

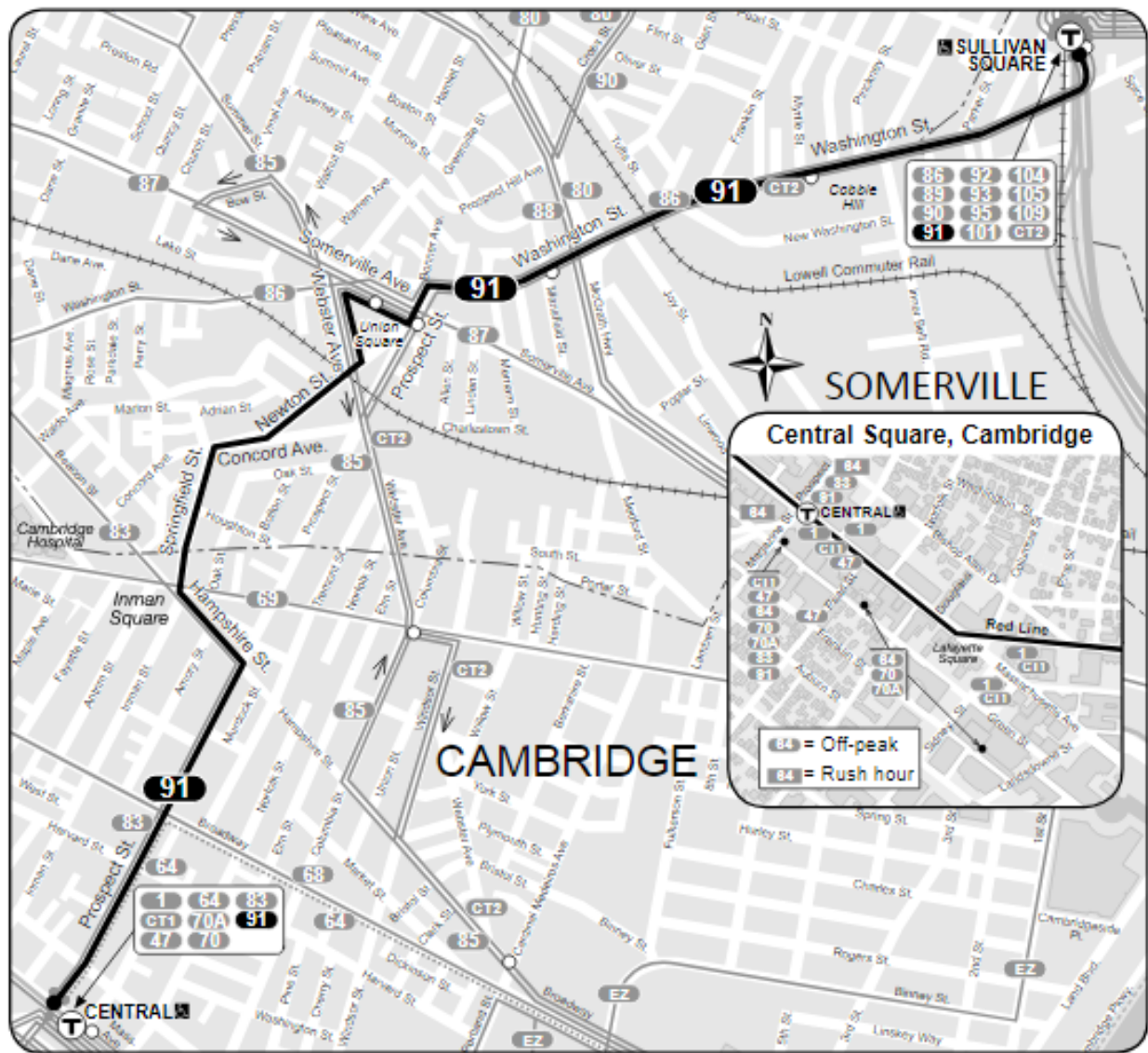
# Route 91

Sullivan Square Station – Central Square, Cambridge

## Route Overview

Route 91 Sullivan Square Station – Central Square, Cambridge is a Local route that provides crosstown service between Sullivan Square Station in Somerville and Central Square in Cambridge via Union Square and Inman Square (see Figure 1).

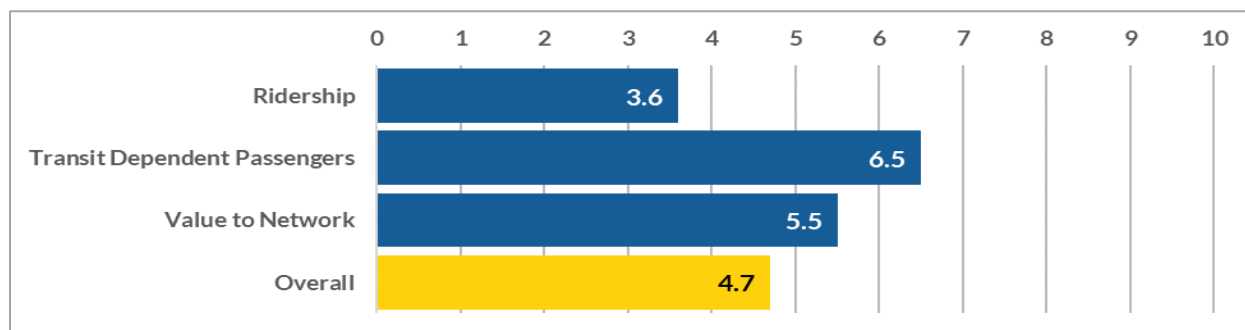
Figure 1 | Service Map



## Network Importance

Route 91 is of moderate importance in the MBTA system (see Figure 2). On a relative scale of 0 to 10, the route rates 3.6 in terms of ridership, 6.5 in terms of transit dependent ridership, and 5.5 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 4.7.

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



## Service Overview

### Schedule

Route 91 provides service from 5:15 AM until 1:10 AM on weekdays, operating every 20 to 29 minutes during the day and every 45 to 53 minutes in the evening (see Table 1).

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
<b>Monday-Friday</b>	<b>5:15 AM to 1:10 AM</b>			<b>42/42</b>
Sunrise	5:15 AM to 5:59 AM	15-25	23	3/2
Early AM	6:00 AM to 6:59 AM	17-25	20	3/3
AM Peak	7:00 AM to 8:59 AM	25-30	29	4/4
Midday Base	9:00 AM to 1:29 PM	20-25	22	12/12
Midday School	1:30 PM to 3:59 PM	20-30	22	7/7
PM Peak	4:00 PM to 6:29 PM	30	29	5/5
Evening	6:30 PM to 9:59 PM	30-50	45	5/5
Late Evening	10:00 PM to 11:59 PM	50-60	53	2/3
Night	12:00 AM to 12:10 AM	60	-	1/1
<b>Saturday</b>	<b>5:00 AM to 1:05 AM</b>	<b>20-65</b>	<b>30</b>	<b>40/40</b>
<b>Sunday</b>	<b>6:30 AM to 12:54 AM</b>	<b>35-60</b>	<b>54</b>	<b>22/22</b>

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

Route 91 operates with a similar span of service on Saturdays, beginning fifteen minutes earlier in the morning and running every 30 minutes on average. On Sundays, the route operates from 6:30 AM to 12:54 AM with service generally running every hour.

Route 91 exceeds the minimum span of service and frequency standards on all days and at all times.

### Service Patterns

All Route 91 trips operate along the same alignment between Sullivan Square Station and Central Square as shown in Figure 1.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
<b>INBOUND</b>				<b>42</b>	<b>40</b>	<b>22</b>
91.0	Sullivan Square Station Lower Busway	Magazine Street at Green Street	Primary service alignment	36	35	17
<b>OUTBOUND</b>				<b>42</b>	<b>40</b>	<b>22</b>
91.0	Magazine Street at Green Street	Sullivan Square Station Lower Busway	Primary service alignment	35	34	16

### Ridership

Route 91 carries 1,700 passengers on weekdays, 1,250 passengers on Saturdays, and 650 passengers on Sundays.

#### Ridership by Stop

On weekdays, Route 91 has consistent ridership between Sullivan Square Station and Central Square. Stops at Union Square and Inman Square are among the highest ridership stops that are not at a rapid transit station (see Figure 3).

On weekdays heading inbound from Sullivan Square Station:

- Half of all Route 91 inbound riders (450 passengers) board at Sullivan Station. This is by far the highest activity stop on the route, and no other stop reaches 100 daily boardings.
- Ridership is low between Sullivan Square Station and McGrath Highway, with no stop serving more than 40 passengers.
- Close to 20% of riders board at Union Square (10%) and Inman Square (8%). Aside from these two stops, ridership between McGrath Highway and Central Square is relatively low and evenly distributed.

- More than half of all Route 91 riders alight at either Prospect Street at Bishop Allen (27%) or Central Square (28%). An additional 20% of riders alight at Inman Square (11%) and Union Square (10%).

Weekend ridership follows roughly the same ridership patterns inbound, with fewer but similarly distributed boardings and alightings.

### Ridership by Trip

On weekdays (see Figure 4 and Figure 5):

- Inbound ridership is highest during AM peak, with several trips serving over 30 passengers and one trip that reaches 45 riders. Ridership is lower during midday and evening, with only one trip (5:05PM) serving more than 30 passengers.
- Outbound ridership is highest during the PM peak, with several trips serving over 30 passengers and one trip that reaches 43 riders. Ridership is lower during morning, midday, and evening service, with only one trip (8:15AM) serving more than 25 passengers.
- During peak periods in both directions, maximum loads never exceed 35 passengers, meaning that no trips have standing riders, even during peak periods.

On Saturdays (see Figure 6 and Figure 7):

- Inbound ridership is relatively constant throughout most of the day, then declines after 9:00 PM. Only one trip (1:10 PM) has more than 30 riders.
- Saturday outbound ridership is low throughout the day, but increases later in the afternoon, when several trips serve more than 25 passengers.

On Sundays (see Figure 8 and Figure 9):

- Inbound ridership is highest in the morning and midday, with one trip (11:03 AM) serving more than 30 riders. Inbound ridership decreases after 7:00 PM, with no trip serving more than 10 passengers.
- Outbound ridership is highest in the afternoon, with several trips serving more than 20 riders.

No Saturday or Sunday trips have standing riders.



Figure 3 | Weekday Inbound Ridership by Stop Map

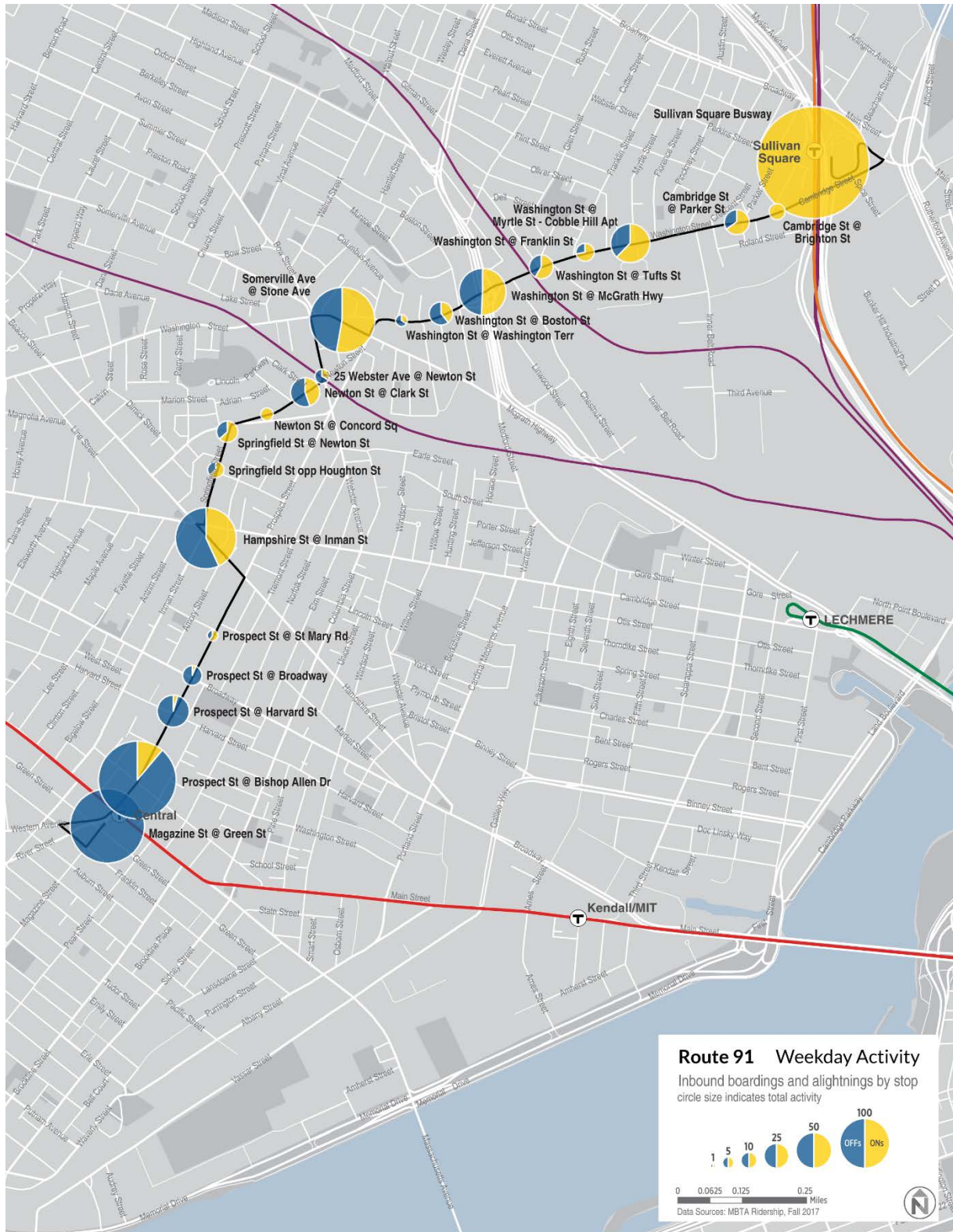


Figure 4 | Weekday Ridership by Trip: Inbound

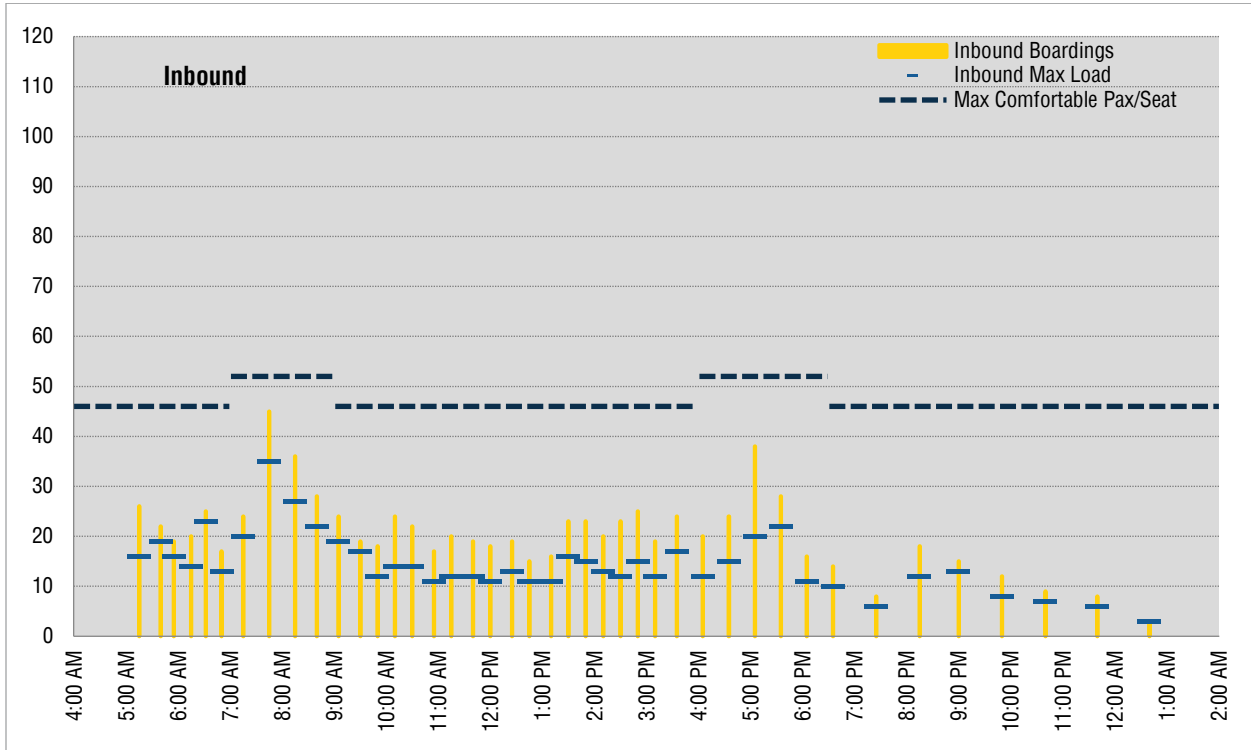


Figure 5 | Weekday Ridership by Trip: Outbound

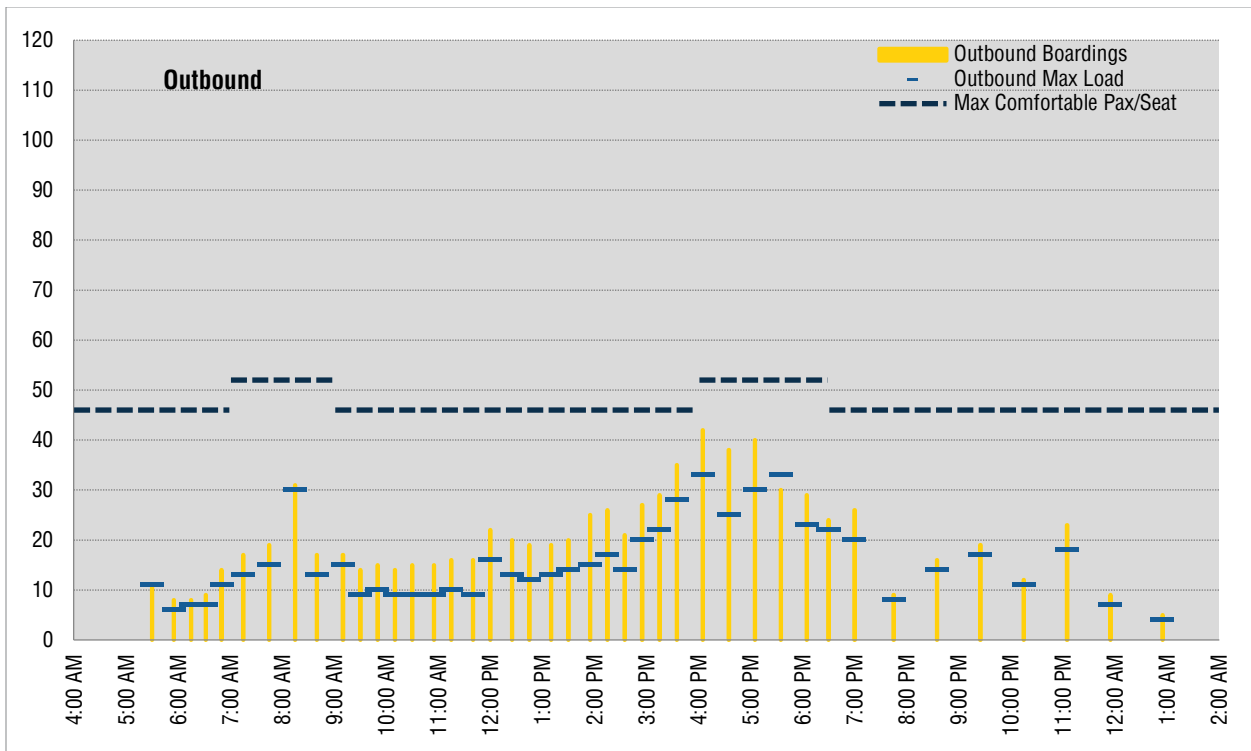


Figure 6 | Saturday Ridership by Trip: Inbound

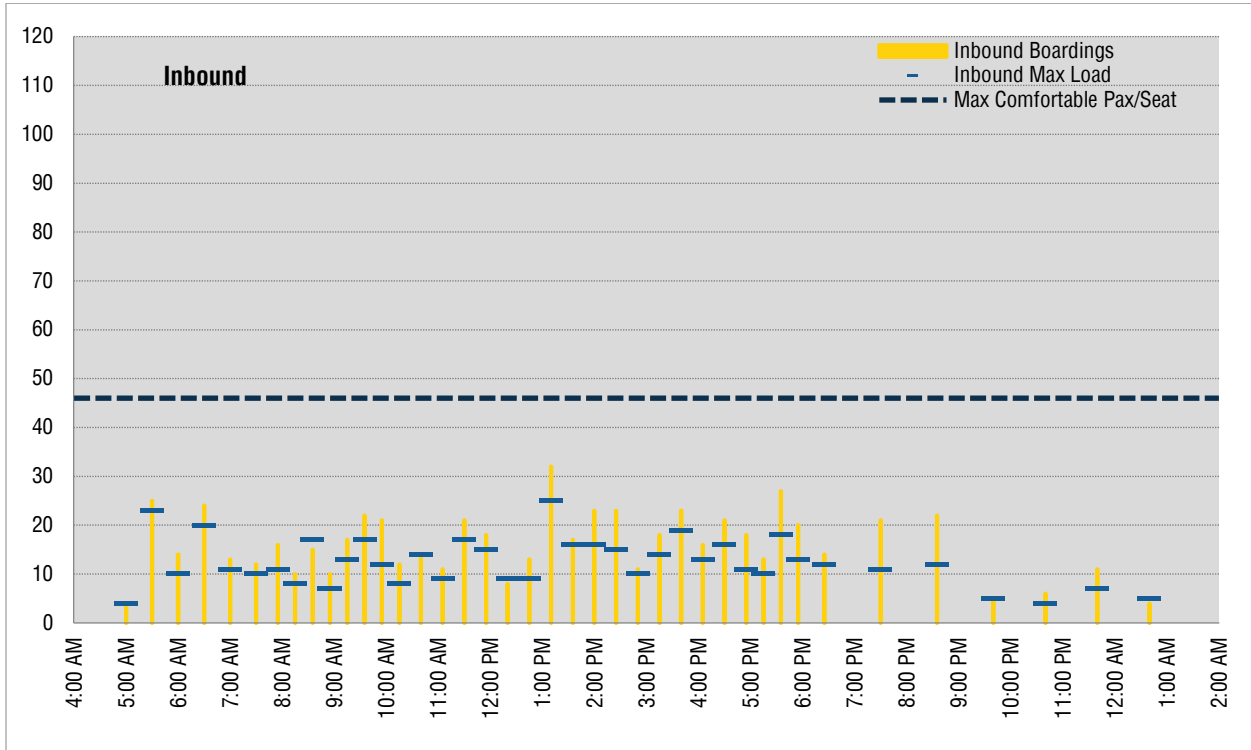


Figure 7 | Saturday Ridership by Trip: Outbound

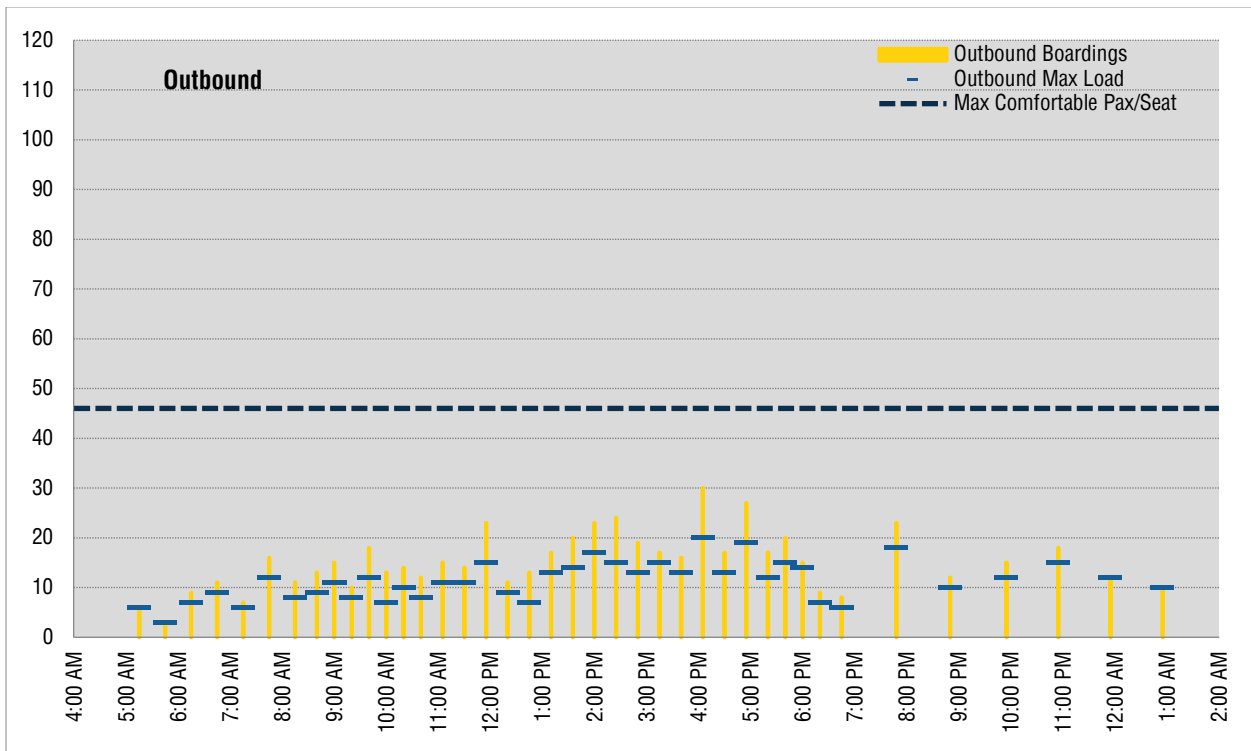


Figure 8 | Sunday Ridership by Trip: Inbound

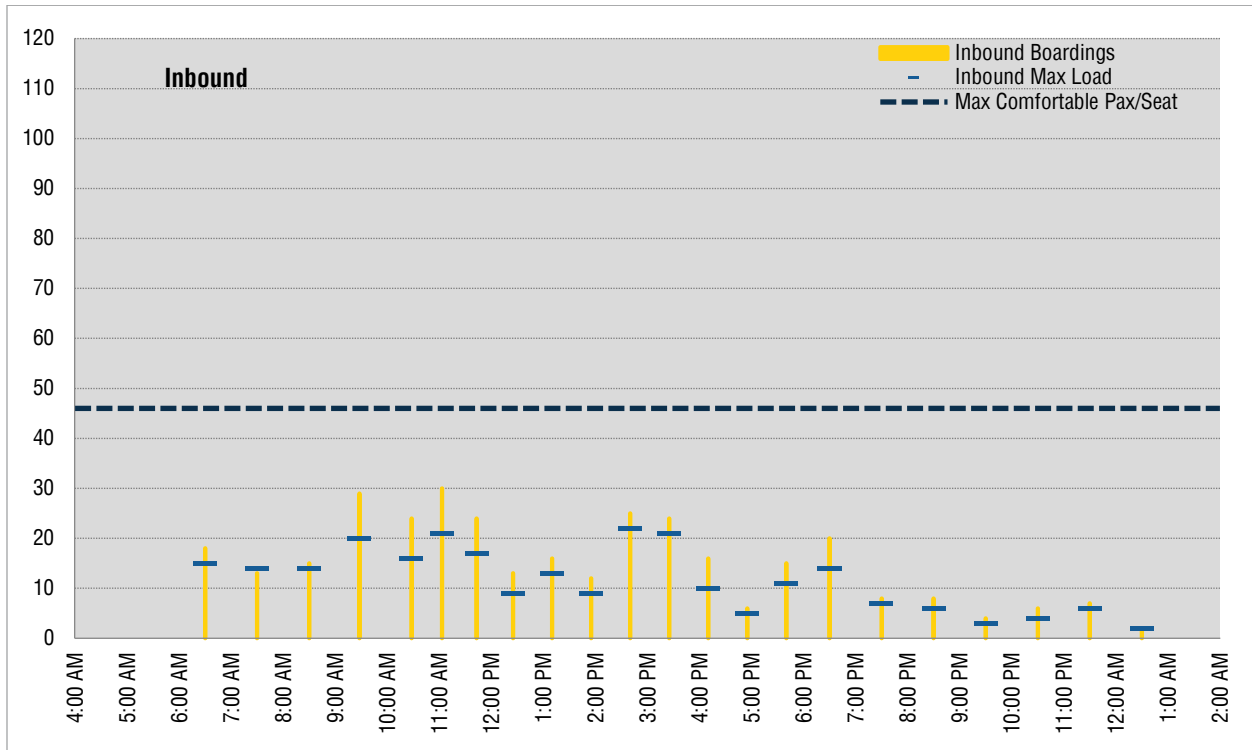
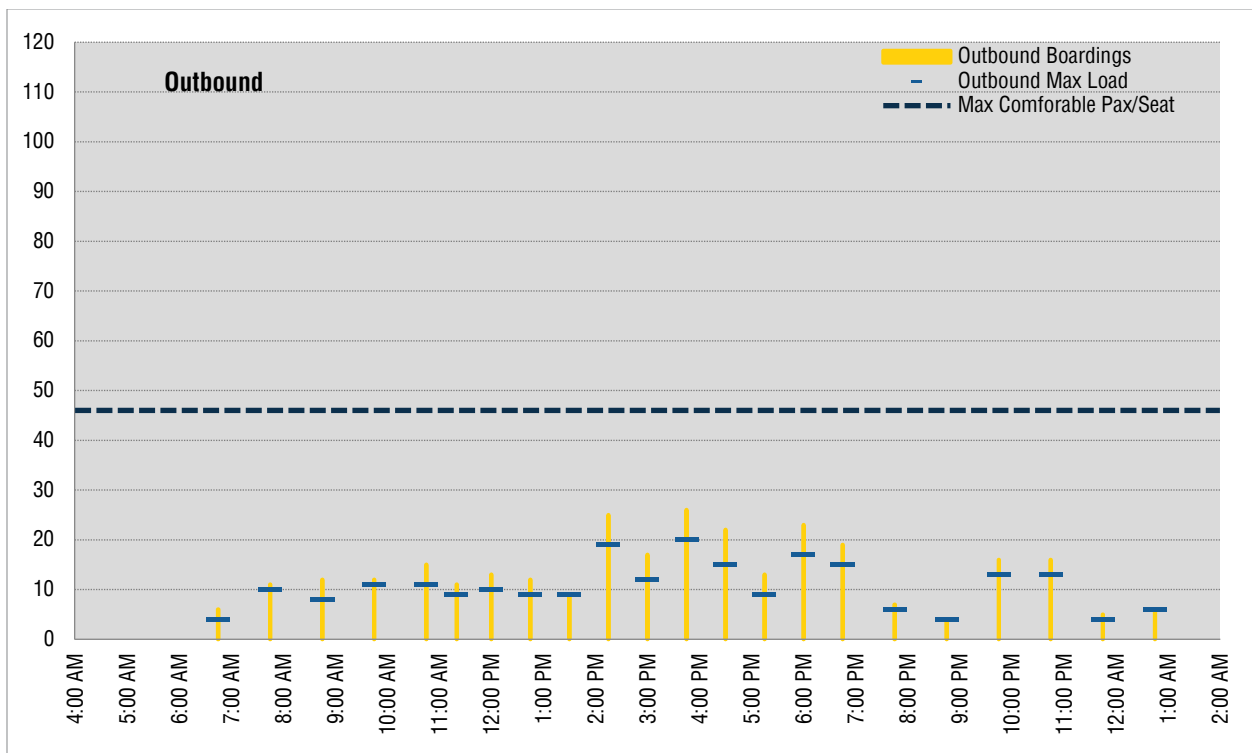


Figure 9 | Sunday Ridership by Trip: Outbound





## 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 91, 99.1% of passengers travel in conditions that meet the MBTA's comfort standards, which is above the target (see Table 3). On weekends, 100% of passengers travel in conditions that meet the MBTA's comfort standard.

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
<b>Minimum Standard</b>	92.0%	92.0%	92.0%
<b>Target</b>	96.0%	96.0%	96.0%
<b>Actual</b>	99.1%	100.0%	100.0%

## Reliability and Speed

### Reliability

Route 91 provides very unreliable service, especially on weekdays and Sundays (see Table 4). Just over 40% of weekday trips are completed on time, with service often running behind and at uneven frequencies. Dropped trips are a moderate issue, with approximately 0.4% of trips not operated in Fall 2017.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
<b>Monday-Friday</b>	45%	41%	44%	0.4%
<b>Saturday</b>	60%	64%	61%	-
<b>Sunday</b>	46%	45%	46%	-

### Running Times

One major reason that Route 91 is unreliable is that its actual running times routinely exceed scheduled running times throughout the service day (see Figure 10 and Figure 11). During the PM peak, Route 91 running times exceed scheduled running times by two to five minutes.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 91 Inbound

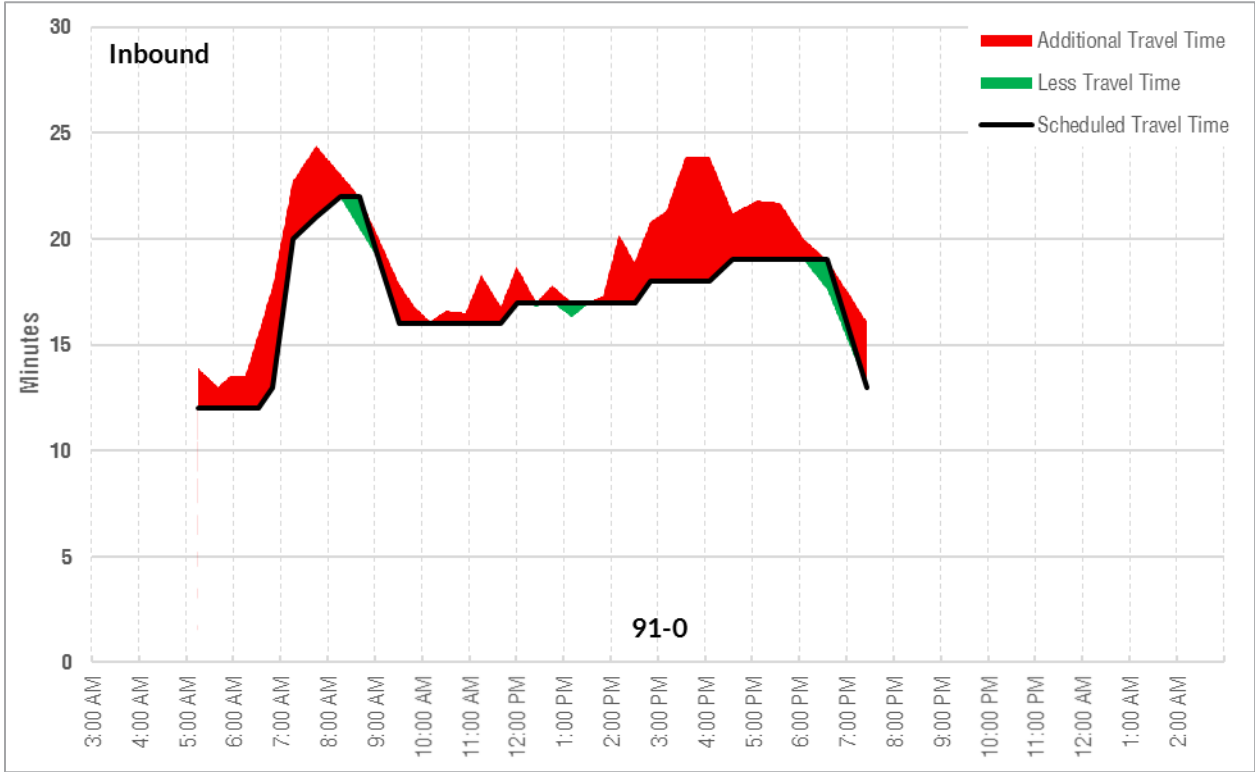
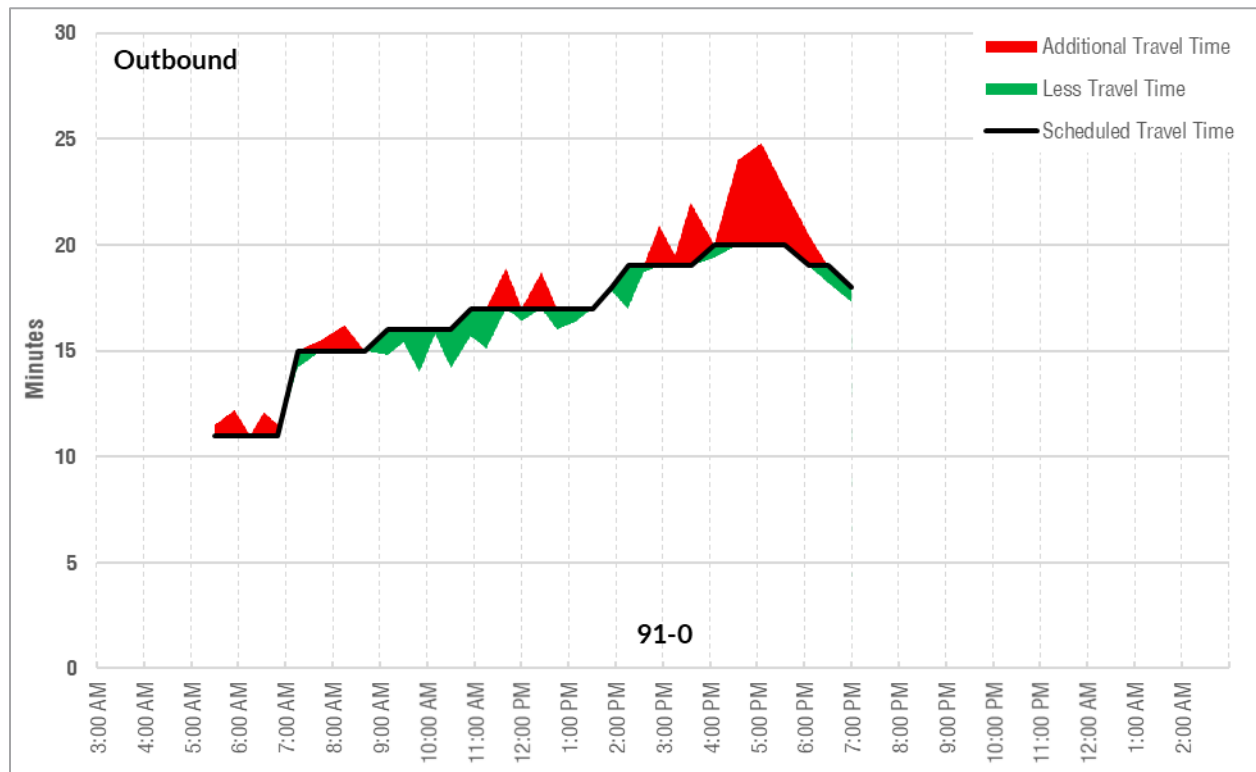


Figure 11 | Scheduled & Median Travel Time by Trip: Route 91 Outbound



### Stop Spacing

Route 91 has an average of 8.5 stops per mile. This equates to a stop every 650 feet, or only a two-minute walk between stops, and exceeds the four to seven stops specified by the MBTA’s bus stop standards. Several stops are closer than 500 feet apart, and some are as close as 200 feet apart, particularly between Myrtle Street and Union Square. The very close stop spacing slows service and contributes to the route’s poor reliability.

### Summary

Route 91 provides an important crosstown connection between Sullivan Square and Central Square. The major issues with the route are that it is slow and unreliable. Additionally, ridership is low on early morning and late evening weekend trips.