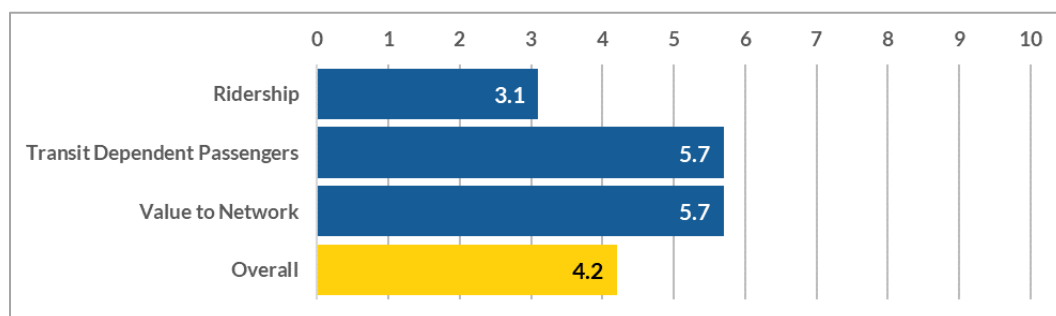




Route 50 is a coverage-oriented route with moderately low importance within the overall network (see Figure 2). On a relative scale of 0 to 10, the route rates 3.1 in terms of ridership, 5.7 in terms of transit dependent ridership, and 5.7 in terms of its value to the network (which reflects the number of people who are uniquely served, the number of jobs and other important destination, 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 Overview

### Schedule

Route 50 provides infrequent service on weekdays and Saturdays and provides infrequent service on all days (see Table 1):

On weekdays, Route 50 operates from 6:00 AM to 9:35 PM:

- Every 25 minutes during the Early AM, from the beginning of service through 7:00 AM.
- Every 25 to 35 minutes during the AM Peak, but mostly every 25 to 26 minutes.
- Every 35 to 60 minutes in the Midday Base period, but every 60 minutes between 9:50 AM and 12:50 PM.
- Every 22 to 52 minutes in the Midday School period, but mostly every 22-30 minutes.
- Every 25 minutes in the PM Peak
- Every 25 to 75 minutes in the Evening period, with 25 minutes headways early, 60 minutes later, and one 75 minute interval during the shift from 25 to 60 minutes.

On Saturdays, regular Route 50 service operates every 60 minutes from 6:50 AM and close to 5:00 PM, and every 50 to 60 minutes from then until 8:40 PM. On Sundays, service operates every 60 minutes from 10:30 AM to 5:22 PM.

**Table 1 | Schedule Statistics**

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
<b>Monday-Friday</b>	<b>6:10 AM to 9:35 PM</b>			<b>26/26</b>
Sunrise	-	-	-	-
Early AM	6:10 AM to 6:59 AM	25	25	2/2
AM Peak	7:00 AM to 8:59 AM	25 – 35	29	5/5
Midday Base	9:00 AM to 1:29 PM	35 – 60	53	5/5
Midday School	1:30 PM to 3:59 PM	22 – 52	26	6/6
PM Peak	4:00 PM to 6:29 PM	25	25	6/6
Evening	6:30 PM to 9:35 PM	25-75	47	2/1
Late Evening	-	-	-	-
Night	-	-	-	-
<b>Saturday</b>	<b>6:50 AM to 8:40 PM</b>	<b>50-60</b>	<b>55</b>	<b>11/11</b>
<b>Sunday</b>	<b>10:30 AM to 5:22 PM<sup>1</sup></b>	<b>60</b>	<b>60</b>	<b>8/8</b>

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

Route 50 meets the MBTA’s service frequency standards but does not meet the span of service standards for weekdays or Saturdays:

- On weekdays, there is an interval of 75 minutes between the 6:45 PM and 8:00 PM outbound trips, which exceed the maximum off-peak standard of 60 minutes.
- On Sundays, service starts at 10:30 AM, later than the standard of 10:00 AM, and ends at 5:22 PM, well short of the standard of 6:30 PM.

### Service Patterns

Most Route 50 service operates between Forest Hills and Cleary Square as shown with the solid black line in Figure 1. Exceptions include:

- On weekdays, the last two outbound trips at 8:00 PM and 9:00 PM operate as a combination of Routes 40 Georgetowne-Forest Hills and 50 that serve the outer ends of each route with a long outer end loop. These trips travel outbound as Route 40 and then to Cleary Square via Alwin Street. They then travel inbound via Route 50’s regular alignment. This alignment is shown with the dotted line in Figure 1.
- On Saturdays, inbound service after 4:50 PM and outbound service after 4:20 PM operates with the combined Route 40/50 outer loop.
- On Sundays, all service operates with the combined Route 40/50 outer loop.

<sup>1</sup> Combined Route 40/50 service.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
<b>Route 40</b>						
<b>INBOUND</b>				<b>2</b>	<b>4</b>	<b>8</b>
40.5	Cleary Square	Forest Hills Station	Evening and Sunday inbound service via Route 50's alignment	2	4	8
<b>OUTBOUND</b>				<b>2</b>	<b>4</b>	<b>8</b>
40.5	Forest Hills Station	Cleary Square	Evening and Sunday outbound service via Route 40's alignment with continuing service to Route 50's inbound alignment	2	4	8
<b>Route 50</b>						
<b>INBOUND</b>				<b>26</b>	<b>11</b>	<b>-</b>
50.0	Cleary Square	Forest Hills Station	Weekday and Saturday alignment	26	11	-
<b>OUTBOUND</b>				<b>26</b>	<b>11</b>	<b>-</b>
50.0	Forest Hills Station	Cleary Square	Weekday and Saturday alignment	26	11	-

## Ridership

Route regular Route 50 service carries 1,210 riders on weekdays and 350 riders on Saturdays. (These numbers do not include ridership on the last two weekday outbound trips, evening Saturday trips, or Sunday service on the combined Route 40/50 service, which is officially considered as part of Route 40. Those numbers are presented in the Route 40 Georgetown-Forest Hills route profile.)

### Ridership by Stop

The large majority of Route 50 riders travel to and from Forest Hills Station. On weekday inbound trips (see Figure 3):

- 80 passengers board at Cleary Square.
- 330 passengers board and 50 alight along between Cleary Square and Metropolitan Avenue at Kitteridge Street, which is the last stop before Washington Street. This is the segment that Route 50 serves uniquely. Most of the 330 boarding passengers are traveling to Forest Hills Station, and most of the 50 alighting passengers are people making outbound trips and transferring to Route 50 in Cleary Square.

- 250 passengers board and 130 alight along Washington Street between Metropolitan Avenue and Forest Hills Station. The 250 boarding passengers are “opportunistic” passengers who take Route 50 when it is the first bus to arrive on

Figure 3 | Weekday Inbound Ridership by Stop Map



Washington Street, which depending upon location, is served by up to eight other routes.

- 490 passengers, or 73% of all inbound riders, alight at Forest Hills Station.

Outbound ridership is roughly the reverse of inbound ridership on weekdays.

Patterns on regular Saturday service before 4:50 PM inbound and 4:20 PM outbound are similar, but with lower volumes. After those times, when service is provided with the Route 40/50 loop, ridership is extremely low, with only six boardings and 10 alightings between Washington Street and Cleary Square on four round trips.

On Sundays, the situation is similar and there are only 60 boardings and 30 alightings between Washington Street and Cleary Square on eight round trips.

### Ridership by Trip

Route 50's weekday ridership is dominated by typical peak hour commuting patterns, with high ridership per trip occurring inbound in the AM peak and outbound in the PM peak (see Figure 4). On weekday inbound trips:

- The highest ridership on any inbound trip is on the first trip at 6:10 AM with 56 total passengers and a maximum load of 49 passengers, which is slightly above the maximum load standard of 46 for this time of day. This high ridership indicates demand for earlier service.
- The second inbound trip carries 52 passengers and also has a maximum load of 49 passengers.
- Other trips through 7:25 AM also carry close to 50 passengers and have similar maximum loads.
- Ridership per trip drops to less than 50 passengers by 7:50 AM and to 25 riders by 9:00 AM.
- From 9:00 to 3:30 PM, ridership per trip generally ranges from 20 to 25 riders.
- Passenger loads drop below 13 riders for all inbound trips after 3:30 PM.

On weekday outbound trips (see Figure 5):

- In the morning and early afternoon until 2:00 PM, ridership per trip is low, at fewer than 15 passengers.
- Loads increase slightly to 20 passengers on the 2:10 PM and 2:35 PM trips before declining to 13 passengers on the 2:52 PM trip.
- Outbound ridership per trip in PM peak is lower than the inbound ridership in the AM peak. The highest outbound passenger loads occur on the 3:50 PM trip, with 33 riders, and the 5:55 PM trip, with 34 riders.

Figure 4 | Weekday Ridership by Trip: Inbound

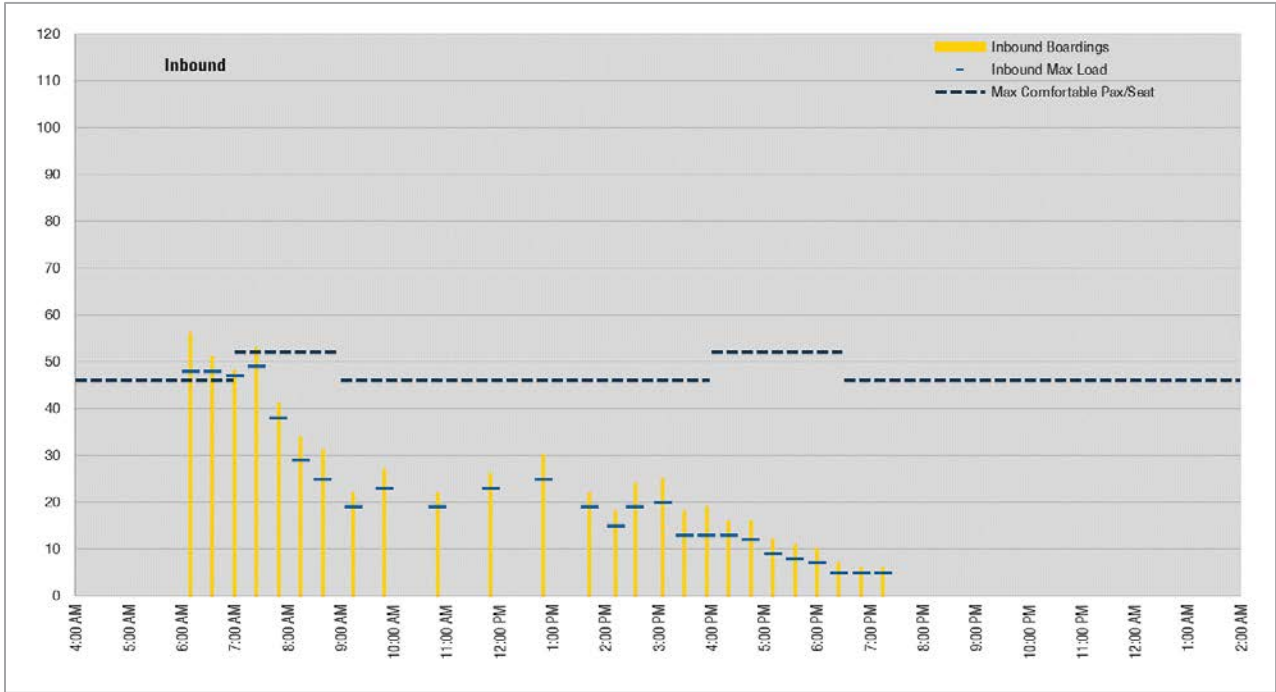
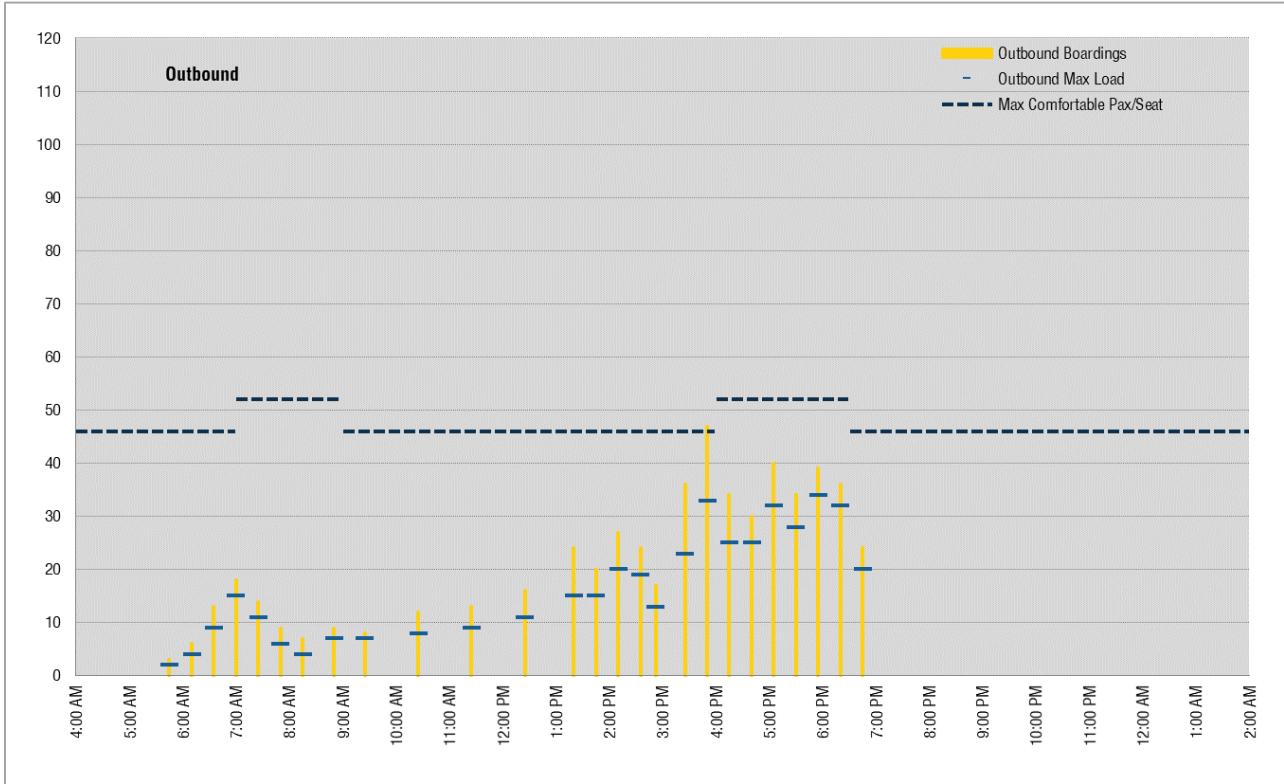


Figure 5 | Weekday Ridership by Trip: Outbound



- There are 20 passengers on the final outbound trip at 6:45 PM.



On Saturdays, ridership per trip is low in both directions, at less than 20 passengers on most trips (see Figures 6 and 7). However, ridership on inbound trips is two to three times higher than on outbound trips. The reason for this requires further investigation; however, most riders in both directions have multiple options and it is likely that outbound times on other services work better for many who use Route 50 inbound.

Figure 6 | Saturday Ridership by Trip: Inbound

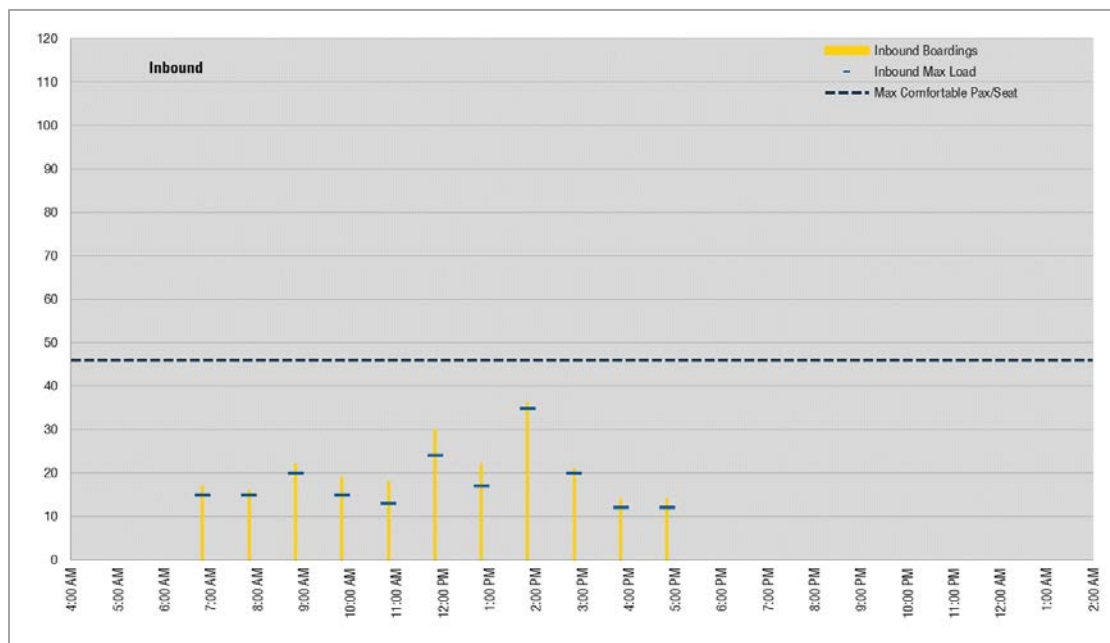
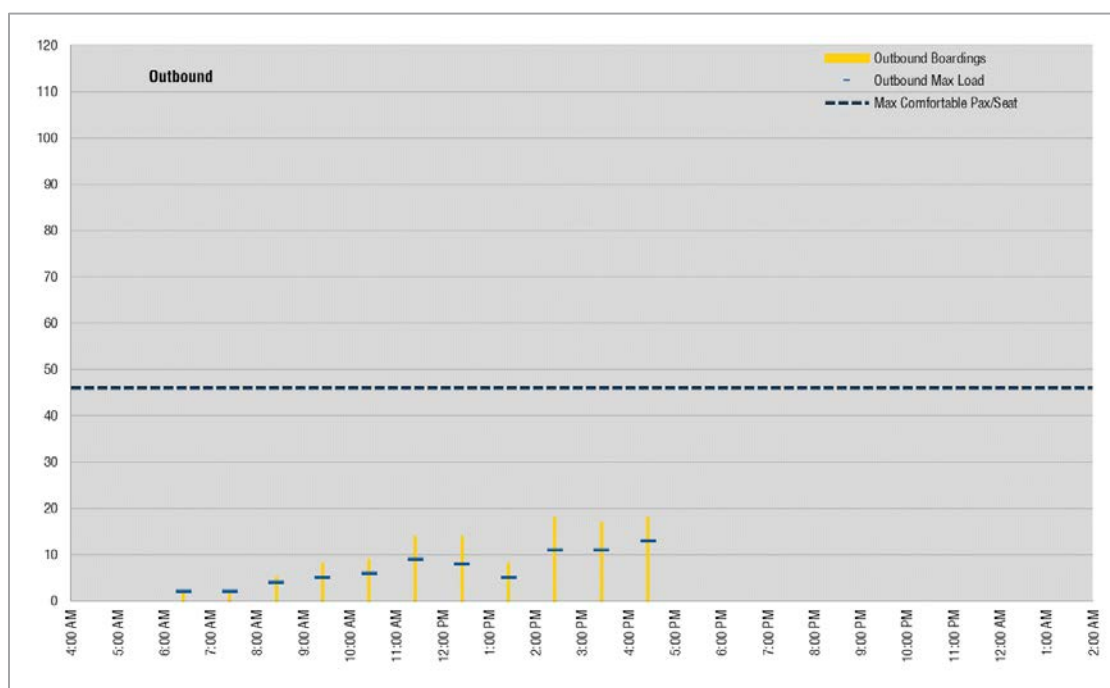


Figure 7 | Saturday Ridership by Trip: Outbound



## 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 50, 93% of passenger minutes are in comfortable conditions (see Table 4). This is above the minimum standard of 92% but below the agency's target of 96% (see Table 4). The below target comfort levels are due to overcrowding on some AM peak inbound trips and poor on-time performance. On Saturdays, 100% of passenger minutes are in comfortable conditions.

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>	93%	100%	-

## Reliability and Speed

### Reliability

Route 50's weekday overall reliability of 59% is poor and falls well below the MBTA's minimum standard of 70% for local routes (see Table 5). Saturday's overall reliability of 75% meets the target standard for local routes. Dropped trips are only a minor issue on Route 33, with approximately 0.3% 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>	58%	64%	59%	0.3%
<b>Saturday</b>	74%	79%	75%	-
<b>Sunday</b>	-	-	-	-

### Running Times

Before 1:00 PM, inbound trips operate two to three minutes behind schedule on most trips before 1:00 PM (see Figure 8). After 1:00 PM, trips typically operate on schedule. Outbound service operates two to three minutes behind schedule during the AM peak,

between 7:00 AM and 9:00 AM, and between 12:00 PM and 2:00 PM (see Figure 9). Trips between 9:00 AM and 12:00 PM generally operate on-time, and trips after 4:00 PM generally operate two to three minutes ahead of schedule.

Figure 8 | Scheduled & Median Travel Time by Trip: Route 50 Inbound

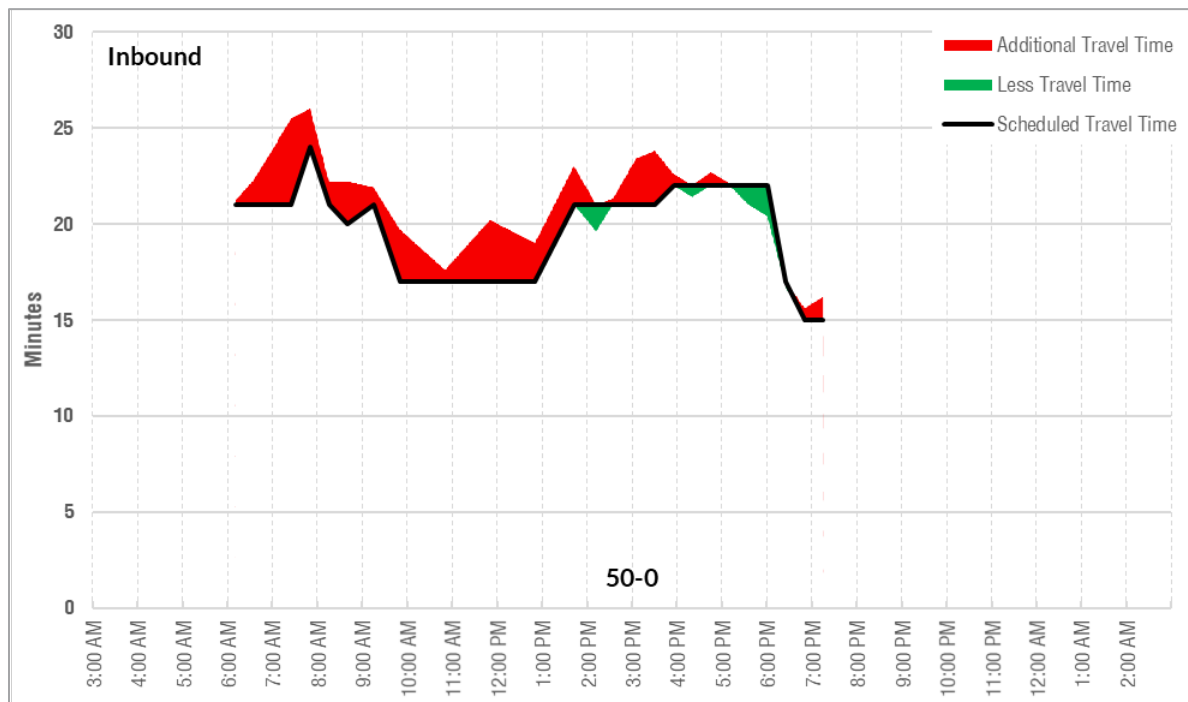
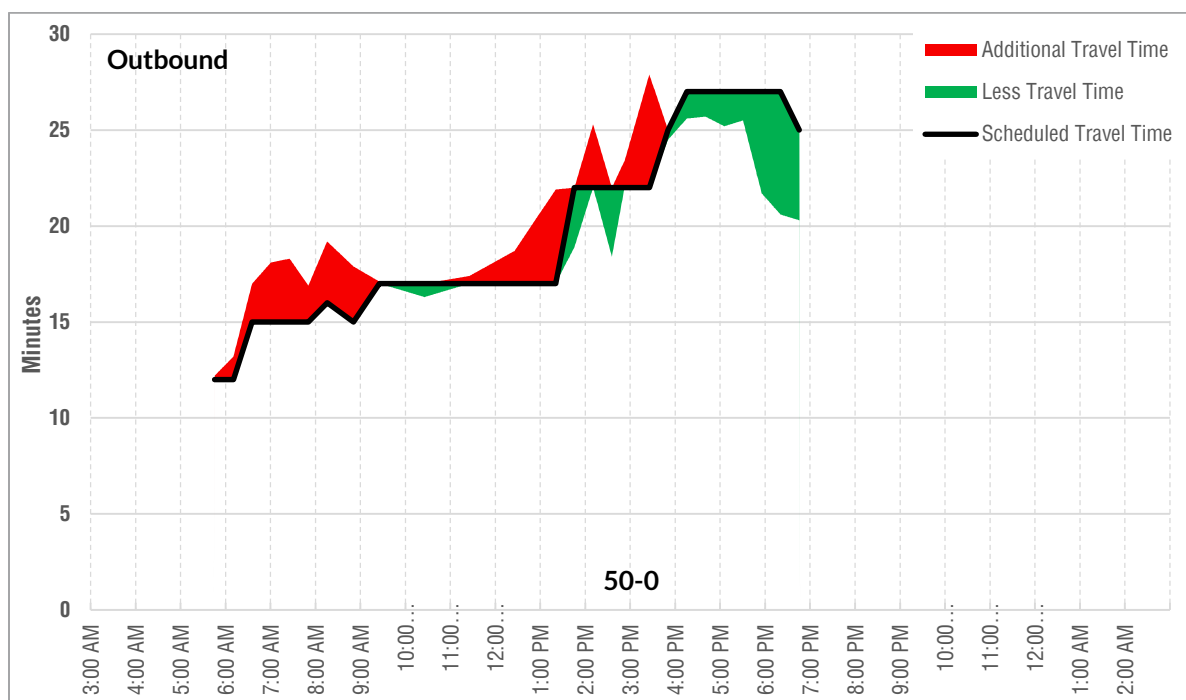


Figure 9 | Scheduled & Median Travel Time by Trip: Route 50 Outbound



## Stop Spacing

Route 50 has 7.9 stops per mile, which is more than the four to seven stops per mile recommended for urban areas under MBTA guidelines. There are several places where stops are spaced particularly close together:

- On Metropolitan Avenue between Hilburn Street and Kittredge Street, there are three inbound and three outbound stops spaced 500 feet apart.
- On West Street between Austin Street and Deforest Street, there are four inbound and four outbound stops spaced an average of 300 feet apart.
- On Washington Street between Metropolitan Avenue and Albano Street, there are three inbound and three outbound stops spaced an average of 310 feet apart.

Stop consolidation could make service faster and improve reliability.

## Summary

Route 50 provides unique service to residential neighborhoods east of Stoney Brook Reservation in Hyde Park, where transit demand is relatively low. It also travels through high demand areas along Washington Street, but this corridor is served by other routes that provide much more service, and thus the proportion of that demand that Route 50 serves is also small.

Issues with existing service include:

- On-time performance is very poor.
- Service does not meet weekday service frequency and Sunday service span standards.
- The combination of Routes 40 and 50 on weekday and Saturday evenings and on Sundays is confusing and makes service much less convenient due to longer travel times for many trips.
- Stops are spaced very close together.