

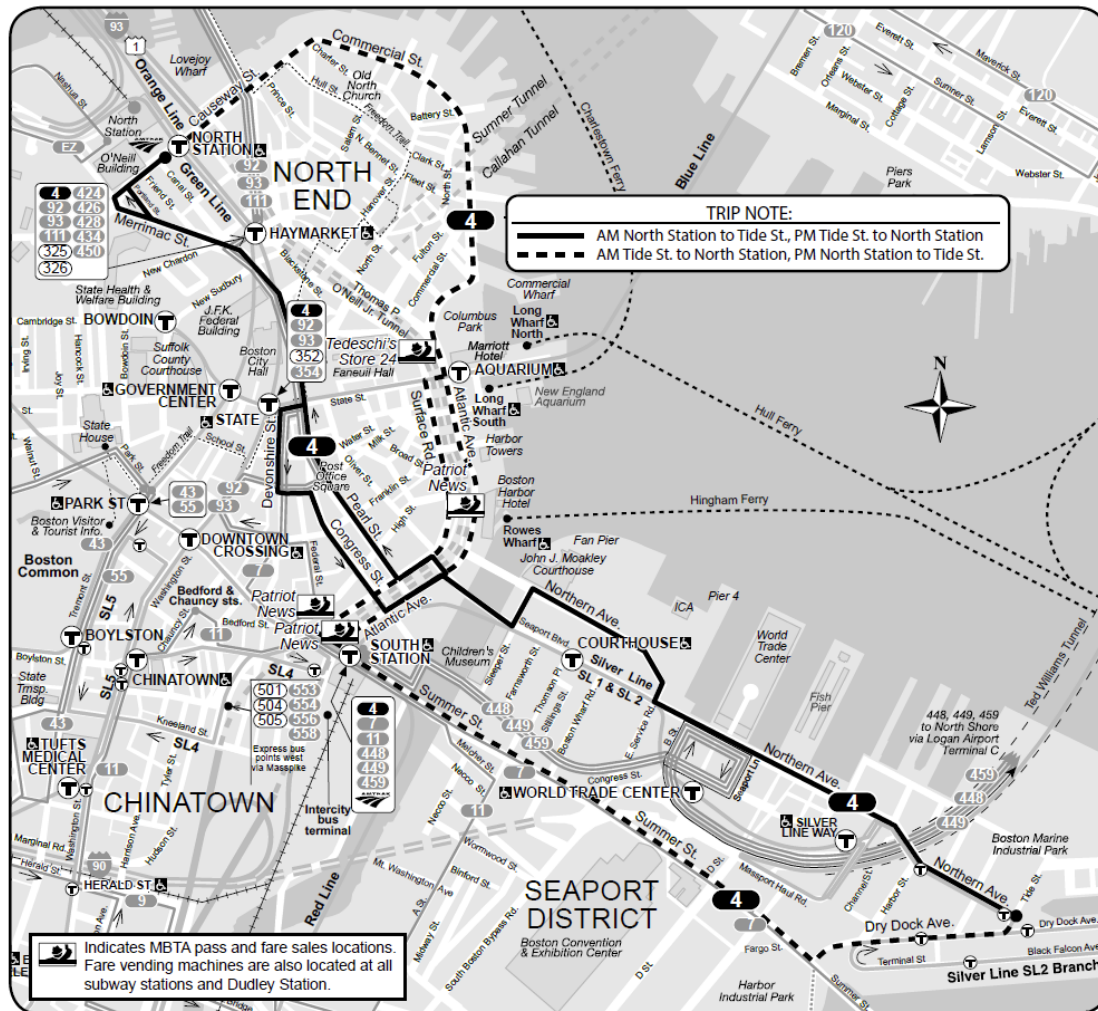
# Route 4

## North Station – Tide Street (Seaport)

### Route Overview

Route 4 North Station – Tide Street (Seaport) is a Commuter route that connects North Station to the Seaport District via Downtown Boston (see Figure 1). Route 4’s primary purpose is to provide a last mile connection between North Station and the Seaport District. The route is the only direct transit service between North and South Station, and provides a transit option along the North End waterfront – though only in one direction depending on time of day.

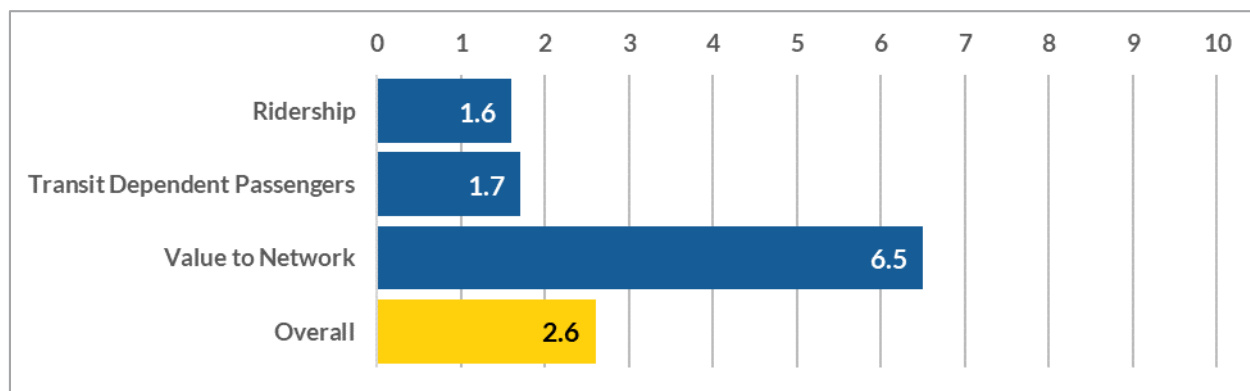
Figure 1 | Service Map



## Network Importance

Route 4 is a less important route within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 1.6 in terms of ridership, 1.7 in terms of transit dependent ridership, and 6.5 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 destination, 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 2.6.

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



## Service Patterns

### Schedule

Route 4 operates only during weekday peak hours, from 6:25 AM to 9:26 AM in the morning and from 3:30 PM to 6:52 PM in the evening, with the following frequencies (see Table 1):

- Morning trips operate every 15-20 minutes in both directions – with the exception of the 7:22 AM outbound trip, which departs 8 minutes after the previous trip.
- Evening trips operate every 25-27 minutes from about 3:30 PM to 5:00 PM and then every 18-21 minutes through the end of service.

Route 4 exceeds the MBTA Span of Service and Frequency Standards for Commuter routes.

**Table 1 | Schedule Statistics**

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
<b>Monday-Friday</b>	<b>6:25 AM to 6:52 PM</b>			<b>17/17</b>
Sunrise	-	-	-	-
Early AM	6:25 AM to 6:59 AM	15-20	18	1/3
AM Peak	7:00 AM to 8:59 AM	8-20	16	7/6
Midday Base	9:00 AM to 9:26 AM	1 trip	1 trip	1/0
Midday School	3:30 PM to 3:59 PM	25	25	1/2
PM Peak	4:00 PM to 6:29 PM	18-25	22	7/6
Evening	6:29 PM to 6:52 PM	-	-	-
Late Evening	-	-	-	-
Night	-	-	-	-
<b>Saturday</b>	-	-	-	-
<b>Sunday</b>	-	-	-	-

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

### Service Patterns

Route 4 inbound and outbound trips use two completely different routes between North Station and the Seaport District, which reverse during between morning and evening service. This pattern is primarily designed to provide the most direct route in the peak direction between North Station and the Seaport District, and the fastest route to return buses in the non-peak direction.

**Table 2 | Service Patterns**

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
<b>INBOUND</b>				<b>17</b>	-	-
4.0	North Station (Causeway Street at North Station)	Northern Avenue at Tide Street	AM only via Congress Street and Northern Avenue	9	-	-
4.1	North Station (Portland Street at Causeway Street)	Northern Avenue at Tide Street	PM only via Commercial Street, Atlantic Avenue, and Summer Street	8	-	-
<b>OUTBOUND</b>				<b>17</b>	-	-
4.0	Northern Avenue at Tide Street	Portland St at Causeway Street	AM only via Summer Street, Atlantic Avenue, and Commercial Street	9	-	-
4.1	Northern Avenue at Tide Street	North Station (Causeway Street at North Station)	PM only via Northern Avenue and Congress Street	8	-	-

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In the morning:

- Pattern 4.0 makes inbound trips from North Station to the Seaport District, primarily via Congress Street and Northern Avenue
- Pattern 4.1 makes outbound trips from the Seaport District to North Station, primarily via Summer Street, Atlantic Avenue, and Commercial Street

Service patterns reverse in the evening:

- Pattern 4.1 makes inbound trips from North Station to the Seaport District run primarily via Commercial Street, Atlantic Avenue, and Summer Street
- Pattern 4.0 makes outbound trips from the Seaport District to North Station run primarily via Northern Avenue and Congress Street

## Ridership

Route 4 has very low ridership, serving about 330 riders per weekday.

### Ridership by Stop

Most Route 4 riders use the route to travel in the peak direction from North Station to the Financial District and the Seaport District (Pattern 4.0). Ridership at stops served by the reverse peak trips is very low (Pattern 4.1). On morning inbound trips from North Station to the Seaport District:

- 116 passengers board at North Station, about 70% of total boardings
- 8 passengers board and 2 passengers alight at Haymarket Station (Congress opposite Hanover Street)
- 41 passengers board and 11 passengers alight at State Station (Devonshire at Congress Street)
- 3 passengers board and 74 passengers alight at the two stops in the Financial District, both of which are within walking distance of South Station
- 2 passengers board and 90 passengers alight at the four stops in the Seaport District

Ridership patterns on evening outbound trips from the Seaport District to North Station are the reverse of inbound morning trips, though with only two-thirds of the volume.

On morning outbound trips from the Seaport District to North Station via the North End:

- 15 passengers board and 3 passengers alight at the six stops in the Seaport District
- 8 passengers board and 2 alight at South Station (Summer Street at Dorchester Avenue)

- 5 passengers board and 3 alight at the 5 stops on Atlantic Avenue from Congress Street to State Street
- 4 passengers board and 14 alight at the 4 stops in the North End
- 11 passengers alight at North Station

Ridership patterns on evening inbound trips from North Station to the Seaport district are generally the reverse of outbound morning trips, though more passengers alight at South Station than in the Seaport District.

Figure 3 | Weekday Inbound Ridership by Stop Map



## Ridership by Trip

Route 4 peak direction trips have much higher ridership than off-peak direction trips (see Figure 4). Running inbound:

- Morning trips, which run in the peak direction, generally serve between 15 and 25 passengers. Trips with the strongest ridership occur between 8:00 AM and 9:00 AM.
- Evening trips, which run in the off-peak direction, all serve less than five passengers.

Running outbound:

- Morning trips, which run in the off-peak direction, all serve less than five passengers.
- Evening trips, which run in the peak direction, serve between 15 and 25 passengers from 4:00 PM and 5:00 PM. Trips outside of this period have lower ridership.

Figure 4 | Weekday Ridership by Trip: Inbound

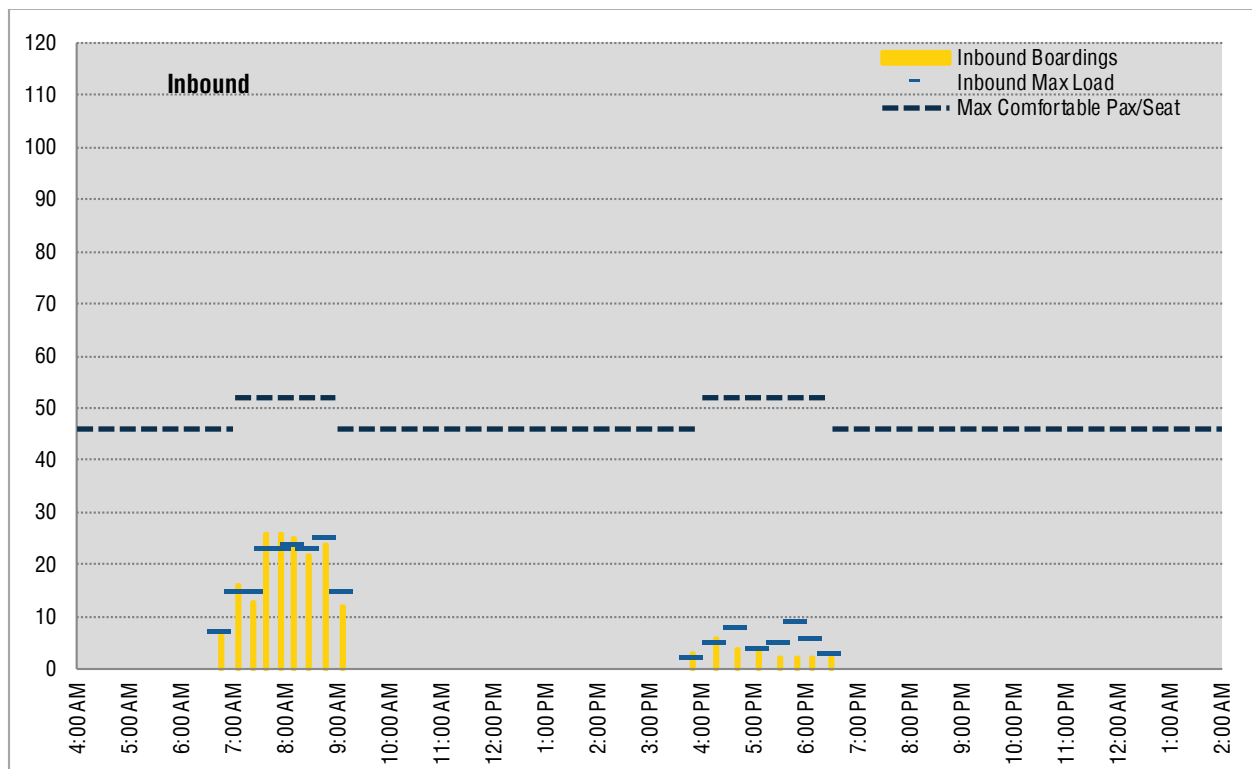
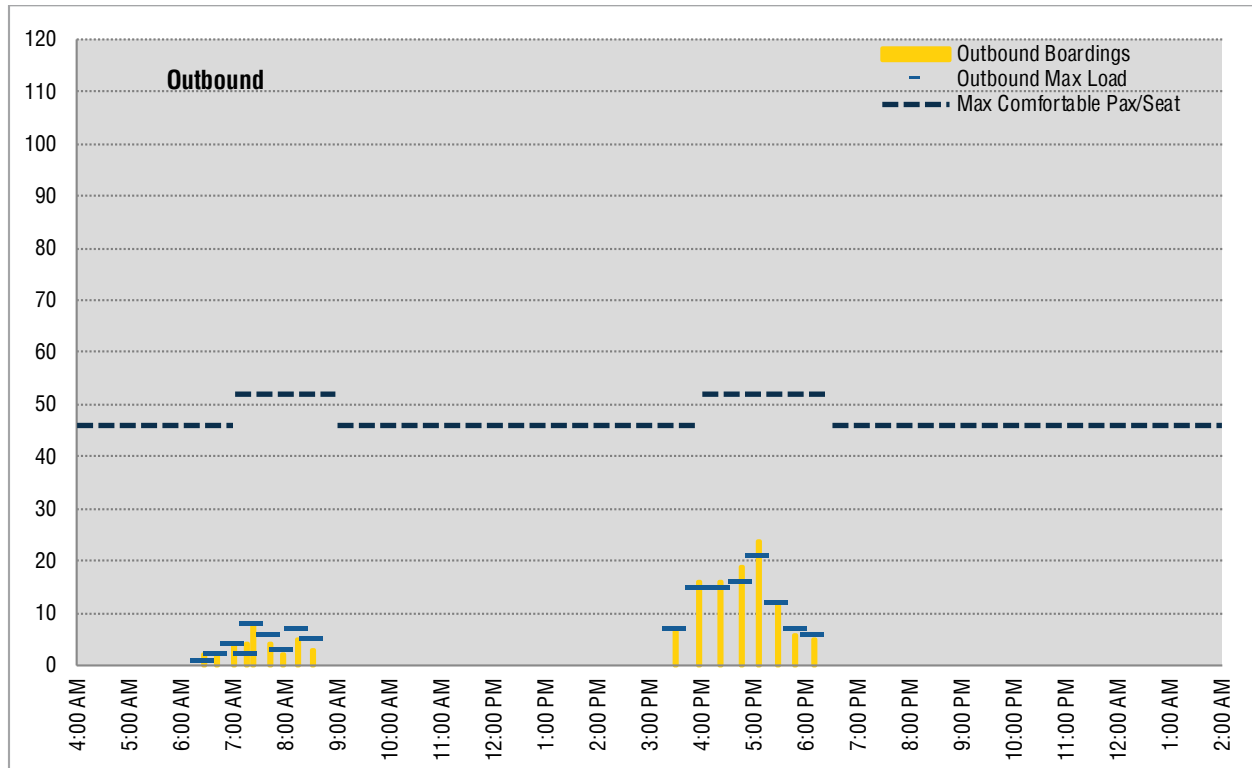


Figure 5 | Weekday Ridership by Trip: Outbound



### 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 4, 100% of passenger minutes are in comfortable conditions, which exceeds the minimum 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>	100%	-	-

## Reliability and Speed

### Reliability

Route 4 has average reliability compared to the MBTA system, with an overall weekday reliability of 63%. Only 0.3% of trips on Route 4 (0.3%) are dropped, which is acceptable under MBTA Service Standards.

Table 4 | Reliability

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

### Running Times

Route 4 trips take 1-5 minutes longer than scheduled for most morning trips (Figure 6 and Figure 7).

### Stop Spacing

Stops are spaced appropriately on Route 4.



Figure 6 | Scheduled & Median Travel Time by Trip: Route 4 Inbound

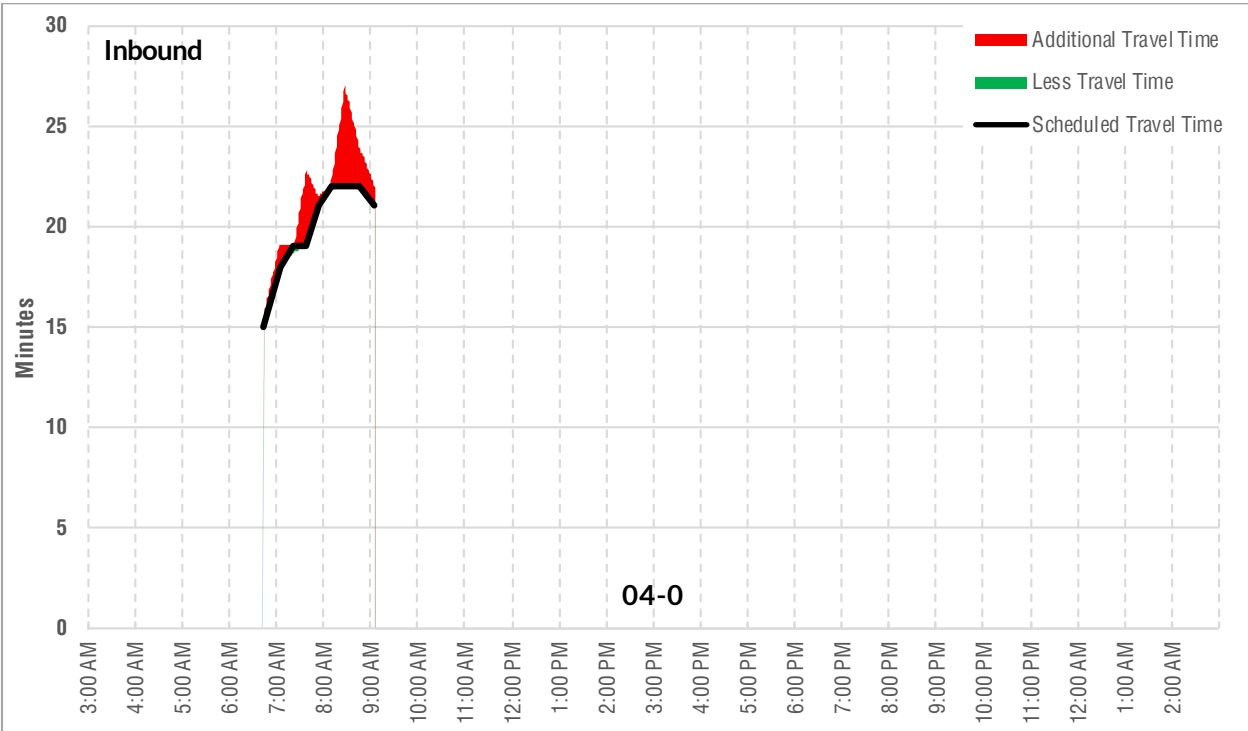
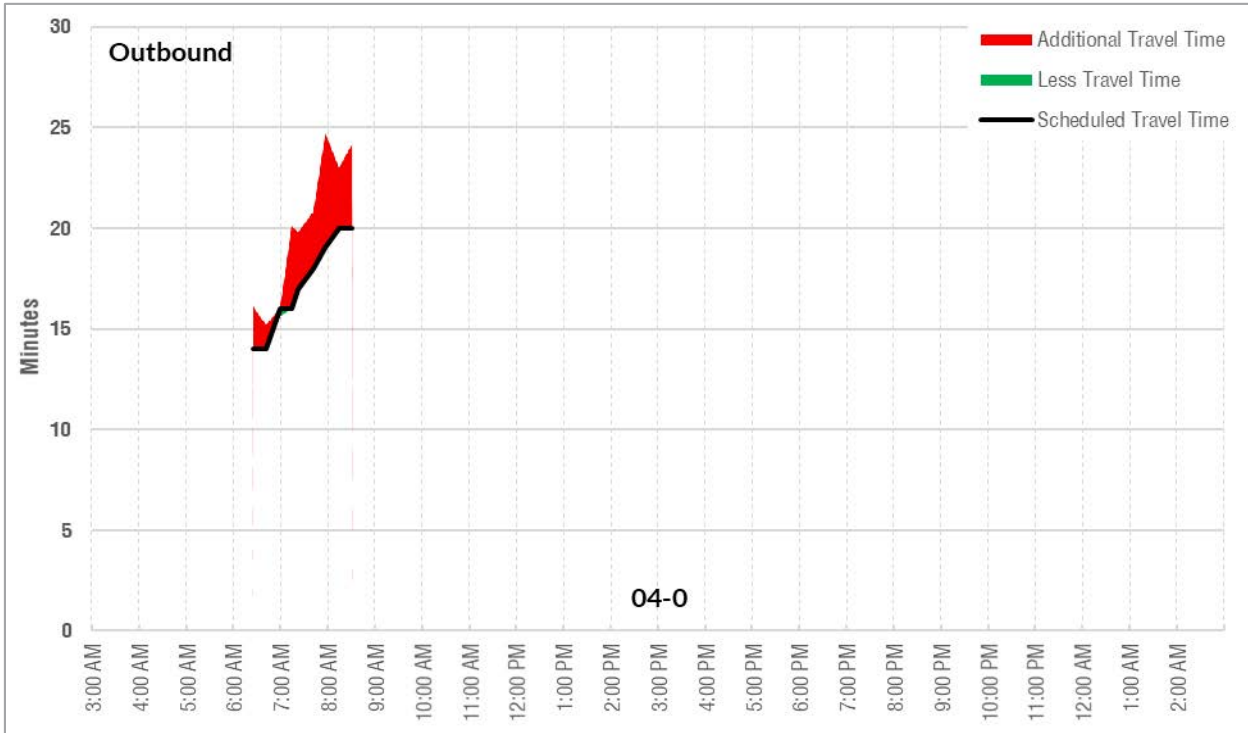


Figure 7 | Scheduled & Median Travel Time by Trip: Route 4 Outbound



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## Summary

Route 4 is a Commuter route that connects North Station to the Financial District, South Station, and the Seaport. The route uses a complicated service pattern that reverses between the morning and evening, which is likely difficult for passengers to understand. The route has moderate ridership on trips in the peak direction, but almost no riders in the off-peak direction. Ridership is likely also affected by significant congestion in Downtown Boston and the Seaport District, as well as similar services offered by the private sector. Route 4's peak direction service pattern, however, covers one of the key missing links in the Boston transit network, North Station to the Seaport District – and thus improvements to the service may strongly benefit customers.