

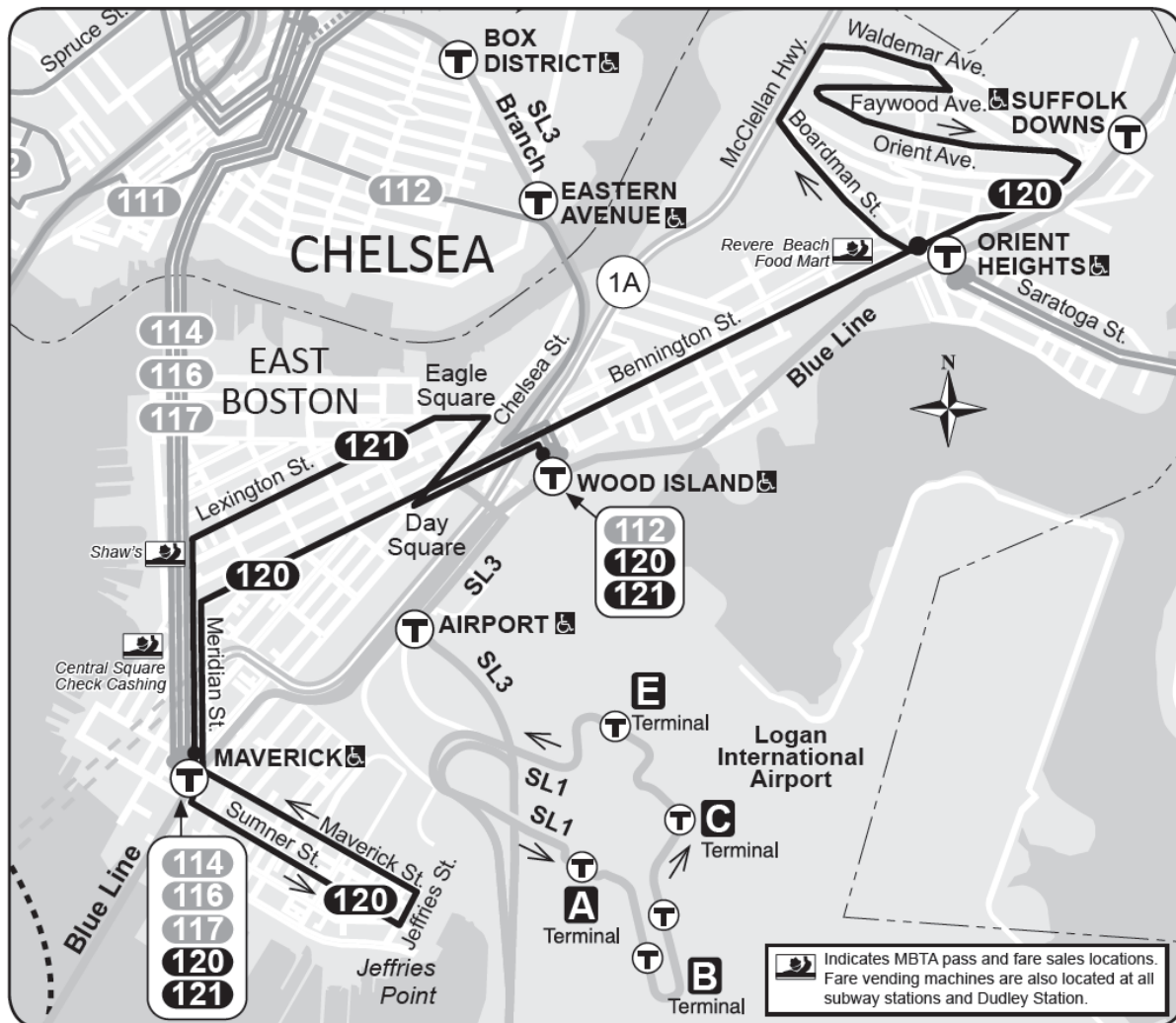
# Route 121

## Wood Island – Maverick Station

### Route Overview

Route 121 Wood Island – Maverick Station is a weekday only commuter route that provides connections between the Eagle Hill area of East Boston and the Blue Line’s Wood Island Station and Maverick Station during the AM peak, and connections between Maverick Station and Eagle Square during the PM peak. Route 121 operates peak-hour service intended to provide service to people in Eagle Hill, who otherwise have a slightly far walk to the Blue Line.

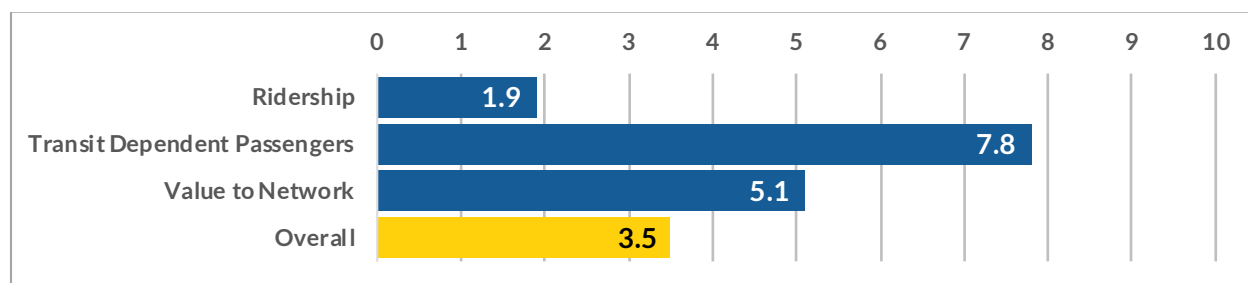
Figure 1 | Service Map



## Network Importance

Route 121 is a short route of relatively low importance with very low ridership, but serves an area with many transit dependent customers (see Figure 2). On a relative scale of 0 to 10, the route rates 1.9 in terms of ridership, 7.8 in terms of transit dependent ridership, and 5.1 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% weighting to overall ridership and a 15% weight to both other measures, is 3.5.

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



## Service Patterns

### Schedule

Route 121 operates in the AM from 6:00 AM to 8:53 AM and in the PM from and from 3:20 PM to 6:38 PM at a frequency of 24 to 30 minutes. Route 121 does not operate on weekends. Route 121 meets the span of service and service frequency standards for Commuter routes.

**Table 1 | Schedule Statistics**

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
<b>Monday-Friday</b>	<b>6:00 AM to 8:53 AM</b> <b>3:20 PM to 6:38 PM</b>			<b>23/23</b>
Sunrise	-	-	-	-
Early AM	6:00 AM to 6:59 AM	30	30	2/2
AM Peak	7:00 AM to 8:53 AM	30	30	4/4
Midday Base	-	-	-	-
Midday School	3:20 PM to 3:59 PM	25	25	2/2
PM Peak	4:00 PM to 6:29 PM	24 - 26	25	6/6
Evening	6:30 PM to 6:38 PM	1 trip	1 trip	0/1
Late Evening	-	-	-	-
Night	-	-	-	-
<b>Saturday</b>	-	-	-	-

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Sunday	-	-	-	-

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

## Service Patterns

Route 121's operates two service patterns.

- Pattern 121.0 operates exclusively during the AM peak, operating between Maverick Station and Wood Island Station via Eagle Square. Service operates along Meridian Street, Lexington Street, Chelsea Street, and Bennington Street.
- Pattern 121.2 operates exclusively during the PM peak, operating a short-turn pattern between Maverick Station and Eagle Square only and serving Meridian Street and Lexington Street. Route 121 does not serve Chelsea Street, Bennington Street and Wood Island Station during the PM peak.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
<b>INBOUND</b>				<b>14</b>	-	-
121.0	Wood Island Station	Maverick Station	Via Lexington Street, AM peak only	6	-	-
121.2	Eagle Street at Lexington Street	Maverick Station	Short-turn via Lexington Street	8	-	-
<b>OUTBOUND</b>				<b>15</b>	-	-
121.0	Maverick Station	Wood Island Station	Via Lexington Street, AM peak only	6	-	-
121.2	Maverick Station	Lexington Street at Shelby Street	Short-turn via Lexington Street	9	-	-

## Ridership

Route 121 serves an average of 446 riders per weekday. Route 121 generates more riders than half of all MBTA's Commuter Bus routes.

### Ridership by Stop

Nearly all riders travel between the Lexington Street corridor and Maverick Station. On inbound trips (to Maverick Station):

- Wood Island Station (served on AM trips only) generates 15 boardings.
- The three Bennington Street stops, between Wood Island and Eagle Square, generate very little ridership, with a total of just three daily boardings and zero alightings.

- Along Lexington Street, six stops generate 188 daily boardings and 27 daily alightings. Ridership is highest at Prescott Street (47 daily boardings), Marion Street (40 daily boardings, 7 alightings), and Meridian Street (31 daily boardings, 11 daily alightings). These stops comprise 81 percent of Route 121's total daily boardings.
- Maverick Station is the highest-ridership stop, with 190 daily alightings, 82 percent of the route's total alightings.

Outbound ridership is roughly the reverse of inbound ridership on weekdays, except there is no service to Wood Island Station.

### Ridership by Trip

Route 121 follows a typical commuter pattern, with ridership peaks in the inbound AM peak period and in the outbound PM peak period (see Figure 4):

- The first inbound trip at 6:00 AM is the second-highest ridership trip on Route 121, with 31 passengers per trip. This level of ridership may indicate a demand for an additional earlier trip before 6:00 AM.
- Ridership is highest on the 7:00 AM inbound trip with 51 boardings, but the lower maximum load indicates higher turnover than on other trips and few problems with crowding.
- The remaining AM peak inbound trips have 22 to 23 boardings.
- On average, no trips are overcrowded.

On weekday outbound trips (see Figure 5):

- Most trips during the AM Peak serve fewer than 10 passengers per trip, with the exception of the 7:15 AM outbound trip, which has a typical maximum load of 19 passengers.
- Ridership on outbound PM Peak trips is generally lower than the inbound AM Peak, with all but one trip carrying between 10 and 20 boardings. The 5:00 PM trip has 25 boardings.
- On average, no trips are overcrowded.

Figure 3 | Weekday Inbound Ridership by Stop Map

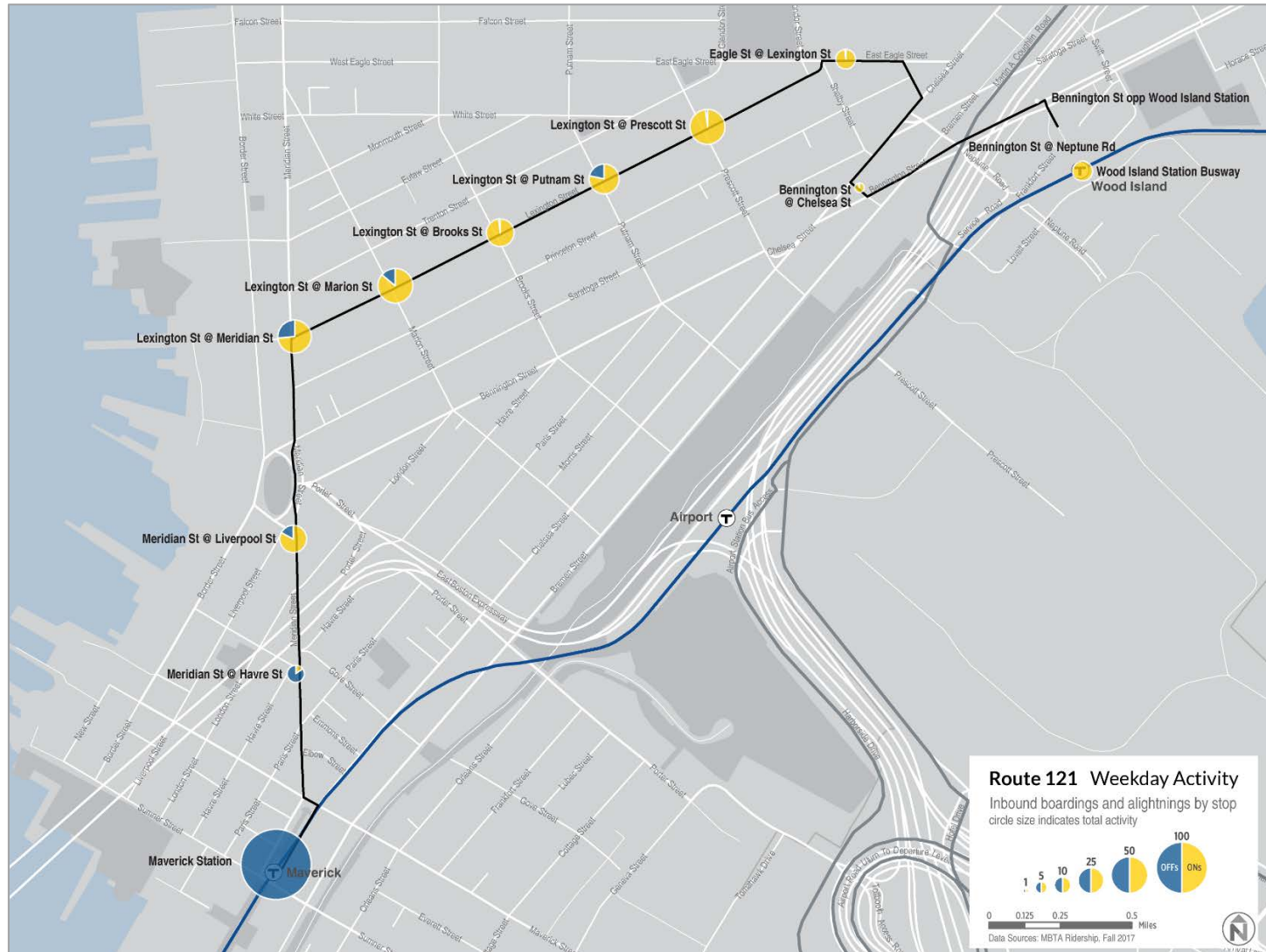


Figure 4 | Weekday Ridership by Trip: Inbound

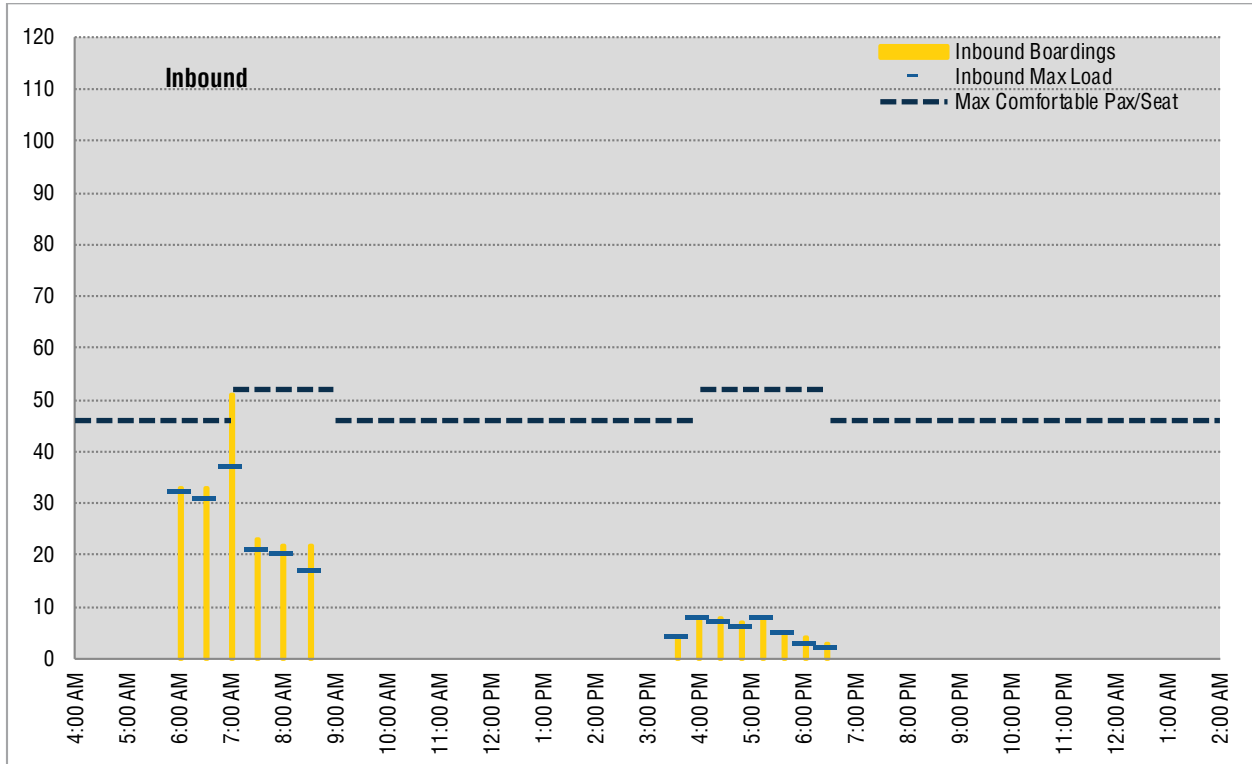
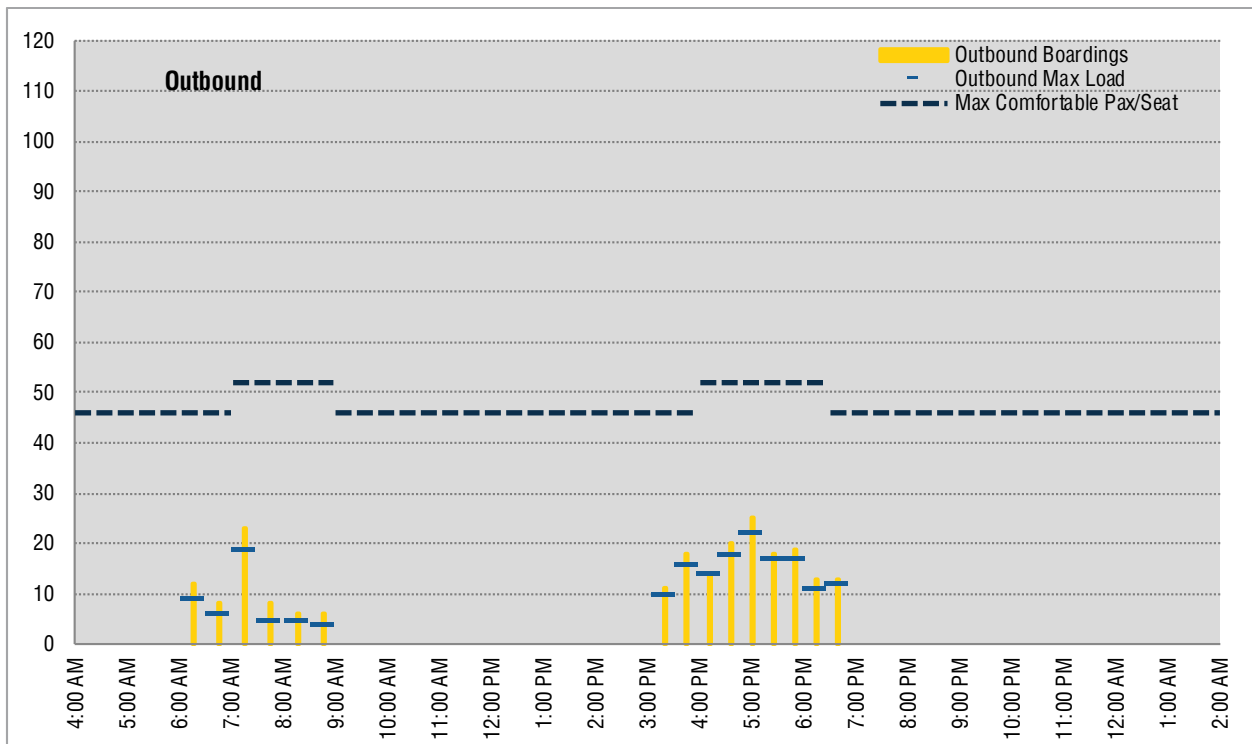


Figure 5 | Weekday Ridership by Trip: Outbound



## 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 121, 100% of passenger minutes are in comfortable conditions, which is well above the agency’s target (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>	100%	-	-

## Reliability and Speed

### Reliability

Route 121 operates with an overall reliability of 83%, which exceeds the local bus route target of 75% (see Table 4). Dropped trips are an issue for Route 121, with 0.7% of trips considered dropped.

Table 4 | Reliability

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
<b>Monday-Friday</b>	81%	86%	83%	0.7%
<b>Saturday</b>	-	-	-	-
<b>Sunday</b>	-	-	-	-

### Running Times

Route 121 operates either on-time or up to two minutes early during the AM peak in both directions (see Figure 6 through Figure 9). During the PM peak, on-time performance issues are relatively minor, with actual running times exceeding scheduled running times by up to two minutes, in both directions, between 4:30 PM and 6:30 PM.

Figure 6 | Scheduled & Median Travel Time by Trip: Service Pattern 121-0 Inbound

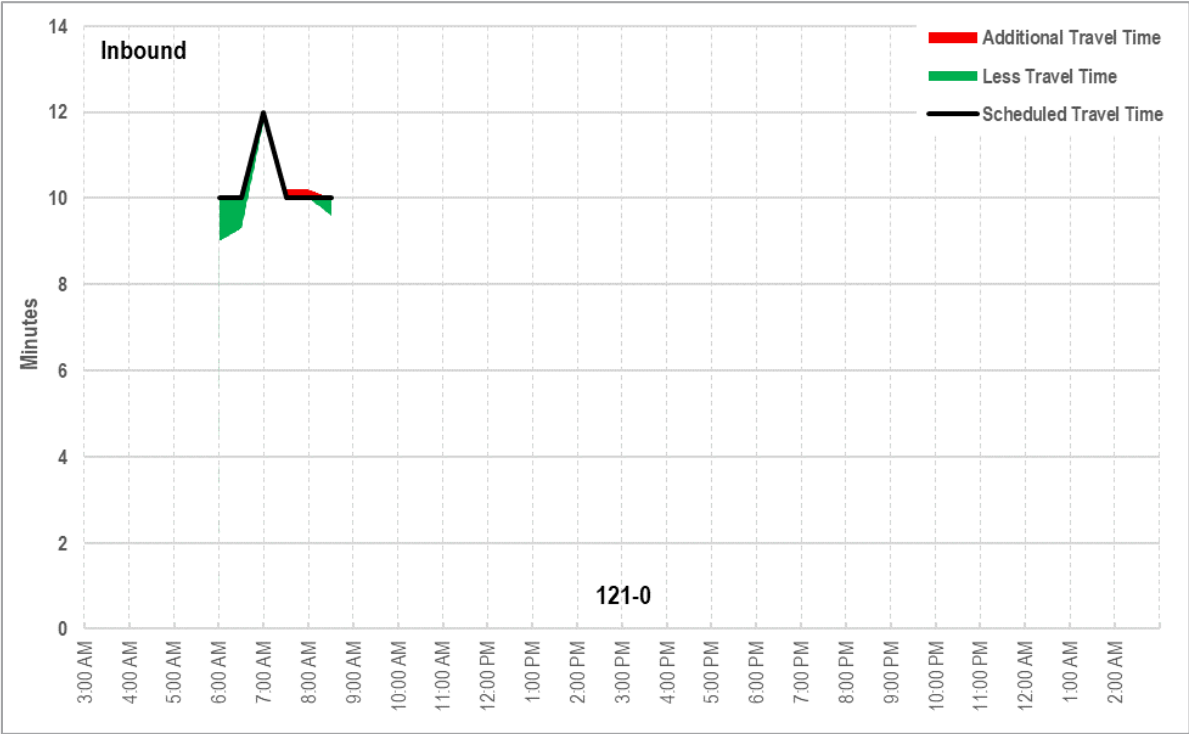


Figure 7 | Scheduled & Median Travel Time by Trip: Service Pattern 121-2 Inbound

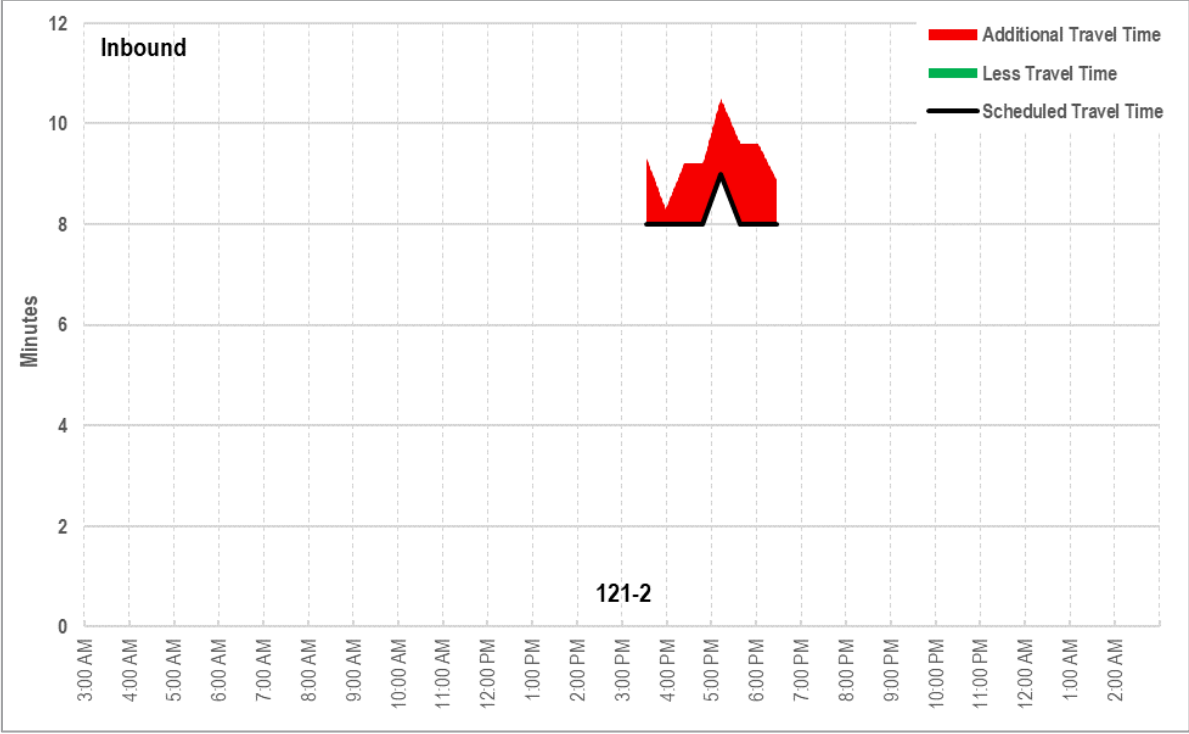




Figure 8 | Scheduled & Median Travel Time by Trip: Service Pattern 121-0 Outbound

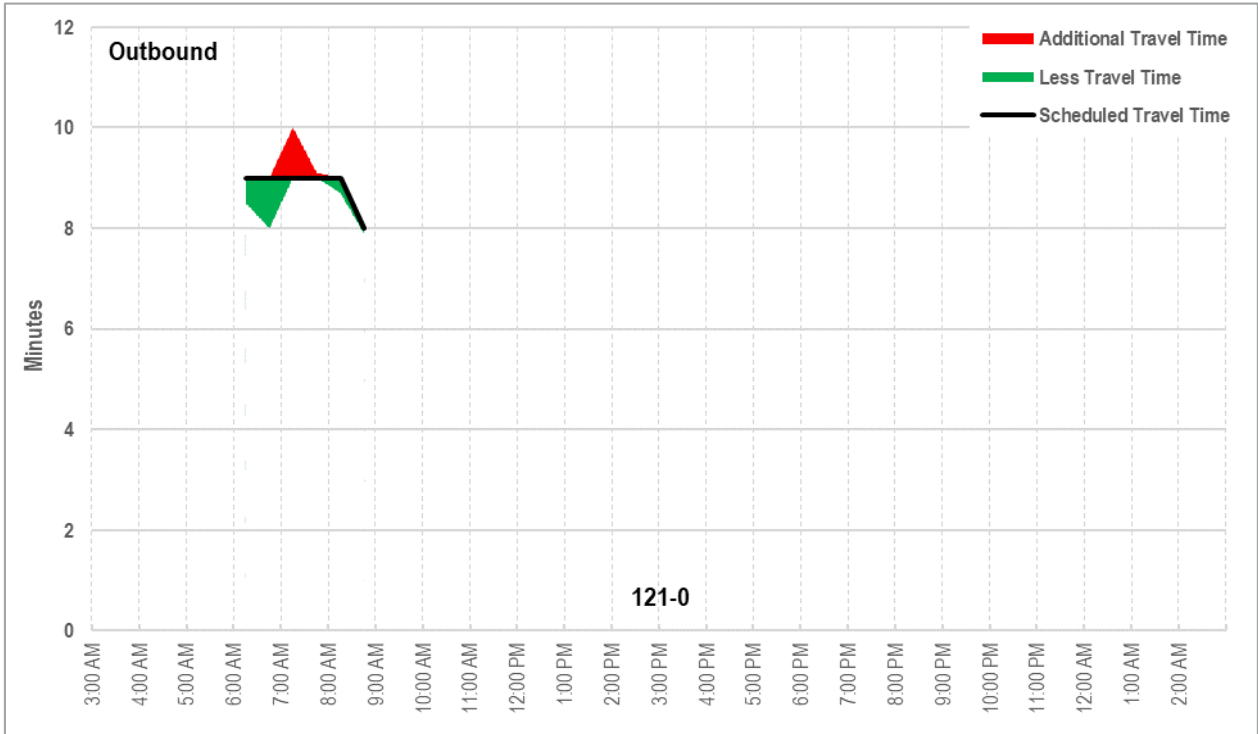
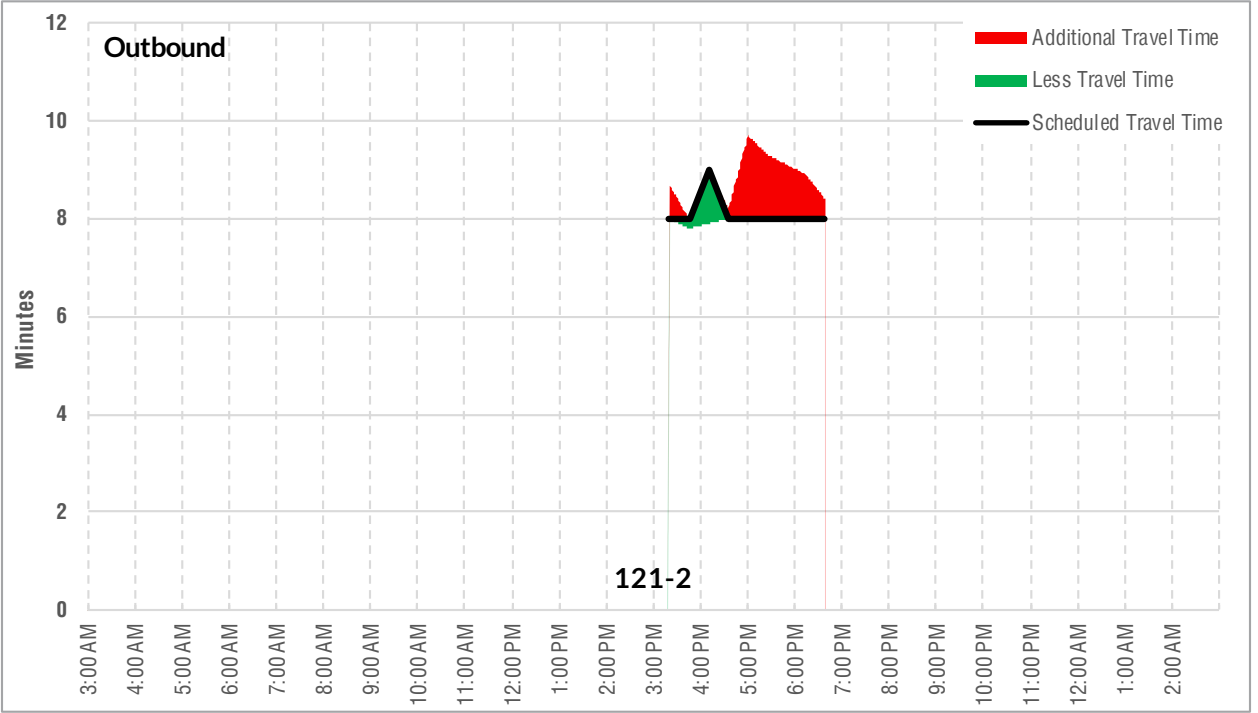


Figure 9 | Scheduled & Median Travel Time by Trip: Service Pattern 121-2 Outbound



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## Stop Spacing

Route 121 has an average of 7.7 stops per mile, which exceeds 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 five blocks served on Lexington Street, between Eagle Square and Meridian Street, one stop is located every block.
- The stops at Bennington Street & Wood Island Station and Bennington Street & Neptune Road are just 450 feet apart. In the outbound direction, the stops at Bennington & Bremen and Bennington & Neptune Road are just 475 feet apart. These stops serve very little ridership, as shown in Figure 3.

Consolidating the most closely spaced stop pairs would bring Routes 121 in line with the MBTA's stop spacing standards and improve on-time performance by reducing stop-related dwell time.

## Summary

Route 121 primarily serves commuters connecting to the Maverick Station and Wood Island Station along the Blue Line. It is a very short route (two miles) that only operates during peak periods, and runs parallel to Route 120, which runs all day. Most travel is oriented toward reaching downtown Boston in the morning and returning in the afternoon, and so ridership is generally higher at Maverick Station (closer to Downtown Boston) than Wood Island Station. The route operates in a congested traffic area and as a result has reliability issues.