

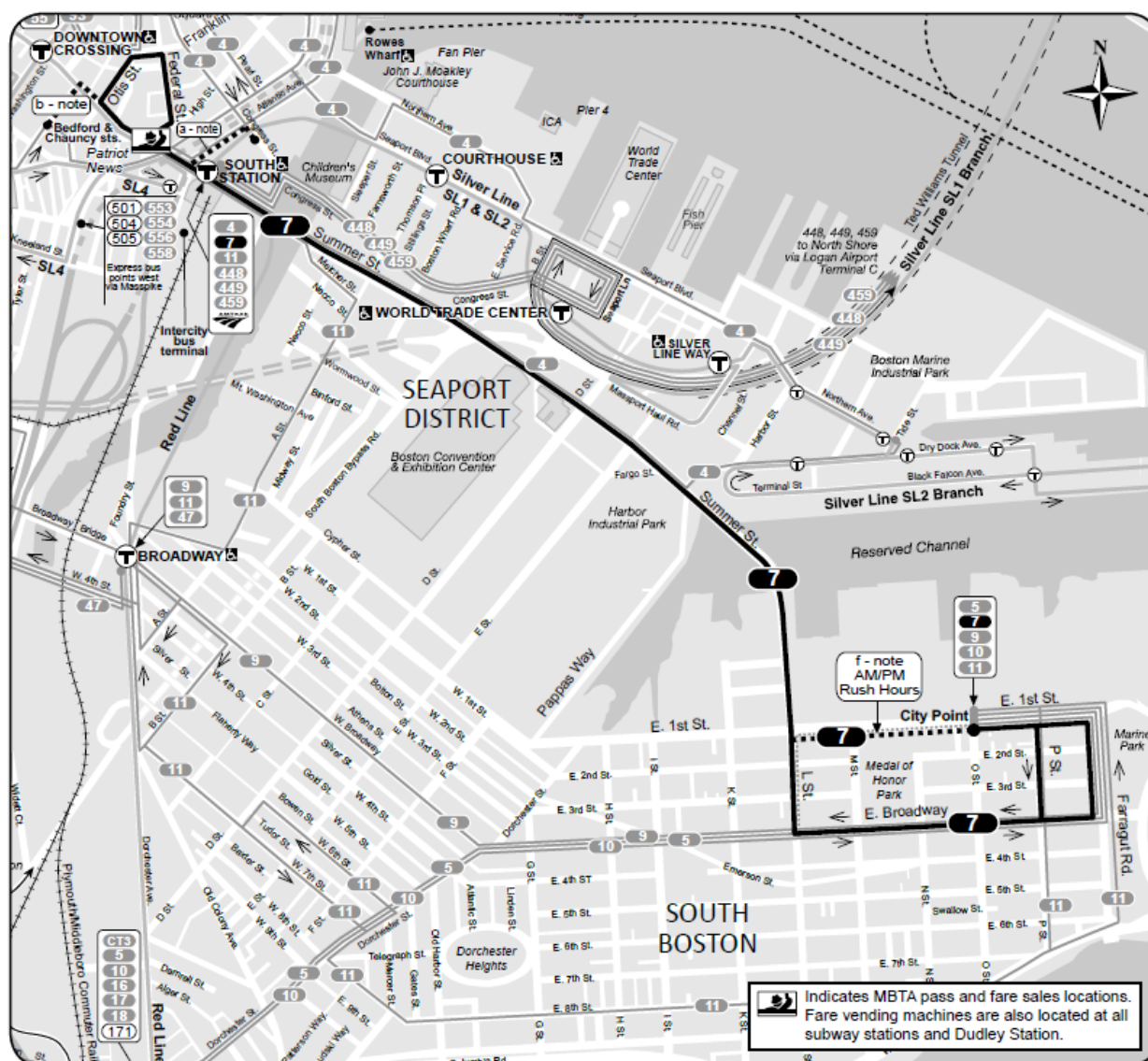
Route 7

City Point – Otis and Summer Streets

Route Overview

Route 7 City Point – Otis and Summer Streets is a Local route that connects City Point in South Boston with downtown Boston via Summer Street (see Figure 1). Route 7 provides the most direct transit service between South Boston and downtown.

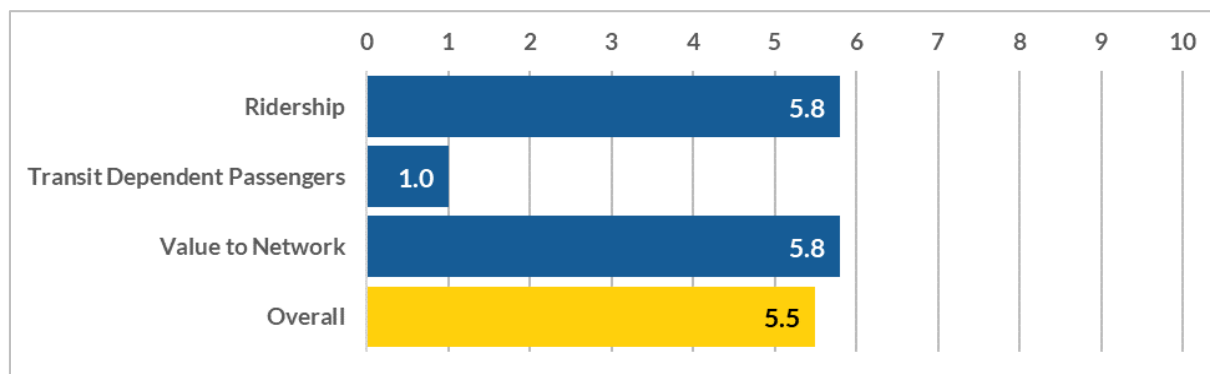
Figure 1 | Service Map



Network Importance

Route 7 has moderate importance within the overall system (see Figure 2). On a scale of 0 to 10, the route rates 5.8 in terms of ridership, 1.0 in terms of transit dependent ridership, and 5.8 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 5.5.

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



Service Overview

Schedule

Route 7 operates on weekdays and Saturdays. On weekdays, it operates from 5:15 AM to 10:33 PM, and provides frequent service during AM and PM peak periods (as frequent as every four minutes) and moderately frequent service at other times (see Table 1). On Saturdays, Route 7 operates with the same span of service as on weekdays, but with service only every 40 minutes.

On weekdays and Saturdays, Route 7 meets the Service Delivery Policy (SDP) standards for both span of service and service frequency. However, on Saturdays, even though the route exceeds the every 60 minute frequency standard, the route's 38-50 minute service frequencies are very sparse for a high ridership route. In addition, the route does not operate Sunday service, which should be provided according to the SDP standards.

Table 1 | Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:15 AM to 10:33 PM			104/89
Sunrise	5:15 AM to 5:59 AM	15-30	23	2/1
Early AM	6:00 AM to 6:59 AM	4-22	8	8/6
AM Peak	7:00 AM to 8:59 AM	1-9	3	36/21
Midday Base	9:00 AM to 1:29 PM	6-26	17	16/16
Midday School	1:30 PM to 3:59 PM	11-21	16	10/10
PM Peak	4:00 PM to 6:29 PM	2-12	7	22/23
Evening	6:30 PM to 9:59 PM	6-40	24	9/11
Late Evening	10:00 PM to 10:33 PM	-	-	1/1
Night	-	-	-	-
Saturday	5:15 AM to 10:31 PM	38-50	40	25/25
Sunday	-	-	-	-

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

Service Patterns

On weekdays, Route 7 operates to and from three different terminals (see Table 2). Most trips operate to and from Otis Street and Summer Street in downtown Boston via a terminal loop on High Street, Federal Street, Franklin Street, Otis Street, and Summer Street.

Table 2 | Service Patterns

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER WKD	TRIPS PER SAT	TRIPS PER SUN
INBOUND				104	25	-
7.1	City Point Bus Terminal	Otis Street at Summer Street	Via P. Street and E. Broadway Street to Summer Street	62	25	-
7.2	City Point Bus Terminal	Otis Street at Summer Street	Via E. 1 st Street to Summer Street	20	-	-
7.5	City Point Bus Terminal	Congress Street at Atlantic Avenue	Turns onto Atlantic Avenue	22	-	-
OUTBOUND				89	25	-
7.1	Otis Street at Summer Street	City Point Bus Terminal	Via P. St. and E. Broadway Street from Summer Street	57	25	-
7.2	Otis Street at Summer Street	City Point Bus Terminal	Via E. 1 st Street from Summer Street	23	-	-
7.7	Bedford Street at Chauncy Street	City Point Bus Terminal	From Bedford at Chauncy, via E. 1st Street from Summer Street	9	-	-

- Approximately 50% of inbound AM peak trips operate via Pattern 7.5, which serves South Station and terminates nearby on Congress Street near Atlantic Avenue. These shorter trips are designed to provide more frequent and reliable service from South Boston to Downtown during the AM Peak, when congestion is severe and bus resources are limited. For the most part these trips alternate with trips to Otis and Summer Streets, but not consistently. These trips deadhead back to City Point.
- Nearly 50% of outbound AM peak trips operate Pattern 7.7, departing from Bedford Street and Chauncy Street. These trips are inbound Route 11 buses returning outbound to City Point via Route 7.

At its outer end, all weekday service except AM and PM peak service operates via L Street, East Broadway, P Street/Farragut Road, and East 1st Street. AM and PM peak trips “shortcut” this alignment so that non-peak direction trips (AM outbound and PM inbound) operate more directly to City Point via East 1st Street.

On Saturdays, all service operates to and from Otis Street and Summer Street in downtown Boston, and to and from City Point via L Street, East Broadway, P Street/Farragut Road, and East 1st Street.

Ridership

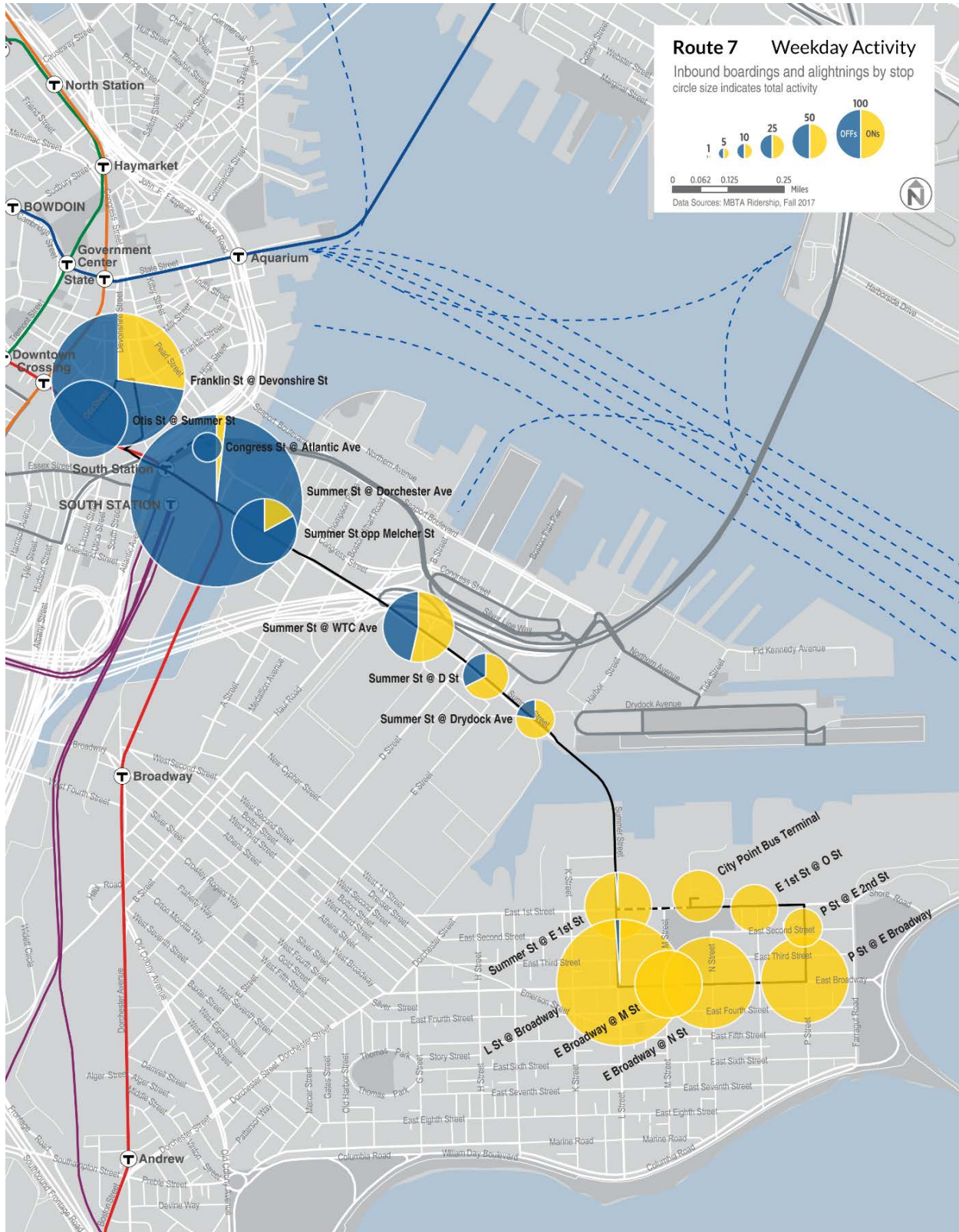
Route 7 carries 4,400 passengers per weekday, which makes it one of the MBTA’s highest ridership non-Key Bus routes. However, on Saturdays, it carries only 450 passengers. This low ridership is attributable to two factors: the route’s infrequent service (an average of only every 40 minutes), and a high ridership base of Monday to Friday commuters. It is likely that Route 7’s infrequent Saturday service and no Sunday service pushes some potential riders to Route 9 City Point - Copley Square, which provides much more frequent, although less direct, weekend service.

Ridership by Stop

Most Route 7 passengers ride between City Point and downtown Boston, plus a moderate number who travel to and from locations in the Seaport District. On weekday inbound trips (see Figure 3):

- Nearly 75% of riders board between the City Point terminal and L Street and East Broadway. All stops on East Broadway have high ridership, and the highest, L Street at East Broadway, has over 650 daily boardings.
- There are a total of 248 boardings and 281 alightings along Summer Street in the Seaport District.
- Most riders alight at South Station or in downtown Boston – over half at South Station, and a third at Franklin Street and Devonshire Street or at Otis Street and Summer Street. Ridership is higher at South Station than in downtown largely because approximately 50% of AM peak trips do not continue into downtown.

Figure 3 | Weekday Inbound Ridership by Stop Map



- Only one stop, Congress Street at Atlantic Avenue, serves fewer than 50 passengers daily. This stop is the terminal stop for AM peak trips that do not continue into downtown.

Ridership on Saturdays follows roughly the same pattern as weekdays, with the majority of riders boarding in City Point and riding until Summer Street at Dorchester Avenue, with the highest boardings at L Street at Broadway.

Ridership by Trip

Route 7's weekday ridership generally follows typical commuting patterns, with high ridership inbound during the AM peak and outbound during the PM peak (see Figure 4 and Figure 5). Ridership per trip is significantly lower on midday and evening trips.

- Inbound ridership is very high during the AM peak, when most trips carry over 40 passengers; several trips carry over 50 passengers, and the 8:20 AM trip carries 65 passengers. Due to low turnover, inbound trips typically have standing loads by the time they reach L Street and Broadway.
- Inbound ridership at other times of the day is much lower, with most trips carrying fewer than 15 passengers. The only exceptions are a few PM peak trips that carry 20 to 30 passengers.
- Outbound, Route 7 ridership is highest during the PM peak, with most trips carrying over 40 passengers and some carrying over 50. Ridership peaks at 55 riders per trip at 5:12 PM and 5:30 PM.
- Outbound ridership at other times of the day is low, with most trips carrying fewer than 20 passengers.

Because turnover along the route is low in both directions, maximum loads almost match the total ridership per trip, generally over 40 passengers during peak periods and fewer than 15 during the midday. On average, these loads are within the MBTA's loading standards of 140% of seated capacity during high volume periods, although several trips come close to reaching the overcrowding threshold, and 125% during low volume periods. However, when service operates irregularly, which is often the case (see Reliability section below), trips often become overcrowded.

On Saturdays, ridership is low in both directions. Trips before 8:00 AM do not serve more than five riders in either direction (see Figure 6 and Figure 7). No Saturday load exceeds 15 passengers. This is due to a combination of the route's commuter orientation and its infrequent service.

Figure 4 | Weekday Ridership by Trip: Inbound

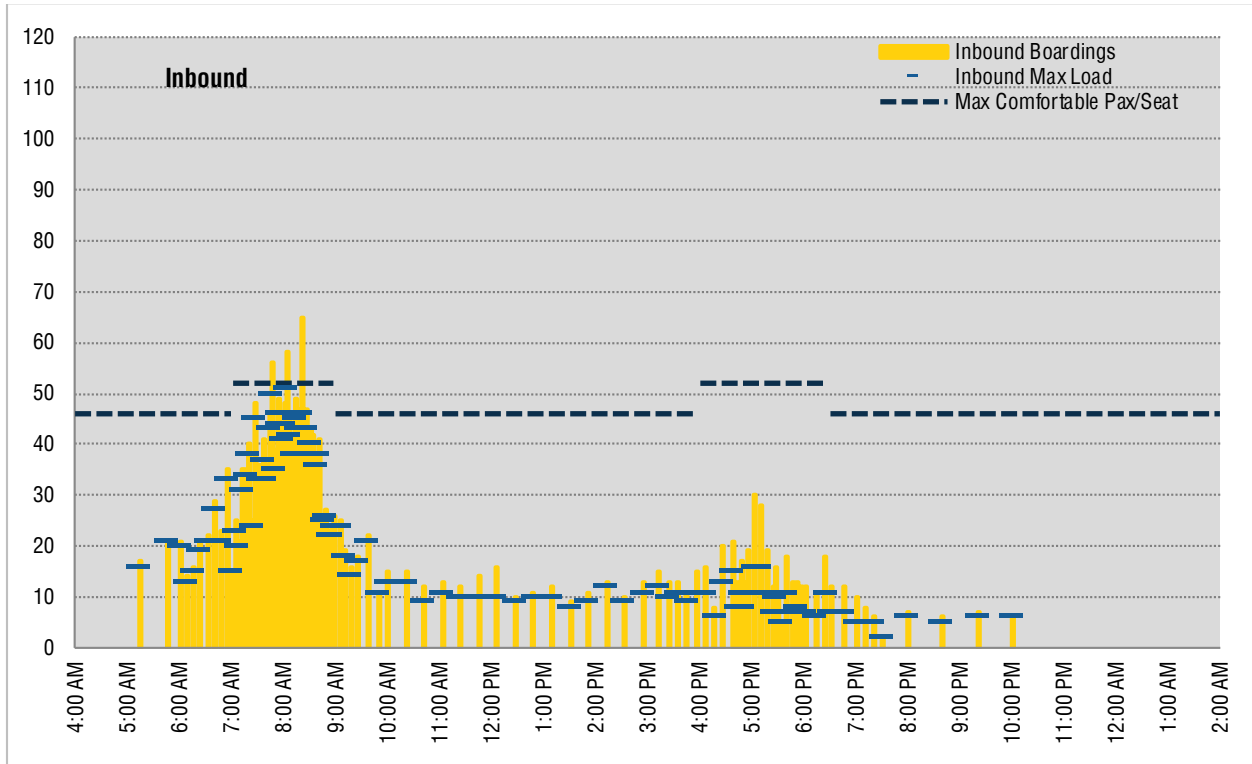


Figure 5 | Weekday Ridership by Trip: Outbound

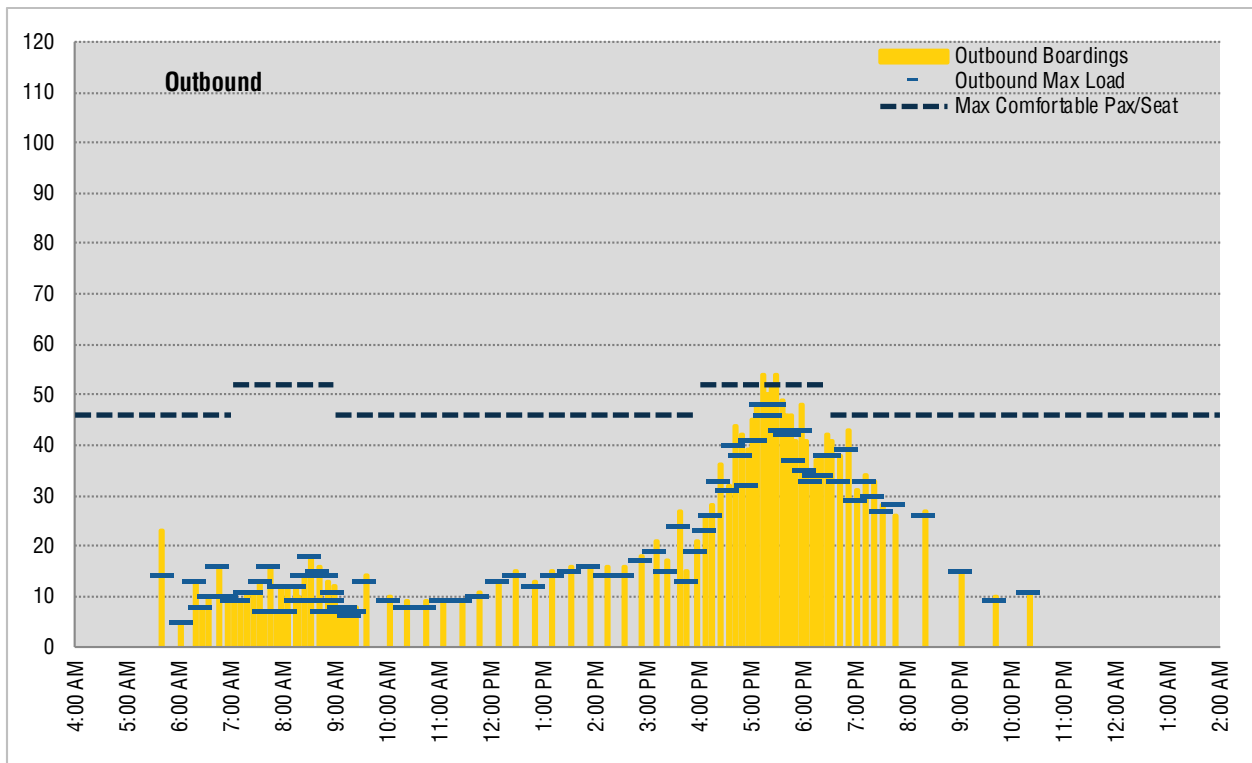


Figure 6 | Saturday Ridership by Trip: Inbound

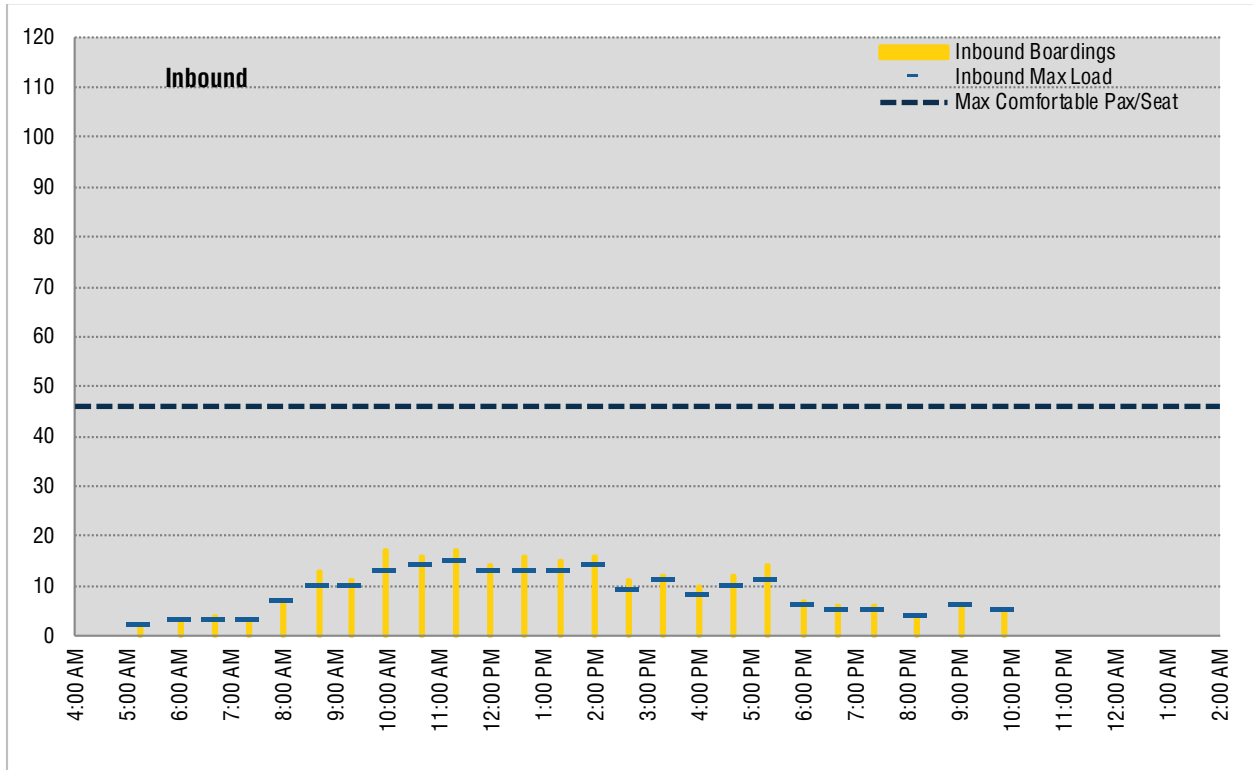
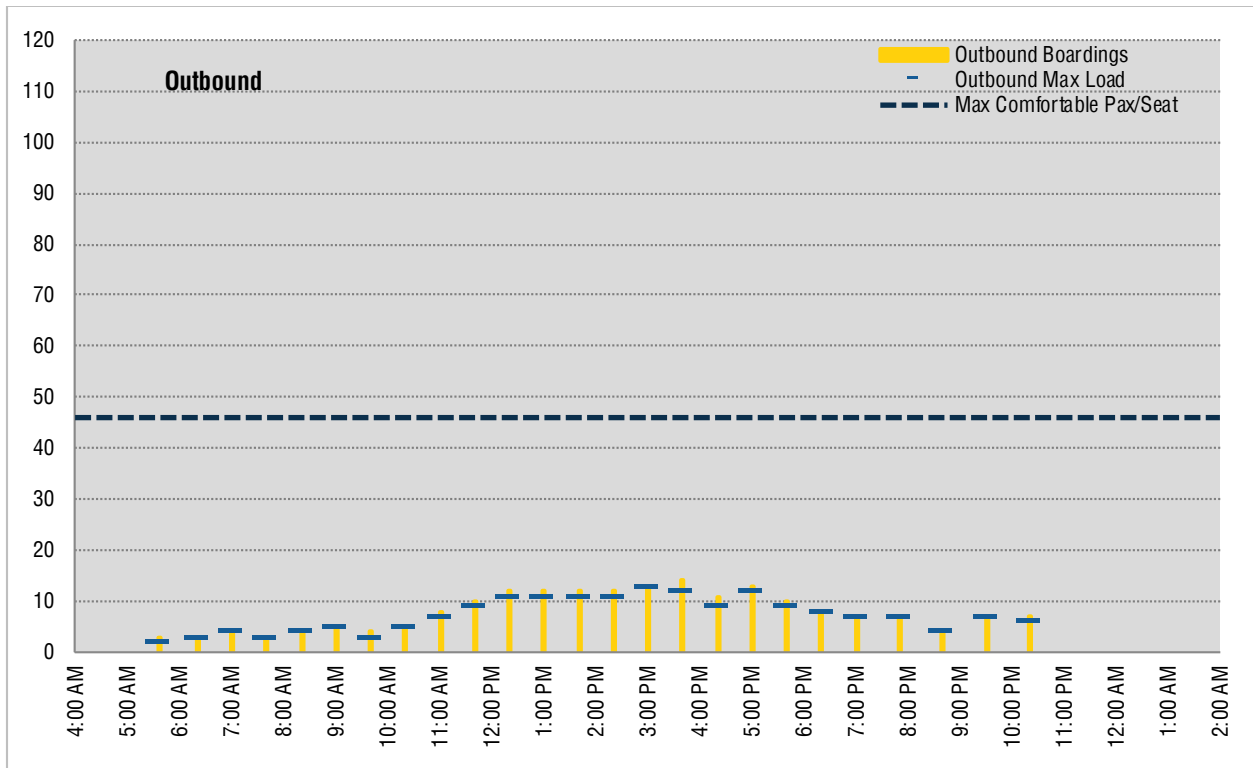


Figure 7 | Saturday Ridership by Trip: Outbound



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% 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 7, 82% of passenger travel is in comfortable conditions on weekdays, which is below both the minimum and target standards (see Table 3). As described below, reliability is within standard, but many trips are late. Missed trips are also a problem. The below standard passenger comfort levels are the result of off-schedule service, and not because too little service is scheduled. On Saturdays, 100% of passenger minutes are in comfortable conditions,

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
Minimum Standard	92%	92%	-
Target	96%	96%	-
Actual	82.3%	100.0%	-

Reliability and Speed

Reliability

Route 7 is more reliable than other local MBTA routes. Close to 82% of trips depart on time and over 87% of trips arrive on time, which is above the MBTA's Local route minimum standard of 70% (see Table 4). However, because peak period service is scheduled with very little extra capacity, this off-schedule performance often creates overcrowding. Dropped trips are a significant issue on this route, with close to 2% 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
Monday-Friday	82%	87%	83%	1.8%
Saturday	80%	82%	80%	-
Sunday	-	-	-	-

On-time: Trips are considered to be on-time if they depart from their destination zero to three minutes late and arrive at their destinations within five minutes of their scheduled arrival time.

Trips in both directions generally run behind schedule throughout the service day (see Figure 8 and Figure 9). Inbound trips run up to five minutes longer than scheduled during the AM peak and about three minutes longer during the afternoon and PM peak. Actual running times on outbound trips are up to five minutes longer than scheduled throughout much of the day. Since the development of this document, the MBTA has updated Route 7 schedules to better reflect actual running times.

Figure 8 | Scheduled & Median Travel Time by Trip: Route 7 Inbound

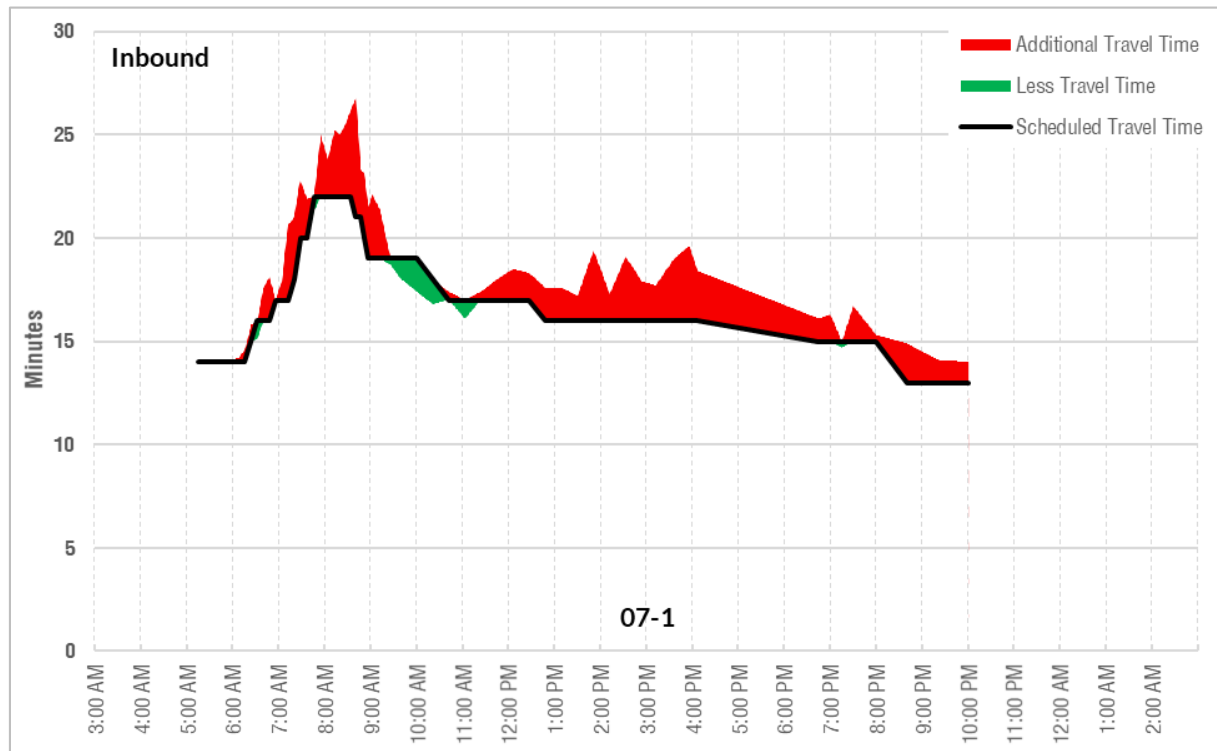
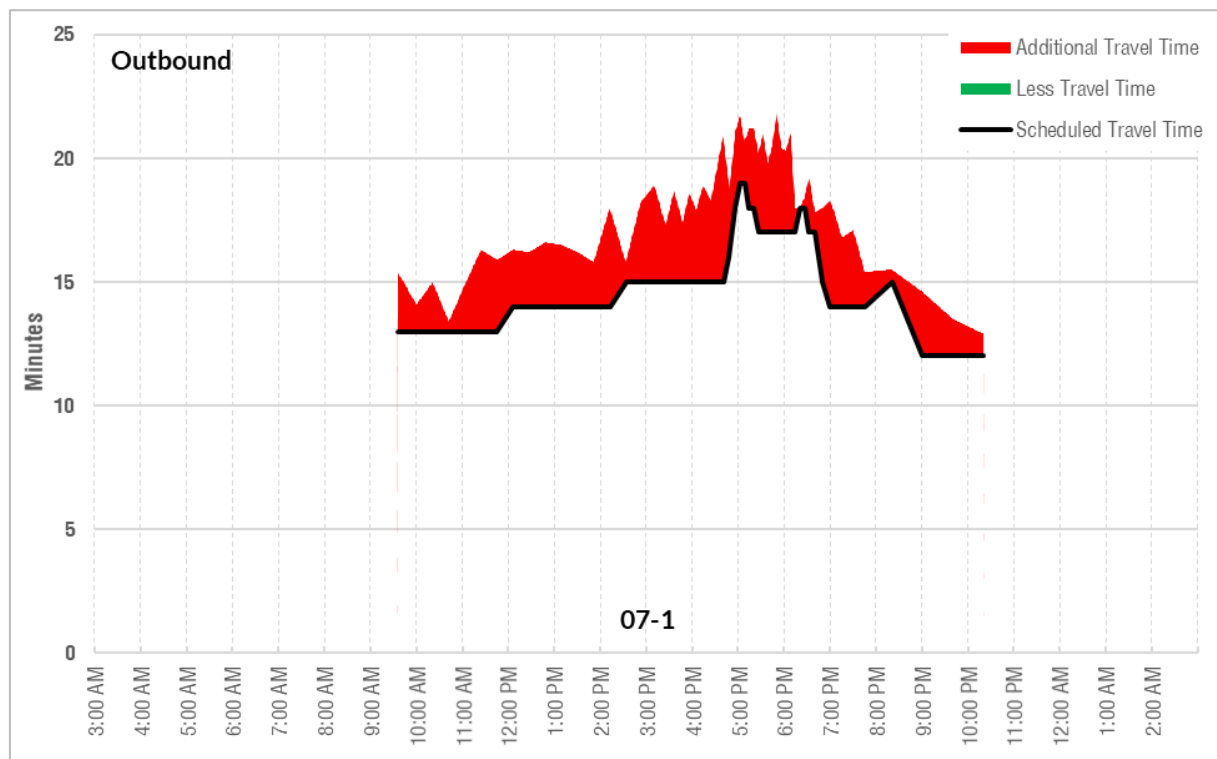


Figure 9 | Scheduled & Median Travel Time by Trip: Route 7 Outbound



Stop Spacing

Route 7 has approximately six stops per mile, which falls within the four to seven stops per mile recommended for urban areas under MBTA guidelines. However, the average stop spacing in City Point is 650 feet. Customers can walk between stops with this spacing in about two to three minutes. As people will typically walk at least five minutes to access a local bus route, this spacing is closer than desirable.

Summary

Route 7 is a very high ridership route. It is unusual in that it carries very high weekday ridership but provides only very limited Saturday service and no Sunday service. The rationale for this is that its predominant market is commuters to downtown Boston. However, downtown Boston is much more than just a work location, and the route also provides the best connection between South Boston and the rest of Greater Boston.

Approximately half of AM peak trips are short-turned at South Station rather than continuing on into downtown in order to cycle buses more quickly. This pattern utilizes fewer vehicles and labor hours to still provide a very high frequency of service along most of the route. While saving constrained resources, this leaves many passengers just short of where they want to go and makes the schedule confusing.