

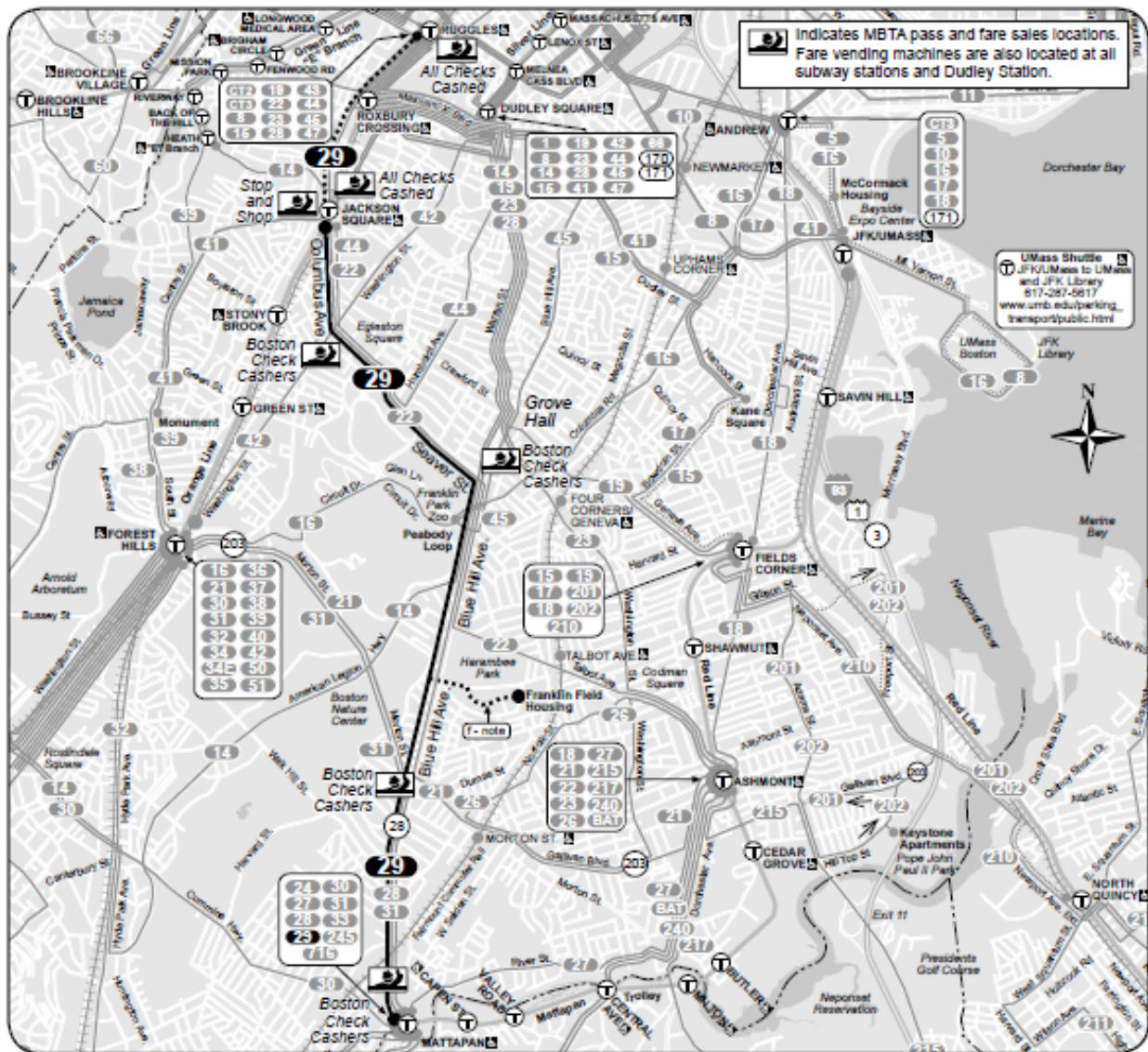
# Route 29

## Mattapan Station – Jackson Square Station

### Route Overview

Route 29 Mattapan Station – Jackson Square Station is a Local route that primarily operates between Mattapan Station and Jackson Square Station along Blue Hill Avenue, Seaver Street, and Columbus Avenue (see Figure 1). On weekday evenings and Saturdays, service is extended to Ruggles Station.

Figure 1 | Service Map



Route 29 duplicates the service provided by two Key Bus routes:

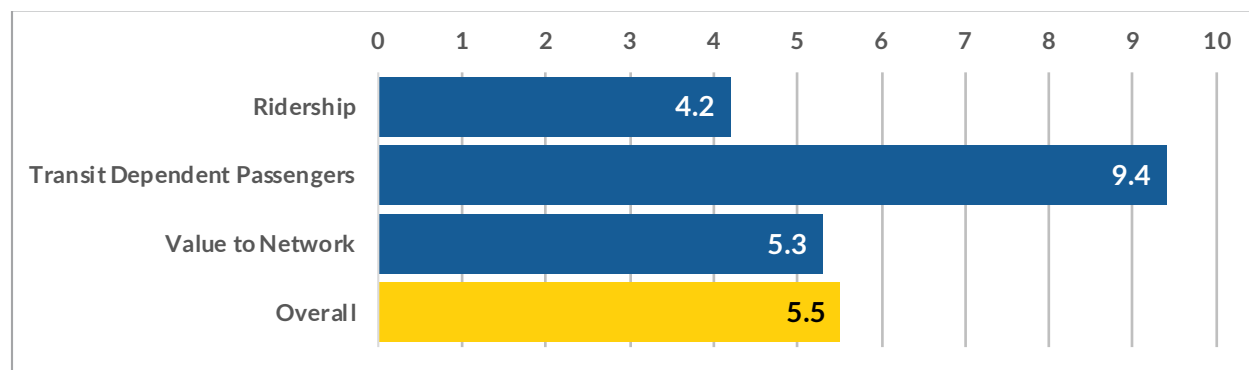
- Route 22 Ashmont Station-Ruggles Station, which operates along the same alignment along Seaver Street and Columbus Avenue.
- Route 28 Mattapan Station-Ruggles Station, which operates along the same alignment along Blue Hill Avenue.

The major reason that Route 29 exists is so that people travelling between Blue Hill Avenue and Seaver Street/Columbus Avenue do not have to transfer between Routes 28 and 22. Route 29 may also provide a somewhat faster option between the Orange Line and Blue Hill Avenue during peak period when bus routes on Warren Street are affected by severe congestion.

## Network Importance

Route 29 is moderately important within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, the route rates 4.2 in terms of ridership, 9.4 in terms of transit dependent ridership, and 5.3 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 29 only operates on weekdays and Saturday evenings and provides moderately frequent to infrequent service at most times (see Table 1). On weekdays, service operates from 5:55 AM to 1:21 AM but with a nearly two hour gap in service between 6:30 PM and 8:20 PM inbound and 6:35 PM and 8:10 PM outbound. Service operates with the following frequencies

- Every 17 to 20 minutes from the beginning of service at 5:55 AM through 9:00 AM.

- Predominately every 70 minutes from 9:00 AM through 2:45 PM.
- Predominately every 30 minutes from 2:45 PM through 4:15 PM.
- Predominately every 15 minutes from 4:15 PM through 6:30 PM.
- There is no service between 6:35 PM and 8:20 PM inbound and 6:35 PM and 8:10 PM.
- Predominantly every 35 minutes from 8:20 PM through the end of service at 1:21 AM.

On Saturday evenings, service operates from 8:20 PM until 1:12 AM, predominantly every 25 minutes.

**Table 1 | Schedule Statistics**

| SERVICEDAY           | SPAN OF SERVICE           | FREQUENCY (RANGE) | FREQUENCY (AVERAGE) | DAILY TRIPS (INBOUND/OUTBOUND) |
|----------------------|---------------------------|-------------------|---------------------|--------------------------------|
| <b>Monday-Friday</b> | <b>5:55 AM to 1:21 AM</b> |                   |                     | <b>38/39</b>                   |
| Sunrise              | 5:55 AM to 5:59 AM        | 17                | 17                  | 1/0                            |
| Early AM             | 6:00 AM to 6:59 AM        | 17 - 19           | 18                  | 3/3                            |
| AM Peak              | 7:00 AM to 8:59 AM        | 15 - 20           | 16                  | 7/7                            |
| Midday Base          | 9:00 AM to 1:29 PM        | 20 - 70           | 69                  | 4/4                            |
| Midday School        | 1:30 PM to 3:59 PM        | 30 - 70           | 40                  | 4/4                            |
| PM Peak              | 4:00 PM to 6:29 PM        | 15 - 30           | 15                  | 9/10                           |
| Evening              | 6:30 PM to 6:35 PM        | 15                | 45                  | 1/1                            |
|                      | 8:20 PM to 9:59 PM        | 35                | 35                  | 4/4                            |
| Late Evening         | 10:00 PM to 11:59 PM      | 29 - 35           | 33                  | 4/4                            |
| Night                | 12:00 AM to 1:21 AM       | 35                | 35                  | 1/2                            |
| <b>Saturday</b>      | <b>8:20 PM to 1:12 AM</b> | <b>22 - 33</b>    | <b>24</b>           | <b>11/12</b>                   |
| <b>Sunday</b>        | -                         | -                 | -                   | -                              |

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

Route 29 fails to meet a number of service span and frequency standards:

- On weekdays, service should operate at least every 60 minutes, but most midday service operates only every 70 minutes.
- On Saturdays, service should operate at least from 8:00 AM to 6:30 PM, but only operates during the evening.
- Routes serving urban areas should operate on Sundays.

### Service Patterns

Route 29 generally operates between Mattapan Station and Jackson Square Station during the day on weekdays and between Mattapan Station and Ruggles Station on weekday evenings and on Saturdays (see Table 2). On weekdays:

- With one exception, all trips before 8:00 PM operate between Mattapan Station and Jackson Square Station (Pattern 29.5). The exception is a 2:55 PM outbound trip that operates from Ruggles Station (Pattern 29.0).
- Between 7:52 AM and 6:35 PM, 11 inbound and 11 outbound trips make an out and back deviation to Franklin Field Housing (Pattern 29.1). There is no regular pattern for the trips that make this deviation, which adds three minutes to the scheduled running times.
- After 8:00 PM, all service operates between Mattapan Station and Ruggles Station via Jackson Square Station (Pattern 29.0).

On Saturdays, all service operates between Mattapan Station and Ruggles Station. No trips serve Franklin Field Housing.

Table 2 | Service Patterns

| PATTERN         | ORIGIN                 | DESTINATION            | UNIQUE FEATURE                                    | TRIPS per WKD | TRIPS per SAT | TRIPS per SUN |
|-----------------|------------------------|------------------------|---|---------------|---------------|---------------|
| <b>INBOUND</b>  |                        |                        |   | <b>38</b>     | <b>11</b>     |               |
| 29.0            | Mattapan Station       | Ruggles Station        | Via Jackson Square, does not serve Franklin Field | 9             | 11            | -             |
| 29.1            | Mattapan Station       | Jackson Square Station | Via Franklin Field Housing                        | 11            | -             | -             |
| 29.5            | Mattapan Station       | Jackson Square Station | Does not serve Franklin Field                     | 18            | -             | -             |
| <b>OUTBOUND</b> |                        |                        |   | <b>39</b>     | <b>12</b>     | <b>-</b>      |
| 29.0            | Ruggles Station        | Mattapan Station       | Via Jackson Square, does not serve Franklin Field | 11            | 12            | -             |
| 29.1            | Jackson Square Station | Mattapan Station       | Via Franklin Field Housing                        | 11            | -             | -             |
| 29.5            | Jackson Square Station | Mattapan Station       | Does not serve Franklin Field                     | 17            | -             | -             |

## Ridership

Route 29 carries 2,250 passengers on weekdays and 460 on Saturdays.

### Ridership by Stop

The largest number of passengers travel to and from Jackson Square Station. In more detail, on weekday inbound trips (see Figure 3):

- 100 passengers board at Mattapan Station.

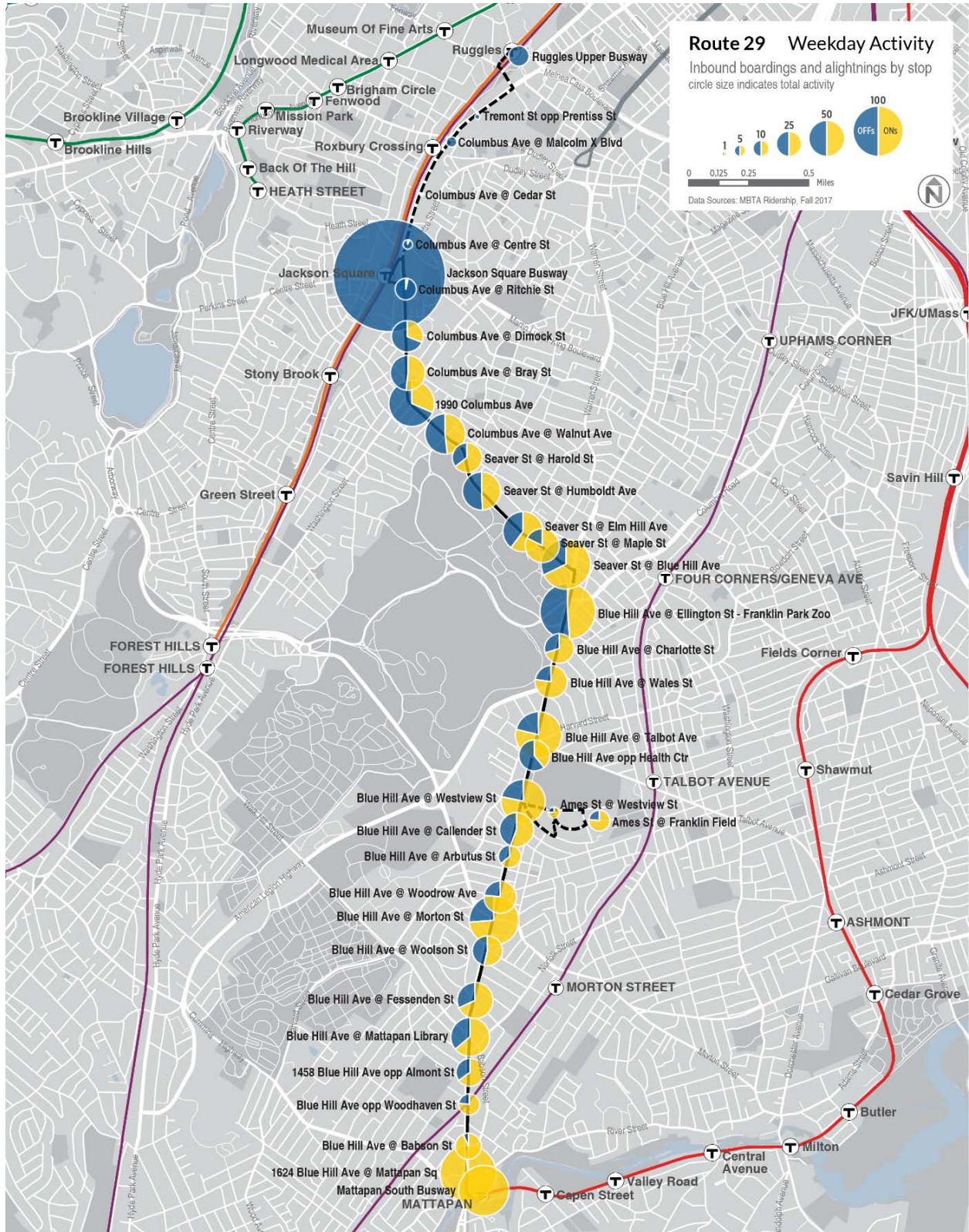
- 690 passengers board and 280 alight at the 17 stops along Blue Hill Avenue.
- 20 passengers board and five alight on the 11 trips that deviate to and from Franklin Field Housing.
- Of the 810 passengers who board before Seaver Street, 290 alight along Blue Avenue and 520 passengers continue to points beyond. These are passengers who would otherwise have to transfer between Route 28 Mattapan Station-Ruggles Station and Route 22 Ashmont Station-Ruggles Station.
- 290 passengers board and 270 alight at the 10 stops along Seaver Street and Columbus Avenue.
- 510 passengers alight at Jackson Square Station.
- 10 passengers alight between Jackson Square Station and Ruggles Station (on the nine evening trips).
- 20 passengers alight at Ruggles Station (on the nine evening trips).
- In total, only 30 passengers ride beyond Jackson Square Station (on the evening trips).

Outbound ridership patterns are roughly the reverse of inbound patterns.

On Saturday evening inbound trips:

- 30 passengers board at Mattapan Station.
- 100 passengers board and 50 alight at the 17 stops along Blue Hill Avenue.
- Of the 130 passengers who board before Seaver Street, 80 passengers continue to points beyond. These are passengers who would otherwise have to transfer between Route 28 and Route 22.
- 30 passengers board and 40 alight at the 10 stops along Seaver Street and Columbus Avenue.
- 10 passengers board and 30 passengers alight at Jackson Square Station.
- Five passengers board and 20 alight between Jackson Square Station and Ruggles Station.
- 40 passengers alight at Ruggles Station.

Figure 3 | Weekday Inbound Ridership by Stop Map



## Ridership by Trip

On weekday inbound trips (see Figure 4):

- Ridership ranges from 30 to 40 passengers per trip during AM and PM peak periods and shoulders of the peaks.
- Midday trips generally carry 20 to 30 passengers.
- Ridership is close to 20 passengers per trip between 7:30 PM and 10:30 PM
- Ridership declines to fewer than 10 passengers per trip after 10:30 PM.

On outbound trips (see Figure 5):

- Ridership is generally 20 passengers per trip from the beginning of service through 12:00 PM.
- Ridership increases to over 40 passengers per trip between 2:55 PM and 5:05 PM, with two trips carrying over 50 passengers.
- Trips carry 20 to over 30 passengers through the evening until 12:00 AM, and the last trip at 1:00 AM carries 10 passengers.

On Saturdays, inbound ridership per trip is around 20 passengers between 8:20 PM and 10:52 PM, and then declines to around 10 through the end of service (see Figure 6).

Outbound ridership per trip ranges from 20 to 35 throughout the evening (see Figure 7).

Figure 4 | Weekday Ridership by Trip: Inbound

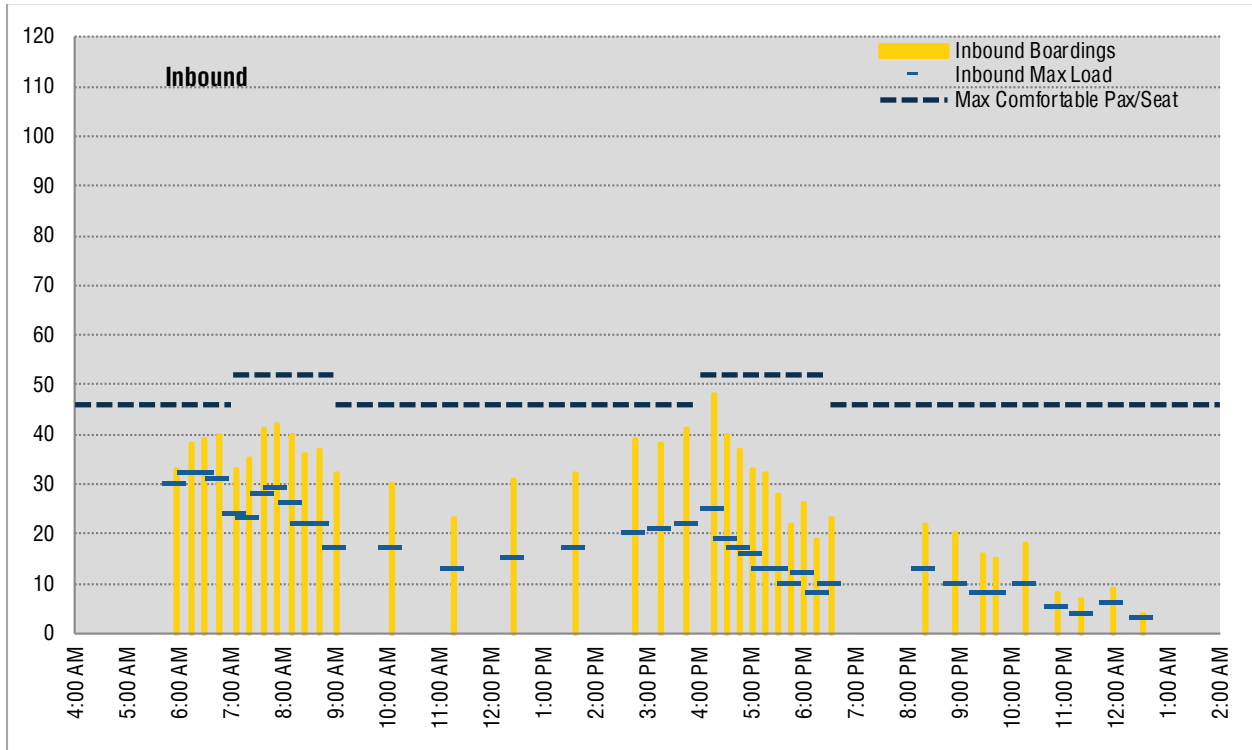


Figure 5 | Weekday Ridership by Trip: Outbound

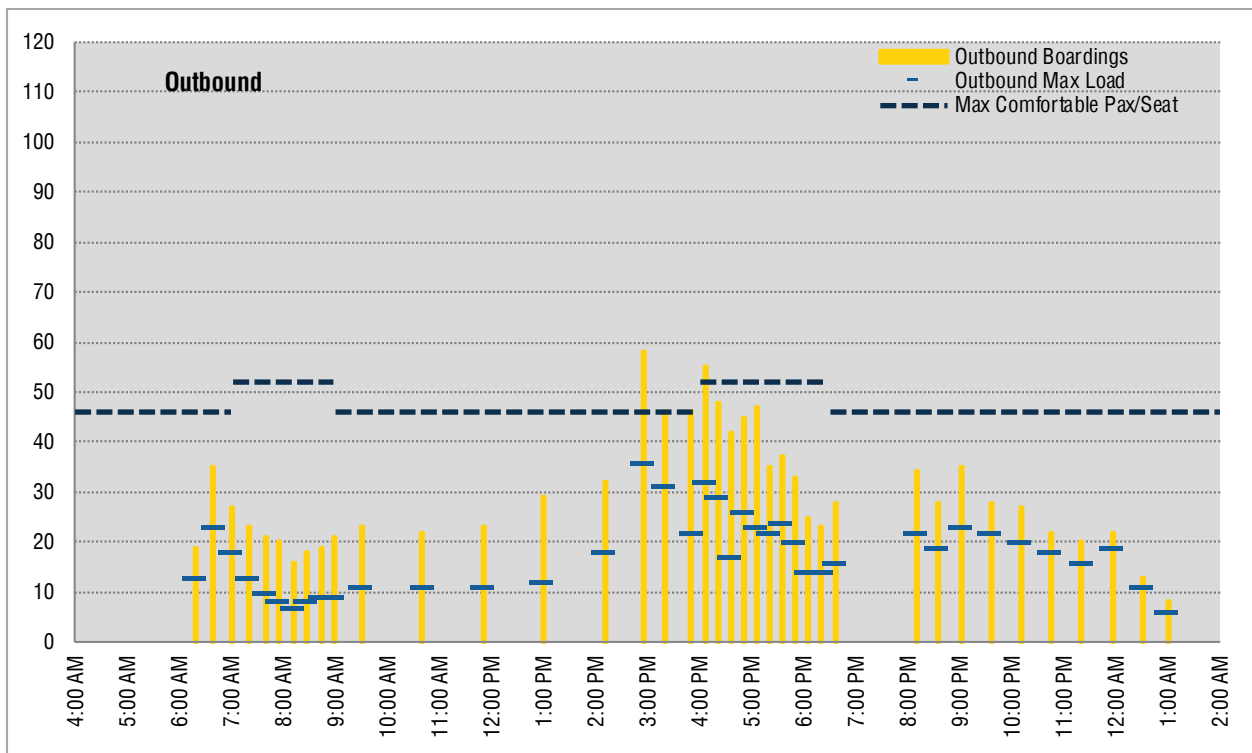




Figure 6 | Saturday Ridership by Trip: Inbound

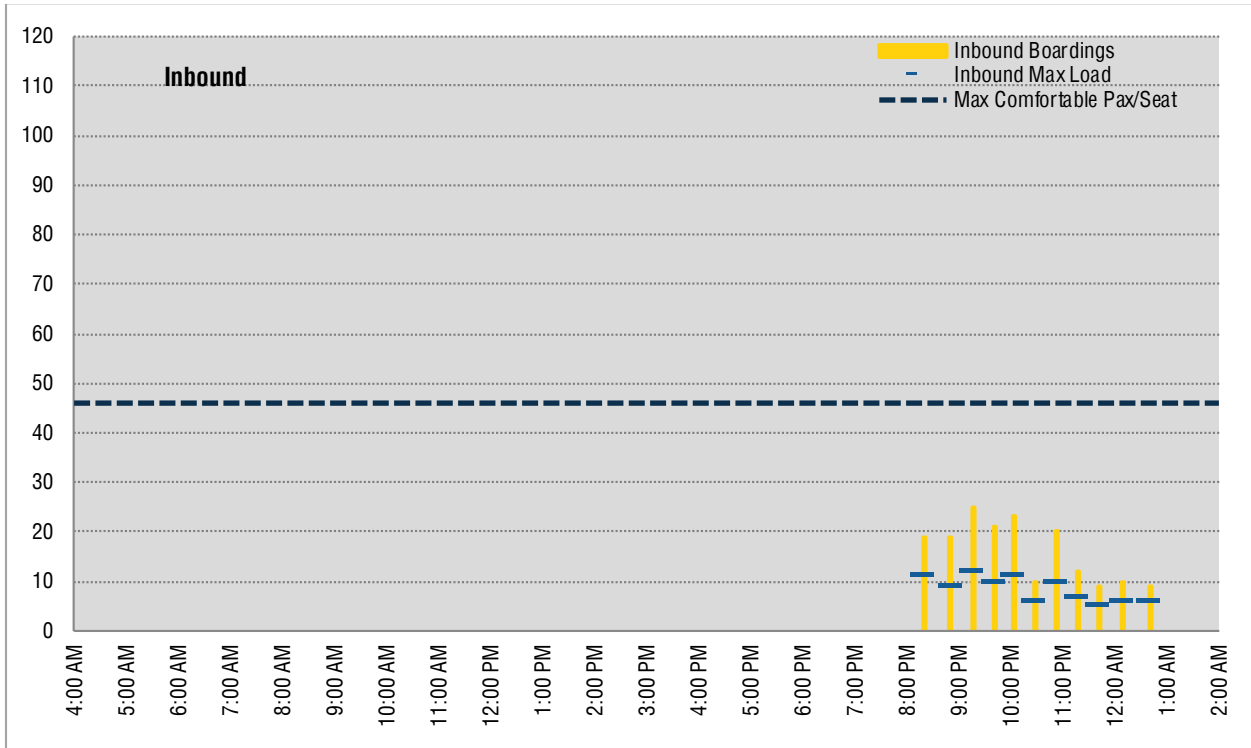
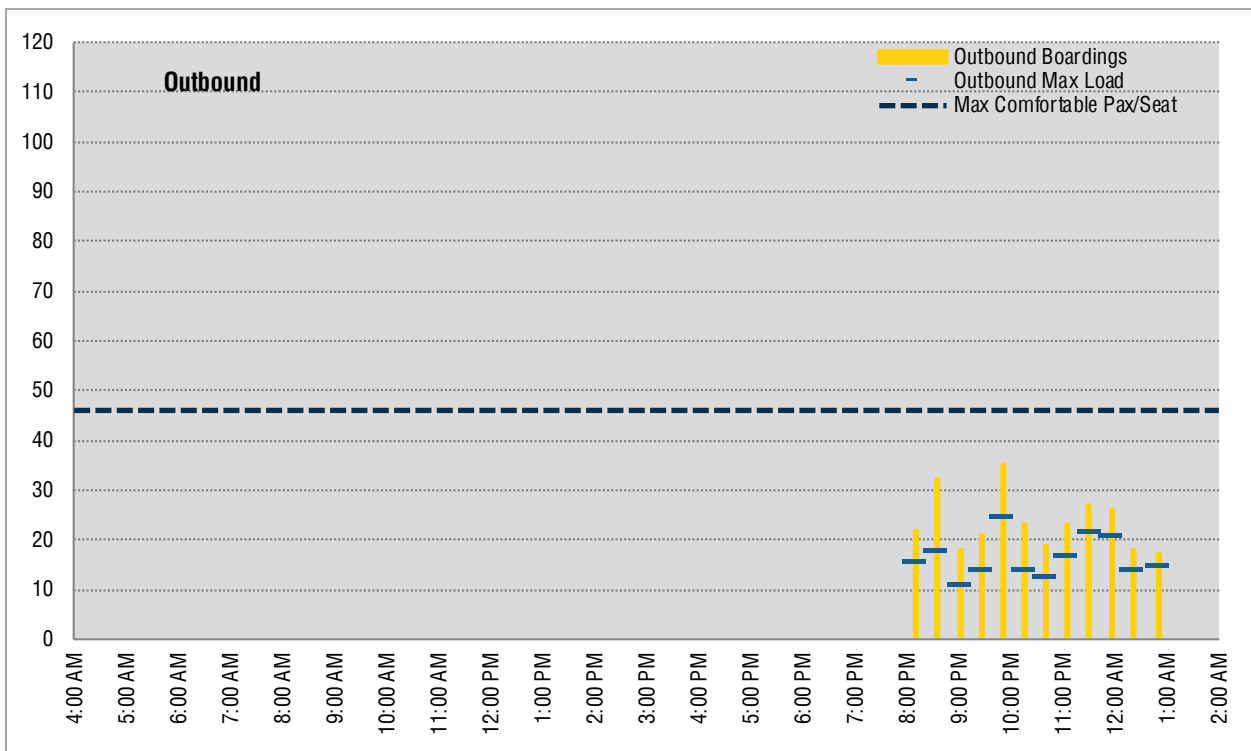


Figure 7 | Saturday Ridership by Trip: Outbound



## 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% 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 29, 98.5% of passenger minutes are in comfortable conditions in weekdays, which is above the target of 96% (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>           | 98.5%    | 100%      | -       |

## Reliability and Speed

### Reliability

Route 29's weekday reliability is very poor, with an overall reliability of 51%, which is well below the minimum standard of 70% (see Table 4). Saturday reliability is 71%, which is just above the minimum standard but below the target of 75%.

Table 4 | Reliability

| SERVICE DAY          | ORIGIN/MID-ROUTE ON-TIME PERFORMANCE | DESTINATION ON-TIME PERFORMANCE | OVERALL RELIABILITY | DROPPED TRIPS |
|----------------------|--------------------------------------|---------------------------------|---------------------|---------------|
| <b>Monday-Friday</b> | 51%                                  | 49%                             | 51%                 | 1.5%          |
| <b>Saturday</b>      | 72%                                  | 70%                             | 71%                 | -             |
| <b>Sunday</b>        | -                                    | -                               | -                   | -             |

### Running Times

During peak periods on weekdays, actual running times are significantly longer than scheduled, and this is a significant cause of poor on-time performance (see Figure 8 and Figure 9). On inbound trips, actual peak period running times are up to 12 minutes longer than scheduled. Outbound peak period running times are as much as eight minutes longer.

Figure 8 | Scheduled & Median Travel Time by Trip: Route 29 Inbound

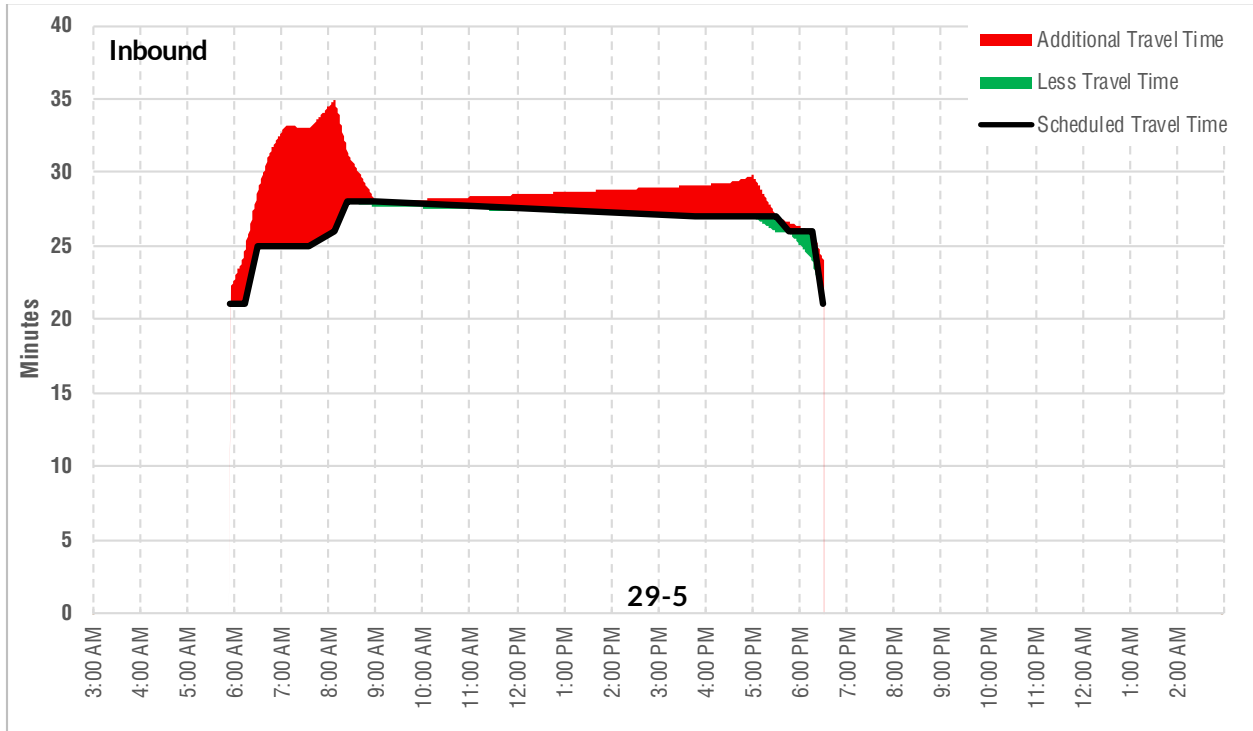
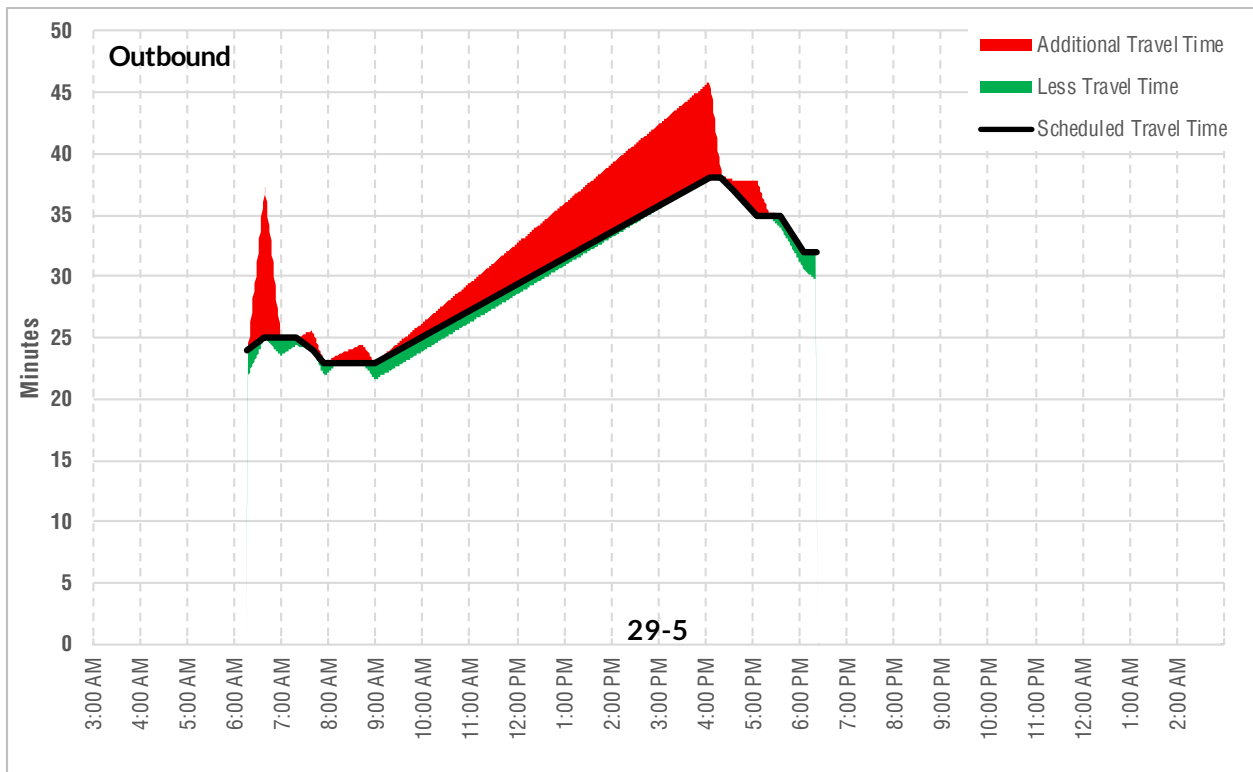


Figure 9 | Scheduled & Median Travel Time by Trip: Route 29 Outbound



## Stop Spacing

Route 29 has an average of six stops per mile, which is at the high end the MBTA's guideline of four to seven stops per mile in urban areas.

## Summary

Route 29's design is unusual. Its primary purpose is to provide one-seat rides to passengers who would otherwise have to transfer between two Key Bus routes (Route 28 Mattapan Station-Ruggles Station and Route 22 Ashmont Station-Ruggles Station). While 1,040 passengers per weekday use the route in this manner, it is unclear how many actually choose to use Route 29 to avoid the transfer or just happen to be traveling when a Route 29 bus is the first to arrive.

The route is also unusual in that there is a nearly two-hour gap in service between approximately 6:30 PM and 8:30 PM, and that Saturday service only operates in the evening.

Additional issues include:

- The deviation to Franklin Field Housing and the extended service to Ruggles Station serve few riders.
- The route does not meet the MBTA's span of service, frequency, and days of service standards.