

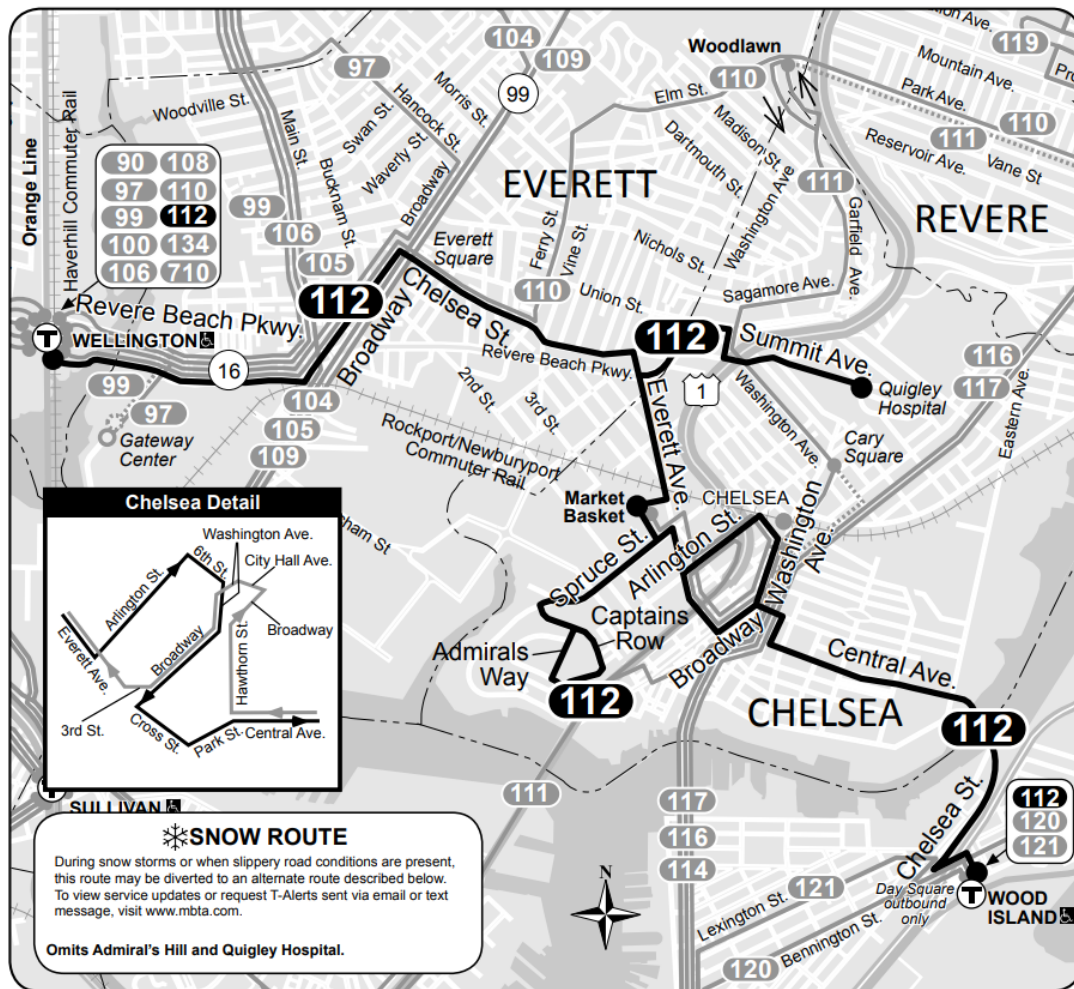
Route 112

Wellington Station – Wood Island Station

Route Overview

Route 112 Wellington Station – Wood Island Station is a local bus route operating between Wellington Station on the Orange Line and Wood Island Station on the Blue Line via Everett Square and downtown Chelsea. Route 112 also makes two special purpose detours to serve the residential community on Admiral’s Hill and to provide access to Quigley Hospital. Between Wellington Station and Everett Square, Route 112 shares an alignment with Route 97 Malden Station – Wellington Station and Route 110 Wonderland-Wellington.

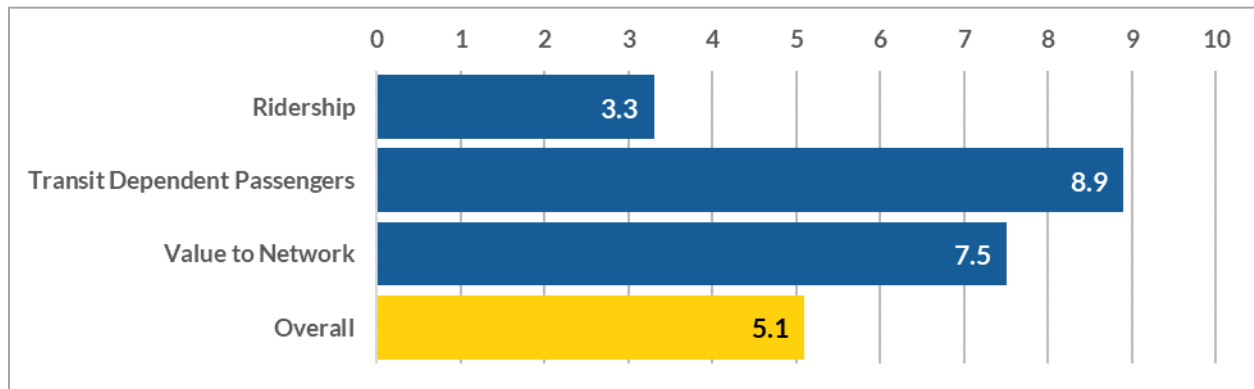
Figure 1 | Service Map



Network Importance

Route 112 is of average importance to the MBTA bus network overall, but serves a high population of transit-dependent riders (see Figure 2). On a relative scale of 0 to 10, Route 112 rates 3.3 in terms of ridership, 8.9 in terms of transit dependent ridership, and 7.5 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% weighting to overall ridership and a 15% weight to both other measures, is 5.1.

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



Service Patterns

Schedule

On weekdays, Route 112 operates with infrequent service, running with 40-minute headways all day from 6:20 AM until 8:39 PM (See Table 1).

Saturday service begins later at 7:00 AM and operates with 50-minute frequencies until 11:10 AM, followed by 40-minute frequencies until the end of service at 8:09 PM.

On Sundays, service begins at 8:30 AM. The second trip of the day leaves 90 minutes later at 10:00 AM, followed by three trips at 50-minute frequencies. From 12:30 PM until 5:30 PM, Route 112 operates every hour. The last two trips of the day operates 45 minutes apart. Service ends at 7:38 PM.

Route 112 meets the MBTA’s span of service and frequency standards for Saturday and Sunday service. However, with a consistent weekday frequency of 40 minutes, it does not meet the MBTA’s 30-minute frequency standard for weekday peak period trips on local bus routes.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:20 AM to 8:39 PM			20/22
Sunrise	-	-	-	-
Early AM	6:20 AM to 6:59 AM	40	40	1/2
AM Peak	7:00 AM to 8:59 AM	40	40	3/3
Midday Base	9:00 AM to 1:29 PM	40	40	7/7
Midday School	1:30 PM to 3:59 PM	40	40	4/3
PM Peak	4:00 PM to 6:29 PM	40	40	4/4
Evening	6:30 PM to 8:39 PM	40	40	1/3
Late Evening	-	-	-	-
Night Evening	-	-	-	-
Saturday	7:00 AM to 8:09 PM	40 - 50	41	17/18
Sunday	8:30 AM to 7:38 PM	45 - 90	53	12/10

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

Service Patterns

Service pattern 112.0 runs most trips on weekdays, Saturdays, and Sundays. Two additional patterns exist (see Table 2):

- Service pattern 112.1 serves the Solder’s Home and Admiral’s Hill but not the Market Basket on Sundays at 8:30 AM and 10:00 AM on inbound trips and at 9:15 AM on an outbound trip while the shopping center is closed in the morning.
- Service pattern 112.3 makes the first outbound weekday trip at 6:10 AM, serving the Market Basket and Admiral’s Hill neighborhood, but not the Soldier’s Home.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				20	17	12
112.0	Wellington	Wood Island Station	Via Market Basket	20	17	10
112.1	Wellington	Wood Island Station	Via Soldier’s Home	-	-	2
OUTBOUND				22	18	10
112.0	Wood Island Station	Wellington	Via Market Basket and Soldier’s Home	21	18	9
112.1	Wood Island Station	Wellington	Via Soldier’s Home	-	-	1
112.3	Wood Island Station	Wellington	Via Market Basket	1	-	-

Ridership

Route 112 serves 1,382 riders on weekdays, 816 riders on Saturdays, and 531 riders on Sundays. This places Route 112 in the bottom half of MBTA local bus routes in terms of total weekday ridership.

Ridership by Stop

On weekday inbound trips, only eight of 47 stops on Route 112 serve more than 30 passengers per day of total boardings or alightings. The highest ridership stops are at the rapid transit stations or close to Wellington Station, Market Basket, and Wood Island Station (See Figure 3):

- Wellington Station attracts 207 boardings, or 33% of all boardings
- The two stops between Wellington and Everett Square have a total of 23 boardings and 15 alightings.
- At Everett Square, 71 passengers board (11% of total) and 27 alight.
- Between Everett Square and Market Basket through Everett and Chelsea, 61 passengers board at 15 stops, making up 10% of all boardings. 150 passengers alight along the segment.
 - The six stops deviating to serve the Soldiers Home feature 27 boardings and 68 alightings per day.
- At Market Basket, 63 passengers board and 69 passengers alight, making it the third most active stop.
- The deviation to Admirals Hill (including 14 stops before Route 112 reaches Bellingham Square) features 72 boardings and 55 alightings.
- The Washington Avenue at Broadway stop is the fifth most active, with 32 boardings and 37 alightings.
- On the six stops between Bellingham Square and Central Avenue at Willow Street, 72 passengers board and 33 passengers alight.
- Central Avenue at Willow Street is the last inbound stop with considerable boardings, attracting 24 boardings and 16 alightings.
- In the last four stops before Wood Island Station, 5 boardings and 41 alightings occur.
- At Wood Island Station, 190 alightings occur, 30% of the total, the most of any stop.

Outbound ridership is roughly the reverse of inbound ridership on weekdays. Weekend ridership patterns are similar, but with lower volumes.

Ridership by Trip

On weekdays, Route 112 averages 33 boardings per trip and is fairly consistent throughout the day, with slight peaks during weekday peak periods. There are no issues with overcrowding on weekdays, Saturdays or Sundays. On weekday inbound trips (See Figure 4):

- The first trip of the day at 6:20 AM has the highest ridership of the day, reaching 55 boardings with a maximum load of 43 passengers.
- The 7:00 AM trip again has high ridership, attracting 47 boardings and 32 passengers at maximum load.
- Ridership declines per trip until 9:40 AM when boardings increase again to reach a mid-morning peak at 11:00 AM with 37 boardings.
- Midday ridership is strongest on the 1:00 PM trip (42 boardings) and declines for the rest of the day until 19 riders board the 7:00 PM trip out of Wellington Station.

Outbound ridership is also strong in the morning peak period, with the 6:10 AM and 6:40 AM trips serving at least 33 passengers at maximum load. All trips prior to 5:20 PM attract at least 30 total boardings, with a peak at 4:00 PM and 57 boardings. The last trip at 8:00 PM attracts just 12 boardings.

Weekend ridership is mostly consistent throughout the day, averaging 23 passenger per trip on Saturdays and 24 on Sundays. There are a handful of Saturday trips where ridership spikes dramatically (at 1:10 PM and 5:10 PM), but this may represent limited data observations. Sunday ridership is slightly higher between 12:30 PM and 4:30PM.

Figure 3 | Weekday Inbound Ridership by Stop Map



Figure 4 | Weekday Ridership by Trip: Inbound

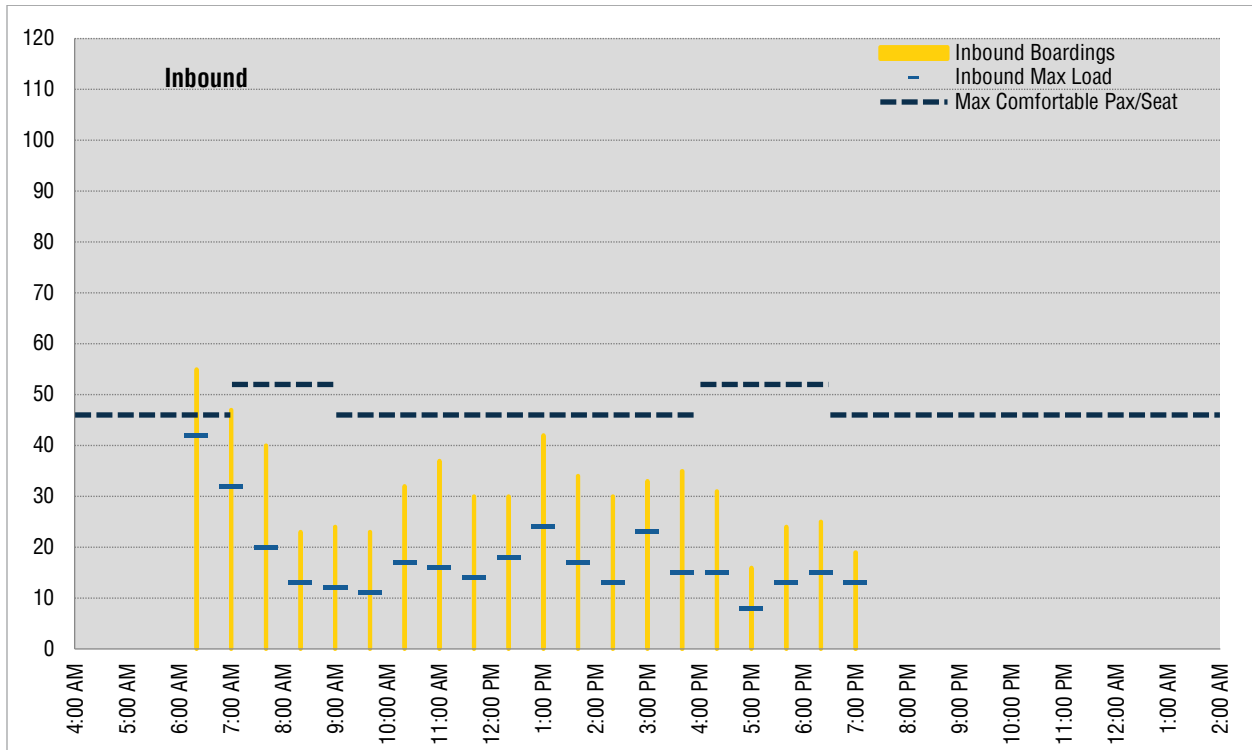


Figure 5 | Weekday Ridership by Trip: Outbound

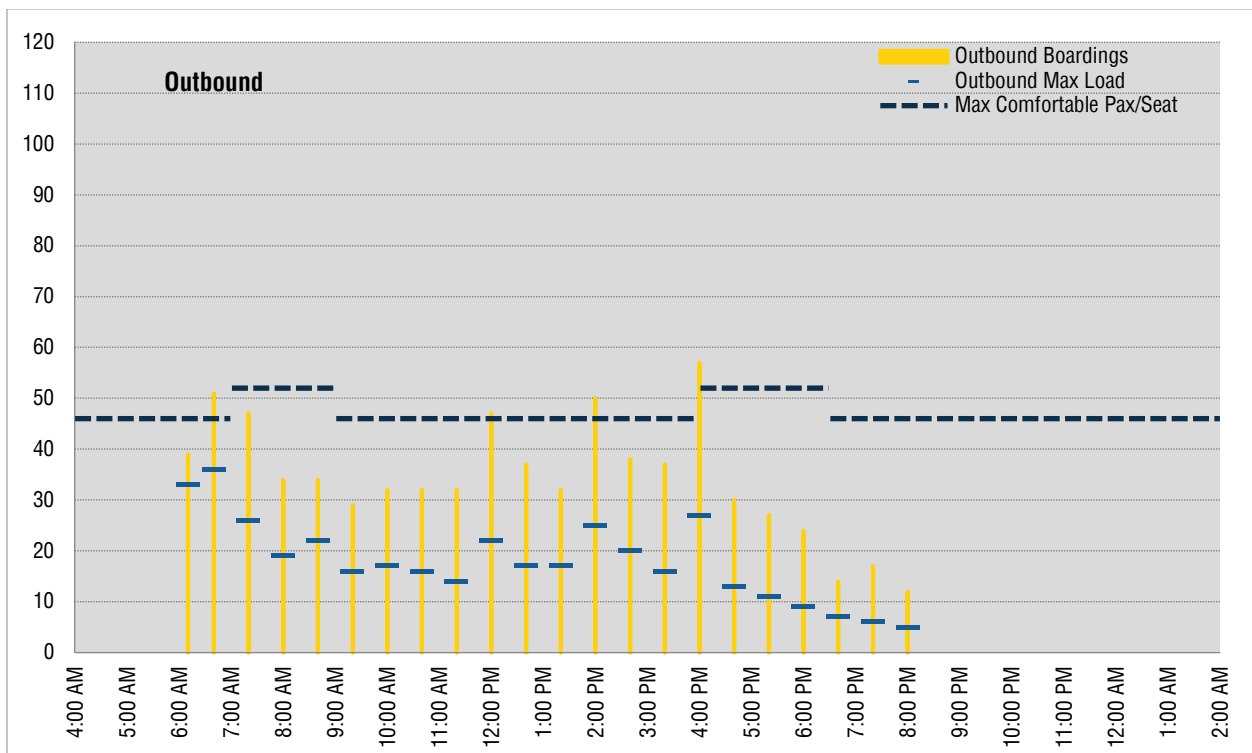


Figure 6 | Saturday Ridership by Trip: Inbound

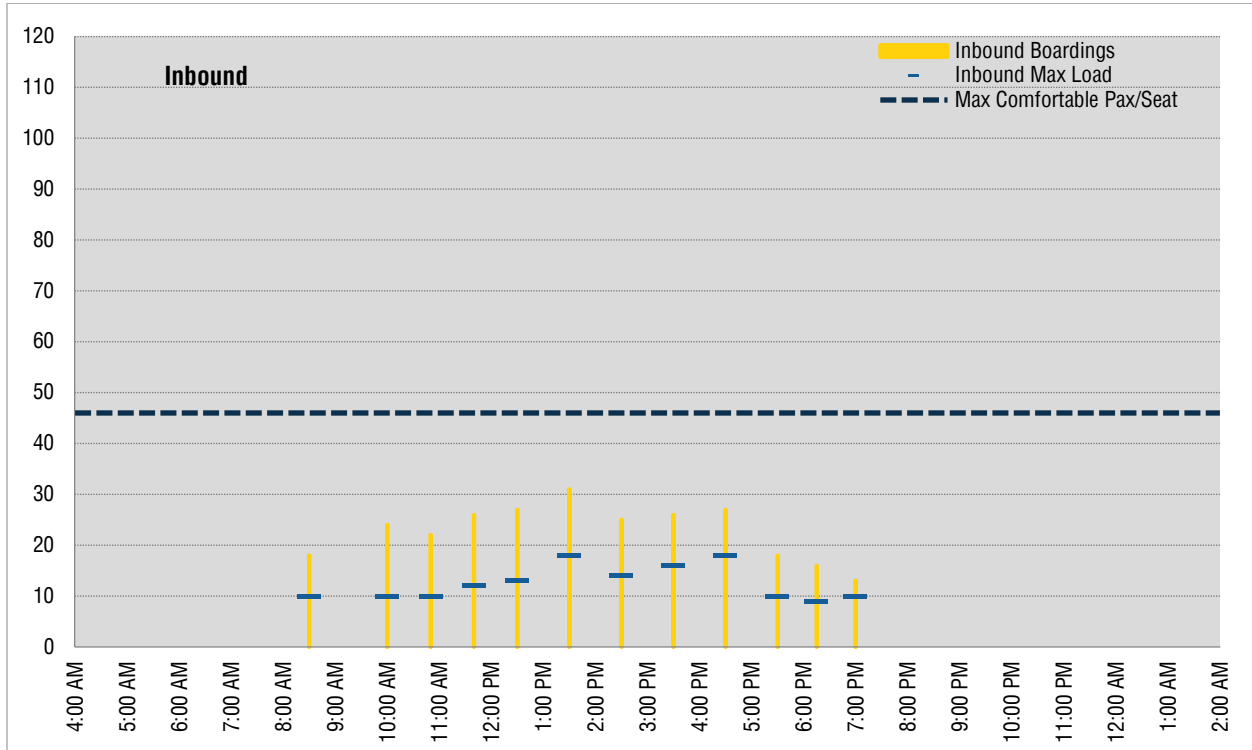


Figure 7 | Saturday Ridership by Trip: Outbound

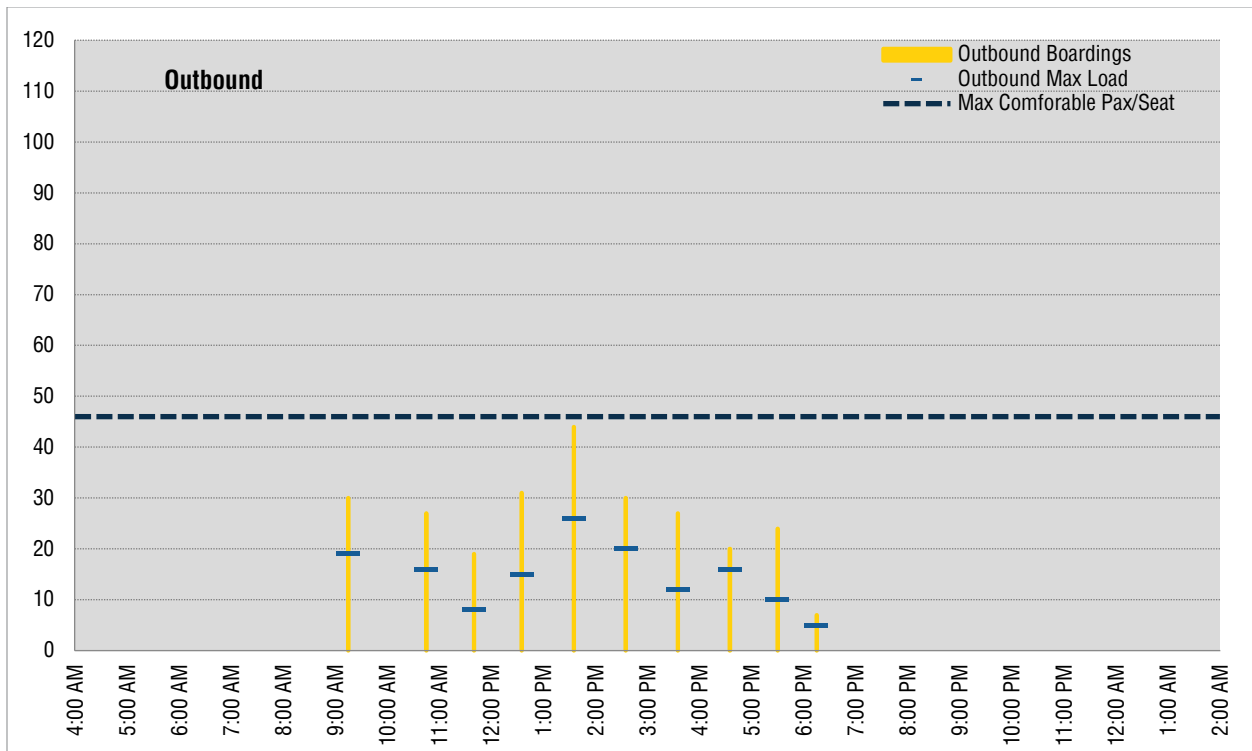


Figure 8 | Sunday Ridership by Trip: Inbound

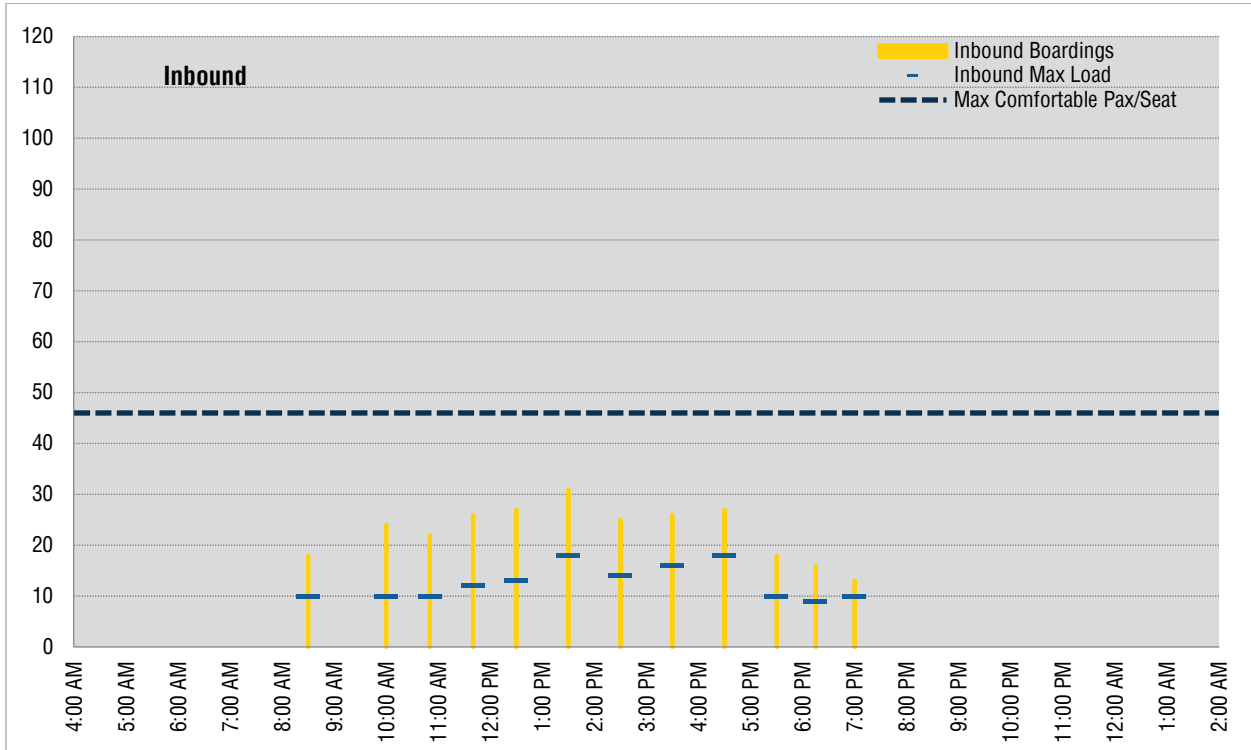
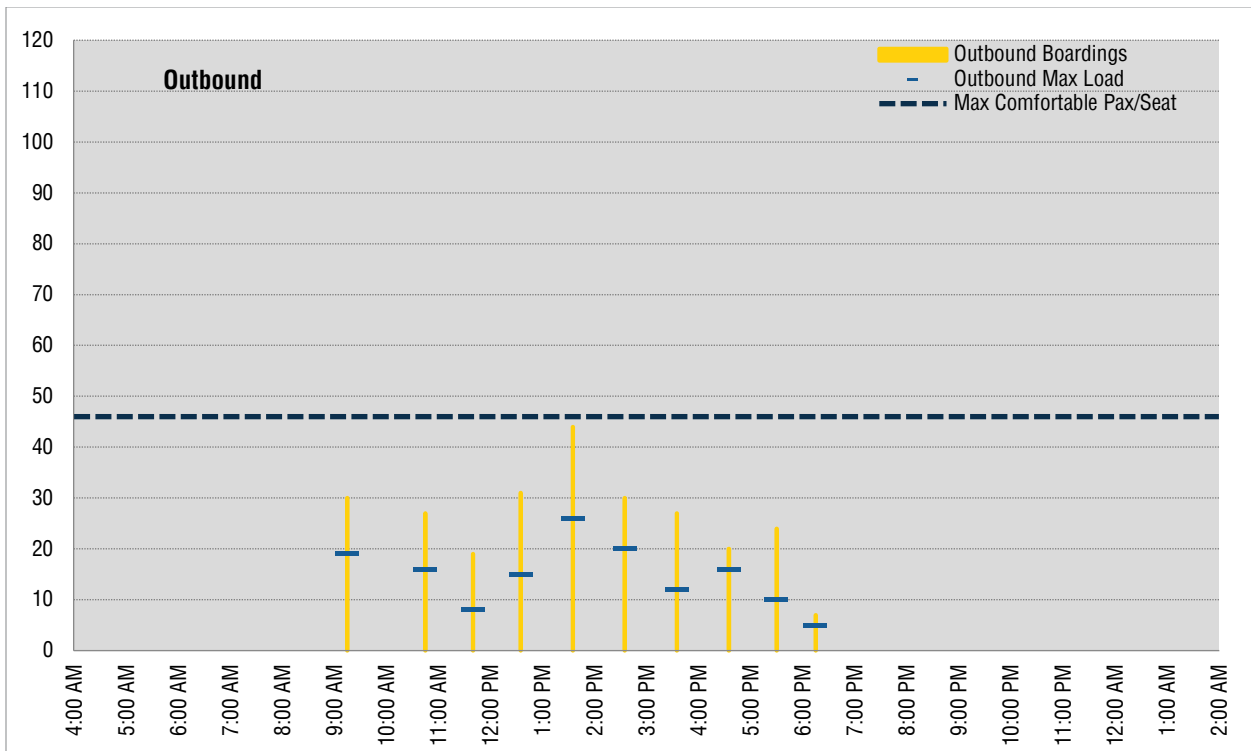


Figure 9 | Sunday Ridership by Trip: Outbound



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 112, 99.5% of passenger minutes are in comfortable conditions, which is above both the minimum and target standard (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	99.5%	100%	100%

Reliability and Speed

Reliability

Passengers using lower frequency services like Route 112 typically use published schedules to plan their trip. Route 112 leaves on time just 50% of the time and arrives on time on less than half of all trips for a 39% reliability. With a 48% overall reliability rate, Route 112 leaves more than three minutes late and arrives more than six minutes behind schedule more than half of the time. This reliability increases slightly on weekends, but no more than 49% of all trips on Saturdays and no more than 55% on Sundays match the scheduled timetables (see Table 4).

Route 112 operates with low frequencies, and does not have many dropped trips.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	50%	39%	48%	0.1%
Saturday	50%	41%	49%	-
Sunday	57%	46%	55%	-

Running Times

Route 112's observed running times routinely exceed scheduled running times prior to 8:00 AM when ridership is high and in the midday after 2:00 PM and evening (See Figure 10 and Figure 11). Trips during these periods can run five to 15 minutes longer than scheduled running times, reducing on time performance.

Figure 10 | Scheduled & Median Travel Time by Trip: Route 112 Inbound

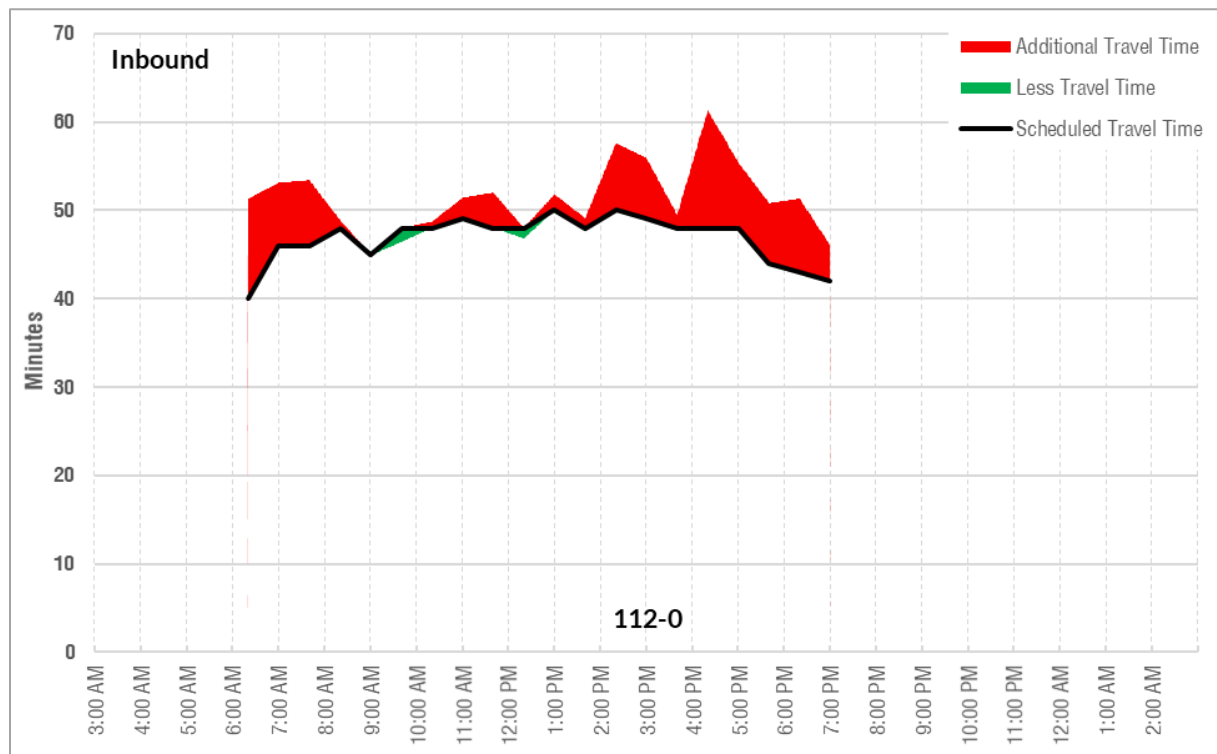
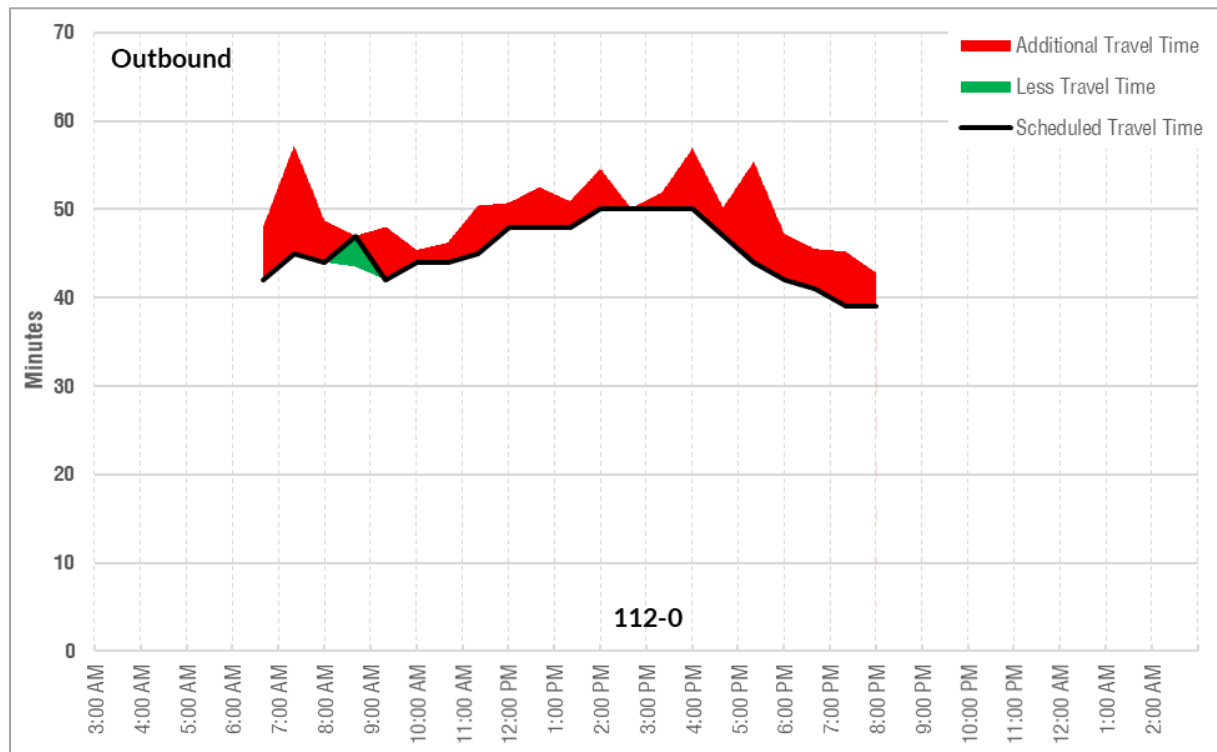


Figure 11 | Scheduled & Median Travel Time by Trip: Route 112 Outbound



Stop Spacing

The overall route measures over nine miles in length with 47 stops, which equates to average of 5.2 stops per mile, or a stop every 1,000 feet. This is within the four to seven stops per mile recommended by the MBTA for urban areas.

Stops are located extremely close together in three points along Route 112:

- Broadway at Everett Square is one of the highest ridership stops on Route 112, attracting 71 boardings and 27 alightings daily. Just 450 feet away, the Chelsea Street at Victoria Street stop attracts 12 passengers.
- Chelsea St at Spring Street and opp. Mead Street are located only 600 feet apart. Both stops attract less than 15 inbound riders daily.
- 5 Admirals Way and Captains Row at Boatswains Way are only 350 feet apart. The Captains Row at Boatswains Way stop attracts a quarter riders than the previous stop on the Admirals Hill loop on both inbound and outbound trips.

Summary

Route 112 provides connections to the MBTA rapid network and serves neighborhoods with a high proportion of transit dependent riders. These factors help Route 112 attract riders despite low frequencies.

The primary challenge with Route 112 is it has an awkward and indirect alignment. The alignment helps Route 112 connect with activity centers, such as Admirals Way and the Quigley Hospital. However, the path between these locations is indirect and makes Route 112 difficult to understand and increases trip times for riders not destined for these locations. It also places the bus in congested traffic areas, causing significant service reliability issues. These factors contribute to Route 112's poor service reliability and low ridership.