

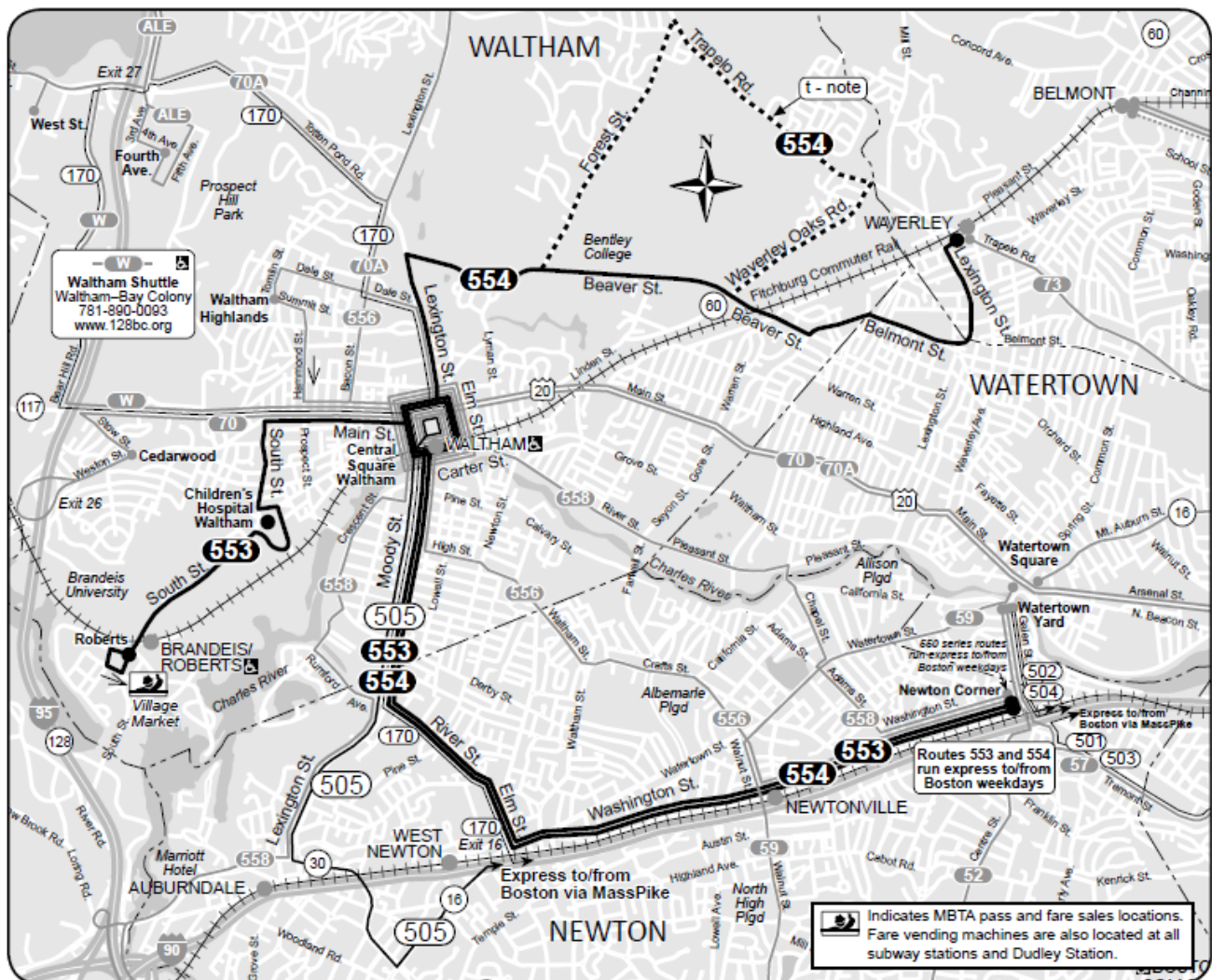
Route 553

Roberts – Downtown Boston

Route Overview

Route 553 Roberts – Downtown Boston is a Local route that operates between Brandeis/Roberts Commuter Rail Station and either Newton Corner or Downtown Boston (see Figure 1). Route 553 operates along the same alignment as Route 554 Waverley Square-Downtown Boston between Waltham Center and Newton Corner or Downtown Boston, and in most respects the two routes act as a single route with different outer branches.

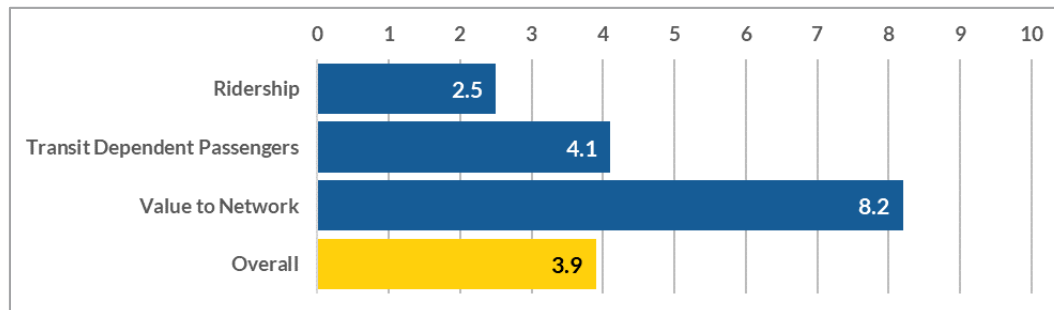
Figure 1 | Service Map



Network Importance

Route 553 is of moderately low importance within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 2.5 in terms of ridership, 4.1 in terms of transit dependent ridership, and 8.2 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% weighting to overall ridership and a 15% weight to both other measures, is 3.9.

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



Service Overview

Schedule

Route 553 operates on weekdays and Saturdays (see Table 1). On weekdays, Route 553 operates from 6:25 AM to 10:24 PM:

- Every 22 to 30 minutes before 8:00 AM.
- Every 55 to 65 minutes between 8:00 AM and approximately 8:00 PM inbound and 7:00 PM outbound, but mostly every 60 minutes.
- Every 20 to 45 minutes after those times until the end of service except for the last outbound trip at 9:45 PM, which is 85 minutes after the previous trip at 8:20 PM.
- With the exception of the first two inbound trips, all Route 553 trips from the beginning of service until 7:25 PM inbound and 6:10 PM outbound alternate with Route 554 Waverley Square-Downtown Boston trips.

On Saturdays, Route 553 operates from 6:30 AM to 7:46 PM, every 45 minutes throughout the day.

Route 553 does not meet the following MBTA Service Delivery Policy standards:

- On weekdays:
 - PM peak services operates every 60 to 65 minutes versus the standard of at least every 30 minutes for peak period service.

- Some midday trips operate every 65 minutes apart and the last outbound trip operates 85 minutes after the second to last trip. These headways are longer than the minimum standard of every 60 minutes for off-peak service.
- No service is provided on Sundays.

Table 1 | Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:25 AM to 9:45 AM			18/20
Sunrise	-	-	-	-
Early AM	6:25 AM to 6:59 AM	25	25	2/3
AM Peak	7:00 AM to 8:59 AM	25 - 60	50	3/2
Midday Base	9:00 AM to 1:29 PM	55 - 60	59	4/4
Midday School	1:30 PM to 3:59 PM	60 - 65	62	3/3
PM Peak	4:00 PM to 6:29 PM	55 - 65	60	2/2
Evening	6:30 PM to 9:45 PM	30 - 65	47	4/6
Late Evening	-	-	-	-
Night	-	-	-	-
Saturday	6:30 AM to 7:15 PM	45	45	18/18
Sunday	-	-	-	-

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

Service Patterns

Service Pattern 553.0 operates all but one trip between Roberts/Brandeis and Newton Corner (as shown in Figure 1) and then to Downtown Boston via the Mass Pike on weekdays before 7:00 PM

Service Pattern 553.7 makes one weekday inbound trip at 6:40 AM and all Saturday trips, operating between Roberts/Brandeis and Newton Corner inbound trip.

Service Pattern 553.1 operates all weekday trips after 7:00 PM, between central Waltham and Downtown Boston via Copley Square. These trips, which are not shown in Figure 1, operate between Newton Corner and Copley Square via the Mass Pike, and between Copley Square and downtown via Saint James Avenue, Stuart Street, and Kneeland Street. Service via Copley operates after Route 502 service between Copley, Newton Corner, and Watertown ends for the evening.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				18	18	-
553.0	Brandeis/Roberts Commuter Rail Station	Downtown Boston	Regular route	14	-	-
553.1	Central Square Waltham	Downtown Boston	Via Newton Corner and Copley Square	3	-	-
553.7	Brandeis/Roberts Commuter Rail Station	Newton Corner	Via Central Square Waltham	1	18	-
OUTBOUND				20	18	-
553.0	Downtown Boston	Brandeis/Roberts Commuter Rail Station	Regular route	15	-	-
553.1	Downtown Boston	Central Square Waltham	Via Newton Corner and Copley Square	5	-	-
553.7	Newton Corner	Brandeis/Roberts Commuter Rail Station	Via Central Square Waltham	-	18	-

Ridership

Route 553 carries 800 passengers per weekday and 340 on Saturdays.

Ridership by Stop

Route 553 serves a combination of local riders in Waltham and Newton and those traveling to and from downtown Boston. On weekday inbound trips (see Figure 3).

- 30 passengers board at first stop, which serves the Brandeis-Roberts Commuter Rail Station as well as a large housing subdivision and office park.
- 40 passenger board and none alight along South Street.
- 30 passengers board and 10 alight along Main Street before Waltham Commuter Rail Station
- 30 passengers board and 10 alight at Waltham Commuter Rail Station.
- 90 passengers board and 30 alight along Moody and Lexington Streets.
- 30 passengers board and fewer than 10 alight along River and Elm Streets.

- 140 passengers board and 90 alight along Washington Street. The highest ridership stop along this segment is at Newtonville Commuter Rail Station where 30 passengers board and 10 alight.
- 230 passengers, or 63%, of all inbound riders, alight in Downtown Boston.
- Only 10 passengers alight in Copley Square on the three evening trips that provide service to that location, or fewer than four per trip.

Outbound ridership is generally the reverse of inbound ridership.

On Saturdays, ridership patterns in Waltham and Newton are similar but with lower volumes. Most passengers – 100 – alight at Newton Corner, where they connect to other routes for continuing service to Boston.

Ridership by Trip

Weekday ridership is heaviest inbound in the AM and outbound in the PM (see Figure 4 and Figure 5). On AM inbound trips:

- Ridership per trip before 10:00 AM generally ranges from 30 to just over 40 passengers. The one exception is the 6:40 AM inbound trip, which only operates to Newtown Corner, and carries 26 passengers. Also, the first trip at 6:40 ties for the highest ridership of any inbound trip at 41, which indicates that there is demand for earlier service.
- Ridership per trip then ranges from 15 to just over 20 between 10:00 AM and 5:00 PM.
- It then declines to less than 10 on the last trip at 9:05 PM.

On outbound trips:

- Ridership per trip is less than 20 before 1:00 PM.
- It then increases slowly to over 30 just before 4:00 PM.
- It then remains around 30 through 7:00 PM.
- Ridership per trip then declines slowly to 17 on the last trip at 9:45 PM.

Saturday ridership per trip is low with nearly all trips carrying 10 or fewer passengers (see Figure 6 and Figure 7).

Figure 3 | Weekday Inbound Ridership by Stop Map

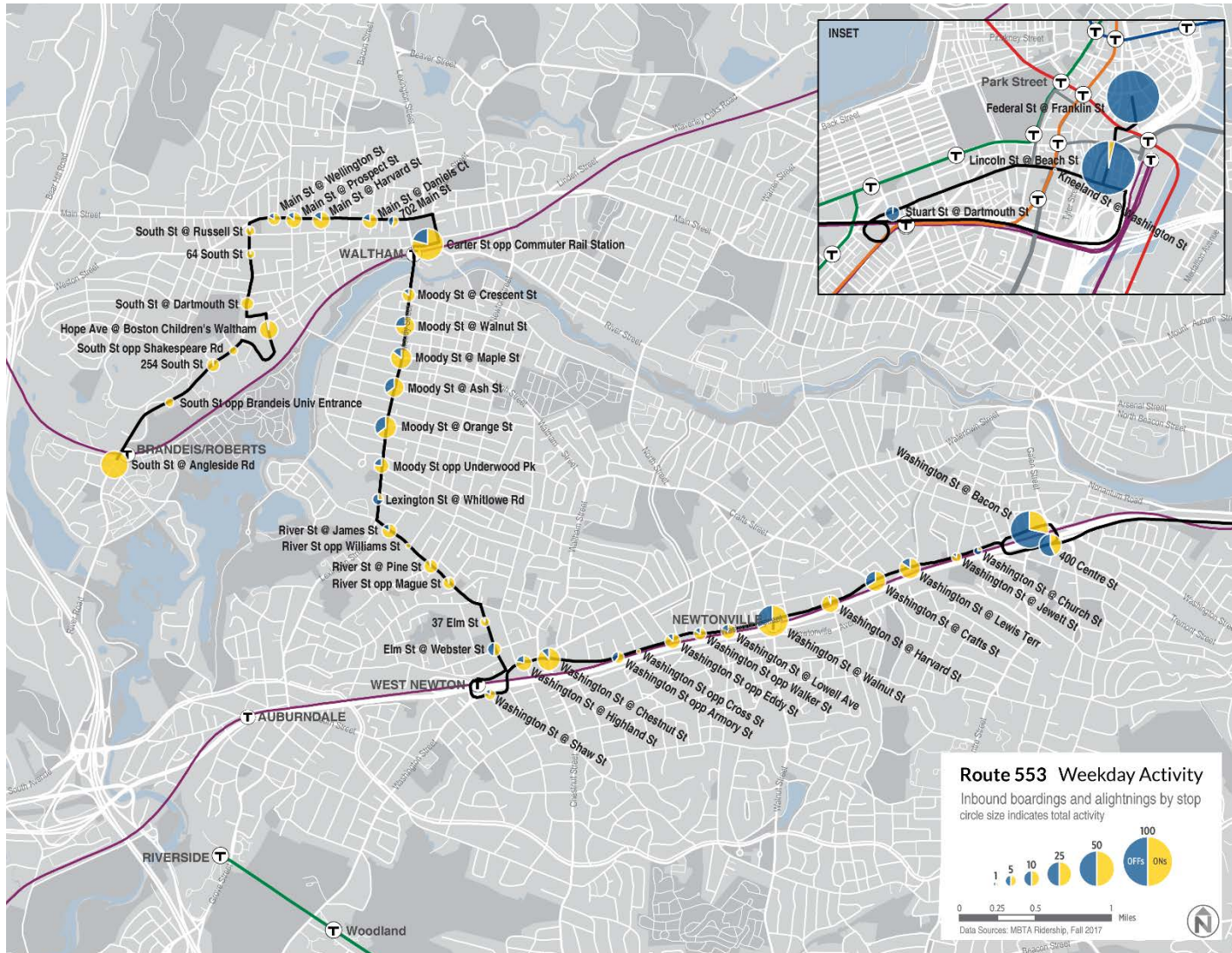


Figure 4 | Weekday Ridership by Trip: Inbound

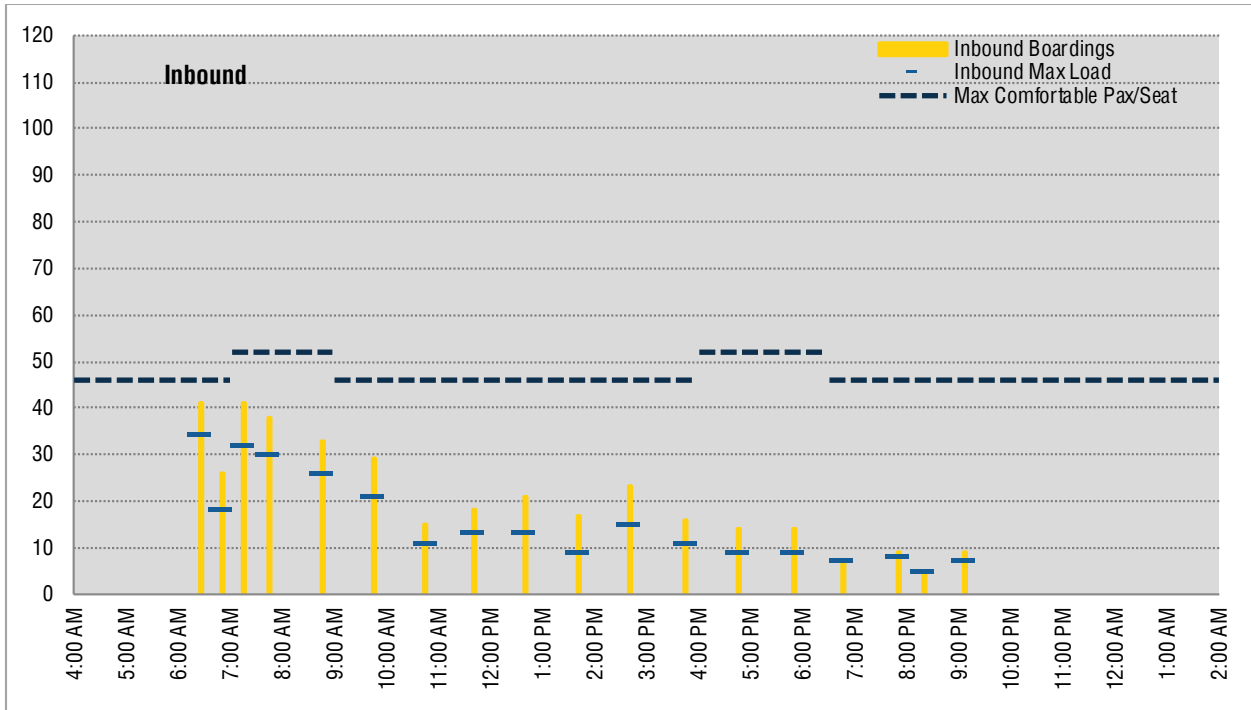


Figure 5 | Weekday Ridership by Trip: Outbound

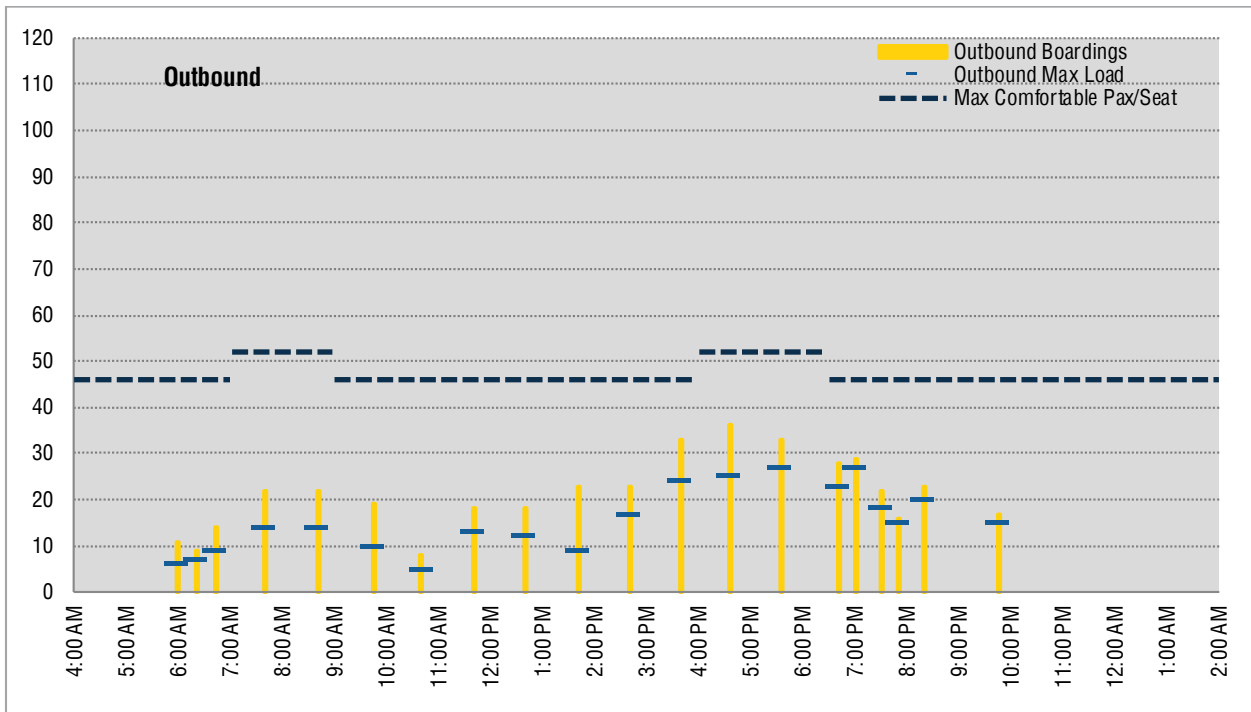


Figure 6 | Saturday Ridership by Trip: Inbound

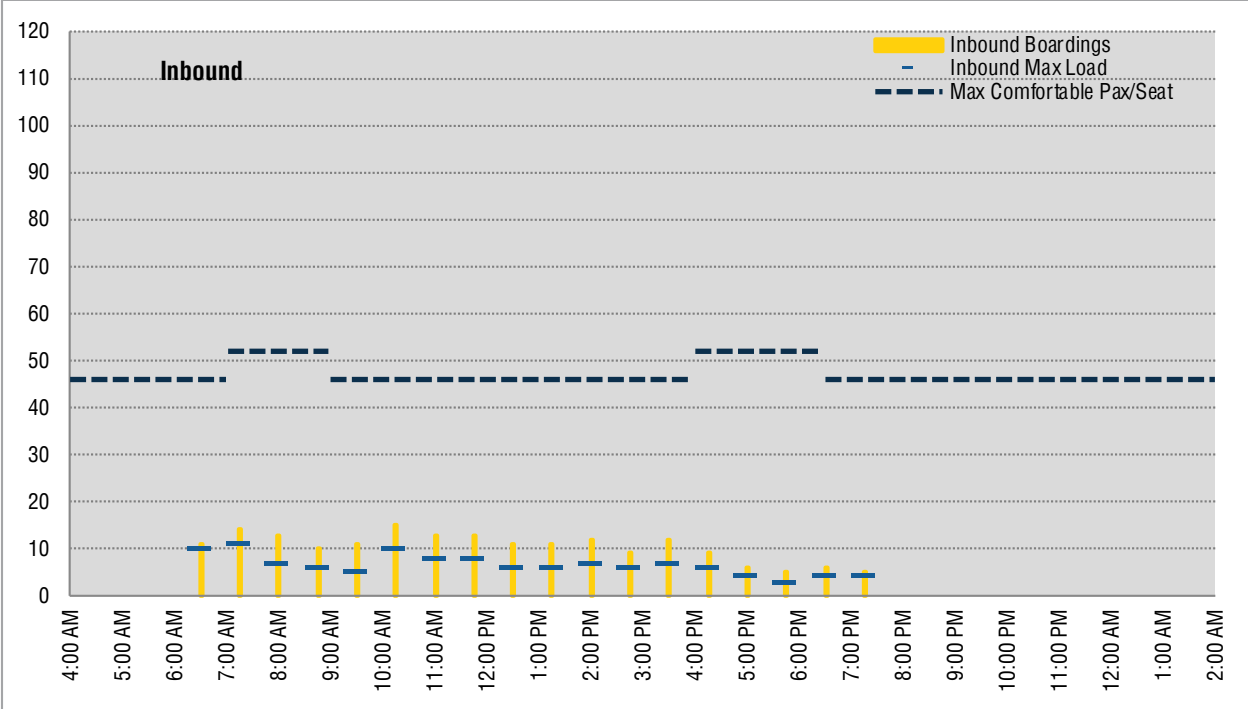
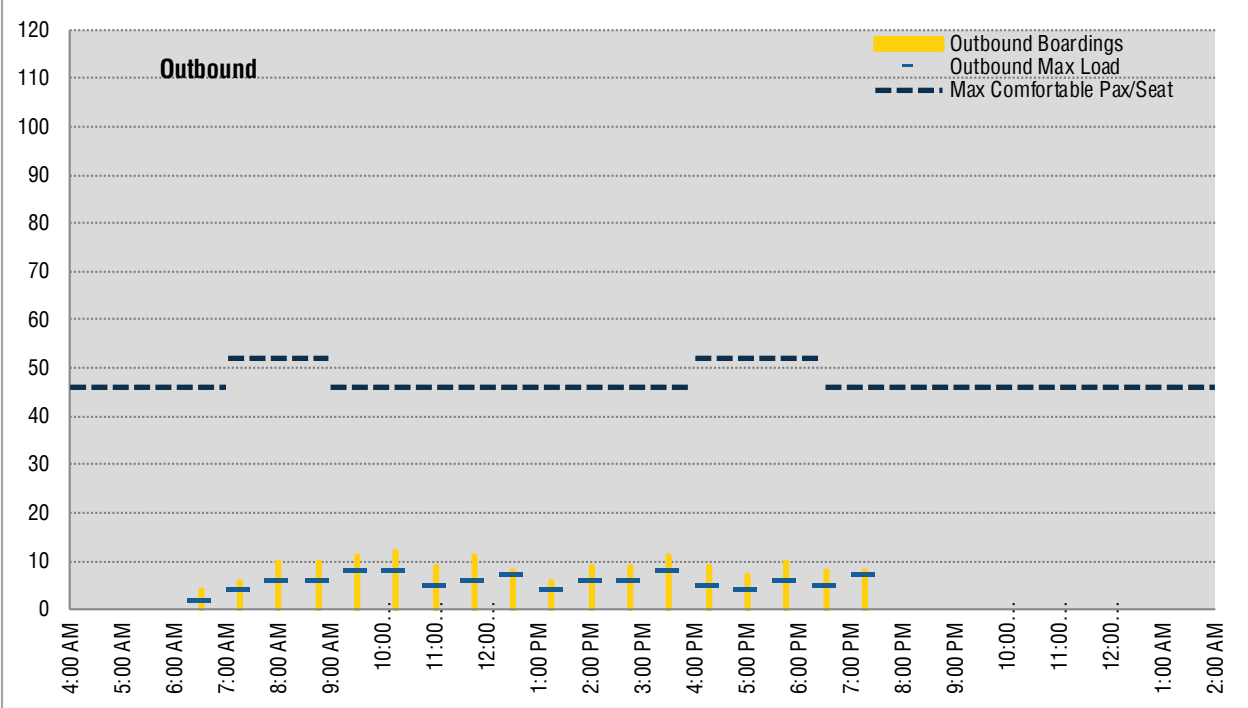


Figure 7 | Saturday Ridership by Trip: Outbound



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 553, 100% of passenger minutes are in comfortable conditions, which is above the MBTA’s 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	100%	100%	-

Reliability and Speed

Reliability

On weekdays, Route 553’s overall reliability is very poor at only 50%, which is well below the minimum standard of 70% (see Table 4). Saturday reliability, at 72%, exceed the minimum standard but is below the target of 75%. As described in the next section, poor reliability, to a significant extent, is because scheduled times are significantly shorter than actual times.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	49%	54%	50%	0.1%
Saturday	72%	73%%	72%	-
Sunday	-	-	-	-

Running Times

Until mid-afternoon, actual running times in both directions operates are close to scheduled times (see Figure 8 and Figure 9). However, after around 1:00 PM, many trips routinely operate more than 10 minutes behind schedule.

Figure 8 | Scheduled & Median Travel Time by Trip: Route 553 Inbound

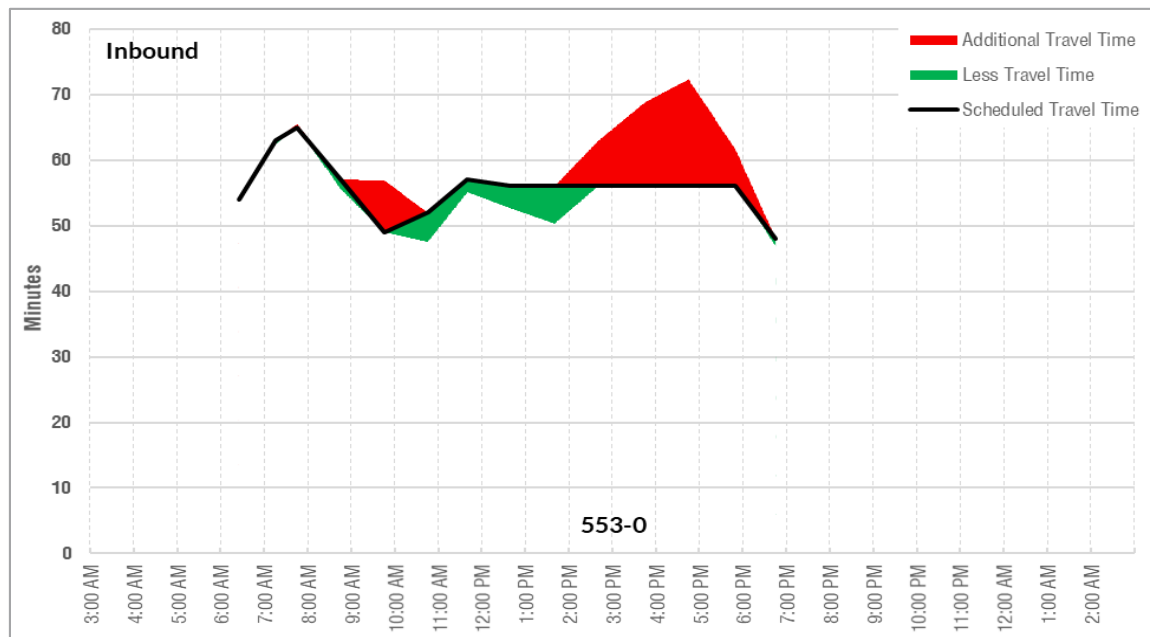
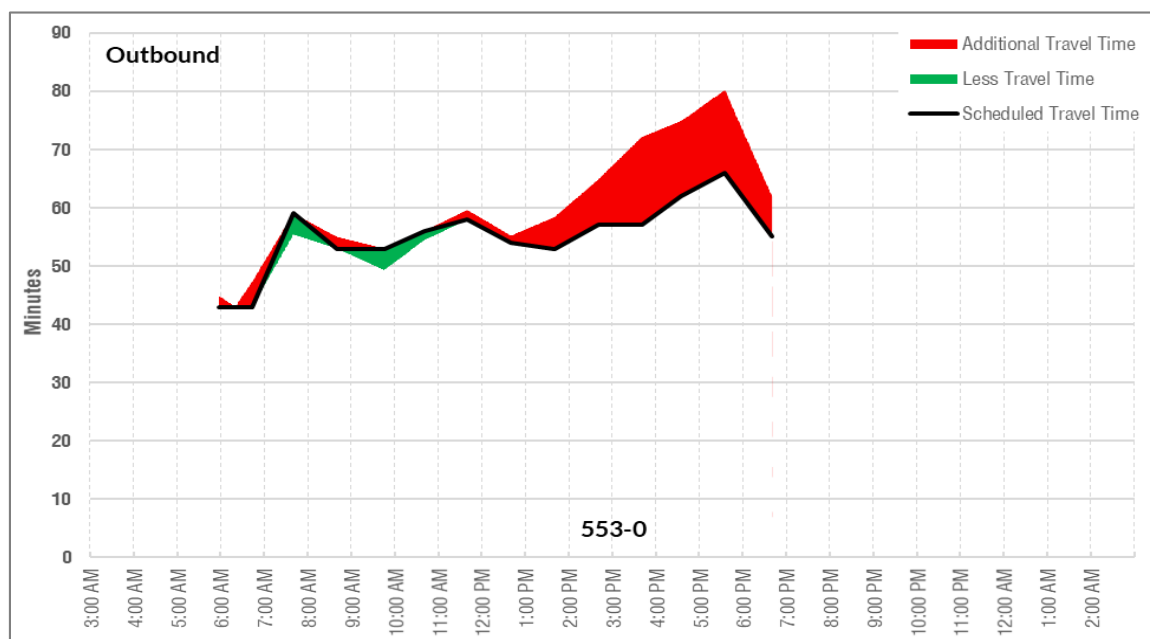


Figure 9 | Scheduled & Median Travel Time by Trip: Route 553 Outbound



Stop Spacing

Route 553 has nearly seven stops per mile west of Newton Corner, which is at the high end of the four to seven stops per mile recommended for urban areas and the four to five recommended for suburban areas. Stop consolidation could speed service and improve reliability.

Summary

Route 553 provides a combination of local service within Waltham and Newton and commuter service to and from Downtown Boston. It is closely related to Route 554 Waverley Square-Downtown Boston, which provides the same service between Waltham Center and Boston (and the two routes alternate trips for most of the day on weekdays). The most significant issues include:

- The route does not meet many Service Deliver Policy standards, including weekday peak period, midday, and evening service that does not meet frequency standards, and no Sunday service.
- On-time performance is very poor, in large part due to schedules that do not reflect actual running times.
- Less than ideal schedule coordination with Route 554 Waverley Square-Downtown Boston.
- Weekday evening service via Copley Square that replaces Route 502 serves an average of fewer than four passengers per trip.