

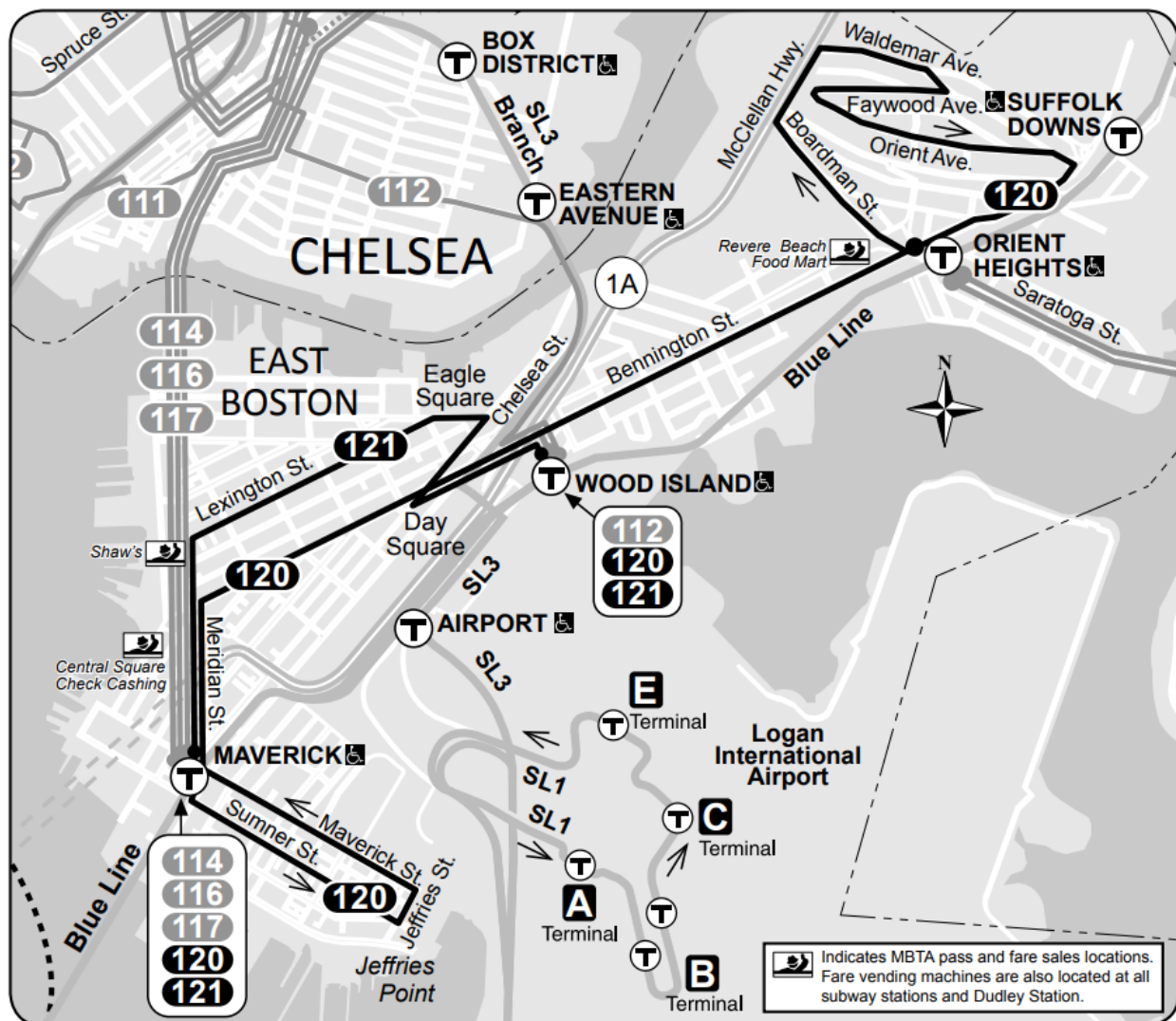
# Route 120

Orient Heights-Maverick Station via Bennington Street

## Route Overview

Route 120 is a Local route that operates between Orient Heights Station and Maverick Station. Inbound trips include a loop through Jeffries Point and outbound trips include a loop through Orient Heights neighborhood (see Figure 1).

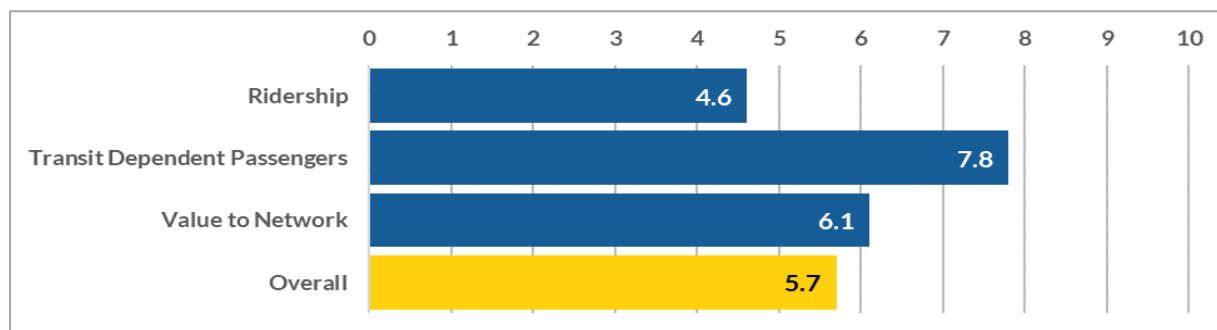
Figure 1 | Service Map



## Network Importance

Route 120 is a moderately important route within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 4.6 in terms of ridership, 7.8 in terms of transit dependent ridership, and 6.1 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, which gives a 70% weight to overall ridership and a 15% weight to both other measures, is 5.7.

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



## Service Patterns

### Schedule

On weekdays, Route 120 generally provides frequent service during the early AM and AM peak periods, moderately frequent service until 7:54 PM, and infrequent service until the end of the day (see Table 1). On weekends, it provides infrequent service.

In more detail, weekday service operates from 5:25 AM to 12:56 AM:

- In the early morning from the beginning of service at 5:25 AM until just before 7:00 AM, service is very irregular and operates every 12 to 35 minutes.
- In the AM peak period and until approximately 9:30 AM, service operates every 16 minutes on average.
- From 9:30 AM until 2:30 PM, service operates every 19 to 26 minutes, but mostly every 22 minutes.
- From 2:30 PM to 4:00 PM, service operates every 19 to 24 minutes.
- From 4:00 PM until slightly after 7:00 PM, service operates every 22 to 25 minutes, but mostly every 25 minutes.
- It then operates every 42 to 55 minutes until the end of service.

On Saturdays service operates every 50 minutes for the first three trips, then every 25 to 30 (but mostly every 30) minutes until 7:00 PM, and then every 45 to 60 (but mostly every

60) minutes until the end of service. On Sundays, service operates at 55 to 60 minute headways throughout the day.

Route 120 meets the span of service and frequency standards for Local routes on all service days.

**Table 1 | Schedule Statistics**

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
<b>Monday-Friday</b>	<b>5:25 AM to 12:56 AM</b>			<b>47/47</b>
Sunrise	5:25 AM to 5:59 AM	23 – 27	25	2/1
Early AM	6:00 AM to 6:59 AM	12 – 35	14	4/3
AM Peak	7:00 AM to 8:59 AM	16 – 18	16	7/7
Midday Base	9:00 AM to 1:29 PM	16 – 23	21	13/14
Midday School	1:30 PM to 3:59 PM	19 – 26	23	7/7
PM Peak	4:00 PM to 6:29 PM	25	25	6/6
Evening	6:30 PM to 9:59 PM	22 – 55	45	5/5
Late Evening	10:00 PM to 11:59 PM	54 – 55	55	2/3
Night	12:00 AM to 12:56 AM	55	-	1/1
<b>Saturday</b>	<b>5:25 AM to 12:56 AM</b>	<b>25 – 60</b>	<b>36</b>	<b>32/32</b>
<b>Sunday</b>	<b>6:00 AM to 12:56 AM</b>	<b>50 – 60</b>	<b>56</b>	<b>20/20</b>

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

### Service Patterns

Most Route 120 service operates between Orient Heights Station and Maverick Station with a one-way loop at each end (see Table 2):

- Inbound trips depart from Orient Heights Station and travel directly to Maverick Station via Bennington Street and Meridian Street. They then operate out to Jeffries Point and back to Maverick Station via Maverick and Sumner Streets as shown in Figure 1 (Pattern 120.0).
- Outbound trips depart from Maverick Station and travel directly to Orient Heights Station. They then loop through Orient Heights via Boardman Street, Waldemar Avenue, Faywood Avenue, and Orient Avenue back to Orient Heights Station (Pattern 120.0).
- The inbound school trip at 6:47 AM does not serve Jeffries Point (Pattern 120.1).
- The outbound school trip at 6:25 AM only serves the Orient Heights loop (Pattern 120.6).
- The outbound school trip at 2:05 PM begins service at Bennington Street at Brooks Street (Pattern 120.5).

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
<b>INBOUND</b>				<b>47</b>	<b>32</b>	<b>20</b>
120.0	Orient Heights Station	Maverick Station	Includes service to Jeffries Point	46	32	20
120.1	Orient Heights Station	Maverick Station	AM school trip that omits Jeffries Point	1	-	-
<b>OUTBOUND</b>				<b>47</b>	<b>32</b>	<b>20</b>
120.0	Maverick Station	Orient Heights Station at Blue Line	Includes service to Orient Heights	45	32	20
120.5	Bennington Street at Brooks Street	Orient Heights Station	PM school trip	1	-	-
120.6	Orient Heights Station	Orient Heights Station	PM school trip around Orient Heights loop	1	-	-

## Ridership

Route 120 serves 2,681 daily passengers on weekdays, 1,277 on Saturdays, and 721 on Sundays. Route 120 ranks 49<sup>th</sup> in ridership on weekdays and 47<sup>th</sup> on both Saturday and Sunday.

### Ridership by Stop

The majority of Route 120 passengers use the route to travel from East Boston neighborhoods to stops on the Blue Line, in whichever direction trip reaches a station the quickest. Because multiple Blue Line stations are served, passenger turnover at stops along Bennington Street is high in both directions. Additionally, because inbound and outbound trips serve different loops in East Boston, turnover is high on these segments as passengers must use one direction all day to reach their stops. On weekdays, inbound from Orient Heights (see Figure 3):

- At Orient Heights Station, 146 passengers board (11% of total boardings), the highest of any stop on inbound trips.
- Boarding demand is lower between Orient Heights Station and Wood Island Station, generating 343 boardings. The highest ridership stop is Bennington Street at Byron Street, equidistant between both Blue Line stations, with 130 boardings. Riderships is lower between Byron Street and Wood Island Station.
- At Wood Island Station Busway, 34 passengers board and 113 passengers alight.
- The two stops after Wood Island Station have very low activity, with just 10 total boardings and alightings combined.

- Along Bennington Street between Wood Island Station and Maverick Station, 487 passengers board (37% of total) and 428 passengers alight (33%) at 11 stops.
- At Maverick Station – the first time inbound buses stop there – 130 passengers board to reach locations in Jeffries Point and 265 passengers alight.
- Along the Jeffries Point loop, 215 passengers board (16% of total) and 259 passengers alight (20% of total). For those boarding in Jeffries Point, 187 passengers alight when buses return to Maverick Station.

On weekdays, outbound from Maverick Station (see Figure 4):

- The first stop at Maverick Station has more than double the number of boardings as the next highest demand stop, attracting 374 boardings to begin outbound trips.
- Stops on Meridian Street and Bennington Street also have high demand and turnover, attracting a total of 384 boardings and 243 alightings until Brooks Street.
- Between Brooks Street and Wood Island Station, ridership is lower, with a total of 162 boardings and 188 alightings. Compared to inbound trips, activity at Wood Island Station is much lower (78 boardings and 40 alightings).
- Between Wood Island Station and Orient Heights Station, 83 passengers board and 320 alight at six stops. The first time outbound buses stop at Orient Heights Station, 99 passengers board to reach neighborhood destinations and 124 passengers alight.
- Along the Orient Heights loop, 227 boardings and 317 alightings occur. Ridership is low at all of these stops except for one, 171 Faywood Avenue, which has 137 boardings and 136 alightings, or 60% of all ridership along the loop.
- At the return to Orient Heights Station, 142 passengers alight.

Weekend ridership patterns on Route 120 are similar to weekday patterns, with fewer but similarly distributed boardings and alightings.

Figure 3 | Weekday Inbound Ridership by Stop Map

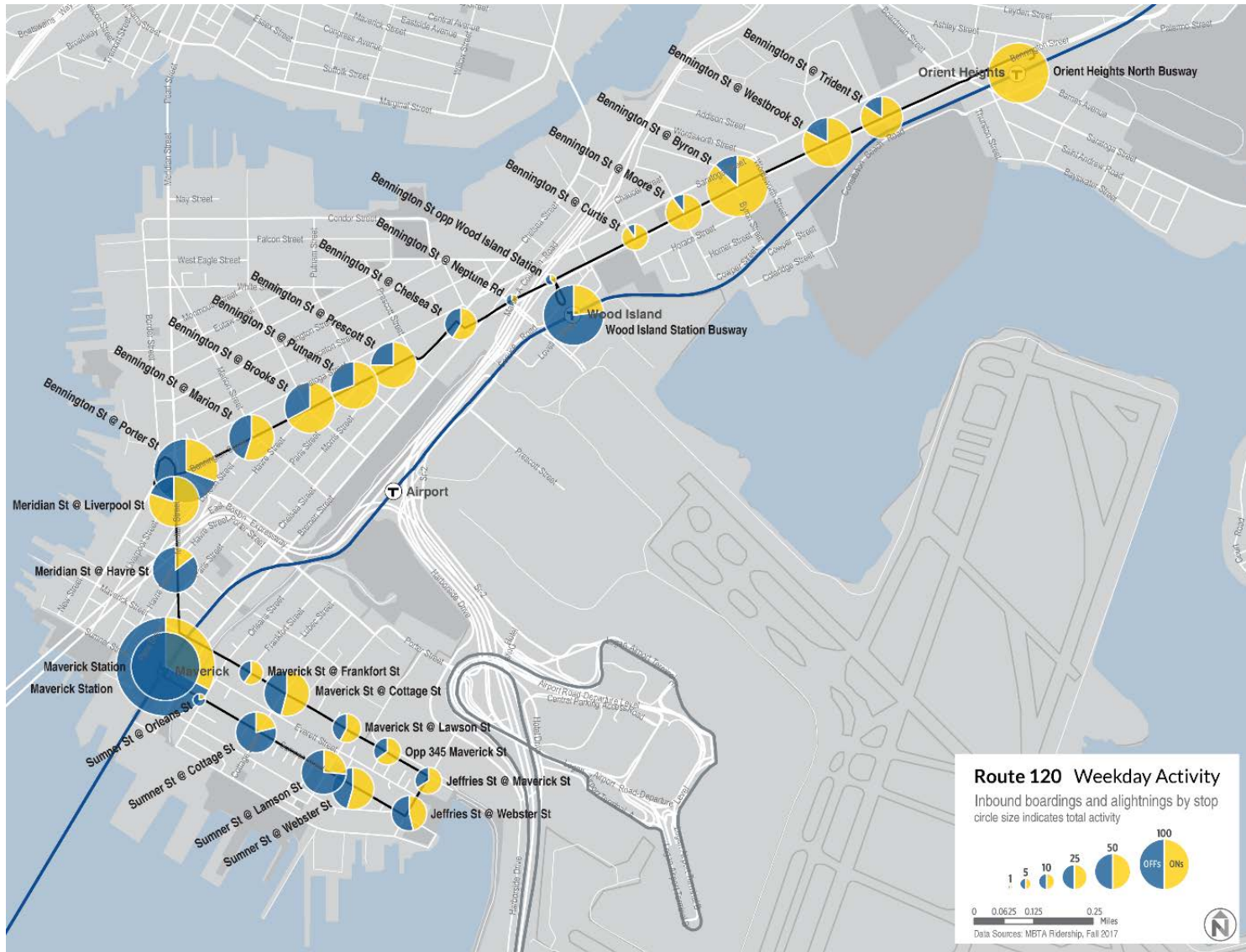
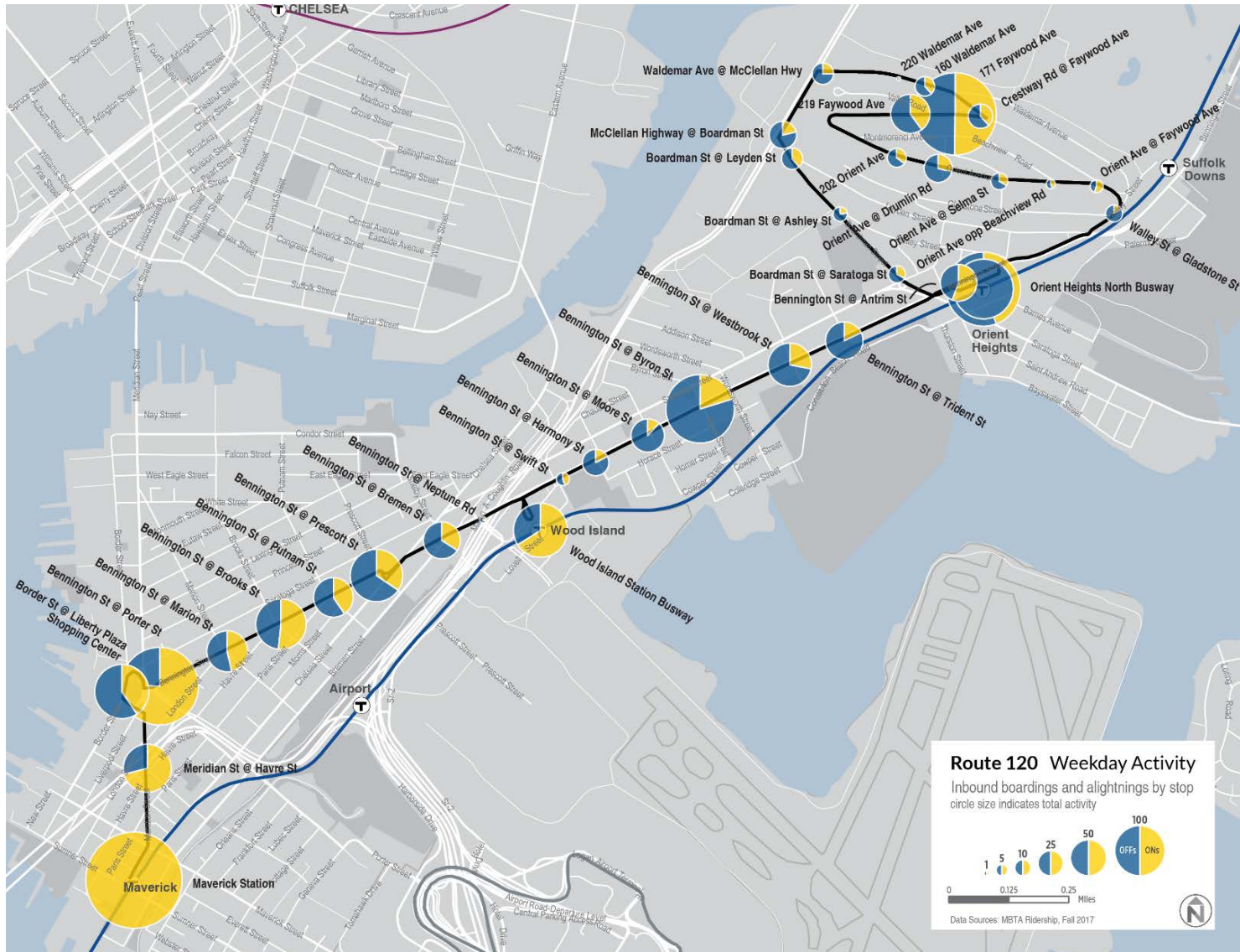


Figure 4 | Weekday Outbound Ridership by Stop Map



## Ridership by Trip

On weekdays, Route 120 has high ridership during peak periods in both directions, and low ridership during the midday. On inbound trips (see Figure 5):

- All trips between 5:25 AM and 7:58 AM attract at least 40 boardings, but all but one trip has a maximum load of 37 passengers or less. The 6:47 AM trip has a maximum load of 40 passengers, still within the MBTA's crowding standard for off-peak time periods. After 8:00 AM, ridership drops steeply.
- Trips from 8:32 AM until 1:42 PM have low to moderate ridership, increasing over the day from 13 boardings at 8:32 AM to 27 boardings at 1:42 PM.
- Between 2:04 PM and 6:00 PM, three trips again surpass 40 boardings each. Trips alternate between maximum loads over 30 passengers and maximum loads around 25 passengers. The highest ridership trip in this period is at 3:55 PM with a maximum load of 49 passengers, overcrowded by MBTA standards.
- After 6:00 PM, no trip attracts more than 21 boardings, and trips after 9:00 PM do not attract more than 12 boardings.

On weekday outbound trips (See Figure 6):

- The first trip of the day at 5:05 PM attracts 24 boardings.
- Between 6:17 AM and 7:22 AM, each trip has a maximum load above 20 passengers with the 7:00 AM trip attracting 45 boardings.
- Ridership declines until 10:34 AM with only 15 boardings before growing steadily until 2:10 PM. The 2:05 PM school trip (pattern 120.6) serving only the Orient Height loop attracts 12 passengers. The 2:10 PM trip has 53 boardings and a maximum load of 43 passengers.
- Outbound trips after 6:00 PM are utilized more than inbound trips, with all trips attracting at least 15 boardings and trips between 6:30 PM and 8:15 PM all attracting at least 30 passengers. Ridership declines slightly through the evening, and the last outbound trip at 12:56 AM has 14 boardings.

On Saturdays, all but one inbound trip have a maximum load of fewer than 30 passengers (see Figure 7 and Figure 8). No trip before 10:00 AM has a maximum load above 18 passengers (the 9:30 AM trip). The highest ridership trip of the day is at 11:00 AM with 34 boardings and 26 passengers at maximum load. From 2:30 PM until the end of the service day, only the 2:30 PM and 3:30 PM trips have more than 20 passengers at maximum load. Trips after 8:00 PM do not surpass 12 boardings. Outbound ridership is highest between 2:55 PM and 3:55 PM, with two trips attracting more than 40 boardings.

On Sundays, most trips have fewer than 30 boardings. Midday trips have the most demand in both directions, with a peak at 2:55 PM inbound (33 boardings) and 2:20 PM outbound (36 boardings).



Figure 5 | Weekday Ridership by Trip: Inbound

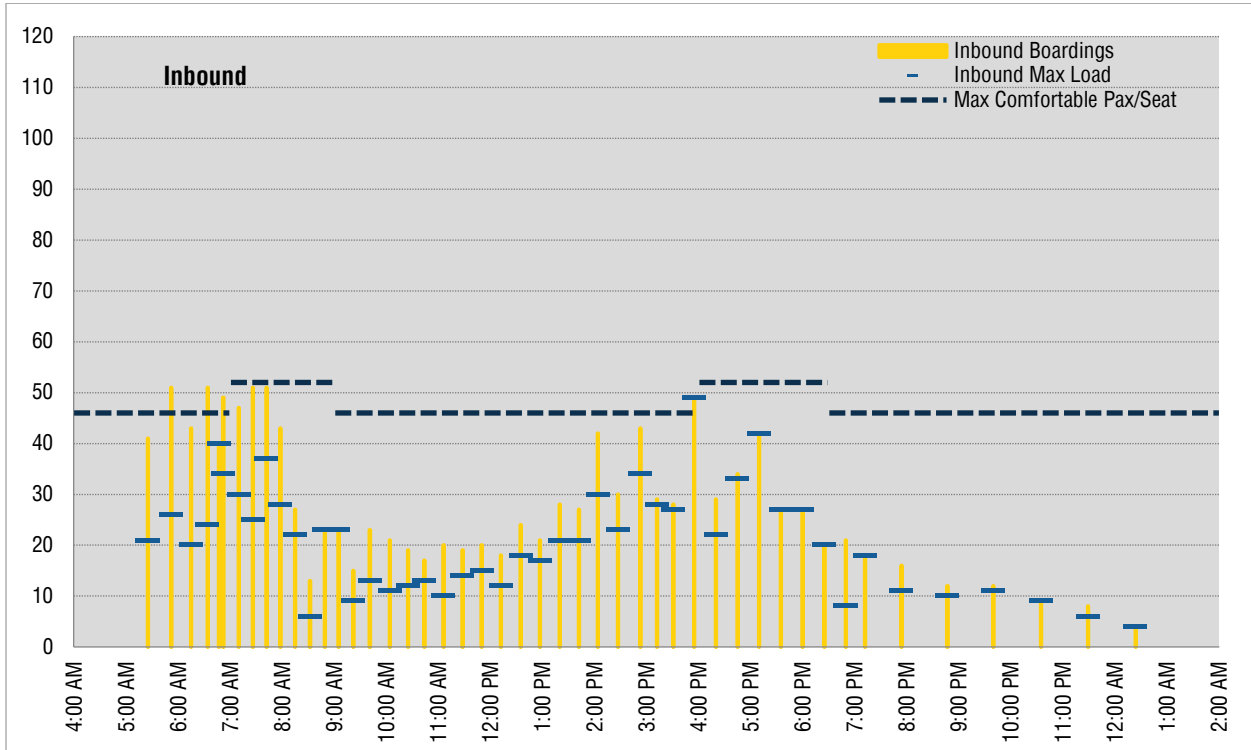


Figure 6 | Weekday Ridership by Trip: Outbound

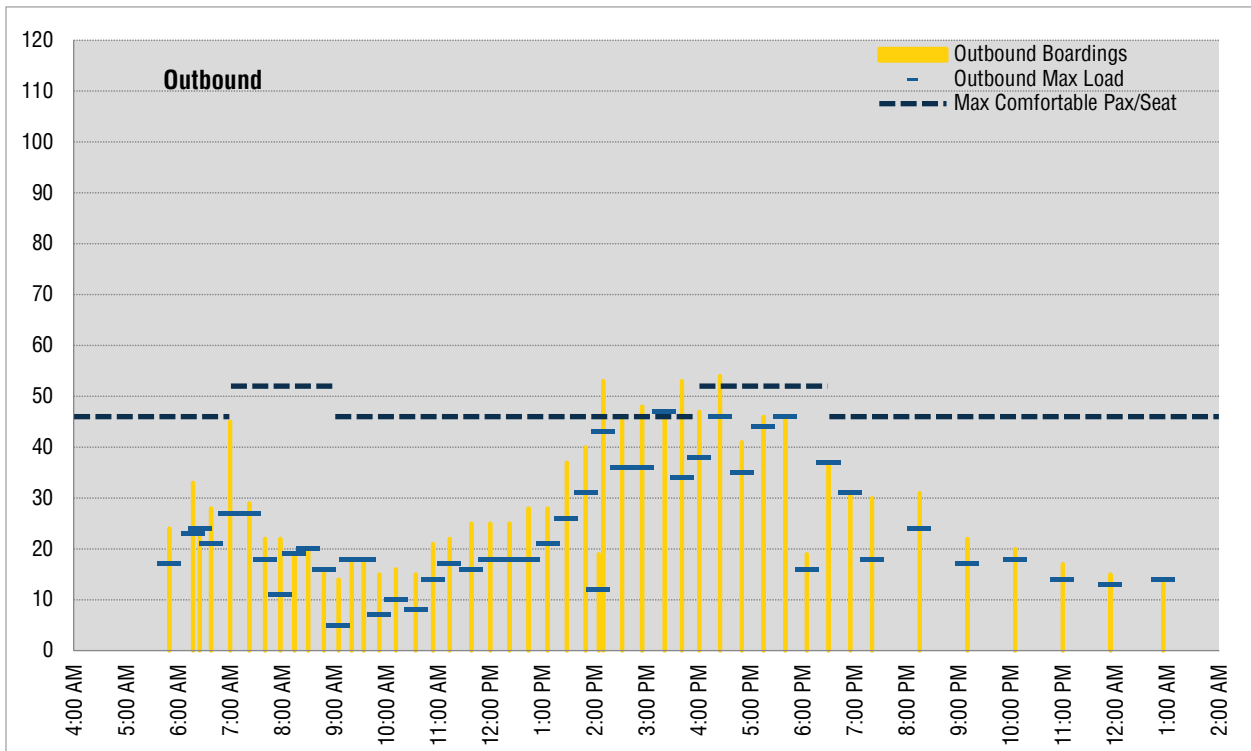


Figure 7 | Saturday Ridership by Trip: Inbound

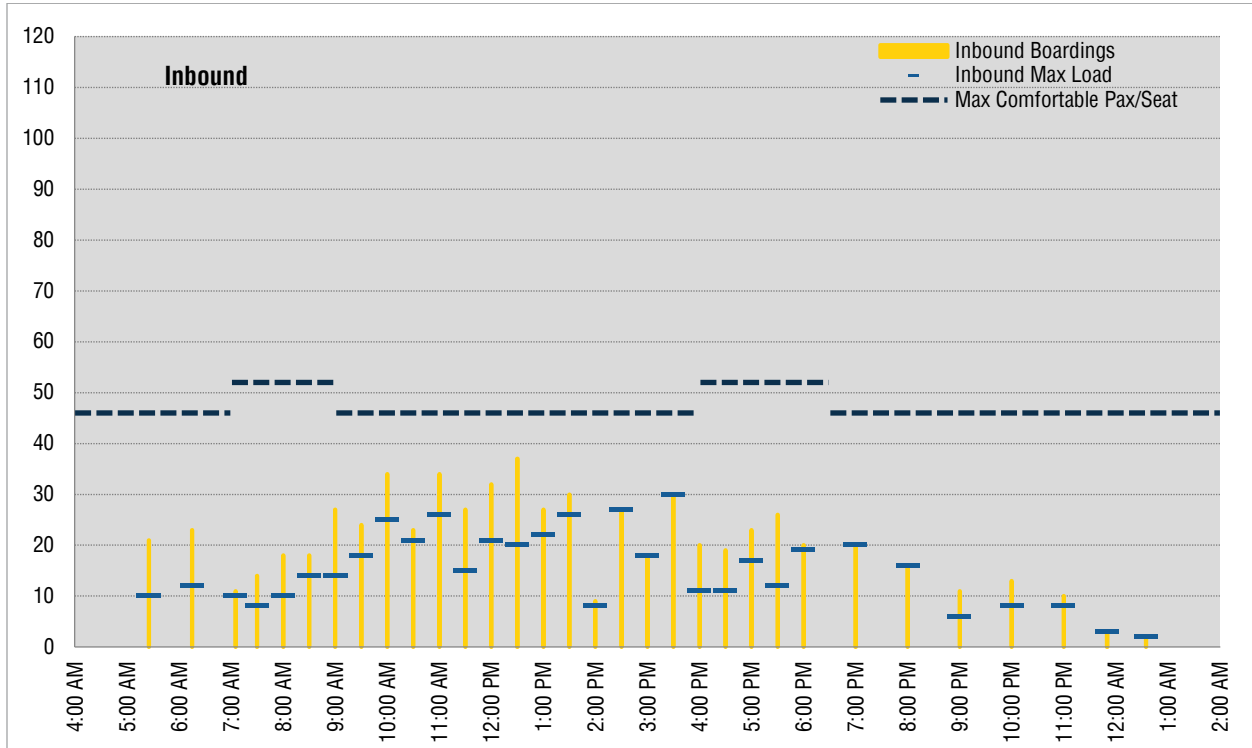


Figure 8 | Saturday Ridership by Trip: Outbound

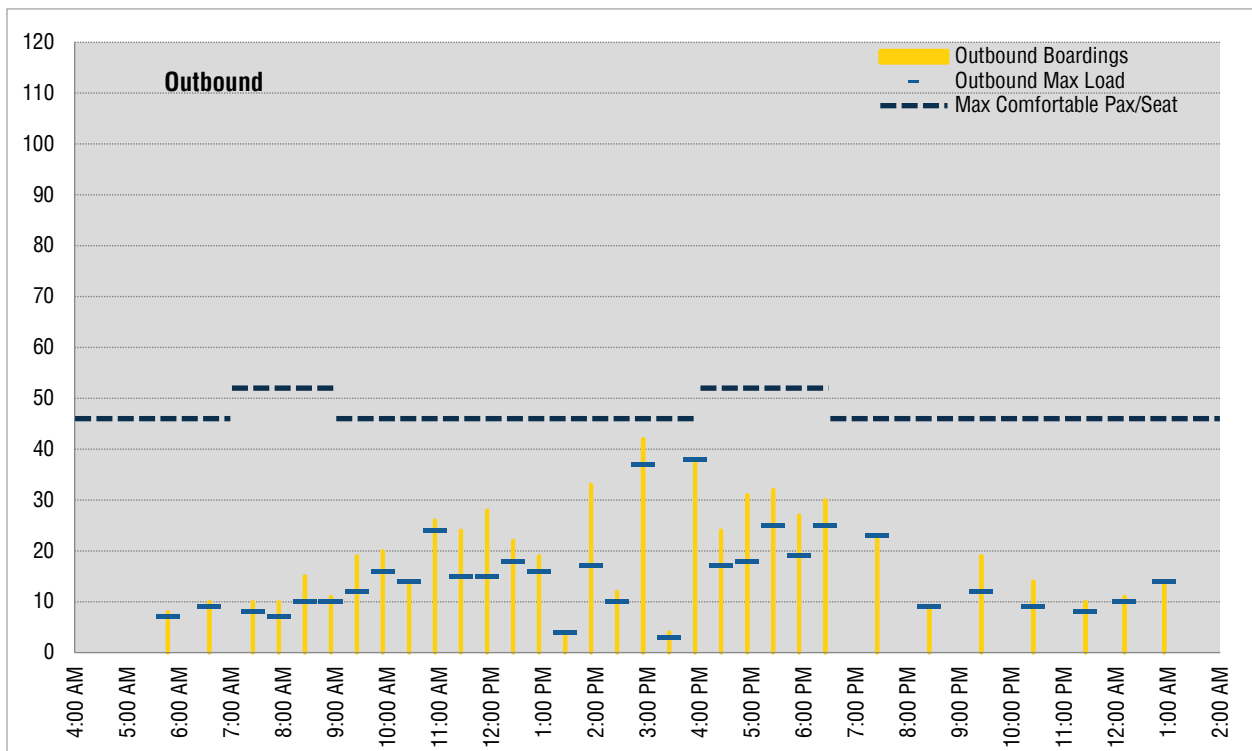


Figure 9 | Sunday Ridership by Trip: Inbound

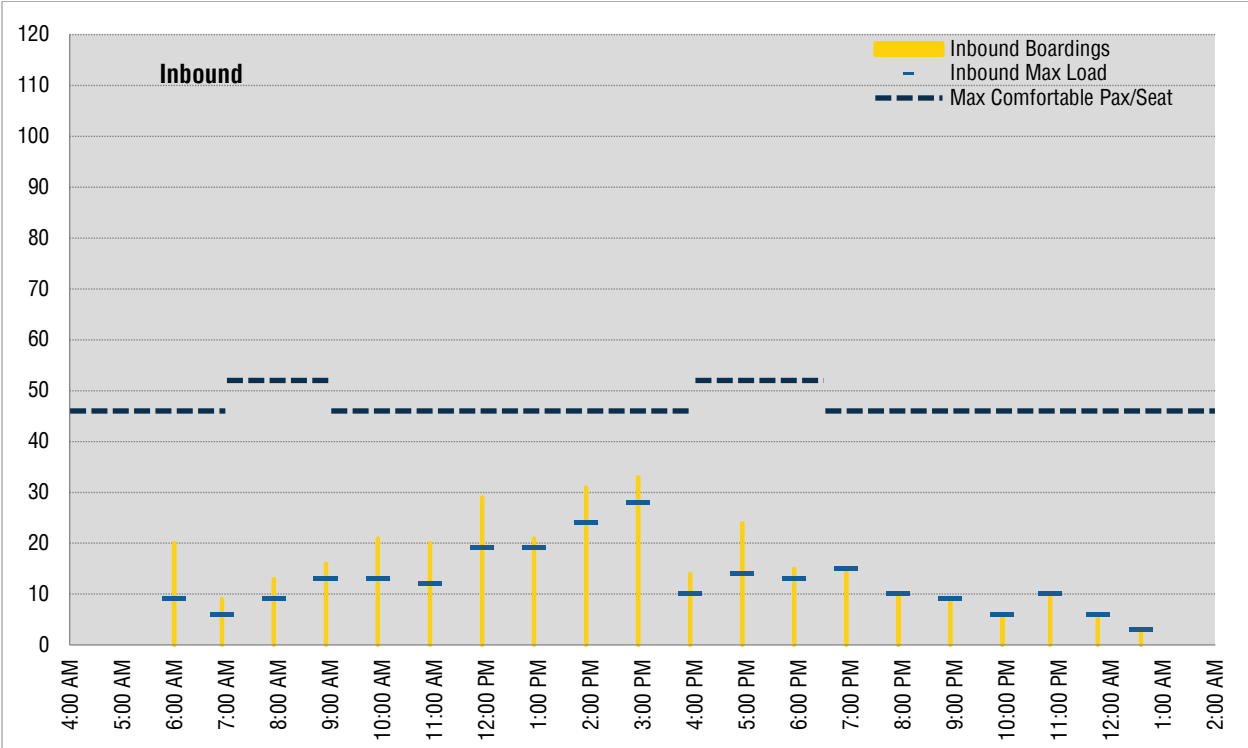
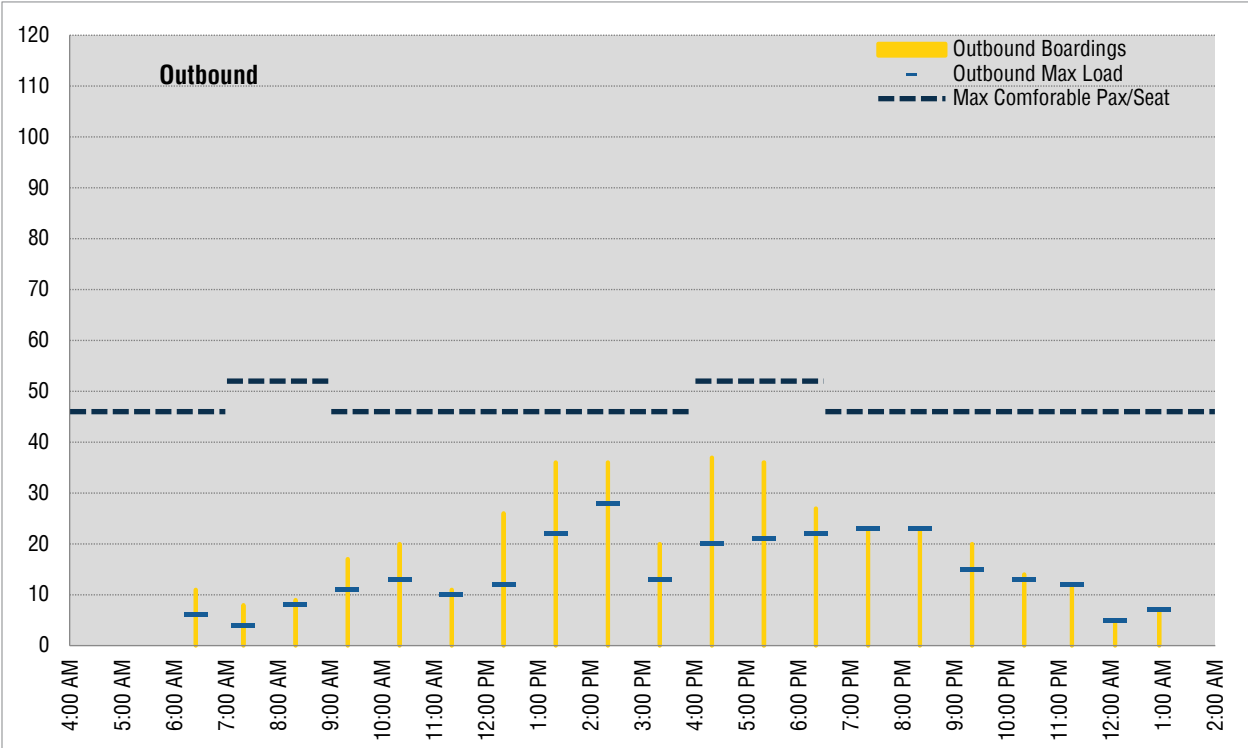


Figure 10 | Sunday Ridership by Trip: Outbound



## 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 120, 99% of passenger minutes are in comfortable conditions, which is above the target standard (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>	99%	100%	100%

## Reliability and Speed

### Reliability

Route 120's overall reliability is poor on all service days, at only 49%, 45%, and 64% respectively, and well below the minimum standard of 70% for local bus routes. On weekdays, 0.2% of trips are dropped, exacerbating on-time performance issues.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
<b>Monday-Friday</b>	50%	49%	49%	0.2%
<b>Saturday</b>	46%	40%	45%	-
<b>Sunday</b>	64%	65%	64%	-

### Running Times

Route 120's inbound running times, when buses do not loop around Orient Heights, often travel faster than scheduled, particularly in the morning and midday time periods (see Figure 11). In contrast, outbound observed running times routinely exceed scheduled running times through most of the day on weekdays, with actual running times exceeding scheduled times by up to eight minutes (see Figure 12).

Figure 11 | Scheduled & Median Travel Time by Trip: Route 120 Inbound

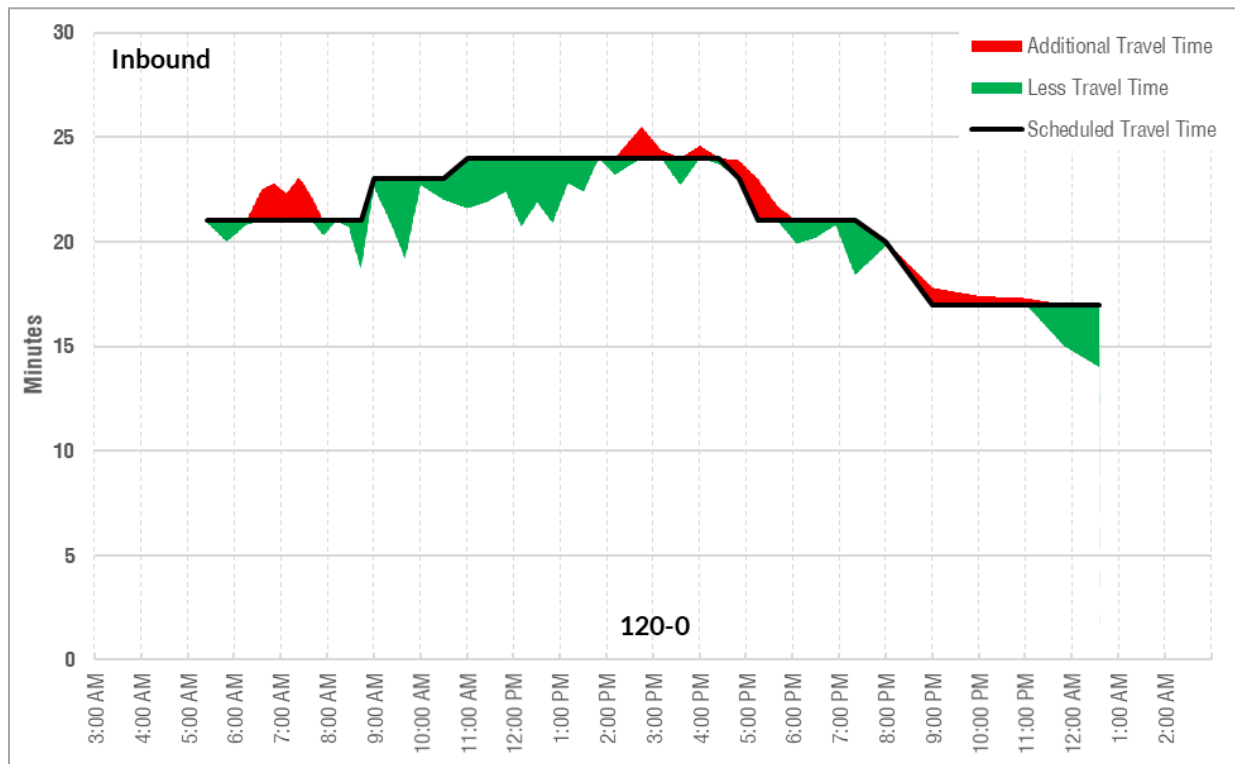
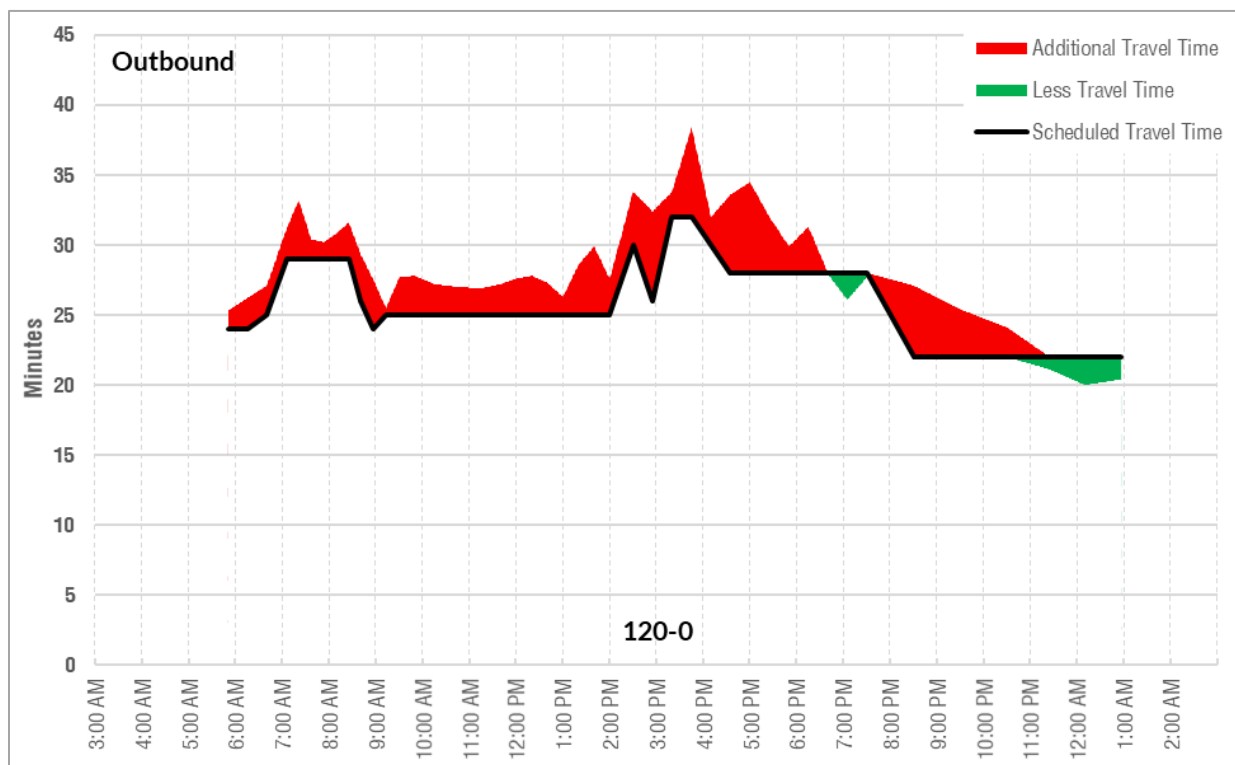


Figure 12 | Scheduled & Median Travel Time by Trip: Route 120 Outbound



## Stop Spacing

Route 120 has an average of 6.5 stops per mile, which is at the high end of the four to seven stops per mile recommended for urban areas under MBTA guidelines. There are a number of places where stops are even closer together:

- Along the Jeffries Point loop, inbound stops along Sumner Street are located as close as 375 feet apart (for example, between Lamson Street and Webster Street).
- Outbound Stops through Orient Heights are often closer than 500 feet apart. Stops 220 Waldemar Avenue and 160 Waldemar Avenue are just 285 feet apart.

Stop consolidation could make service faster and improve reliability.

## Summary

Route 120 primarily serves residents of East Boston who are both traveling around the peninsula and connecting to downtown Boston on the Blue Line. Route 120 creates connections to Maverick Station and Orient Heights Station.