

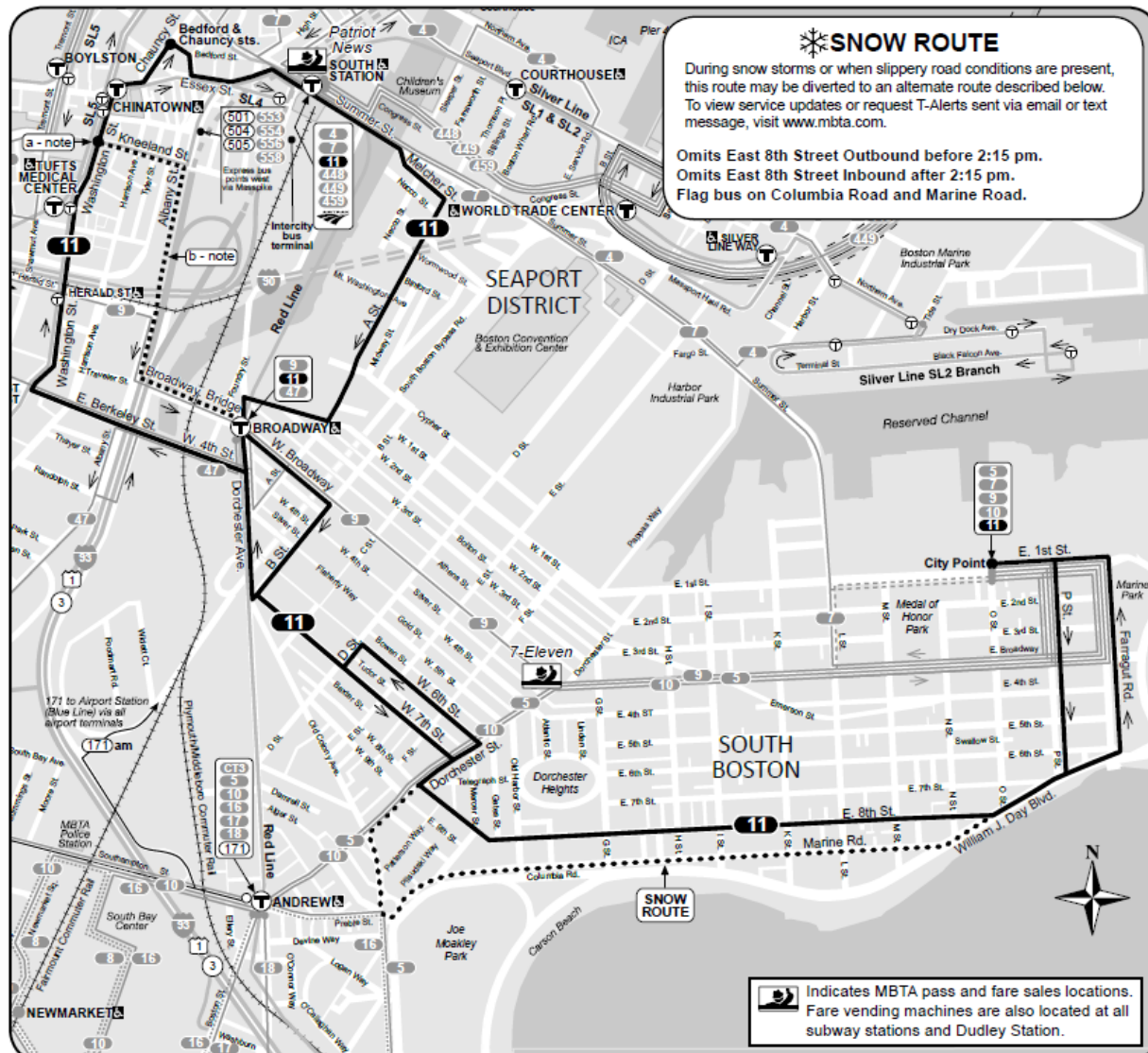
# Route 11

## City Point - Downtown

### Route Overview

Route 11 City Point - Downtown is a Local route that operates between City Point in South Boston and South Station via a long loop via the South End and Chinatown (See Figure 1). It is one of two routes that directly connect City Point to downtown Boston, the other being Route 7 City Point-Otis and Summer Streets. (Route 7 serves the Broadway corridor and provides much more direct service to downtown Boston).

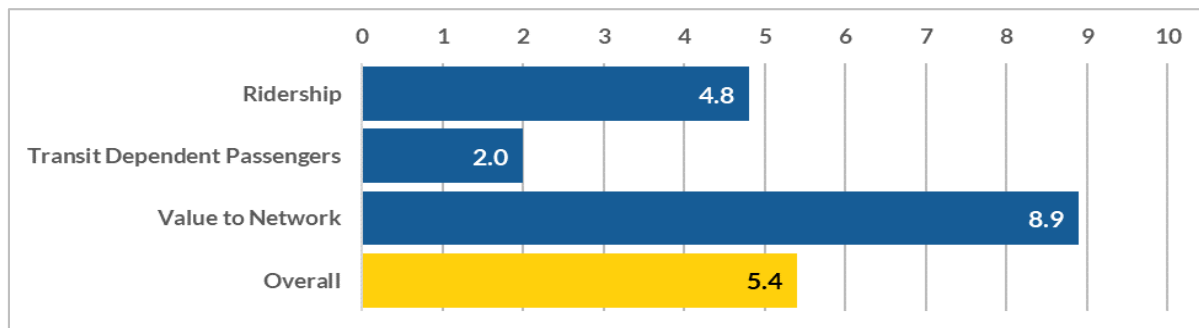
Figure 1 | Service Map



## Network Importance

Route 11 has moderate importance within the overall system (see Figure 2). On a scale of 0 to 10, the route rates 4.8 in terms of ridership, 2.0 in terms of transit dependent ridership, and 8.9 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 5.4.

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



## Service Overview

### Schedule

Route 11 provides a combination of frequent and less frequent service (see Table 1). On weekdays, Route 11 operates from 5:11 AM to 1:24 AM. Most AM peak inbound service operates every six minutes and PM peak outbound service operates every 12 minutes. Midday service generally operates every 25 minutes, and evening service operates every 30 to 60 minutes.

Route 11 operates with a similar span of service on Saturday, with trips running every 20 to 30 minutes before 8:00 PM and every 40 to 58 minutes in the evening. Sunday service is more limited, with trips every 35 to 40 minutes between 6:15 AM and 1:28 AM.

Route 11 meets the span of service and service frequency standards for Local bus routes during all service days and periods.

### Service Patterns

The majority of Route 11 trips operate Pattern 11.3, which serves the route's full alignment from City Point through the South End and Chinatown, then return to City Point via Fort Point. Two exceptions to this operation are intended to shorten the runtime to return to City Point and begin another inbound trip (see Table 2):

**Table 1 | Schedule Statistics**

| SERVICE DAY          | SPAN OF SERVICE           | FREQUENCY (RANGE) | FREQUENCY (AVERAGE) | DAILY TRIPS (INBOUND/OUTBOUND) |
|----------------------|---------------------------|-------------------|---------------------|--------------------------------|
| <b>Monday-Friday</b> | <b>5:11 AM to 1:24 AM</b> |                   |                     | <b>73/63</b>                   |
| Sunrise              | 5:11 AM to 5:59 AM        | 10 – 20           | 16                  | 3/2                            |
| Early AM             | 6:00 AM to 6:59 AM        | 10 – 10           | 10                  | 6/4                            |
| AM Peak              | 7:00 AM to 8:59 AM        | 6 – 10            | 6                   | 19/9                           |
| Midday Base          | 9:00 AM to 1:29 PM        | 10 – 30           | 25                  | 11/13                          |
| Midday School        | 1:30 PM to 3:59 PM        | 9 – 25            | 14                  | 11/9                           |
| PM Peak              | 4:00 PM to 6:29 PM        | 11 – 15           | 13                  | 12/12                          |
| Evening              | 6:30 PM to 9:59 PM        | 15 – 60           | 32                  | 8/10                           |
| Late Evening         | 10:00 PM to 11:59 PM      | 50 – 60           | 50                  | 2/2                            |
| Night                | 12:00 AM to 1:24 AM       | 50 – 60           | 53                  | 1/2                            |
| <b>Saturday</b>      | <b>5:10 AM to 1:20 AM</b> | <b>20 – 58</b>    | <b>25</b>           | <b>47/47</b>                   |
| <b>Sunday</b>        | <b>6:15 AM to 1:28 AM</b> | <b>28 – 45</b>    | <b>36</b>           | <b>32/32</b>                   |

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

**Table 2 | Service Patterns**

| PATTERN         | ORIGIN                           | DESTINATION                      | UNIQUE FEATURE                       | TRIPS PER WKD | TRIPS PER SAT | TRIPS PER SUN |
|-----------------|----------------------------------|----------------------------------|--------------------------------------|---------------|---------------|---------------|
| <b>INBOUND</b>  |                                  |                                  |                                      | <b>73</b>     | <b>47</b>     | <b>320</b>    |
| 11.2            | City Point Terminal              | Washington Street at Tufts       | Terminates at Kneeland Street        | -             | -             | 8             |
| 11.3            | City Point Terminal              | Bedford Street at Chauncy Street | Primary pattern                      | 64            | 47            | 24            |
| 11.4            | City Point Terminal              | Bedford Street at Chauncy Street | Returns to City Point as the 7.7 OB. | 9             | -             | -             |
| <b>OUTBOUND</b> |                                  |                                  |                                      | <b>63</b>     | <b>47</b>     | <b>32</b>     |
| 11.2            | Washington Street at Tufts       | City Point Terminal              | Kneeland Street to Broadway Station  | -             | -             | 8             |
| 11.3            | Bedford Street at Chauncy Street | City Point Terminal              | Primary pattern                      | 63            | 47            | 24            |

- Nine inbound AM peak trips operate via Pattern 11.4, returning to City Point as Route 7 via Summer Street from South Station rather than looping around Fort Point and South Boston. These trips alternate with Pattern 11.3 between 7:00AM and 8:36AM. This pattern saves 17 minutes in travel time.
- On Sunday mornings, eight inbound trips end and eight outbound trips start at Tufts Medical Center (Pattern 11.2), cutting off service to Chinatown. These shorter trips turn right from Washington Street onto Kneeland Street to return to Broadway Station via Albany Street and the Broadway Bridge.

## Ridership

Route 11 carries close to 3,000 passengers on weekdays, 1,100 passengers on Saturdays, and 600 on Sundays.

### Ridership by Stop

The majority of Route 11 passengers use the route to travel from South Boston to the Red Line or downtown Boston, or from the Red Line to downtown Boston. On weekdays, inbound from City Point (see Figure 3):

- The outer segment of the route between City Point and 8<sup>th</sup> Street has the lowest ridership, with a total of 134 boardings and only one alighting at six stops. This is because nearly all riders in this area are better served by Route 7 City Point-Otis and Summer Streets or by Route 10 City Point-Copley Square. Passengers who board at these stops are likely traveling to the Red Line and use Route 11 when it arrives first.
- Ridership between East 8<sup>th</sup> Street at I Street and Broadway Station is significantly higher and relatively consistent, with most stops serving between 40 and 150 boardings. There are very few alightings along this portion of the route.
- Broadway Station is the highest ridership stop on the route, with more than 180 boardings and over 650 alightings per day, representing almost 40% of all weekday inbound alightings.
- From Broadway Station, the route begins its long loop through Chinatown and downtown. The highest alighting stops are Washington Street at Tufts Medical Center (307), Washington Street at Essex Street (160), and Bedford Street at Chauncy Street (280). There are also several stops with high boarding volumes along the loop, with the highest at East Berkeley Street at Washington Street (80), Washington Street at Tufts Medical Center (90) and Washington Street at Essex Street/Chinatown Station (40). These riders continue onto outbound trips.

On weekdays, outbound from Chinatown (see Figure 4):

- 84% of all Route 11 riders, or over 800 passengers, board at three stops: Bedford Street at Chauncy Street, South Station, and Broadway Station. Outside of these three stops, no stop has more than 25 boardings a day.
- Alightings are relatively evenly dispersed throughout the rest of the route, averaging 37 riders per stop. However, stops between Columbia Road at Farragut Road and East 1<sup>st</sup> Street opposite O Street serve much lower volumes of passengers, with six stops serving fewer than two boardings and 40 alightings.

Figure 3 | Weekday Inbound Ridership by Stop Map

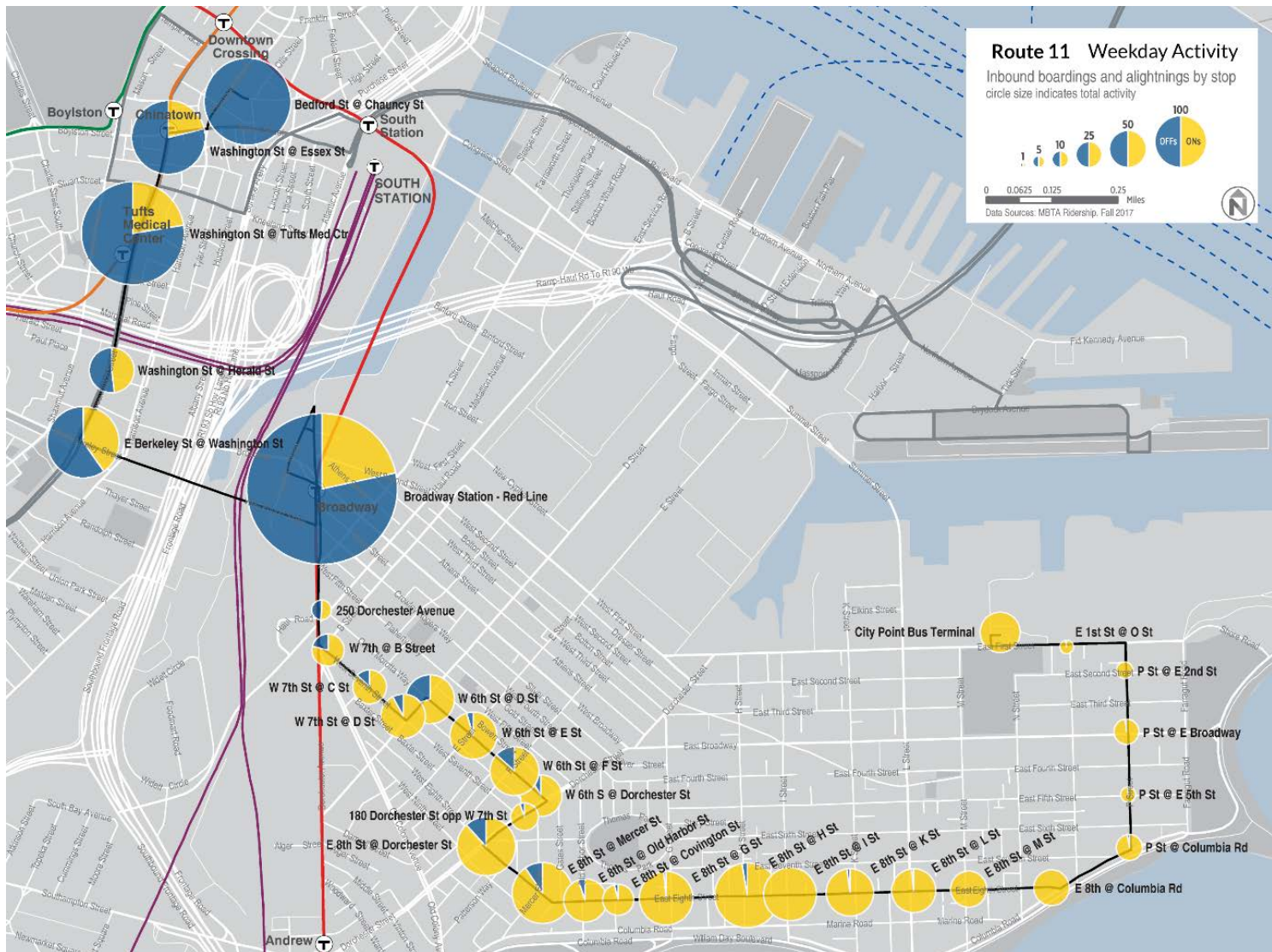
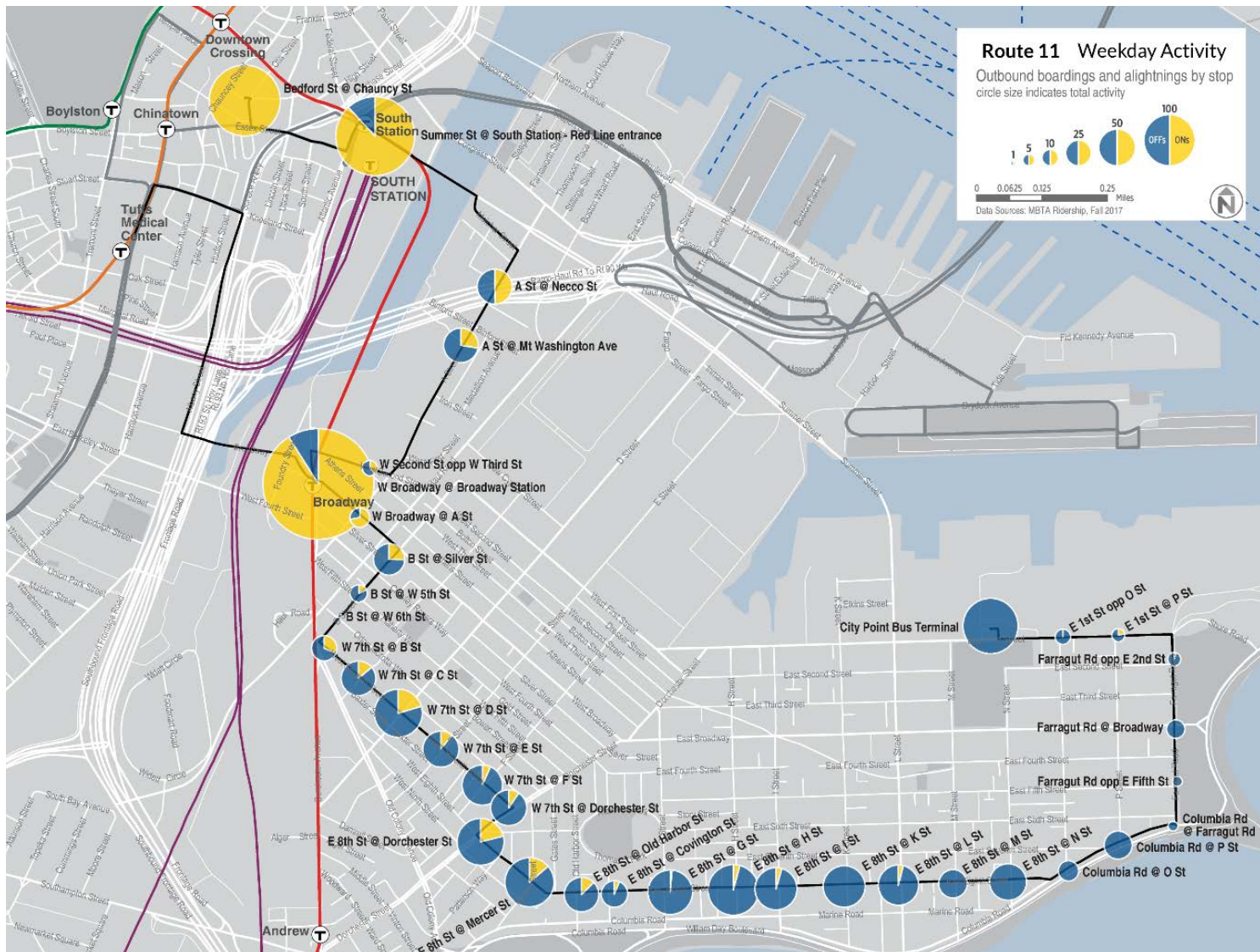


Figure 4 | Weekday Outbound Ridership by Stop Map



Weekend ridership patterns on Route 11 are similar to weekday patterns, with fewer but similarly distributed boardings and alightings, with the exception being a smaller percentage of riders alighting at Broadway Station.

### Ridership by Trip

On weekdays, Route 11 weekday ridership generally follows typical commute patterns, with high ridership inbound during the AM peak and outbound during the PM peak (see Figure 5 and Figure 6). Ridership per trip is significantly lower on midday and evening trips.

Recorded ridership per trip is significantly higher on inbound trips than outbound trips. Inbound trips have an average of 27 boardings per trip, while outbound trips have an average of 16 boardings per trip. This is partially due to the looped alignment of the route, as nearly all riders who board at Tufts Medical Center and Chinatown continue on-board to outbound trips. This also results in many outbound trips having maximum passenger loads that exceed total boardings, as most outbound trips begin with passengers onboard.

In more detail:

- During the AM peak inbound, most trips carry more than 40 passengers. However, because of the large amount of turnover at Broadway Station, maximum loads are significantly lower. During the PM peak outbound, most trips carry between 20 and 30 passengers, and two trips (5:06 PM and 5:30 PM) have more than 40 riders.
- During the midday, inbound trips carry 20 to 30 passengers, and outbound trips carry 10 to 20 passengers.
- In the evening, outbound ridership per trip declines from 20 to 30 passengers per trip initially to 10 at around 10:00 PM. Inbound ridership declines to 10 passengers per trip even earlier, around 7:00 PM.
- No trip exceeds the maximum load service standard, although AM inbound trips from City Point often have standing loads by the time they reach Broadway Station. PM outbound trips do not have any crowding problems.

On Saturdays, inbound ridership is very low before 6:00 AM, with fewer than five passengers per trip (see Figure 7 and Figure 8). It then increases from approximately 15 passengers per trip at 6:00 AM to 25 passengers per trip just after 9:00 AM. Ridership remains between 15 and 25 passengers until around 5:30 PM, when it tapers off to 10 passengers per trip. At 8:00 PM, ridership drops again to between five and 10 passengers per trip and stays at that level until the end of service except for the last trip, which has only one passenger.

Saturday outbound service also has very low ridership in the morning, with between six and 10 passengers per trip until noon. Ridership per trip remains low through the rest of the service day, serving between 10 and 20 riders per trip from noon to 11:00 PM. Ridership peaks at 5:00 PM with 17 passengers per trip.

Figure 5 | Weekday Ridership by Trip: Inbound

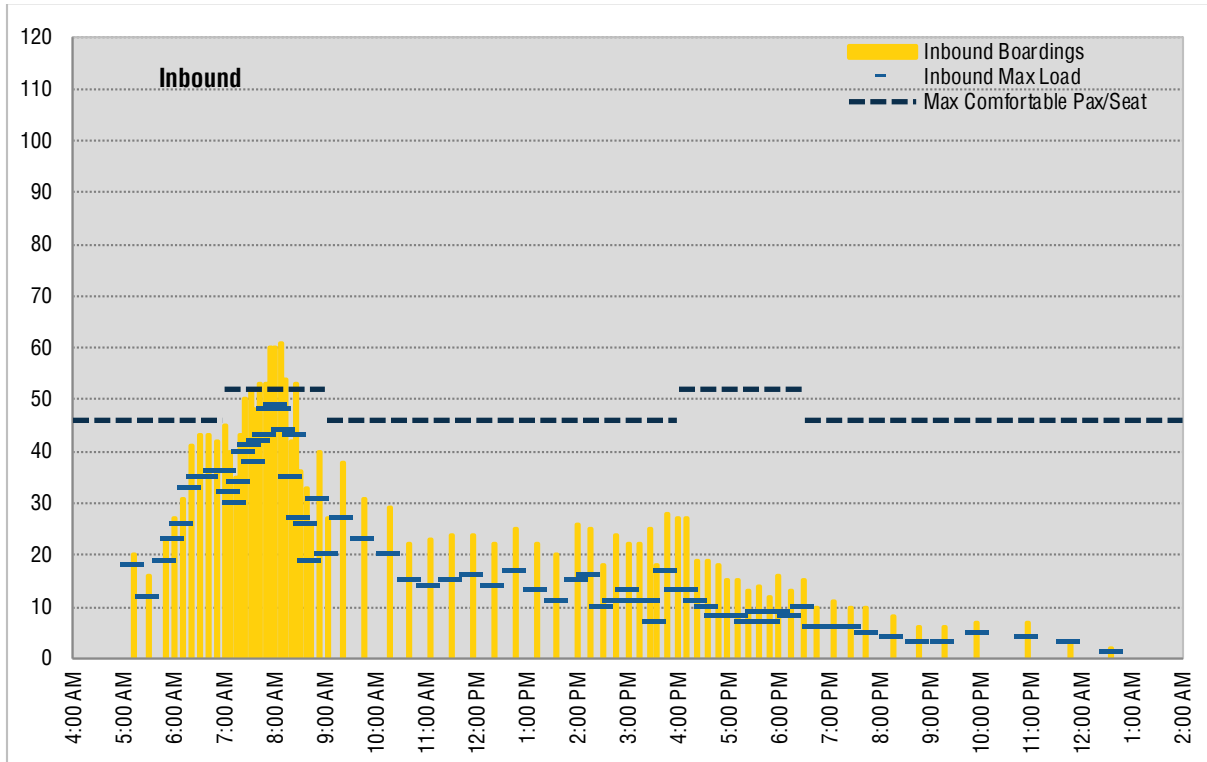


Figure 6 | Weekday Ridership by Trip: Outbound

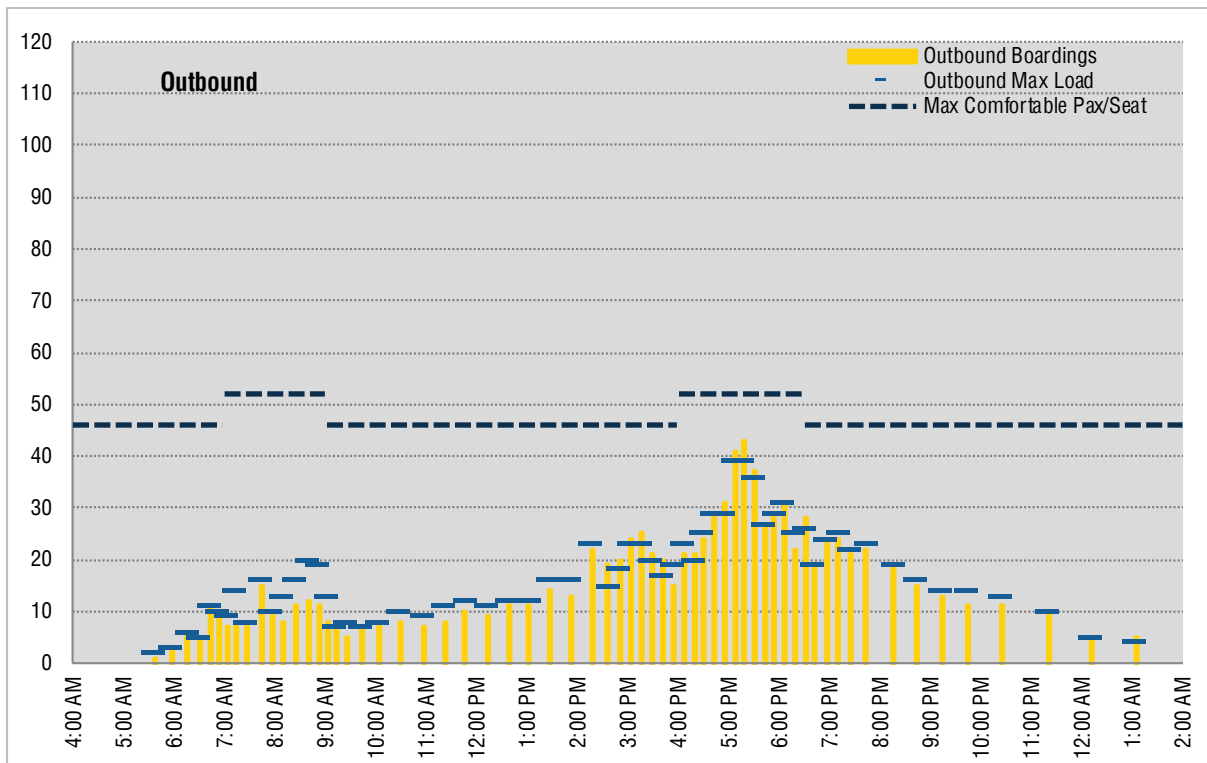




Figure 7 | Saturday Ridership by Trip: Inbound

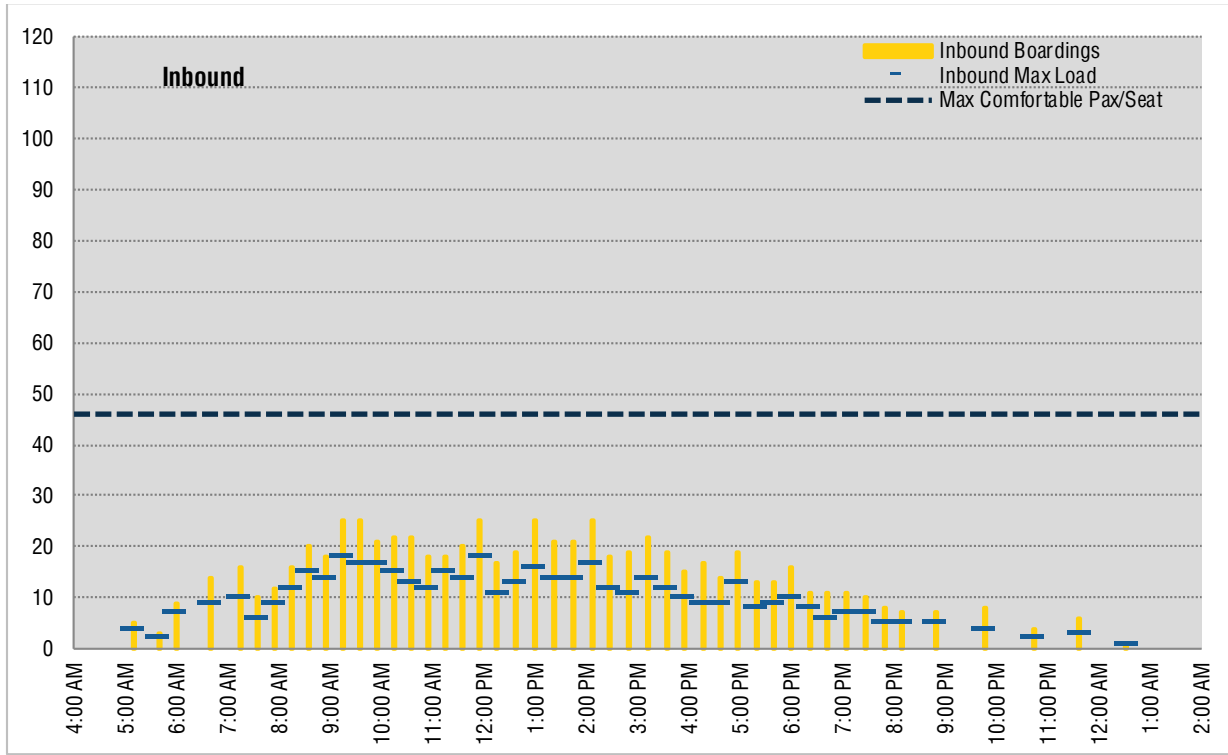
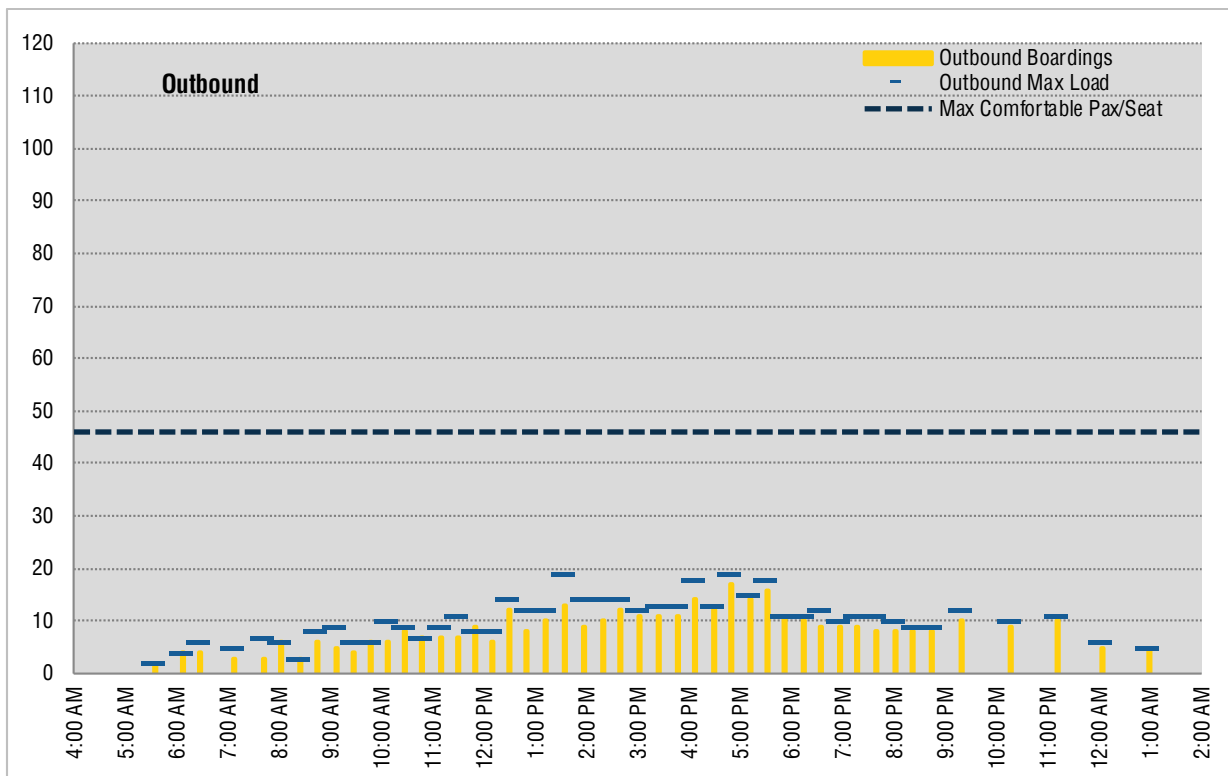


Figure 8 | Saturday Ridership per Trip: Outbound



Sunday service follows similar patterns (see Figure 9 and Figure 10). Because less service is provided (every 30 minutes versus approximately every 20 minutes on Saturdays), ridership by trip is lower, but not significantly so.

Figure 9 | Sunday Ridership by Trip: Inbound

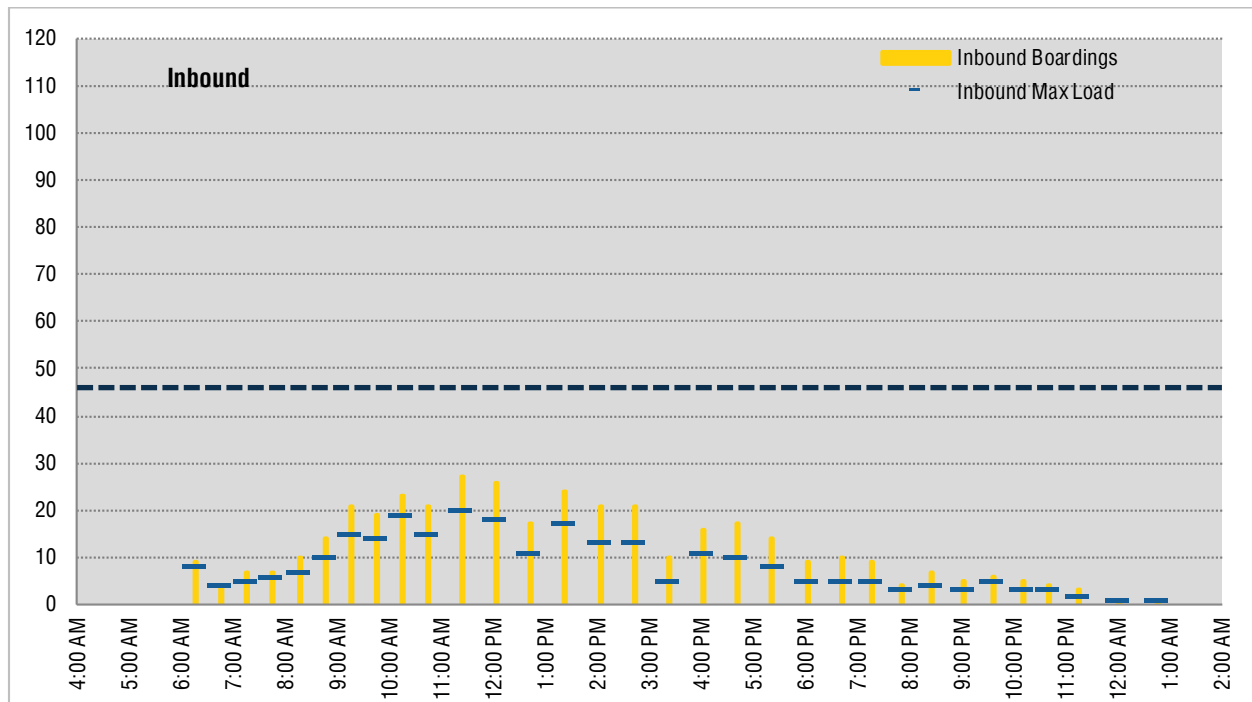
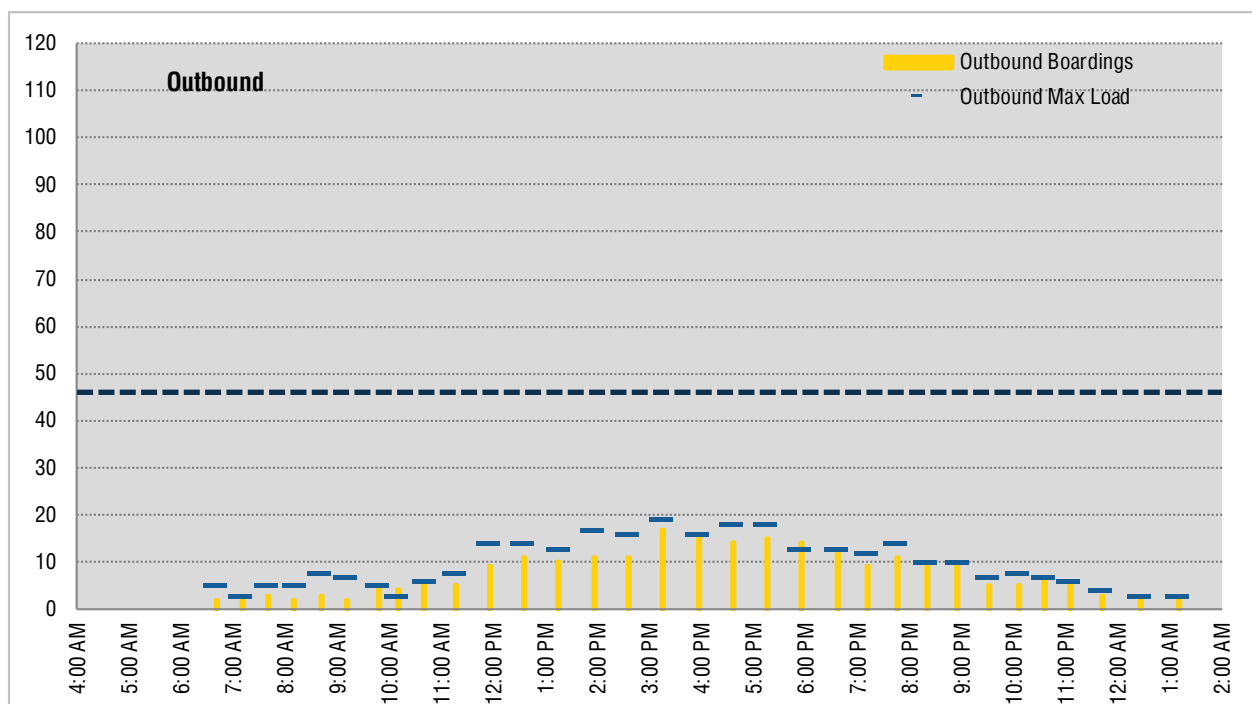


Figure 10 | Sunday Ridership by Trip: Outbound



## 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 weekdays, 92% of passenger minutes on Route 11 are in comfortable conditions. This meets the minimum standard, but below the target (see Table 3). On Saturdays and Sundays, 100% of passenger minutes are spent in comfortable conditions.

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>           | 92.3%    | 100%      | 100%    |

## Reliability and Speed

### Reliability

Route 11 provides relatively reliable service compared to other Local MBTA routes, especially on weekdays (see Table 4). On weekdays, 75% of trips depart on time and 87% of trips arrive on time. On weekends, Route 11 is less reliable, with 68% of Saturday trips completed on time and 64% of Sunday trips completed on time. Dropped trips are a problem, with 1.4% of trips not operated in Fall 2017.

Table 4 | Reliability

| SERVICE DAY          | ORIGIN/MID-ROUTE ON-TIME PERFORMANCE | DESTINATION ON-TIME PERFORMANCE | OVERALL RELIABILITY | DROPPED TRIPS |
|----------------------|--------------------------------------|---------------------------------|---------------------|---------------|
| <b>Monday-Friday</b> | 75%                                  | 87%                             | 77%                 | 1.4%          |
| <b>Saturday</b>      | 70%                                  | 68%                             | 70%                 | -             |
| <b>Sunday</b>        | 70%                                  | 64%                             | 69%                 | -             |

Route 11 weekday service experiences moderate and sometimes significant differences between scheduled and actual running times, which negatively impact on-time performance (see Figure 11 and Figure 12). With the exception of between 9:00 AM and 10:00 AM and between 7:00 PM and 8:00 PM, actual inbound running times are generally five minutes longer than scheduled times throughout the day. During the morning peak period, where inbound frequencies and ridership is highest, trips run an average of more

than 10 minutes longer than scheduled. Outbound trips run even longer than scheduled, approximately five to seven minutes longer through most of the day and up to 15 minutes longer during the PM peak. Since the completion of this document, the MBTA has adjusted Route 11 schedules to better reflect actual running times.

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

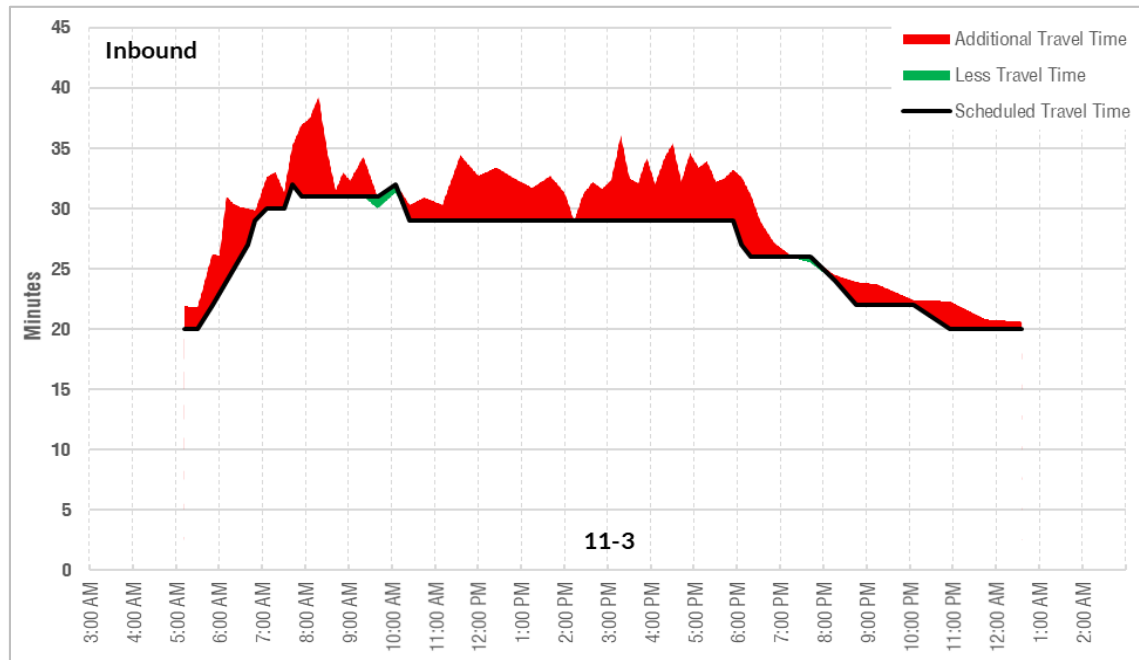
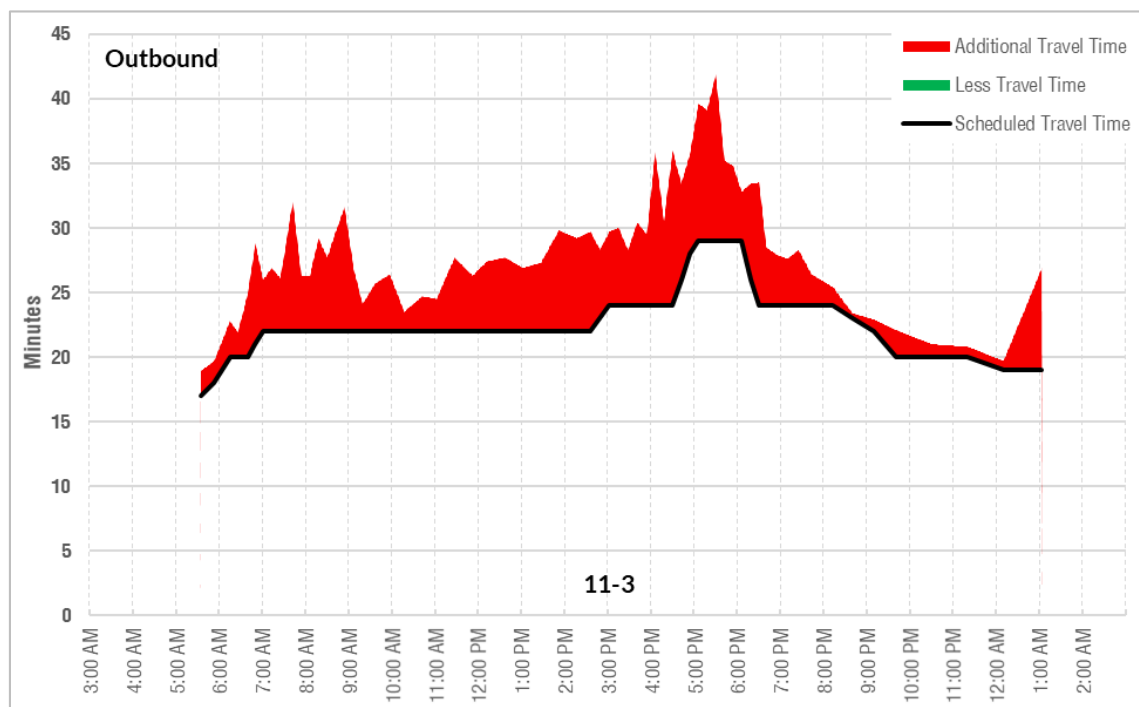


Figure 12 | Scheduled & Median Travel Time by Trip: Route 11 Outbound



## Stop Spacing

Excluding the segment between Broadway Station and Berkeley Street on the other side of West 4<sup>th</sup> Street Bridge, Route 11 has stops spaced an average of 630 feet apart. Several stops along 8<sup>th</sup> Street are less than 500 feet apart, and some are as close as 430 feet. This stop spacing is higher than the MBTA's standard and slows down service at the beginning and end of the route, particularly for those on the east side of South Boston with alternative ways to access the Red Line, including Routes 7 and 9.

## Summary

Route 11 provides connections between South Boston's 8<sup>th</sup> Street corridor and downtown Boston. Its major weaknesses are related to its long loop alignment through Chinatown and downtown Boston, which is slow and indirect and creates ridership imbalances (outbound ridership is equal to just half of inbound ridership). While some of this is due to the fact that riders board at the end of the inbound trip (for example, at Tufts Medical Center) intending to continue traveling on the outbound trip, it also appears that outbound riders may use alternative routes to return to South Boston. Alternatives include Route 9 City Point-Copley Square, which departs from Broadway Station, and Route 7 City Point-Downtown, which departs from South Station and returns to City Point in less than half the time as Route 11.