

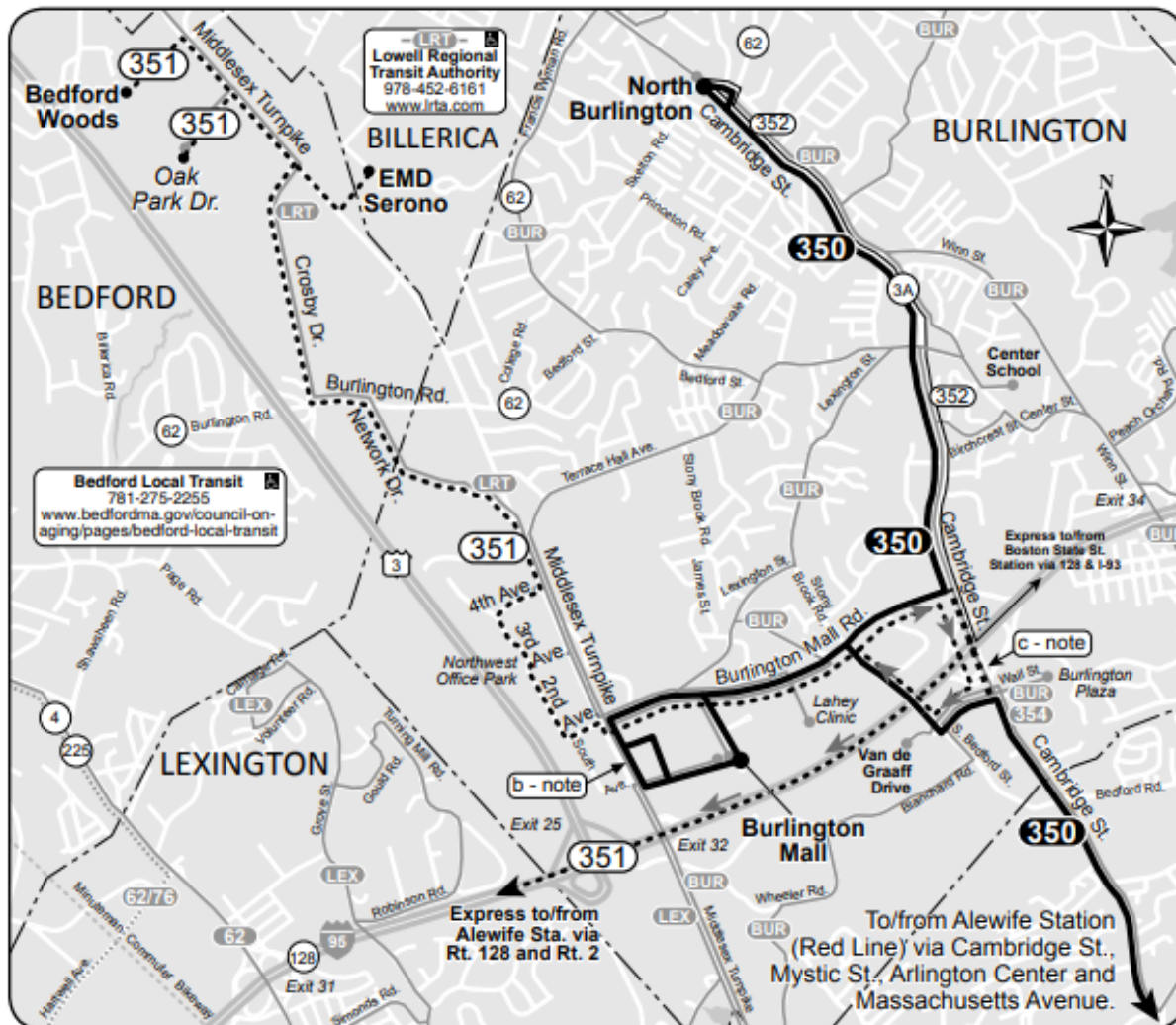
Route 350

North Burlington – Alewife Station

Route Overview

Route 350 North Burlington – Alewife Station is a Local route operating between North Burlington and Alewife Station in Cambridge. Route 350 primarily operates along State Route 3A and Cambridge Street, with select service to the Burlington Mall. The route travels south from Burlington through Woburn, Winchester, and Arlington before terminating at Alewife Station. The route serves as a local connection and provides service to and from the Burlington Mall.

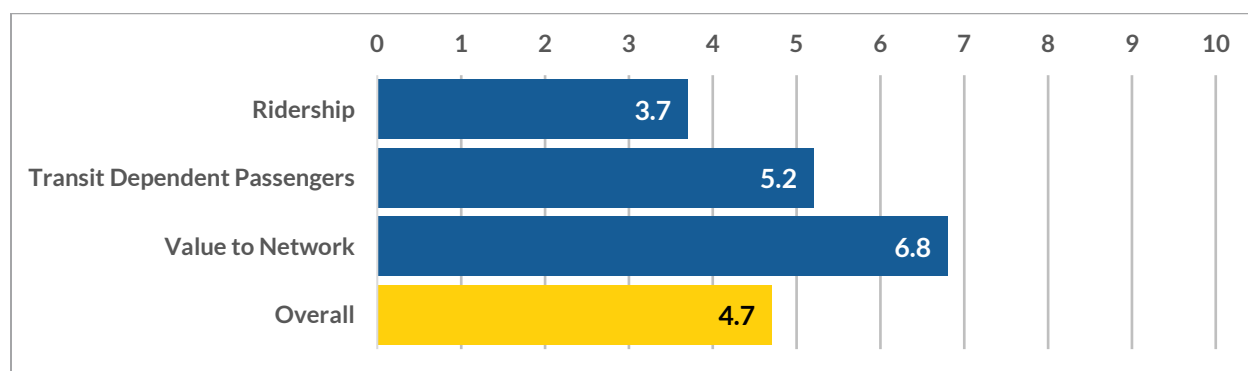
Figure 1 | Service Map



Network Importance

Route 350 has moderate value to the network (see Figure 2). On a relative scale of 0 to 10, the route rates 3.7 in terms of ridership, 5.2 in terms of transit dependent ridership, and 6.8 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 each of the other measures, is 4.7.

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



Service Patterns

Schedule

Route 350 operates seven days a week (see Table 1). On weekdays, service operates from 6:04 AM to 11:00 PM, with somewhat frequent service during the early morning and peak periods and infrequent service during the midday and evening.

- During the early AM period, the route operates every 18 minutes.
- In the AM and PM peak, frequencies average every 15 to 45 minutes, but primarily every 25 minutes.
- Midday and evening frequencies average every 37 to 60 minutes.

Saturday service operates from 7:10 AM until 11:07 PM, with 40 to 60 minute headways. Sunday service operates from 7:55 AM until 7:21 PM, running every 55 to 95 minutes.

Route 350 meets the MBTA's span of service and frequency standards for weekday and Saturday service. Sunday service meets the standard for span of service but fails the frequency standard with headways over 60 minutes.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:04 AM to 11:00 PM			30/29
Sunrise	-	-	-	-
Early AM	6:04 AM to 6:59 AM	3 – 32	18	4/3
AM Peak	7:00 AM to 8:59 AM	20 – 30	25	5/4
Midday Base	9:00 AM to 1:29 PM	60 – 60	60	5/5
Midday School	1:30 PM to 3:59 PM	25 – 60	40	3/4
PM Peak	4:00 PM to 6:29 PM	15 – 45	24	6/8
Evening	6:30 PM to 9:59 PM	20 – 60	37	6/4
Late Evening	10:00 PM to 11:00 PM	60 – 60	60	1/1
Night	-	-	-	-
Saturday	7:10 AM to 11:07 PM	40 – 60	52	17/19
Sunday	7:55 AM to 7:21 PM	55 – 95	60	11/12

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

Service Patterns

Route 350 primarily provides service from Burlington to Cambridge. The primary service pattern, Pattern 350.5, serves North Burlington, Burlington Mall, Woburn, Winchester, and Arlington, and terminates at Alewife Station. This serves the commercial corridor along Cambridge Street, while also serving Burlington Mall and Arlington Center.

Additional service patterns include:

- Pattern 350.3 operates one outbound trip, and serves employees of Burlington Mall, arriving a half hour before the mall opens.
- Pattern 350.4 does not serve Burlington Mall, and operates in the morning before the mall opens and during the PM peak in the outbound direction, when most passengers are traveling through to Burlington.
- Pattern 350.7 operates in the outbound only. Buses do not serve the Mall, but instead loop around the former Sears Auto Center, and predominantly serve mall-area employees who need to arrive before 8:30 AM.
- Pattern 350.9 operates once a day in each direction, and serves as a school trip for Arlington Catholic High School.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				30	17	11
350.4	Chestnut Avenue at Cambridge Street	Alewife Station	Skips Burlington Mall	6	2	3
350.5	Chestnut Avenue at Cambridge Street	Alewife Station	Primary pattern, serves Burlington Mall	23	15	8
350.9	Chestnut Avenue at Cambridge Street	Medford Street at Massachusetts Avenue	School-day only trip to Arlington Catholic High School	1	-	-
OUTBOUND				29	19	12
350.3	Alewife Station	Burlington Mall at Macys	Skips Cambridge Street north of Route 128	1	-	-
350.4	Alewife Station	Chestnut Avenue at Cambridge Street	Skips Burlington Mall	6	2	1
350.5	Alewife Station	Chestnut Avenue at Cambridge Street	Primary pattern, serves Burlington Mall	17	14	11
350.7	Alewife Station	Chestnut Avenue at Cambridge Street	Only serves north side of Burlington Mall	4	3	-
350.9	Medford Street at Massachusetts Avenue	Chestnut Avenue at Cambridge Street	School-day only trip from Arlington Catholic High School	1	-	-

Ridership

Route 350 has 1,760 daily boardings on weekdays, 845 boardings on Saturdays, and 505 boardings on Sundays.

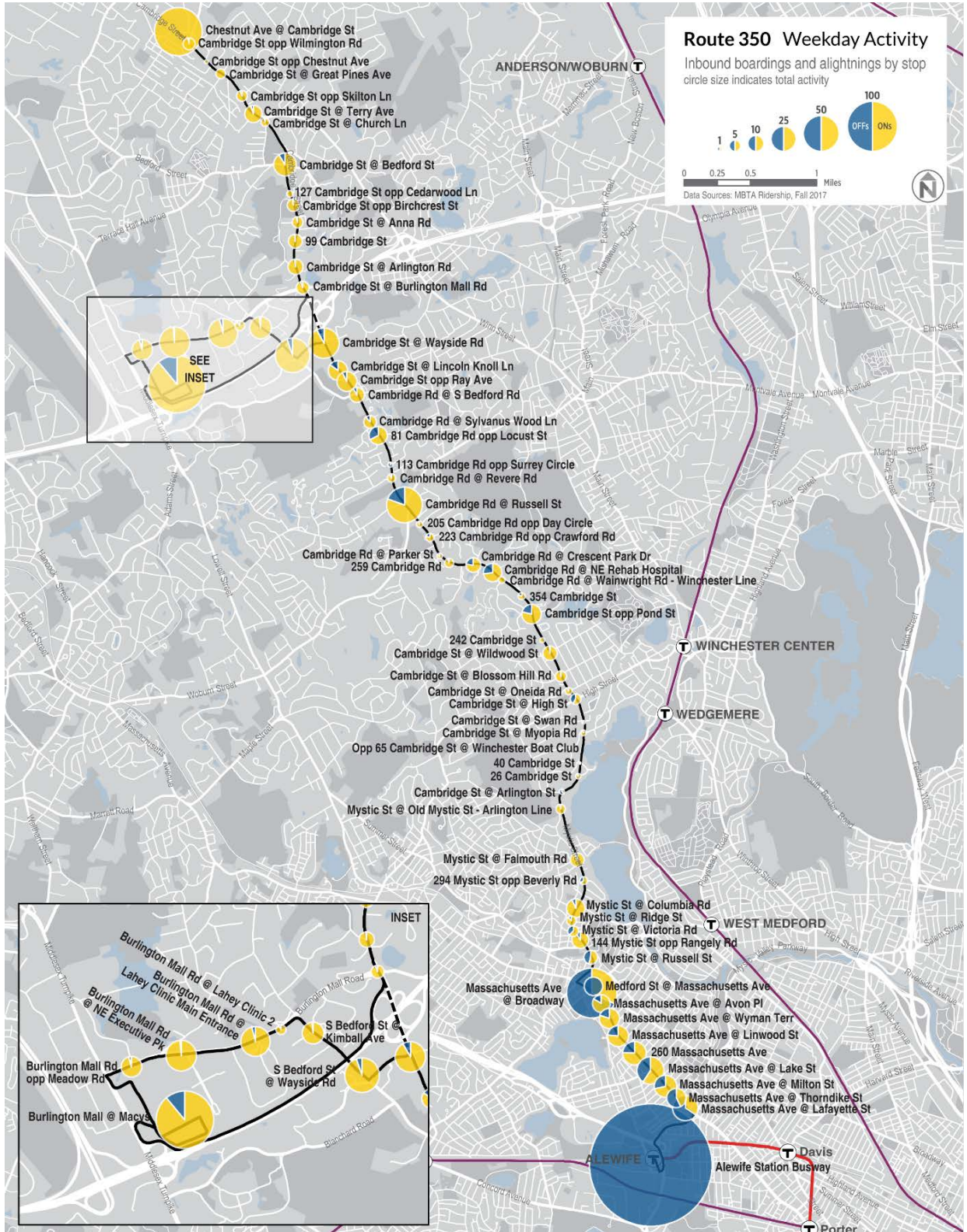
Ridership by Stop

Route 350 primarily serves passengers traveling to Alewife Station from Burlington, but also serves as a local connection to shopping and employment along Cambridge Street and at the Burlington Mall. On weekday inbound trips (see Figure 3):

- 96 people board Route 350 at Chestnut Avenue at Cambridge Street in North Burlington.

- Along Cambridge Street between Chestnut Avenue and Burlington Mall Road, there are 13 stops with a combined total of 86 boardings and four alightings.
- Along Route 350's alignment through Burlington Mall, there are a total of 283 boardings and 22 alightings. The highest ridership stop along this segment is at Burlington Mall at Macy's, with 122 boardings and 15 alightings, and is Route 350's second-highest ridership stop.
- Cambridge Street at Wayside Road has 36 boardings and three alightings.
- Along Cambridge Street between Wayside Road and Russell Street, there are seven stops with a combined total of 55 boardings and 11 alightings.
- Cambridge Street at Russell Street has 43 boardings and 10 alightings.
- Ridership is generally low along the 2.8-mile segment from Russell Street to Arlington Street, with 21 stops serving a combined total of 64 boardings and 14 alightings. Seventeen of these stops have between zero and five total daily riders.
- From Arlington Street along Cambridge Road, Cambridge Street, and Mystic Street to Arlington Center, Route 350 serves eight stops with a combined total of 48 boardings and 10 alightings.
- Arlington Center (Massachusetts Avenue at Broadway) is Route 350's third-highest ridership stop, with 36 boardings and 71 alightings. This is a very high turnover stop, with more alightings than boardings, while most other stops have mostly (or only) boardings. Riders can connect here to MBTA bus routes 77 Arlington Heights – Harvard and 79 Arlington Heights – Alewife.
- Massachusetts Avenue between Arlington Center and Alewife Station is a relatively high ridership segment, with a combined total of 105 boardings and 61 alightings at the segment's eight stops.
- 626 passengers alight at Alewife Station, the route's highest ridership stop.

Figure 3 | Weekday Inbound Ridership by Stop Map



Ridership by Trip

On weekdays, Route 350 has higher ridership during both AM and PM peak periods in both inbound and outbound directions, rather than the traditional commuter pattern of AM peak inbound and PM peak outbound. On inbound trips (see Figure 4):

- Ridership is high during the early morning and into the AM peak period, when most trips carry between 30 and 40 riders. The first inbound trip at 6:04 AM has 38 riders and a maximum passenger load of 38, while the second inbound trip at 6:36 AM carries 53 riders and exceeds the passenger comfort standard, suggesting demand for additional early trips traveling inbound.
- Midday inbound ridership is generally lower, with trips carrying around 30 passengers before increasing later in the afternoon.
- Inbound service has an additional peak period, during the late afternoon just before and into the early portion of the traditional PM peak period. Between 3:20 PM and 5:05 PM, three of the four inbound trips exceed 50 passengers per trip, with passenger loads that closely approach the maximum passenger comfort standard. This indicates demand for additional service during this period.
- Frequency increases significantly after 5:00 PM but ridership per trip drops off, carrying 24 riders at 5:40 PM and then decreasing from there. Ridership increases again on the last two trips of the evening, at 9:20 PM (22 riders) and 10:20 PM (19 riders).

On outbound trips (see Figure 5):

- The highest ridership outbound trip is the first outbound trip at 6:20 AM, which carries 48 riders and exceeds the passenger comfort standard, indicating demand for an earlier trip on this route.
- Ridership drops to below 30 riders per trip until 7:00 AM, then increases during the AM peak period. Between 7:30 AM and 9:30 AM, trips carry between 37 and 44 riders.
- Midday inbound ridership is generally lower, with trips carrying around 30 passengers before increasing later in the afternoon. One trip at 2:20 PM has 41 riders, but then ridership drops again before the PM peak period.
- Ridership on PM peak outbound trips is generally higher, with trips carrying between 30 and 40 riders per trip and passenger loads around 30 passengers. Ridership is highest on the 4:00 PM trip (41 riders) and the 6:05 PM trip (41 riders).
- Ridership declines after the PM peak and into the evening, and the last outbound trip carries 11 riders.

Figure 4 | Weekday Ridership by Trip: Inbound

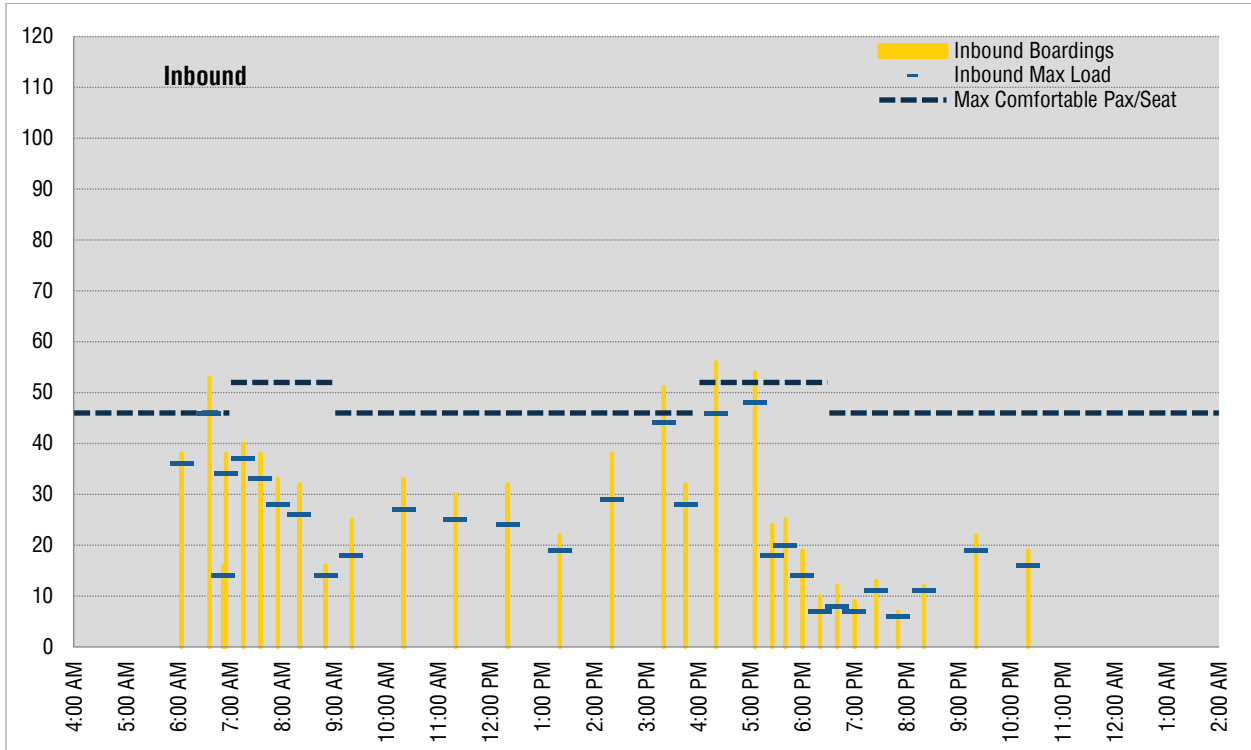
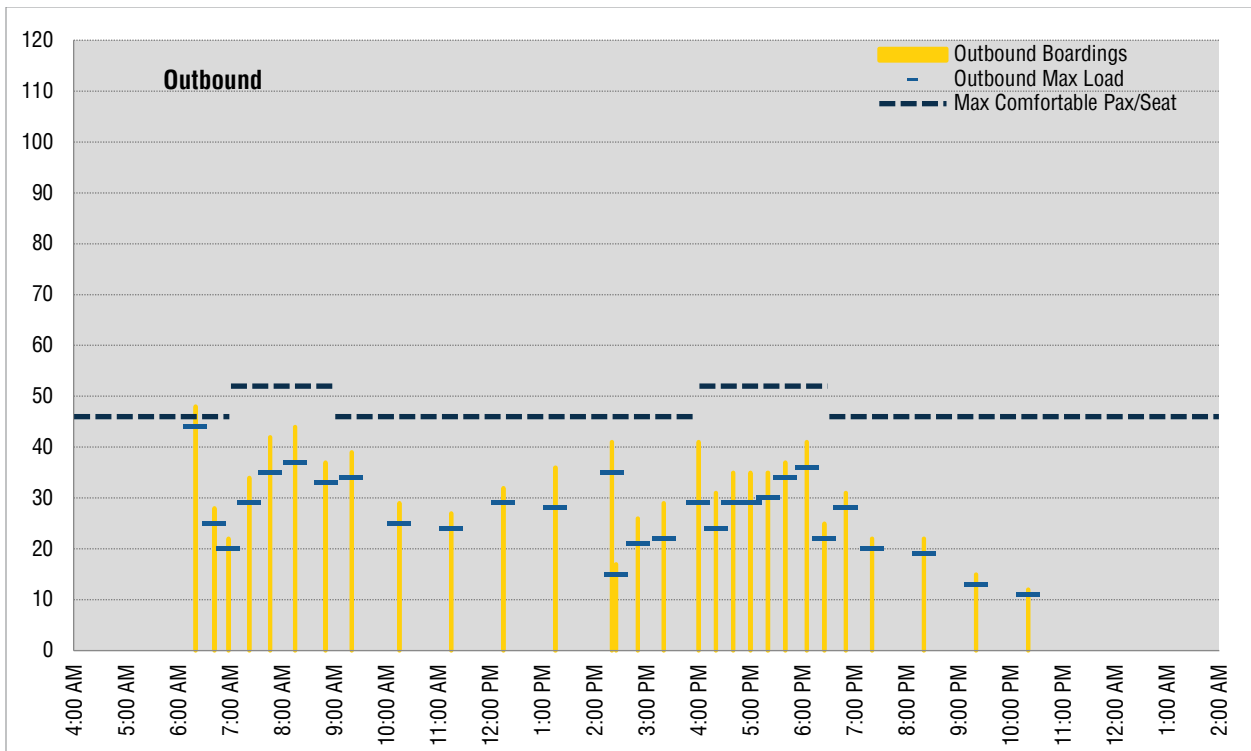


Figure 5 | Weekday Ridership by Trip: Outbound



On Saturdays, inbound ridership is lower in the morning and higher later in the day, while outbound ridership is highest earlier in the day (see Figure 6 and Figure 7). Before 1:00 PM, inbound trips do not exceed 20 riders. Ridership is highest later in the afternoon; the 1:30 PM trip carries 35 riders, and the 4:30 PM trip carries 44 riders. Inbound ridership for the rest of the day is similar to the morning. On outbound service, the first three trips of the day carry between 27 and 29 riders, and ridership increases to 40 riders on both the 9:30 AM and 10:30 AM trips. Ridership is slightly lower at 11:30 AM (23 riders), but then increases again through the midafternoon when trips carry between 37 and 42 riders. After 4:00 PM, ridership drops off significantly and does not exceed 20 riders per trip; the last two outbound trips of the day each carry fewer than 10 riders.

Sunday ridership is generally lower than Saturday ridership but has a similar pattern (see Figure 8 and Figure 9). Inbound trips have lower ridership earlier in the day, carrying between 10 and 20 riders from the start of service until 2:00 PM. Ridership increases to 21 riders on the 2:00 PM and 2:55 PM trips, and peaks at 3:50 PM with 35 riders. The last three inbound trips each carry 29 riders, which is higher than the end-of-day inbound ridership on weekdays or Saturdays, and suggests potential demand for some later inbound service on Sundays. Outbound ridership mirrors inbound, with ridership highest in the morning and declining through the afternoon. The first outbound trip at 7:05 AM has 35 riders, and ridership peaks on the second trip at 8:25 AM with 39 riders. After 10:00 AM, trips carry fewer than 30 riders, and fewer than 30 riders per trip after 3:00 PM.

Figure 6 | Saturday Ridership by Trip: Inbound

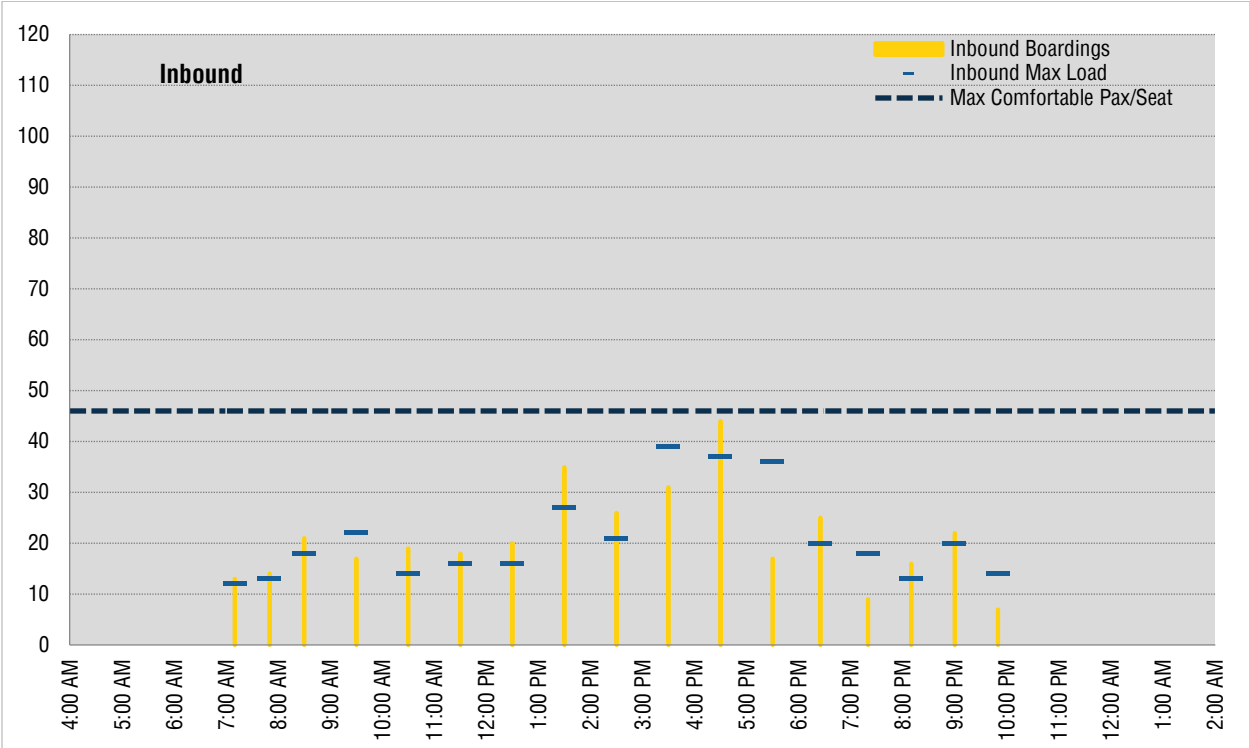


Figure 7 | Saturday Ridership by Trip: Outbound

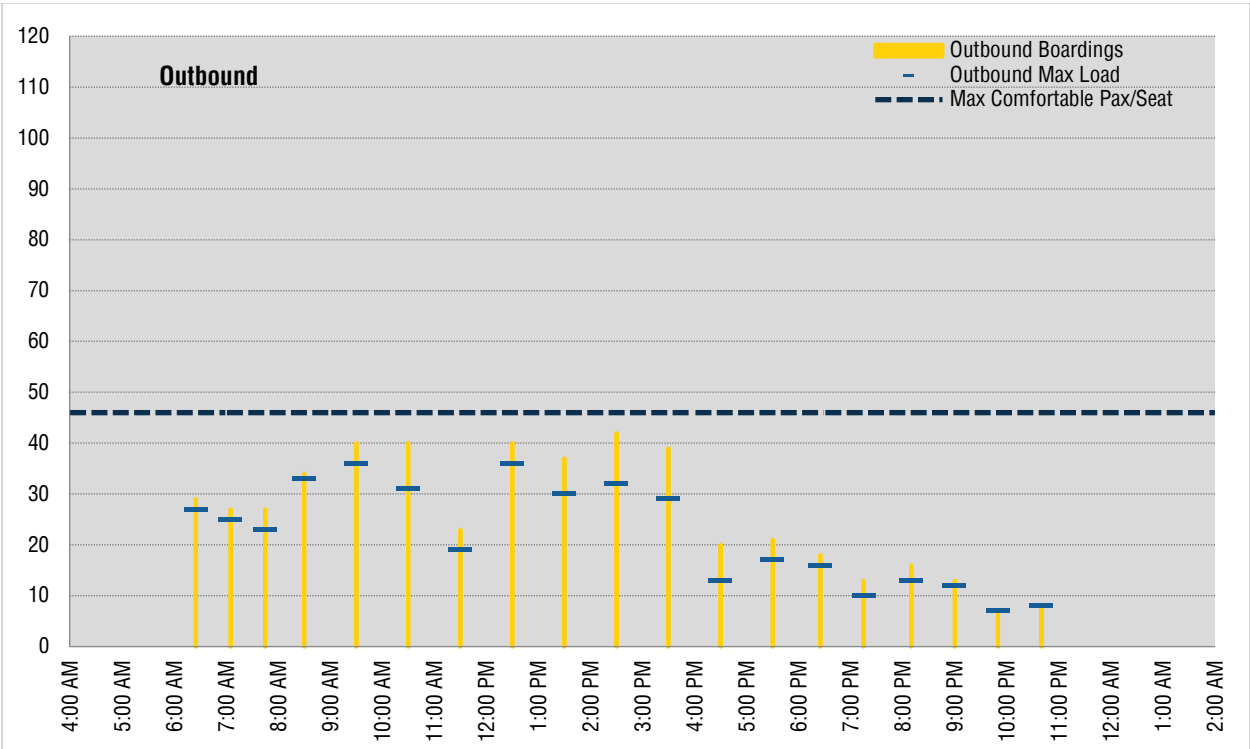


Figure 8 | Sunday Ridership by Trip: Inbound

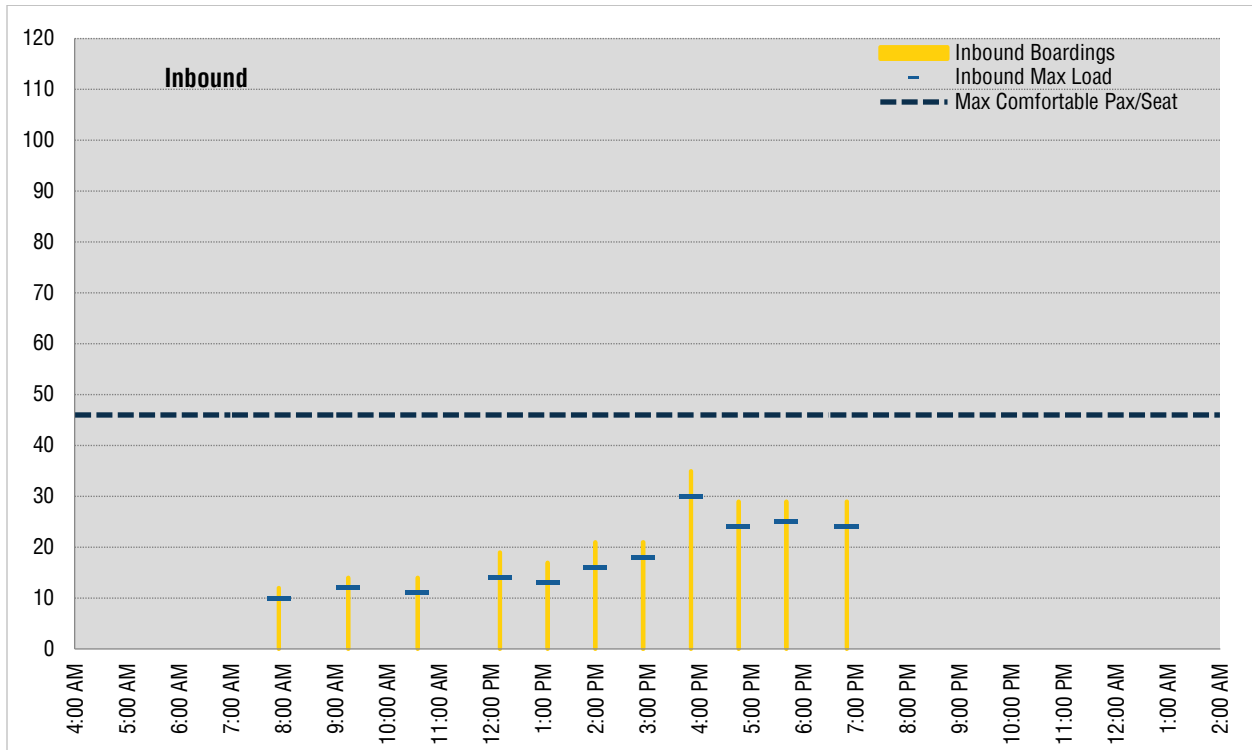
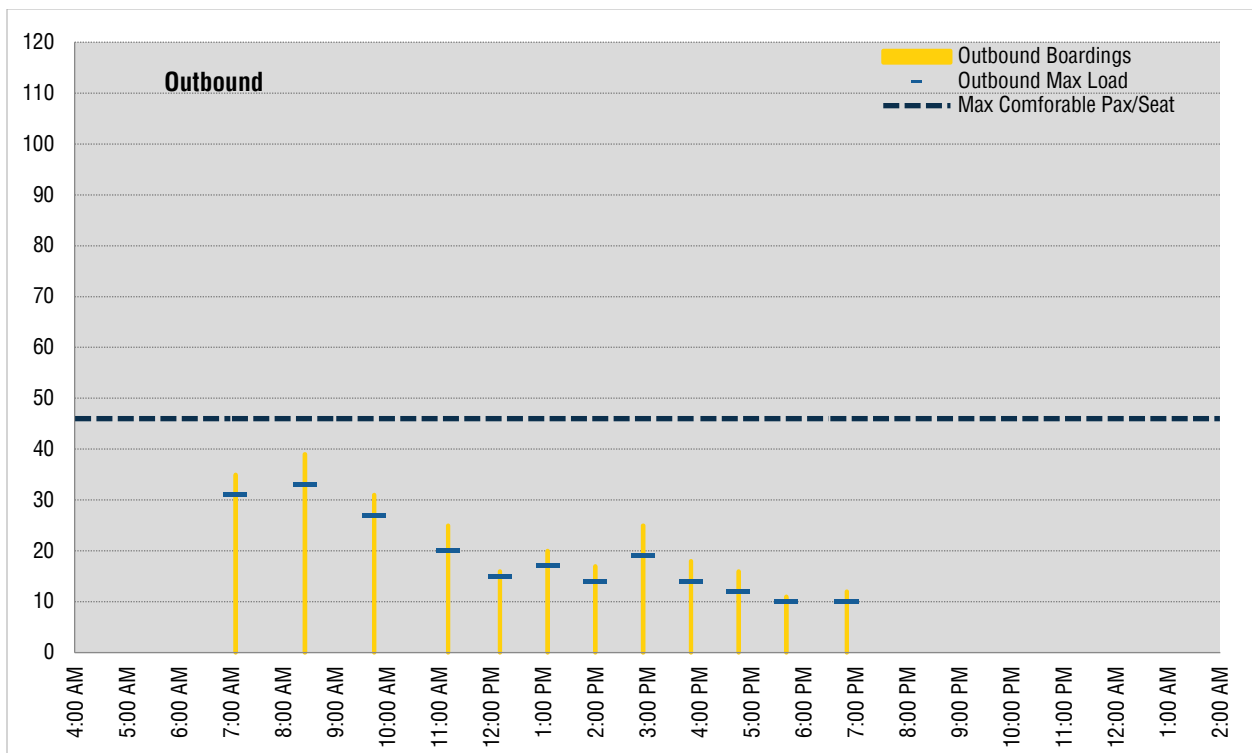


Figure 9 | Sunday Ridership by Trip: Outbound



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 350, 99% of passenger minutes are in comfortable conditions during weekdays, which is above both the minimum standard and the target (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%	100%	100%

Reliability and Speed

Reliability

Route 350 overall reliability on weekdays is 60%, which is well below the MBTA's minimum standard of 70%. Relatively few trips are dropped and this is generally not an issue for passengers on the route. Reliability increases on the weekend with 64% on Saturday and 68% on Sunday.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	59%	70%	60%	0.2%
Saturday	64%	65%	64%	-
Sunday	68%	74%	68%	-

Running Times

Route 350's travel times vary between inbound and outbound trips. On inbound trips, actual travel time is generally shorter than scheduled through most of the day, and trips run up to seven minutes ahead of schedule between noon and 2:00 PM. On early PM peak trips, travel time is slightly longer than scheduled. Outbound trips run much longer than scheduled throughout the day, particularly in the late afternoon and PM peak period.

Actual travel times are three to eight minutes longer than scheduled, and as much as 12 minutes longer than scheduled from 4:00 PM to 5:00 PM.

Stop Spacing

The stops along Route 350 are relatively well spaced, with an average of approximately 1,035 feet between every stop, or about five stops per mile. Stops are spaced particularly closely along Cambridge Street between Russell Street and Arlington Street, with one stop every 704 feet or about 7.5 stops per mile, and ridership is generally low along this corridor.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 350 Inbound

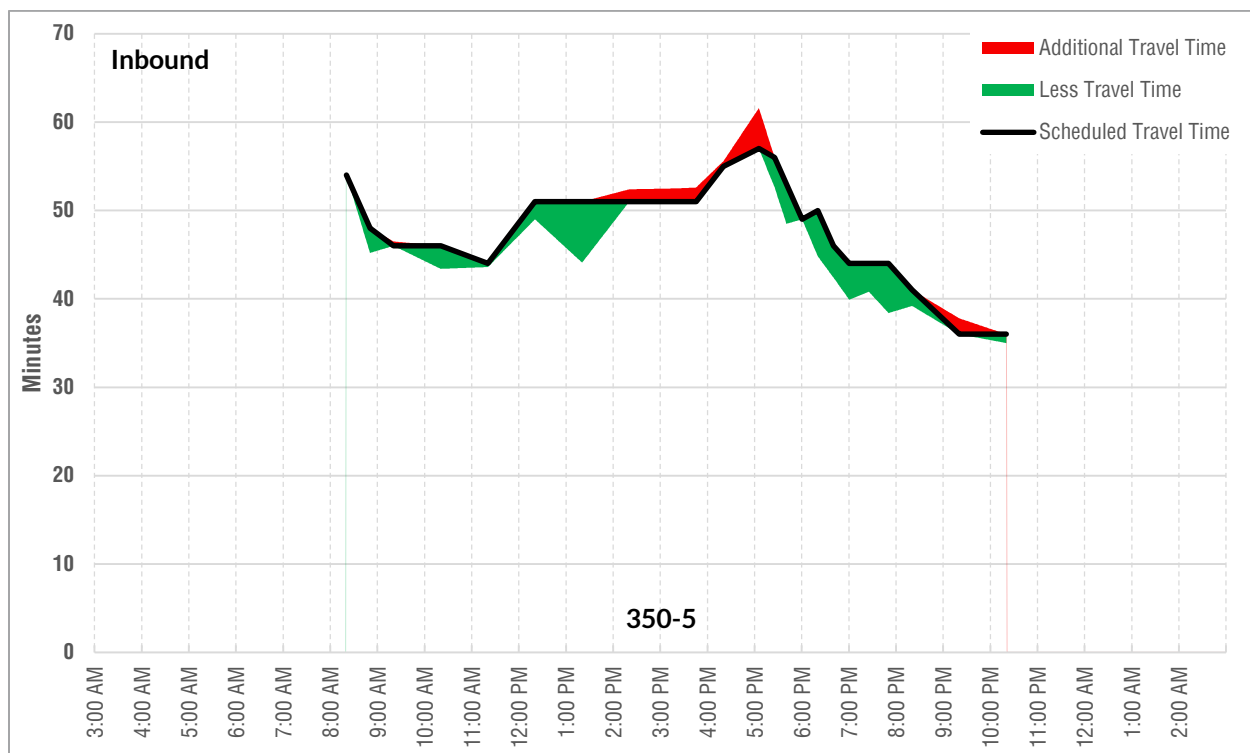
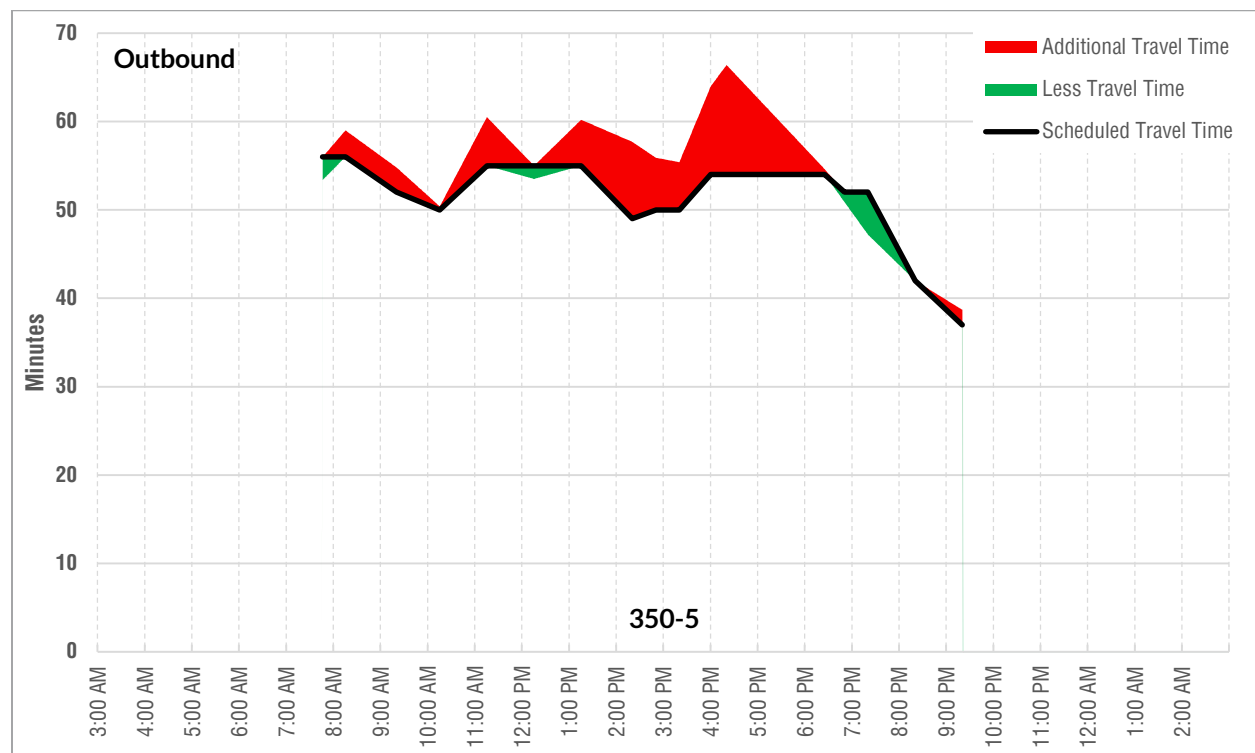


Figure 11 | Scheduled & Median Travel Time by Trip: Route 350 Outbound



Summary

Route 350 provides a commuter service both inbound and outbound during the AM and PM weekday peaks as well as local circulation during the midday. The route has few deviations, and largely operates along the same corridor for the majority of the route. Route 350 does have very closely spaced stops, and several segments of the route have very low ridership.