

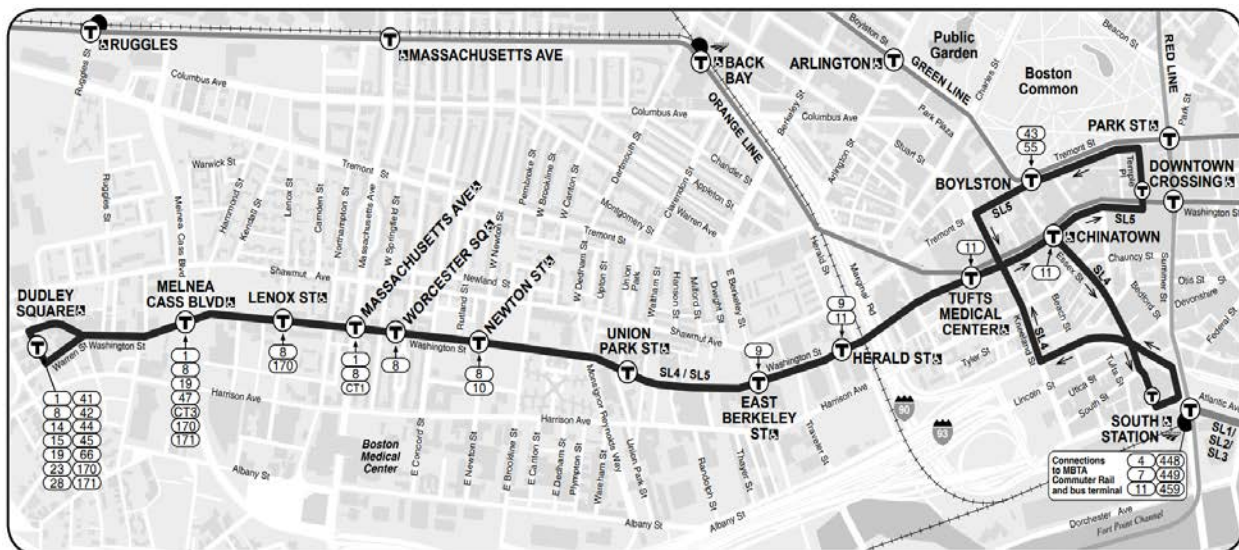
# Route SL5

## Dudley Station – Downtown Crossing at Temple Place

### Route Overview

Route SL5 Dudley Station – Downtown Crossing at Temple Place is a Silver Line Bus Rapid Transit (BRT) route that operates between Dudley Square and downtown Boston (see Figure 1). It is very similar to Route SL4 Dudley Station-South Station, which uses the same alignment between Dudley Station and Chinatown and then operates to South Station.

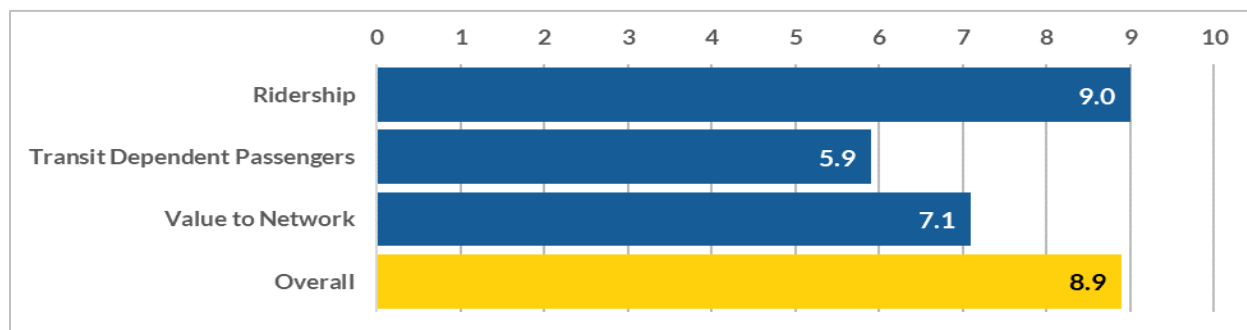
Figure 1 | Service Map



### Network Importance

Route SL5 is a very important route within the MBTA bus network overall (see Figure 2). On a relative scale of 0 to 10, it rates 9.0 in terms of ridership, 5.9 in terms of transit dependent ridership, and 7.1 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 is 8.9, which reflects the measure’s strong weighting to overall ridership.

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



## Service Overview

### Schedule

Route SL5 provides frequent service throughout the day on weekdays, Saturdays, and Sundays (see Table 1). On weekdays, it operates from 5:15 AM to 1:18 AM, with trips every 7.5 to 10 minutes before 10:00 PM and every 10 to 17 minutes thereafter. As described above, Route SL4 Dudley Station-South Station also operates along most of the same alignment. However, Route SL4 operates less frequently and thus the schedules of the two routes are not coordinated.

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 1:18 AM</b>			<b>131/133</b>
Sunrise	5:15 AM to 5:59 AM	8 - 10	9	6/3
Early AM	6:00 AM to 6:59 AM	8 - 9	8	7/8
AM Peak	7:00 AM to 8:59 AM	7 - 9	8	15/15
Midday Base	9:00 AM to 1:29 PM	8 - 10	10	28/28
Midday School	1:30 PM to 3:59 PM	6 - 9	8	18/19
PM Peak	4:00 PM to 6:29 PM	5 - 10	8	19/20
Evening	6:30 PM to 9:59 PM	7 - 10	8	25/25
Late Evening	10:00 PM to 11:59 PM	10 - 17	12	9/10
Night	12:00 AM to 1:07 AM	15 - 17	17	4/5
<b>Saturday</b>	<b>5:19 AM to 1:13 AM</b>	<b>4 - 12</b>	<b>8</b>	<b>144/144</b>
<b>Sunday</b>	<b>6:00 AM to 12:58 AM</b>	<b>7 - 15</b>	<b>9</b>	<b>125/125</b>

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

Saturday service is similar to weekday service, with trips every eight minutes throughout most of the day. On Sundays, Route SL5 operates with a slightly shorter service span and with marginally longer frequencies, with trips every nine minutes (on average) until 12:58 AM.

Route SL5 meets the MBTA’s Service Delivery Policy (SDP) span of service and service frequency standards for Key Bus routes throughout the day on all days.

### Service Patterns

All Route SL5 operates with a single inbound and outbound service pattern, with all service operating as indicated in Table 2.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
<b>INBOUND</b>				<b>131</b>	<b>144</b>	<b>125</b>
SL5.0	Dudley Station	Temple Place @ Washington Street	Via Washington Street	131	144	125
<b>OUTBOUND</b>				<b>133</b>	<b>144</b>	<b>125</b>
SL5.0	Temple Place @ Washington Street	Dudley Station	Via Washington Street	133	144	125

### Ridership

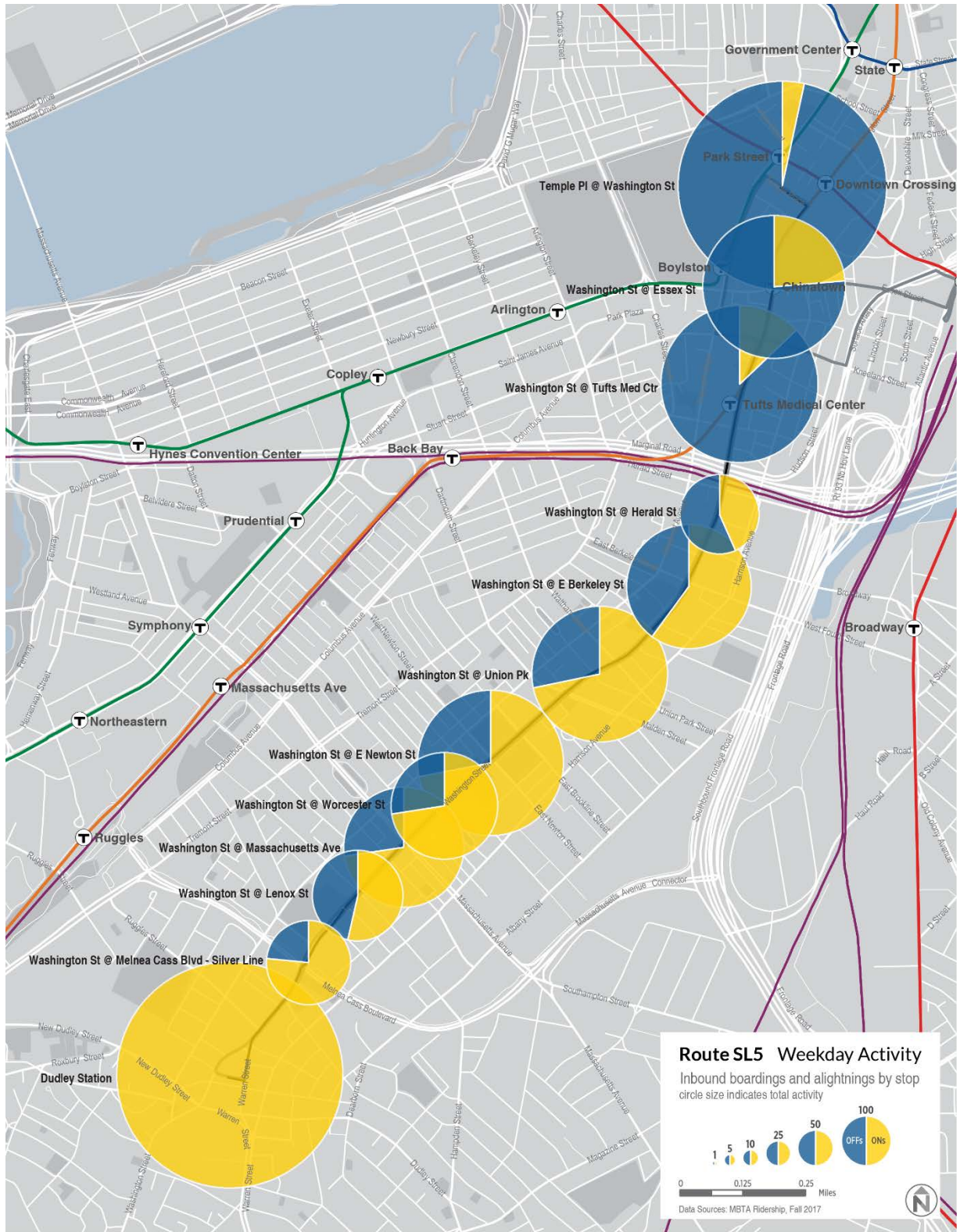
Route SL5 carries 10,300 riders per weekday, 6,900 riders per Saturday, and 5,200 riders per Sunday. These ridership levels make it one of the 10 highest ridership routes in the MBTA system.

### Ridership by Stop

Route SL5 has very strong ridership along its entire length. Each of the 12 inbound stops serves more than 250 boardings or alightings daily, and five serve more than 825 passengers (see Figure 3):

- Close to 40% (2,073 passengers) of all daily boardings occur at Dudley Station, which serves Dudley Square and is a major transit hub.
- After Dudley Station, the bus stops with highest boardings are East Newton Street (621 daily) and Union Park (537 daily) in the South End.

Figure 3 | Weekday Inbound Ridership by Stop Map



- Most stops south of the Mass Pike serve more boardings than alightings. However, alightings are also high, indicating that there are large volumes of travel within the corridor and not just to downtown Boston.
- Approximately 30% of all riders alight at Tufts Medical Center.
- Just over half of all riders alight at the last stop on Temple Place.

Outbound weekday ridership is roughly the reverse of inbound ridership.

On weekends, there are fewer boardings and alightings overall. In addition, there are proportionally fewer boardings and alightings at Tufts Medical Center.

### **Ridership by Trip**

Route SL5's weekday ridership is strong throughout the day. It also exhibits typical commuting patterns, with higher ridership inbound during the AM peak and outbound during the PM peak (see Figure 4 and Figure 5).

Many AM peak inbound trips carry over 80 passengers, and many PM peak outbound trips carry 70 passengers. However, due to the use of 60' articulated coaches and significant levels of ridership turnover along the route, on average, all trips operate within maximum crowding levels. Midday ridership is strong in both directions, with trips serving more than 50 passengers inbound and more than 45 passengers outbound and maximum loads of over 30 riders. After 5:30 PM inbound and 6:00 PM outbound, ridership per trip falls to 30 passengers or less. Late night trips serve few riders.

On Saturdays, ridership fluctuates between 20 passengers to over 40 per trip in both directions between approximately 9:00 AM and 6:00 PM, and with fewer than 15 passengers on trips after 7:00 PM inbound (see Figure 6 and Figure 7). Outbound ridership is slightly stronger during the midday and evening. Sunday patterns are similar but with ridership per trip that is approximately 25% lower (see Figure 8 and Figure 9).

Figure 4 | Weekday Ridership by Trip: Inbound

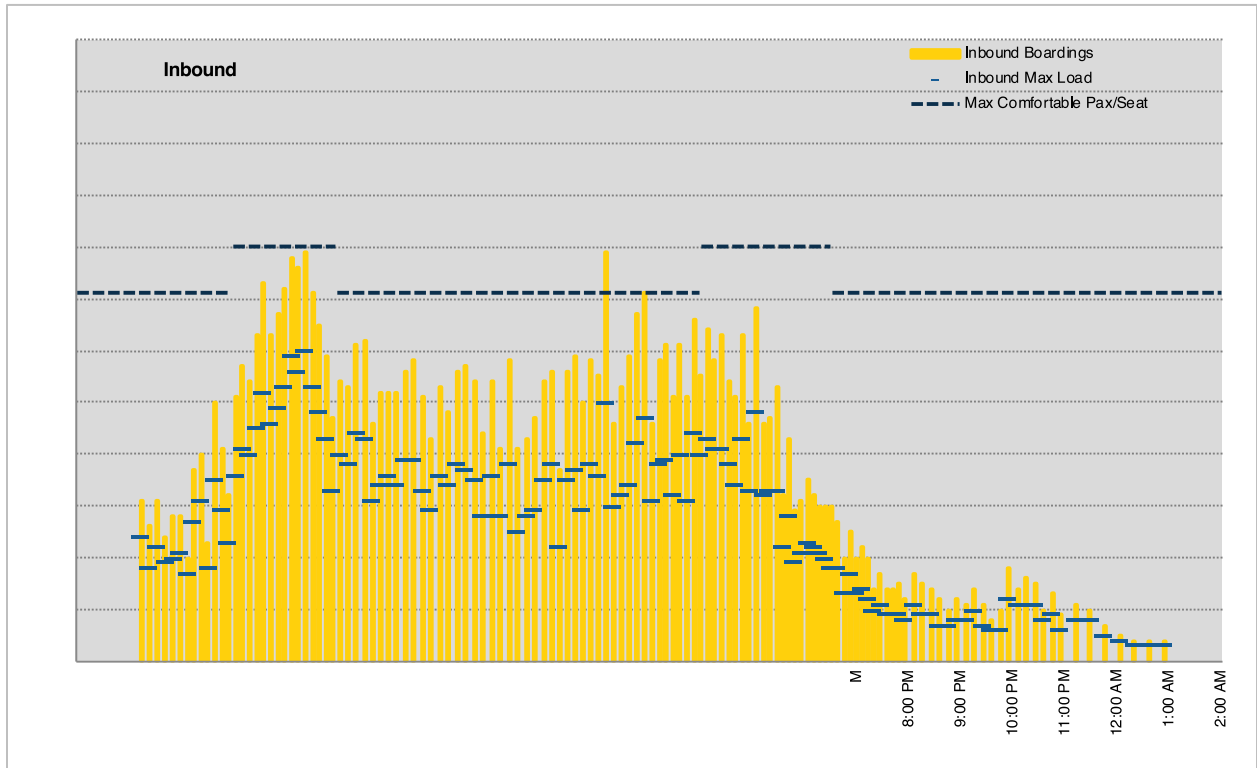


Figure 5 | Weekday Ridership by Trip: Outbound

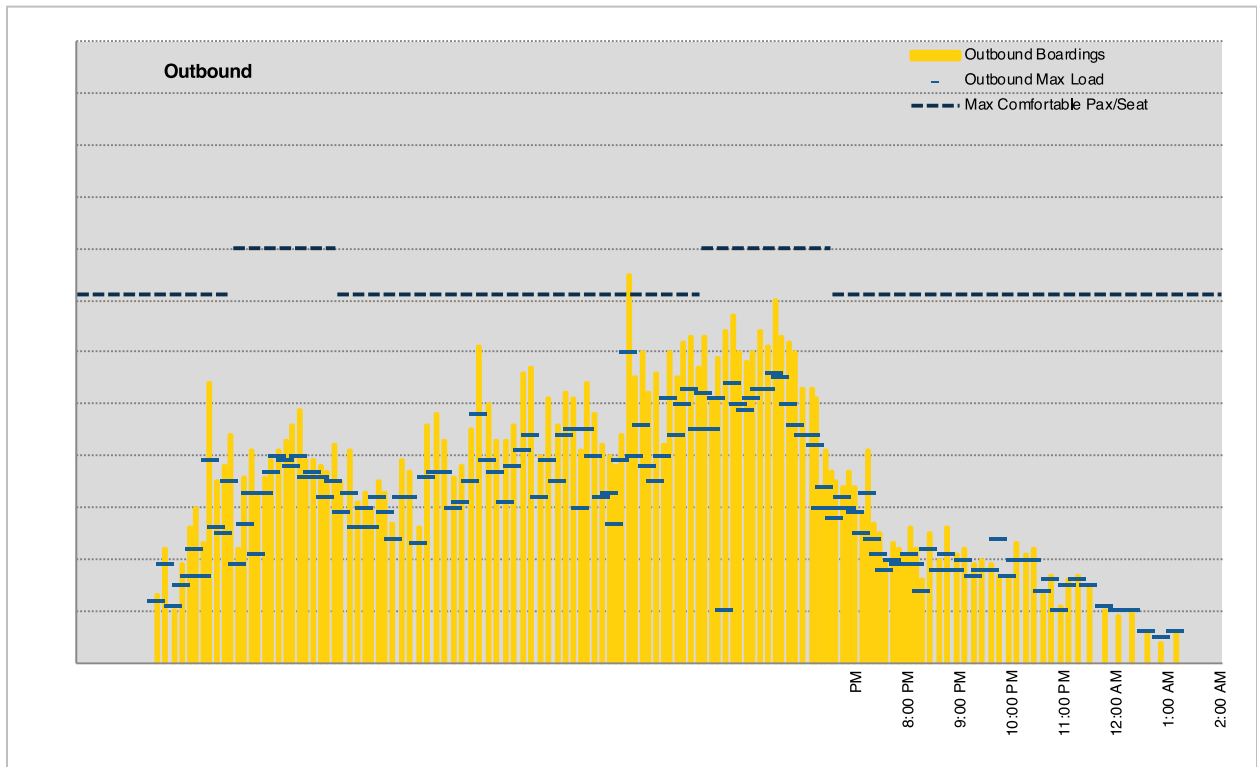


Figure 6 | Saturday Ridership by Trip: Inbound

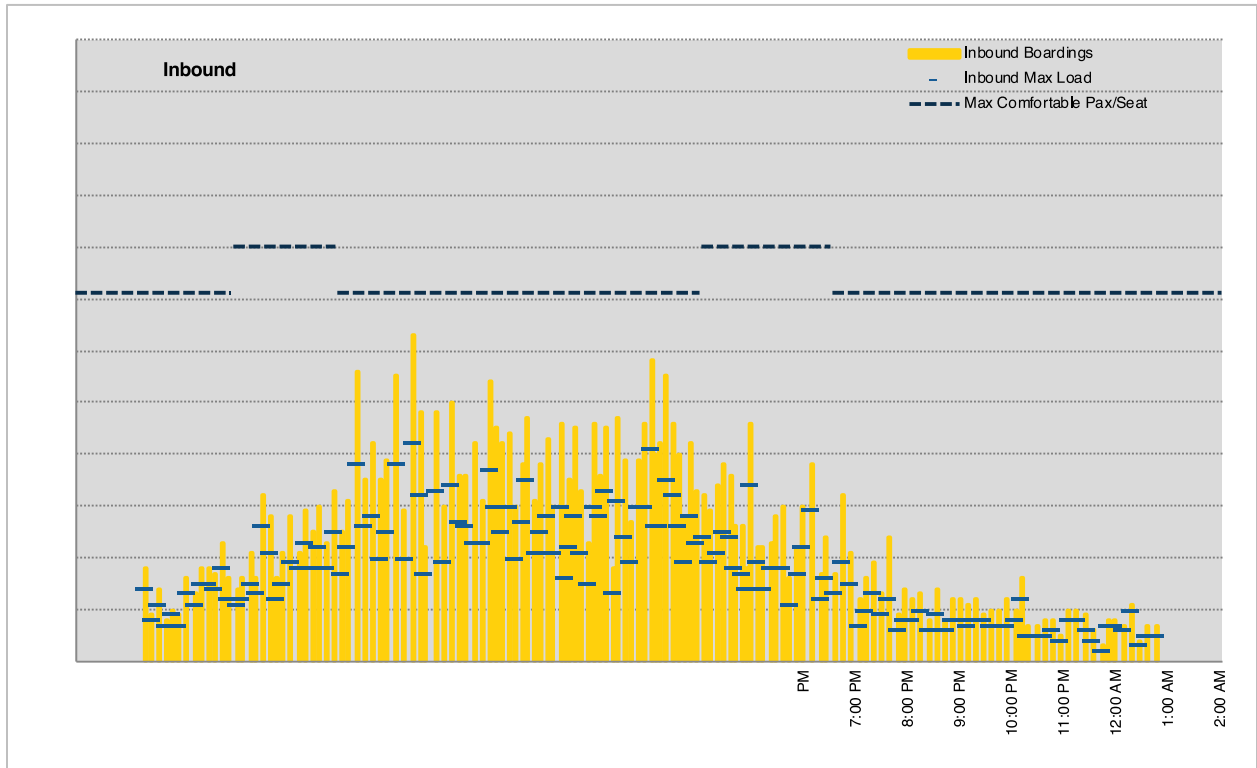


Figure 7 | Saturday Ridership by Trip: Outbound

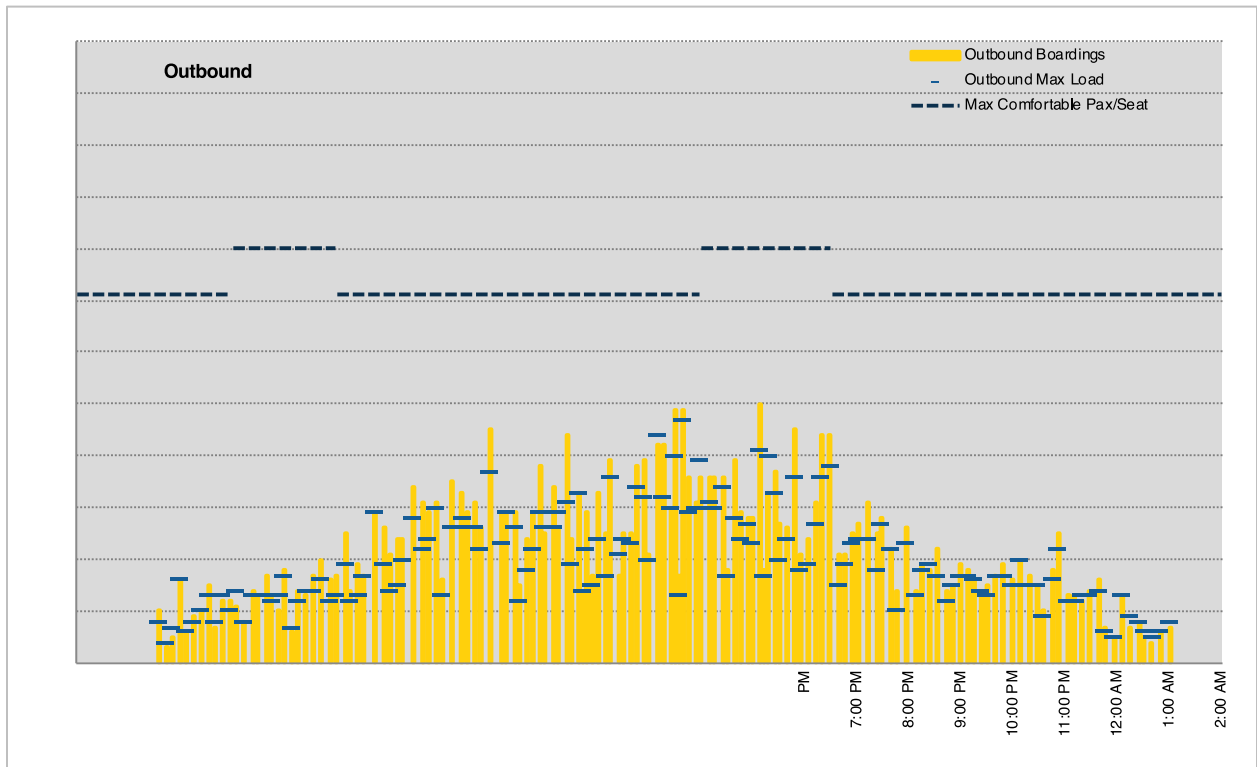


Figure 8 | Sunday Ridership by Trip: Inbound

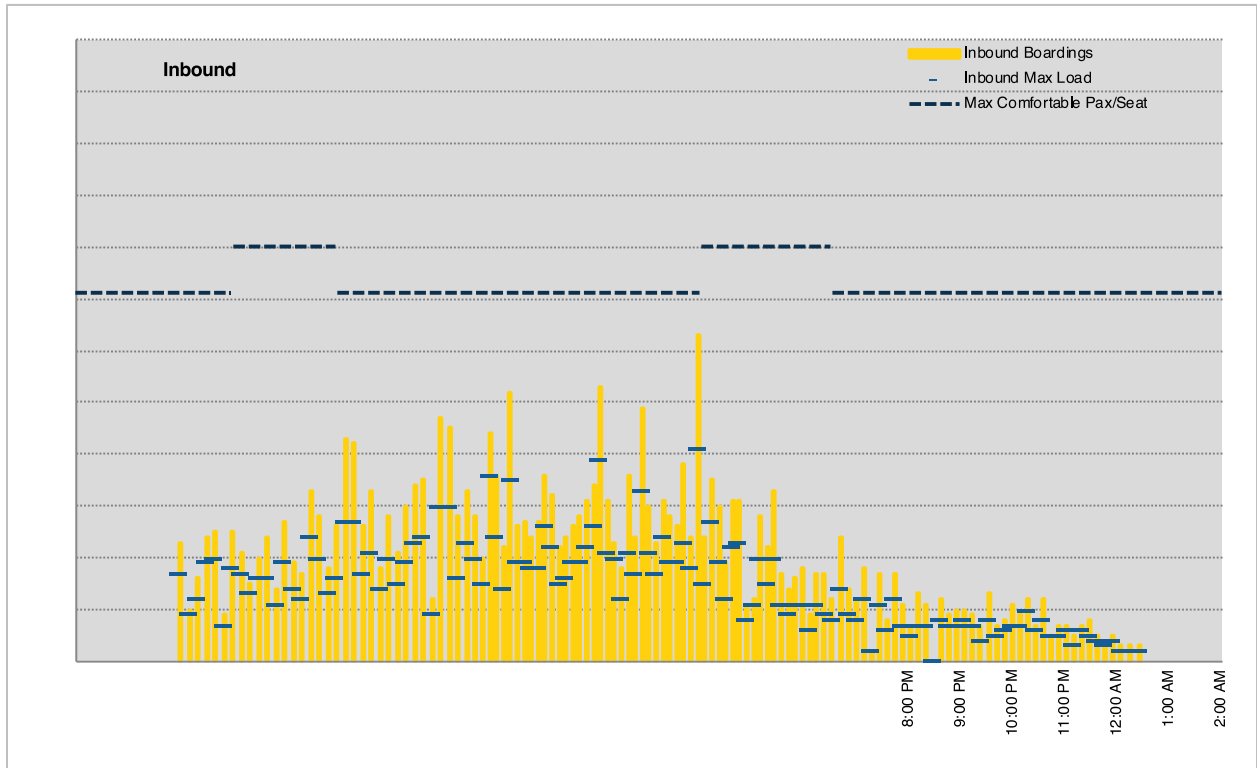
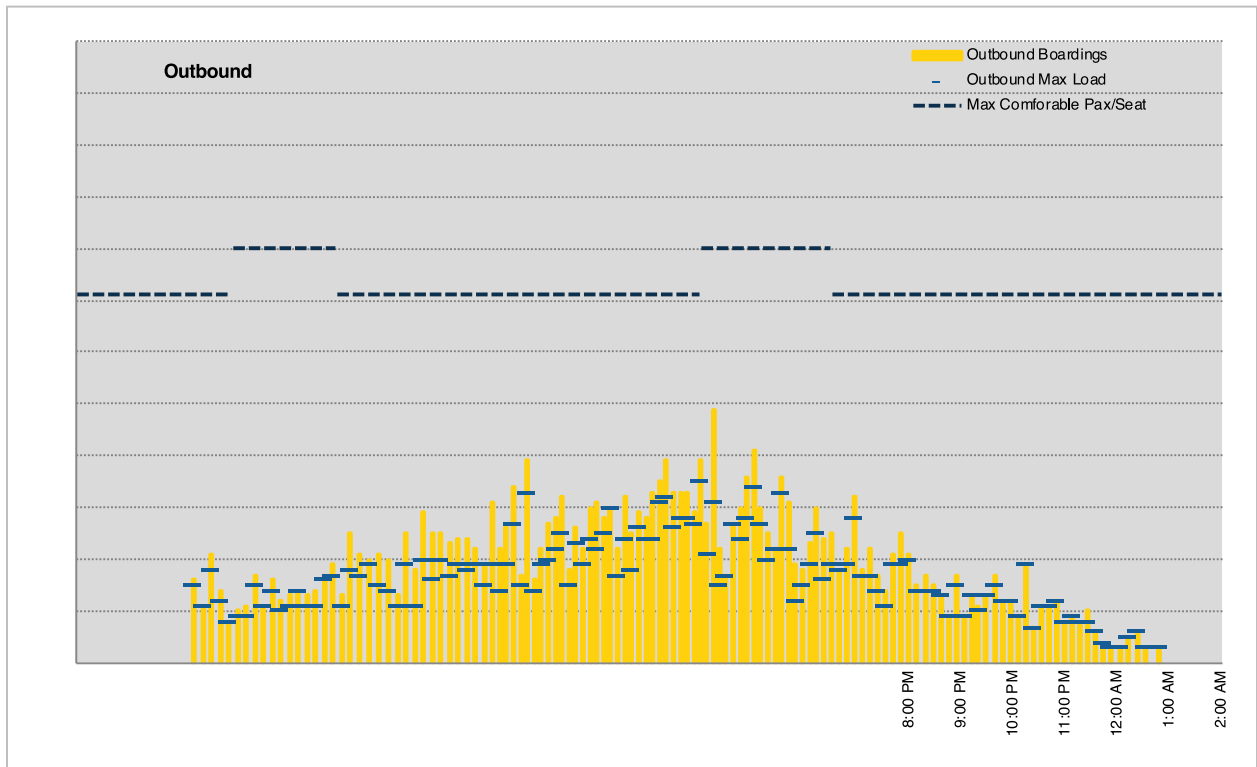


Figure 9 | Sunday Ridership by Trip: Outbound





## Passenger Comfort

The MBTA desires that passengers travel in relatively comfortable conditions. 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.

Over 97% of passenger minutes are in comfortable conditions, which is above the minimum and target standards of 92% and 96% (see Table 3).

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
<b>Minimum Standard</b>	92%	92%	92%
<b>Target</b>	96%	96%	96%
<b>Actual</b>	97.3%	99.4%	99.9%

## Reliability and Speed

### Reliability

Passengers using high frequency services like Route SL5 expect buses to arrive on a regular basis, and typically do not rely on published schedules. Route SL5's weekday reliability is 77%, which is above the MBTA's minimum standard of 70%. However, given that Route SL5 operates in dedicated bus lanes for most of its length, this on-time performance is lower than would be expected. The route also suffers from a relatively high percentage of dropped trips, with an average of 2.5%. Saturday and Sunday reliability, 75% and 78% exceed and meet the target of 75% reliability on the weekends but are not a marked improvement over weekday on-time performance. (see Table 4)

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
<b>Monday-Friday</b>	81%	85%	77%	2.5%
<b>Saturday</b>	76%	63%	75%	-
<b>Sunday</b>	75%	89%	78%	-

### Running Times

Off-schedule performance is caused in large part by actual running times that differ from scheduled running times, which are sometimes longer and sometimes shorter. In general, trips fall behind schedule during the morning peak period, midday, and evening trips when

trips routinely run five minutes late. Mid-afternoon inbound and PM peak period trips actually run faster than scheduled. (see Figure 10 and 11)

Figure 10 | Scheduled & Median Travel Time by Trip: SL5 Inbound

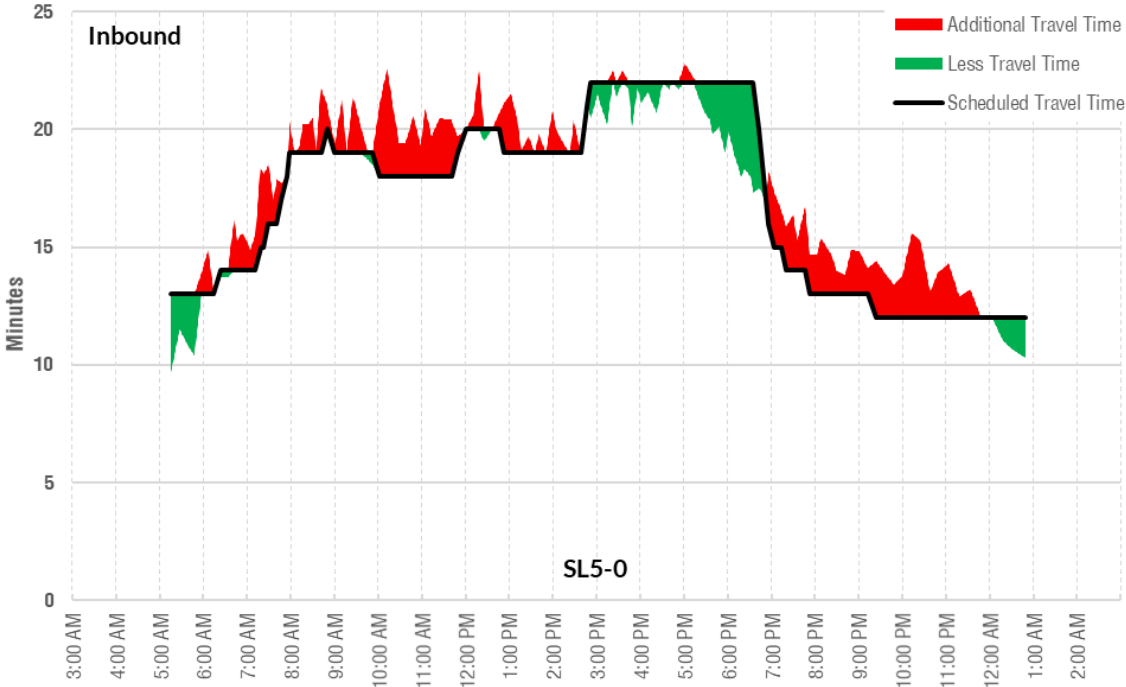
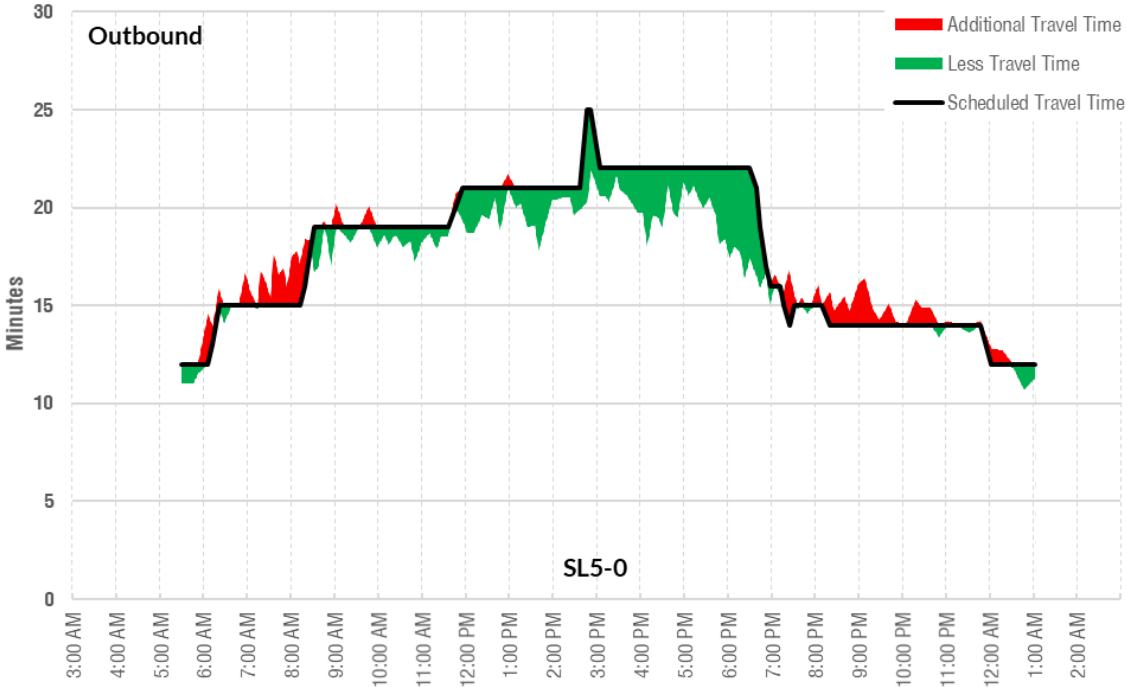


Figure 11 | Scheduled & Median Travel Time by Trip: SL5 Outbound



### **Stop Spacing**

Route SL5 has 12 stops over its 2.3 mile length or an average of five per mile. This overall spacing exceeds the MBTA's guidelines of two to four stops per mile for BRT routes, and some stops, particularly between Newton Street and Melnea Cass Boulevard are much closer. In particular, the Worcester Square and Lenox Street stops are not transfer points with other routes and are very close to other stop.

### Summary

Overall, Route SL5 is one of the MBTA's strongest bus routes and provides BRT service to one of Greater Boston's highest demand corridors. Its weaknesses are that it is slow and its on-time performance is slow for a BRT route, and that service is not coordinated with Route SL4, which operates along most of the same alignment.