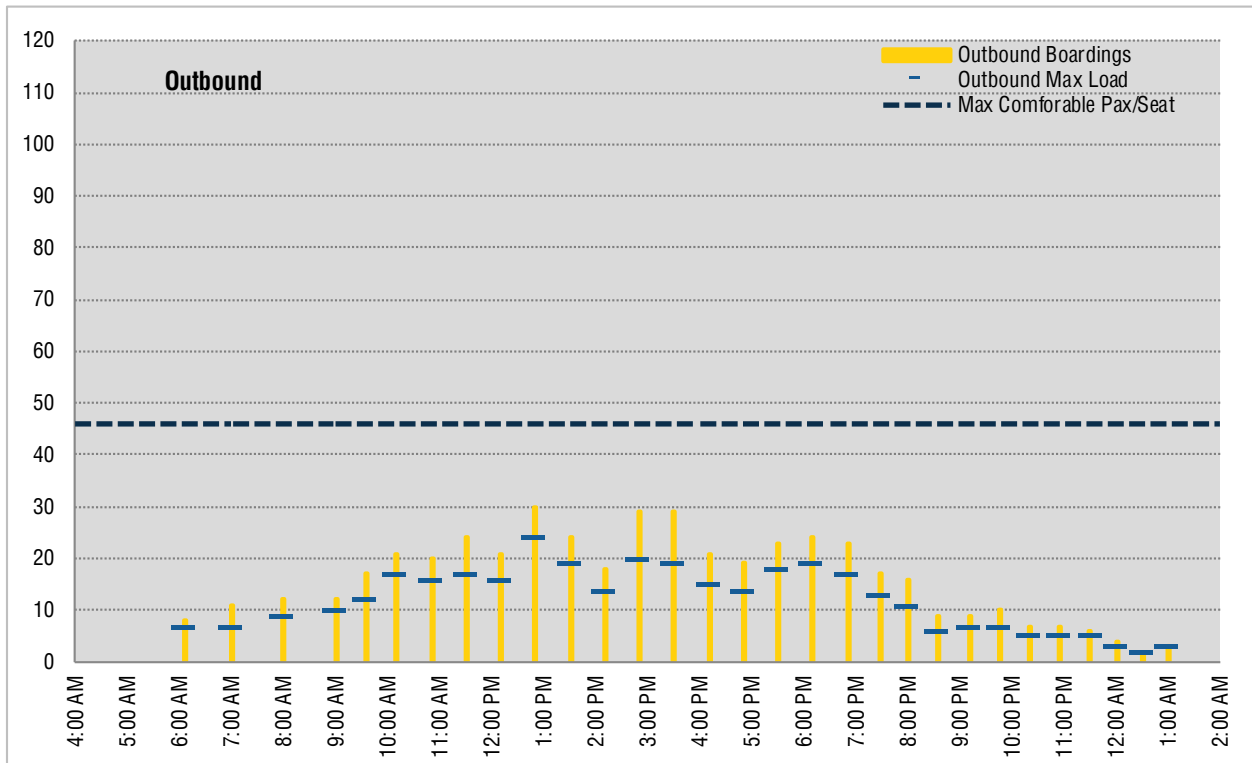


Figure 9 | Sunday Ridership by Trip: Outbound



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 69, 100% of passenger minutes are in comfortable conditions (see Table 4).

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

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

Reliability and Speed

Reliability

On weekdays, Route 69's overall reliability is 75%, which meets the target standard of 75%. Saturday and Sunday reliability is lower, at 70% and 73%, respectively. Dropped trips are a minor issue on Route 69 with 0.6% of trips not run in Fall 2017.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	75%	77%	75%	0.6%
Saturday	67%	78%	70%	-
Sunday	74%	71%	73%	-

Running Times

About 50% of inbound trips run in excess of their scheduled travel time by as long as four minutes (see Figure 10). The same is true of outbound trips, with excess travel times of up to three minutes (see Figure 11). The most significant delays occur on inbound trips between 8:45 AM and 3:00 PM and on outbound trips between 7:00 PM and 1:00 AM.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 69 Inbound

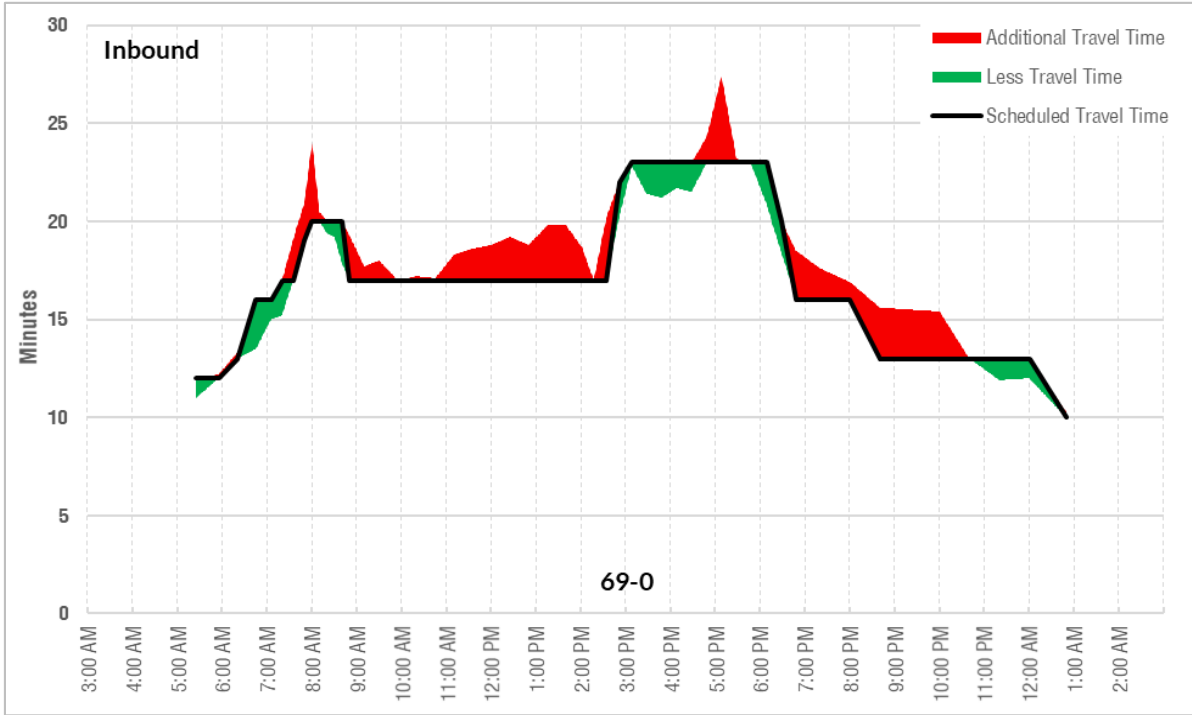
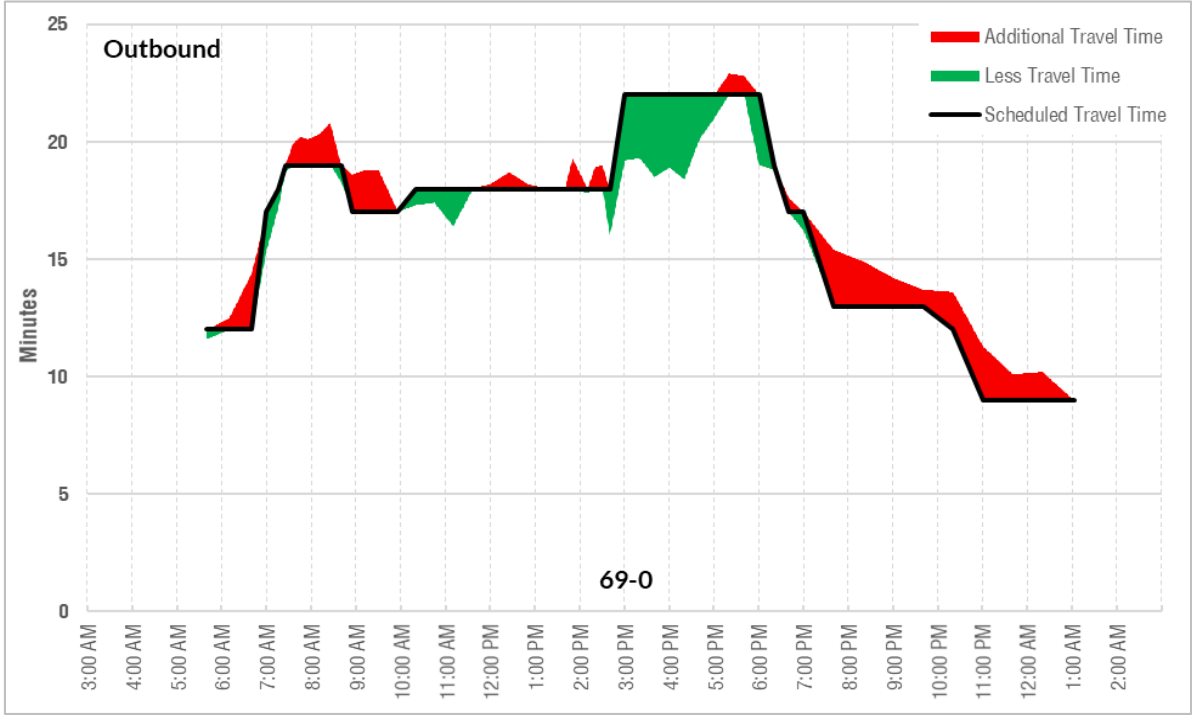


Figure 11 | Scheduled & Median Travel Time by Trip: Route 69 Outbound



Stop Spacing

Stops along Cambridge Street are very closely spaced, with an average of nine stops per mile. This is well in excess of the MBTA's standard of four to seven per mile for urban areas. Stop consolidation would make service faster and improve reliability.

Summary

Route 69 provides unique service between Harvard Station and Lechmere Station along Cambridge Street. The route alignment is direct with few deviations. The route performs relatively well.