

Routes 214 and 216

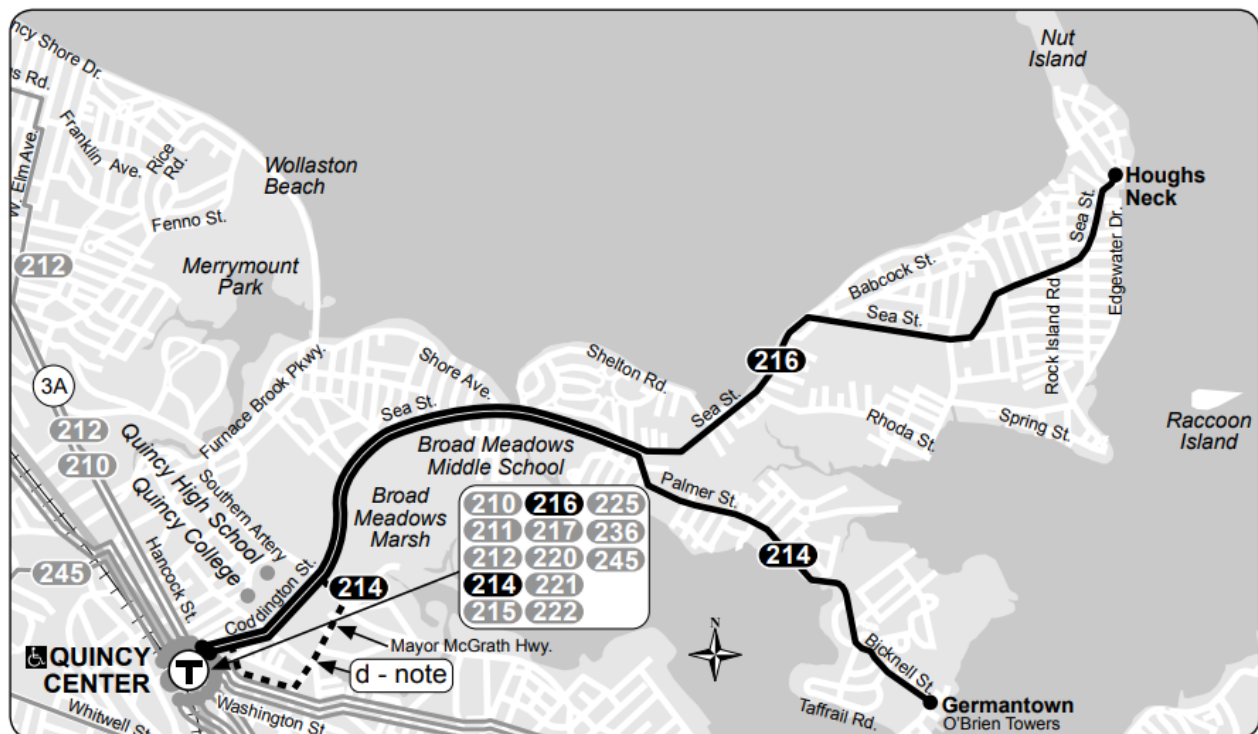
Route 214: Germantown – Quincy Center Station

Route 216: Houghs Neck – Quincy Center Station

Route Overview

Routes 214 Germantown – Quincy Center Station and 216 Houghs Neck – Quincy Center Station are Local routes that connect Quincy Center to Germantown and Houghs Neck respectively, via Coddington Street or Mayor McGrath Highway. Route 214 operates on weekdays only with service ending in the evening. Route 216 operates seven days a week and provides along Route 214’s alignment to Germantown when Route 214 is not operating. These routes exist to connect the residential neighborhoods in Houghs Neck and Germantown to the Red Line and other transit services in Quincy Center.

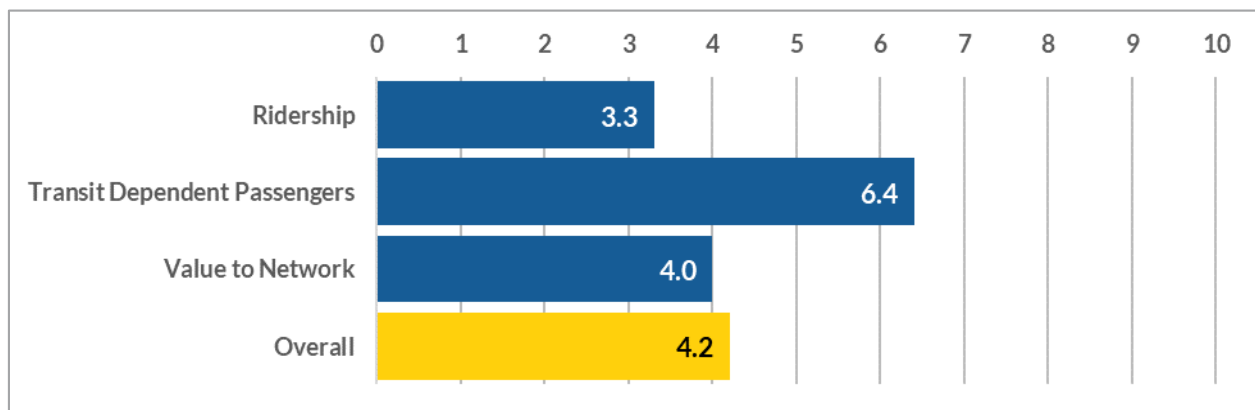
Figure 1 | Service Map



Network Importance

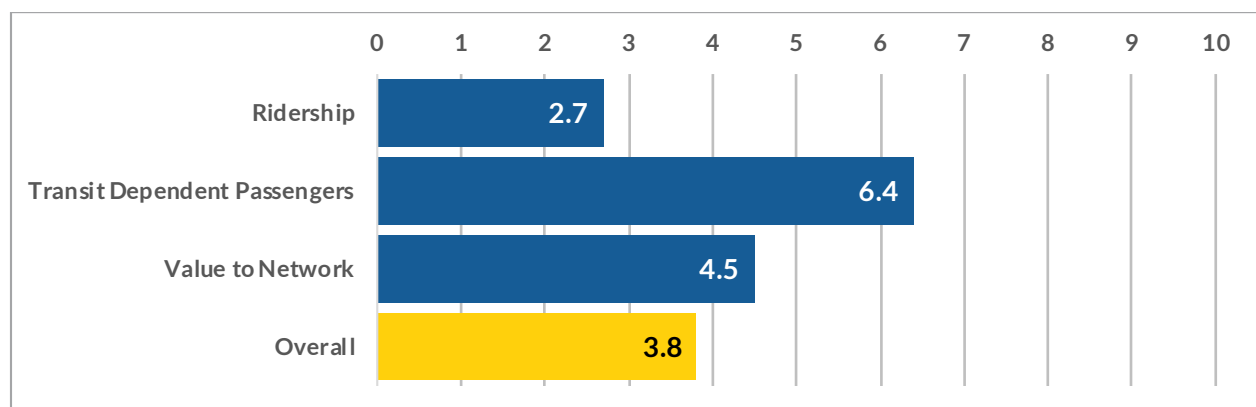
Route 214 is a coverage service of moderate importance with a higher proportion of transit dependent customers. On a relative scale of 0 to 10, the route rates 3.3 in terms of ridership, 6.4 in terms of transit dependent ridership, and 4.0 in terms of its value to the network (which reflects the number 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 4.2.

Figure 2 | Route 214 Relative Importance within MBTA Bus Network (on a scale of 0 to 10)



Route 216 is a coverage service of moderate importance with a similarly higher proportion of transit dependent customers. On a relative scale of 0 to 10, the route rates 2.7 in terms of ridership, 6.4 in terms of transit dependent ridership, and 4.5 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 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 3.8.

Figure 3 | Route 216 Relative Importance within MBTA Bus Network (on a scale of 0 to 10)



Service Patterns

Schedule

Route 214 operates on weekdays only between 6:46 AM and 6:10 PM. Service is provided:

- Every 10 minutes from 6:46 AM to 8:59.
- Midday, from 9:00 AM to 11:48 PM service operates about every 30 minutes.
- Every 20 minutes from 12:03 PM to the end of service.

Route 216 operates from 5:00 AM to 1:14 AM on weekdays. Service is provided:

- At a 40 minute interval between the first and second trip of the day.
- Every 8 to 13 minutes from 6:15 AM until 8:22 AM.
- During midday, from 8:32 AM to 3:00 every 25-30 minutes.
- Every 20 minutes from 3:00 until 6:40 PM.
- Primarily every 60 minutes after 6:40 PM.

Table 1 | Route 214 Schedule Statistics

SERVICEDAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	6:46 AM to 6:25 PM			36/36
Sunrise	-	-	-	-
Early AM	6:46 AM to 6:59 AM	8 - 11	10	2/2
AM Peak	7:00 AM to 8:59 AM	8 - 23	12	10/10
Midday Base	9:00 AM to 1:29 PM	23 - 35	30	9/9
Midday School	1:30 PM to 3:59 PM	12 - 30	21	7/8
PM Peak	4:00 PM to 6:25 PM	20	20	8/7
Evening	-	-	-	-
Late Evening	-	-	-	-
Night	-	-	-	-
Saturday	-	-	-	-
Sunday	-	-	-	-

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

On Saturdays, Route 216 operates an average every 23 minutes from 5:05 AM to 1:15 AM. On Sundays, it operates on average every 51 minutes from 7:45 AM to 1:21 AM.

Route 214 meets the MBTA's Frequency Standards but not the Span of Service Standards. Route 214 ends service before the MBTA's 7:00 PM minimum standard. Route 216 meets both the MBTA's Frequency Standards and its Span of Service Standards.

Table 2 | Route 216 Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (RANGE)	FREQUENCY (AVERAGE)	DAILY TRIPS (INBOUND/OUTBOUND)
Monday-Friday	5:00 AM to 1:14 AM			
Sunrise	5:00 AM to 5:59 AM	35 - 40	38	2/3
Early AM	6:00 AM to 6:59 AM	9 - 35	13	4/4
AM Peak	7:00 AM to 8:59 AM	8 - 28	12:30	9/9
Midday Base	9:00 AM to 1:29 PM	28 - 30	30	9/9
Midday School	1:30 PM to 3:59 PM	20 - 30	25	6/8
PM Peak	4:00 PM to 6:29 PM	18 - 20	20	8/8
Evening	6:30 PM to 9:59 PM	15 - 60	41	6/5
Late Evening	10:00 PM to 11:59 PM	60 - 60	60	2/2
Night	12:00 AM to 1:14 AM	36 - 60	33	2/2
Saturday	5:05 AM to 1:15 AM	15 - 60	23	52/52
Sunday	7:45 AM to 1:21 AM	36 - 60	51	52/52

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

Service Patterns

For Route 214:

- Pattern 214.1 is the primary service pattern in both directions, traveling between O’Brien Towers in Germantown and Quincy Center via Coddington Street.
- Pattern 214.2 runs in in both directions, traveling between O’Brien Towers and Quincy Center via the Southern Artery, McGrath Highway, and Washington Street instead of Coddington Street.
- Pattern 214.3 only operates during the school year, and runs once per day in the outbound direction at 2:40 PM from Broadmeadows Middle School—about midway between Quincy Center and Germantown—to O’Brien Towers.
- Pattern 214.4 only operates during the school year, and runs once per day in the outbound direction at 2:40 PM from Quincy High School to O’Brien Towers.

For Route 216:

- Pattern 216.0 is the primary service pattern, operating on all days between 6:35 AM and 6:34 PM, and traveling between Houghs Neck and Quincy Center Station via Coddington Street.
- Pattern 216.2 makes all other weekday trips and two-thirds of weekend trips, traveling inbound between Houghs Neck and Quincy Center Station via Coddington Street, and traveling outbound between Quincy Center and Houghs Neck via Coddington Street and Route 214’s alignment in Germantown. Pattern 216.2 operates when Route 214 is not operating, and it replaces Route 214 service

for Germantown residents during sunrise, early AM, evening, late evening, night, Saturday, and Sunday.

- Pattern 216.4 makes one third of weekend trips, traveling inbound from Houghs Neck to Quincy Center Station via McGrath Highway, and outbound from Quincy Center Station to Houghs Neck via McGrath Highway and Route 214’s alignment in Germantown.
- Pattern 216.1 makes one outbound school trip at 2:40 PM from Broadmeadows Middle School direct to Houghs Neck.
- Pattern 216.3 makes one outbound school trip at 2:40 PM from Quincy High School direct to Houghs Neck.

Ridership

On the typical weekday, Route 214 carries 1,211, moderately higher than other MBTA Local Routes. Route 214 carries slightly more passengers outbound (700) than inbound (500), because passengers at inbound stops along Sea Street and Coddington Street riders can also take Route 216 to Quincy Center Station.

Table 3 | Service Patterns for Route 214

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				36	-	-
214.1	O'Brien Towers	Quincy Center Station	Via Coddington Street	24	-	-
214.2	O'Brien Towers	Quincy Center Station	Via McGrath Highway	12	-	-
OUTBOUND				36	-	-
214.1	Quincy Center Station	O'Brien Towers	Via Coddington Street	22	-	-
214.2	Quincy Center Station	O'Brien Towers	Via McGrath Highway	12	-	-
214.3	Broadmeadows Middle School	O'Brien Towers	Leaves from Broadmeadows Middle School instead of Quincy Center Station	1	-	-
214.4	Coddington Street	O'Brien Towers	Leaves from Quincy High School	1	-	-

Route 216 carries 1,156 passengers on the average weekday, moderately higher than other MBTA Local Routes. On Saturdays, it carries 1,441 passengers; on Sundays it carries 910 passengers. Saturday ridership is higher than weekday ridership because on weekends, Route 216 serves passengers served by Route 214 on weekdays.

Table 4 | Service Patterns for Route 216

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS per WKD	TRIPS per SAT	TRIPS per SUN
INBOUND				48	52	24
216.0/216.2	Houghs Neck	Quincy Center Station	Via Coddington Street	48	35	24
216.4	Houghs Neck	Quincy Center Station	Via McGrath Highway	-	17	-
OUTBOUND				50	52	24
216.0	Quincy Center Station	Houghs Neck	Via Coddington Street	35	-	-
216.1	Broadmeadows High School	Houghs Neck	School trip	1	-	-
216.2	Quincy Center Station	Houghs Neck	Via Coddington street	13	35	24
216.3	Quincy High School	Houghs Neck	School trip	1	-	-
216.4	Quincy Center Station	Houghs Neck	Via McGrath Highway	-	17	-

Ridership by Stop

The highest proportion of ridership activity along Route 214 occurs at its termini. Germantown is a higher-density residential neighborhood with a large number of affordable and senior housing units. Route 216 sees moderate ridership along all of the unique parts of its alignment in Houghs Neck. Sea Street, served by both routes, is a low density corridor that serves primarily to connect Quincy Center to Germantown and Houghs Neck across a tidal marsh. Quincy Center sees its highest ridership activity at the Stop N Shop along McGrath Highway, Quincy High School, and the MBTA Quincy Center Station.

The following stops are served by Route 214 only:

- On weekdays, about 340 passengers board at the six Germantown stations; 110 of these passengers alone are boarding at O'Brien Towers, a 274 unit low-income senior housing building.
- 150 passengers board at the 10 remaining Palmer Street stops between Bowes Avenue and Sea Street, a 0.7 mile long corridor through a neighborhood of detached single-family homes. Three of these stops see fewer than four passengers per day.

The following stops are served by Route 216 only:

- 330 passengers board and 19 alight at the 18 stops along Sea Street between Houghs Neck and 410 Norton Road, a 1.7 mile long corridor. These stops have an average boarding count of 18 passengers each, although there is much higher boarding (40-45 passengers each) at the Quincy Yacht Club, Manet Avenue (at the Atherton Hough High School), and Gannet Road (a neighborhood activity center).

The following stops are served by both routes:

- About 20 passengers board at 410 Sea Street.
- About 70 passengers per day board and 75 alight at Norton Road, the nearest station to Broadmeadows Middle School.
- 105 passengers board and 10 alight at the four stops along Sea Street between Norton Road and Cemetery, a 1.1 mile long corridor.
- Along the Coddington Street pattern, ridership activity is highest at Quincy High School, where about 90 passengers alight.
- Along the McGrath Highway pattern, ridership activity is highest near the large Stop N Shop grocery store with about 17 passengers alighting.
- About 970 passengers alight in Quincy Center, with most (about 850) alighting the bus at Quincy Center Station, where connection is available to the Red Line and 14 other MBTA bus routes.

Ridership by Trip

Ridership is highest on Route 214's earliest and latest trips, just after and before Route 216 service takes over. For example, Route 214's first inbound trip at 6:40 AM averages about 25 passengers. Route 214's last trip at 6:10 PM has the highest ridership of any trip, with about 40 passengers, indicating that there is significant evening demand for outbound trips. Most inbound trips have few alightings between Germantown and Quincy Center, indicating that most passengers are using the route to transfer to other MBTA services at Quincy Center Station.

Route 216 experiences low ridership throughout the weekday except for in the early AM inbound when Route 214 is not operating and after 6:30 PM in the outbound direction when Route 214 is not operating. The trips during these times have high ridership, oftentimes approaching the capacity of an MBTA bus. On Sundays, Route 216 experiences very high ridership during the first three trips of the day, indicating that there exists unmet demand for more frequent service and for service beginning earlier in the day.

Figure 4 | Weekday Inbound Ridership by Stop Map for Route 214



Figure 5 | Weekday Inbound Ridership by Stop Map for Route 216

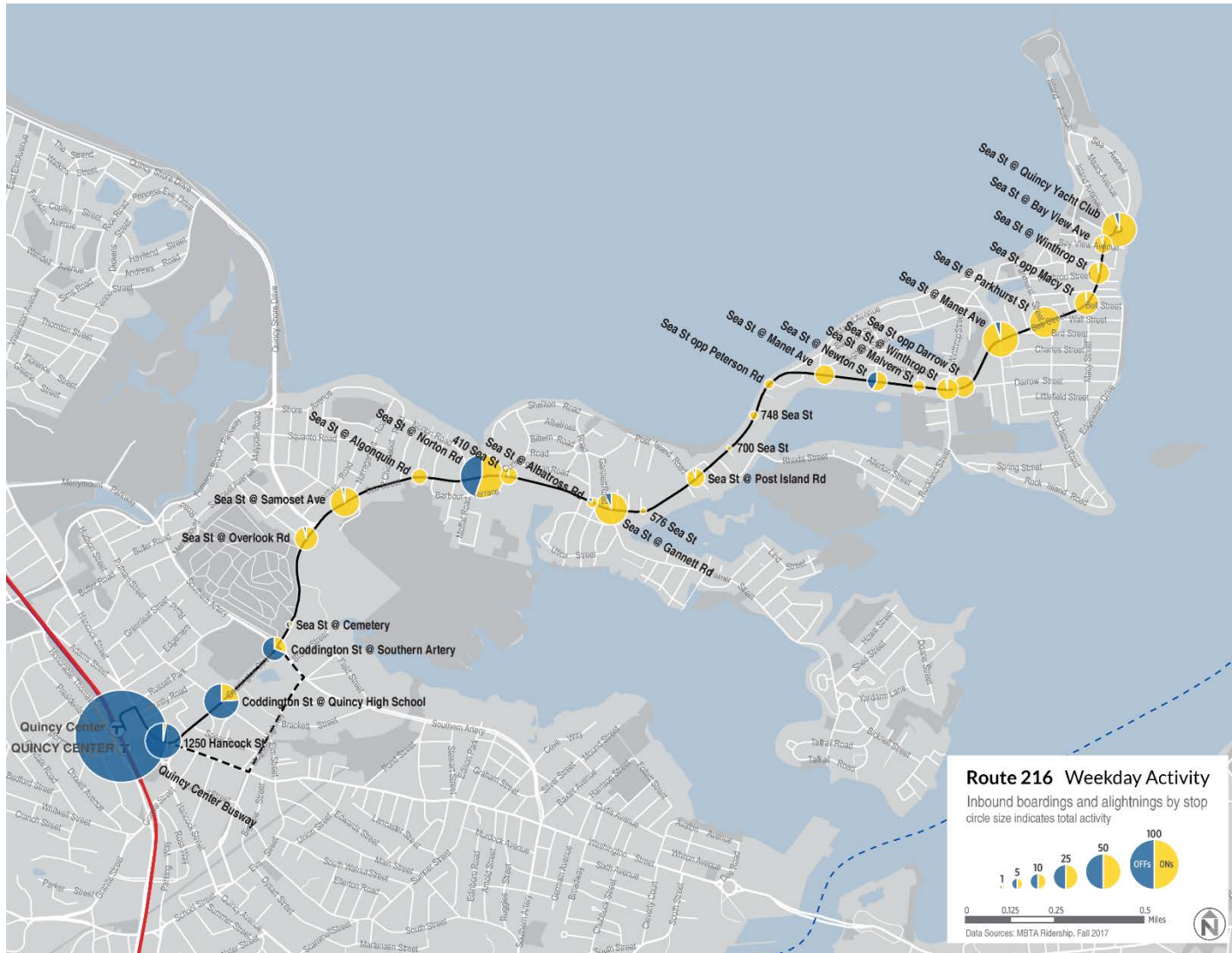


Figure 6 | Weekday Ridership by Trip for Route 214: Inbound

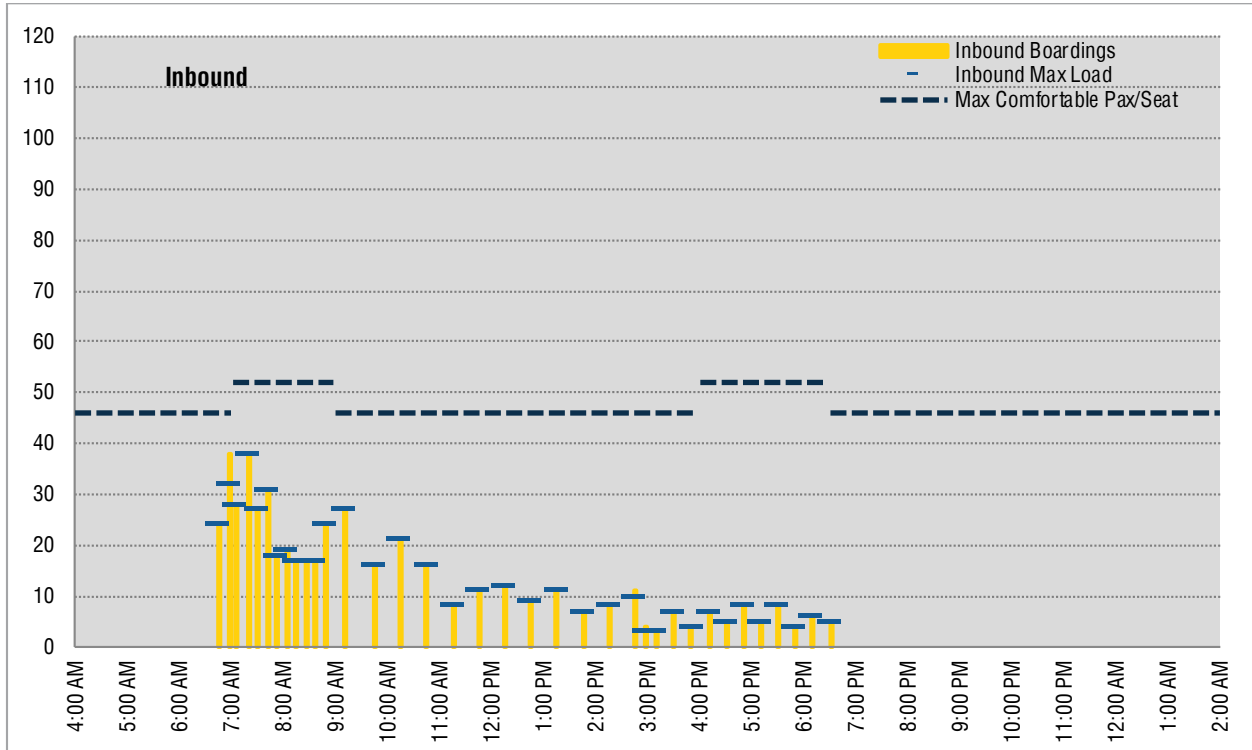


Figure 7 | Weekday Ridership by Trip for Route 214: Outbound

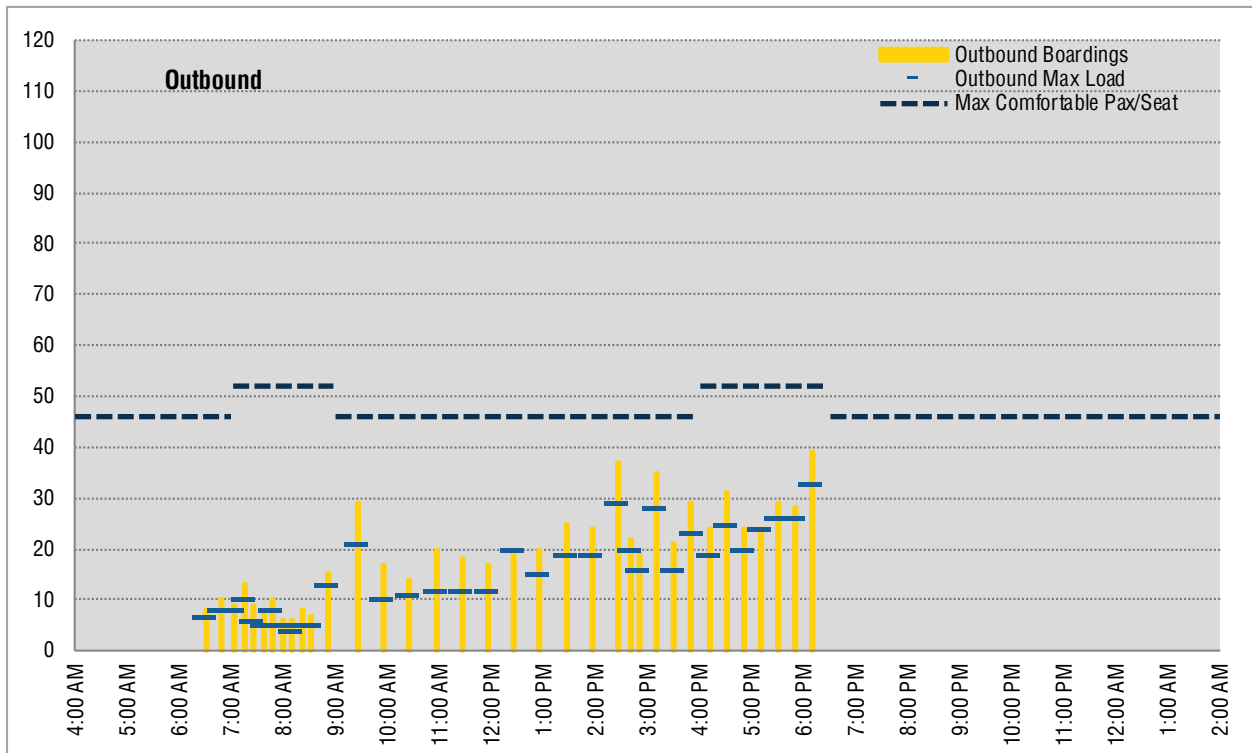


Figure 8 | Weekday Ridership by Trip for Route 216: Inbound

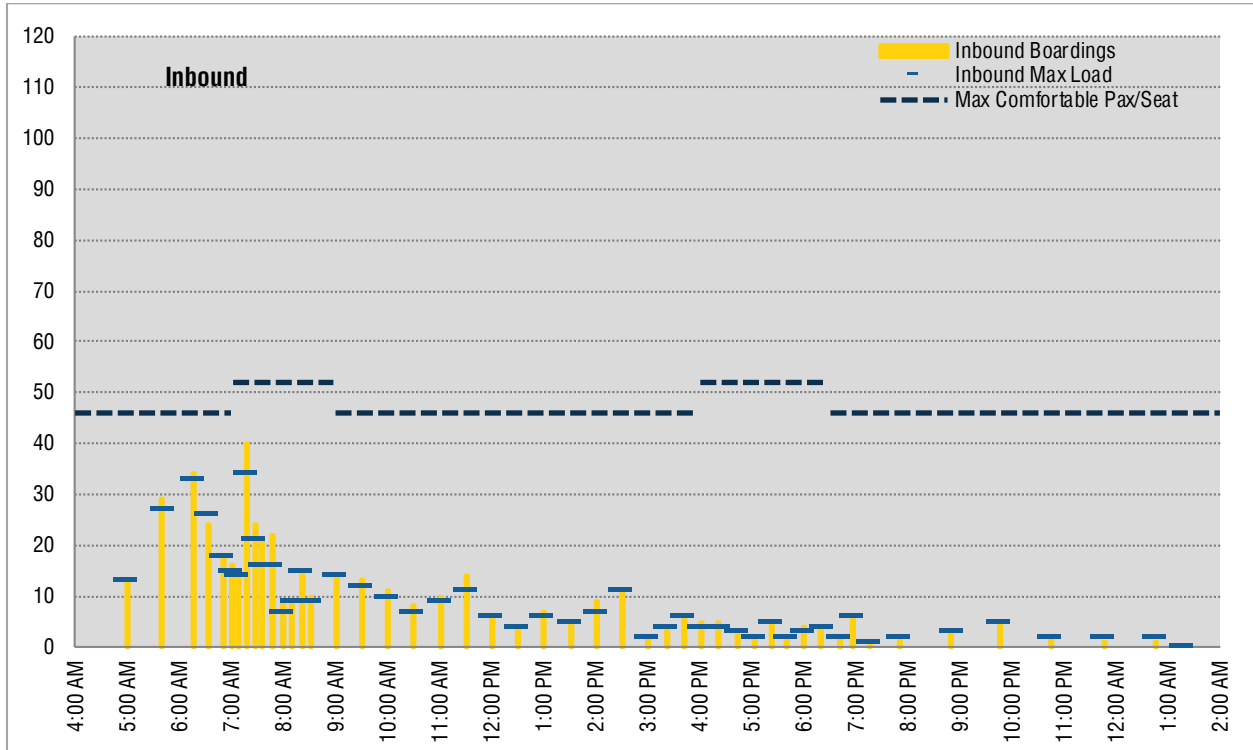


Figure 9 | Weekday Ridership by Trip for Route 216: Outbound

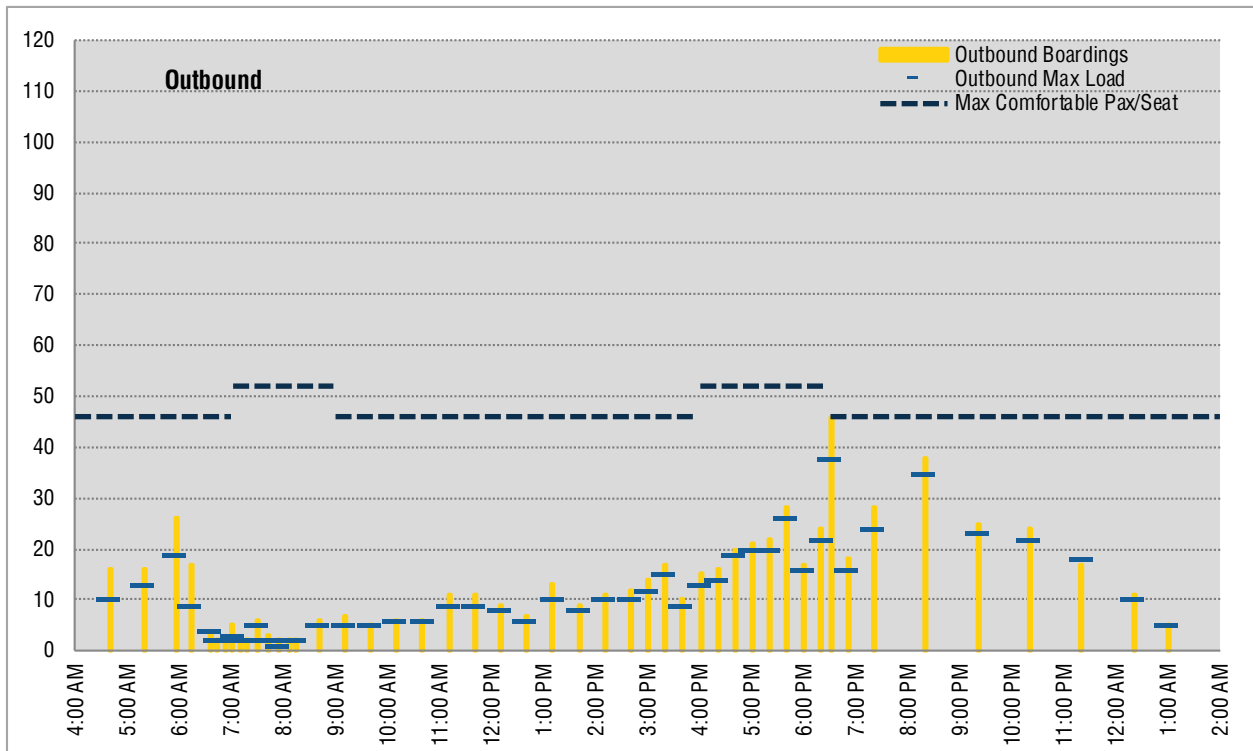


Figure 10 | Saturday Ridership by Trip for Route 216: Inbound

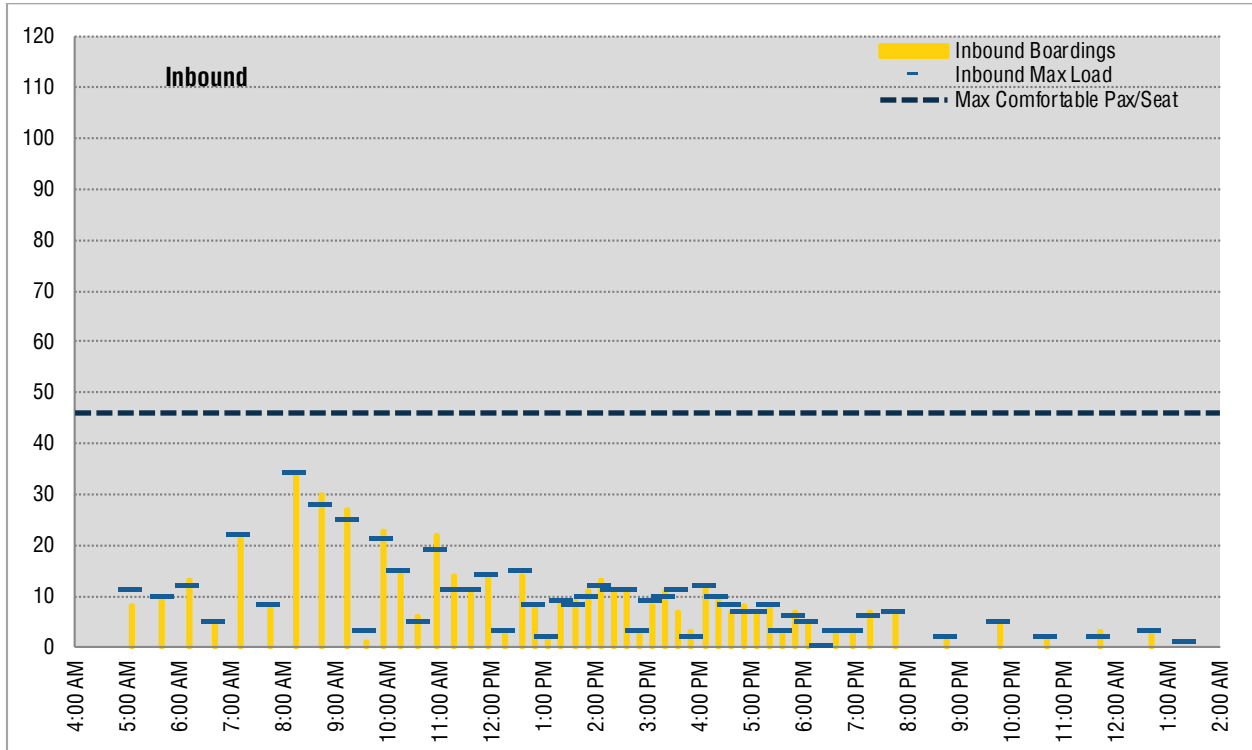


Figure 11 | Saturday Ridership by Trip for Route 216: Outbound

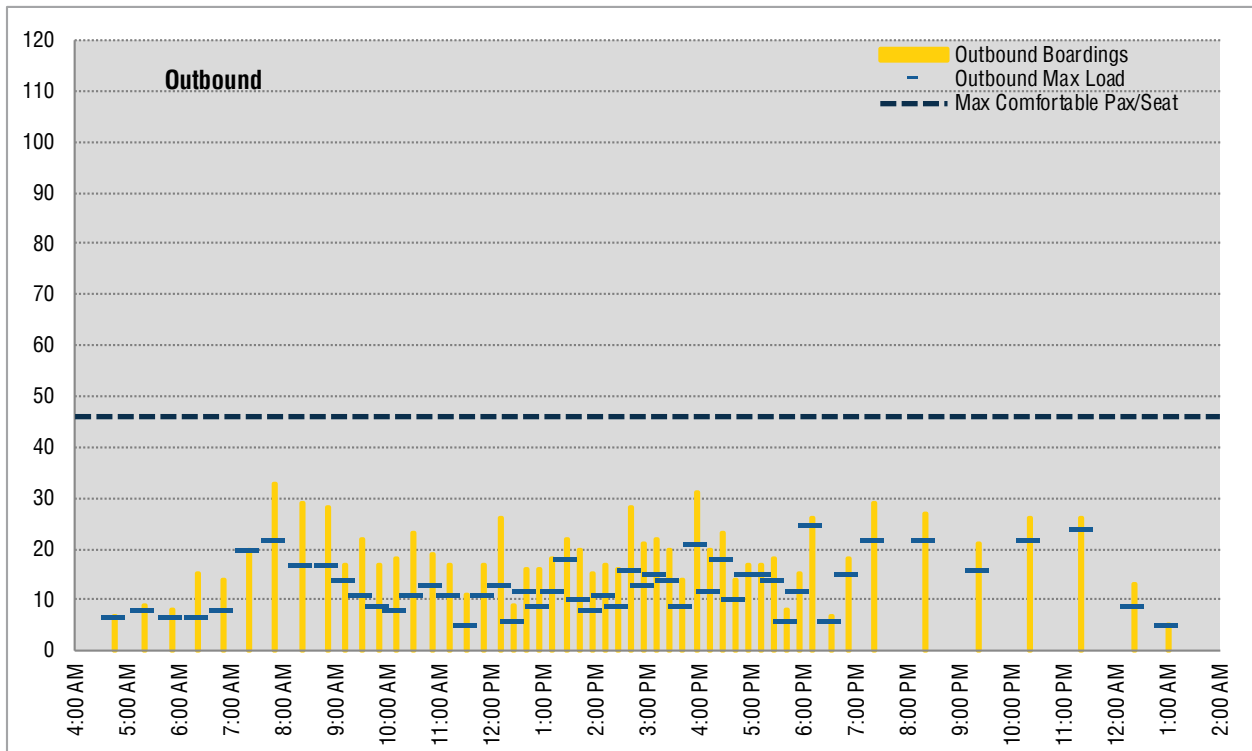


Figure 12 | Sunday Ridership by Trip for Route 216: Inbound

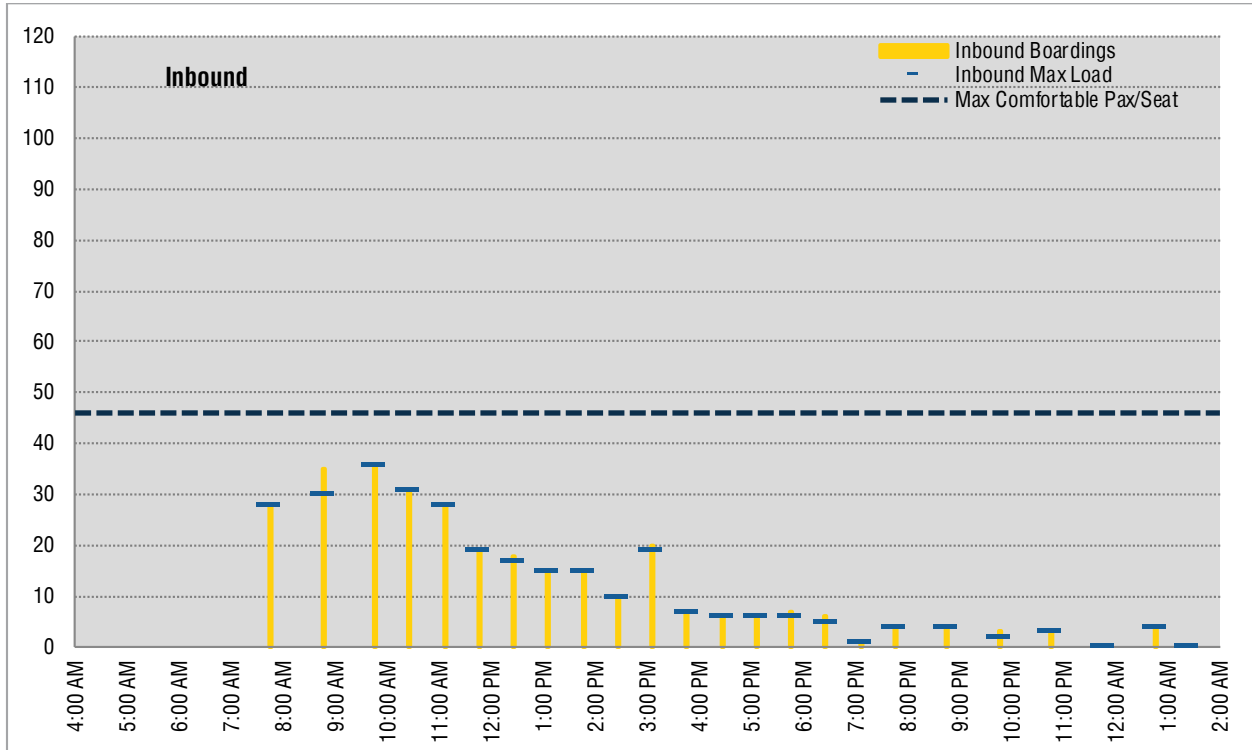
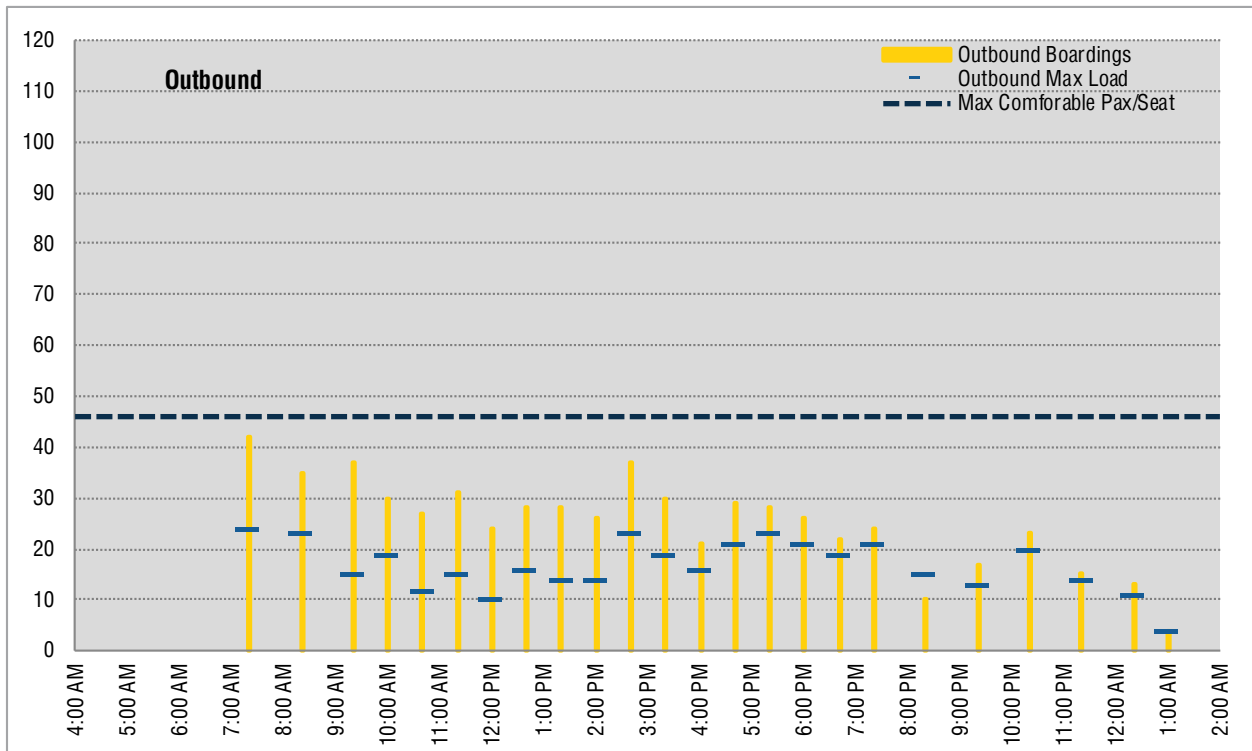


Figure 13 | Sunday Ridership by Trip for Route 216: Outbound



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 214, 99.4% of passenger minutes are in comfortable conditions, and on Route 216, 100% of passenger minutes are in comfortable conditions. Both of these conditions are above both the minimum standard and the target standard (see Table 5).

Table 5 | Passenger Time Spent Traveling in Comfortable Conditions

	WEEKDAYS	SATURDAYS	SUNDAYS
Minimum Standard	92%	92%	92%
Target	96%	96%	96%
Actual: Route 214	99.4%	-	-
Actual: Route 216	100%	100%	-

Reliability and Speed

Reliability

Route 214 has an overall reliability of 71%, which is above the weekday MBTA average of 61%. Route 216 is slightly more reliable on weekdays, with an overall reliability of 75%. On Saturdays and Sundays, Route 216 is slightly less reliable but still performs above the MBTA average, with 71% overall reliability on Saturdays and 70% overall reliability on Sundays.

Table 6 | Reliability on Route 214

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	70%	73%	71%	1.0%
Saturday	-	-	-	-
Sunday	-	-	-	-

Table 7 | Reliability on Route 216

SERVICE DAY	ORIGIN/MID-ROUTE ON-TIME PERFORMANCE	DESTINATION ON-TIME PERFORMANCE	OVERALL RELIABILITY	DROPPED TRIPS
Monday-Friday	73%	79%	75%	0.8%
Saturday	70%	76%	71%	-
Sunday	69%	73%	70%	-

Running Times

Route 214 trips take 1-5 minutes longer than scheduled throughout the service day (see Figure 14 and Figure 15). Similarly, Route 216 trips take 1-5 minutes longer than scheduled throughout the service day (See Figure 16 and Figure 17).

Figure 14 | Scheduled & Median Travel Time by Trip: Route 214-1 Inbound

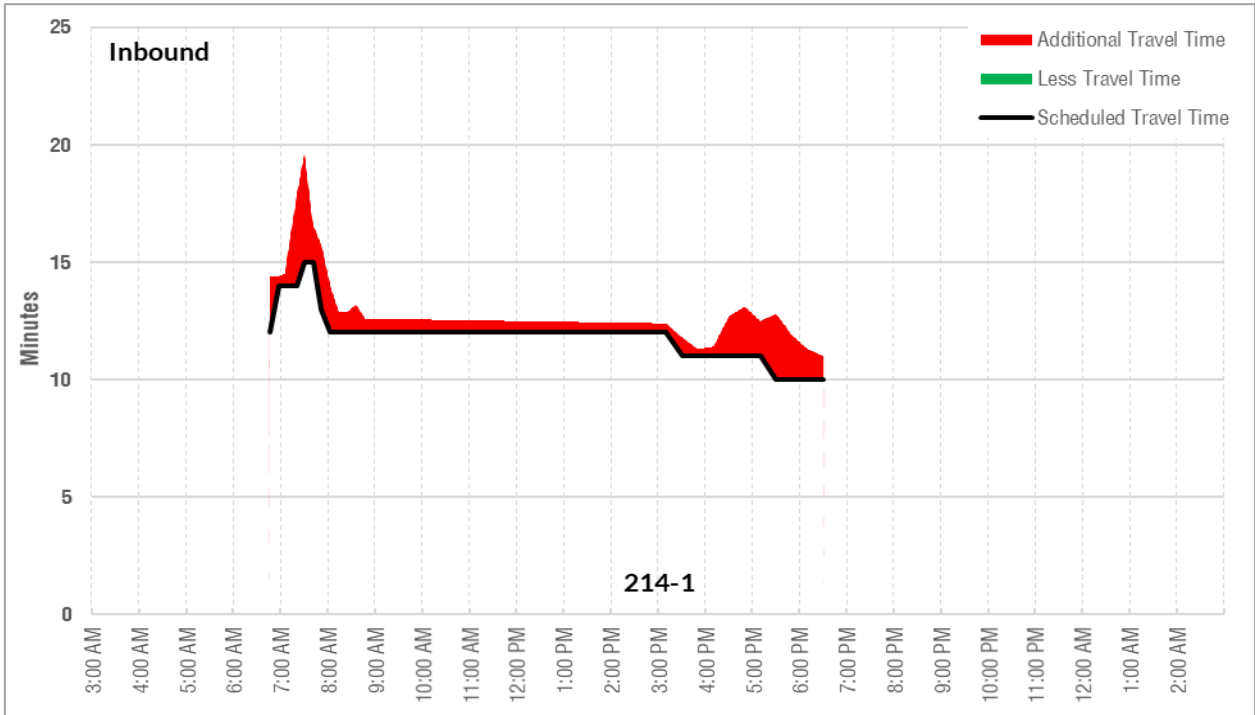


Figure 15 | Scheduled & Median Travel Time by Trip: Route 214-2 Inbound

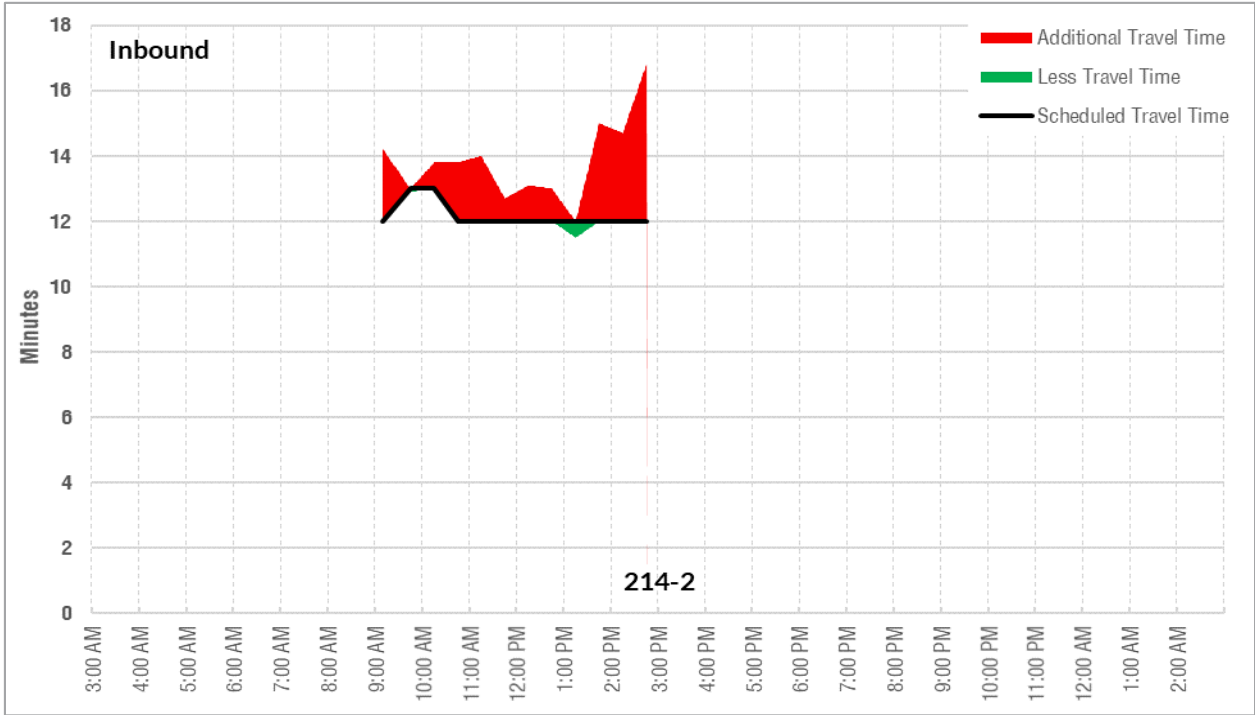


Figure 16 | Scheduled & Median Travel Time by Trip: Route 216-0 Inbound

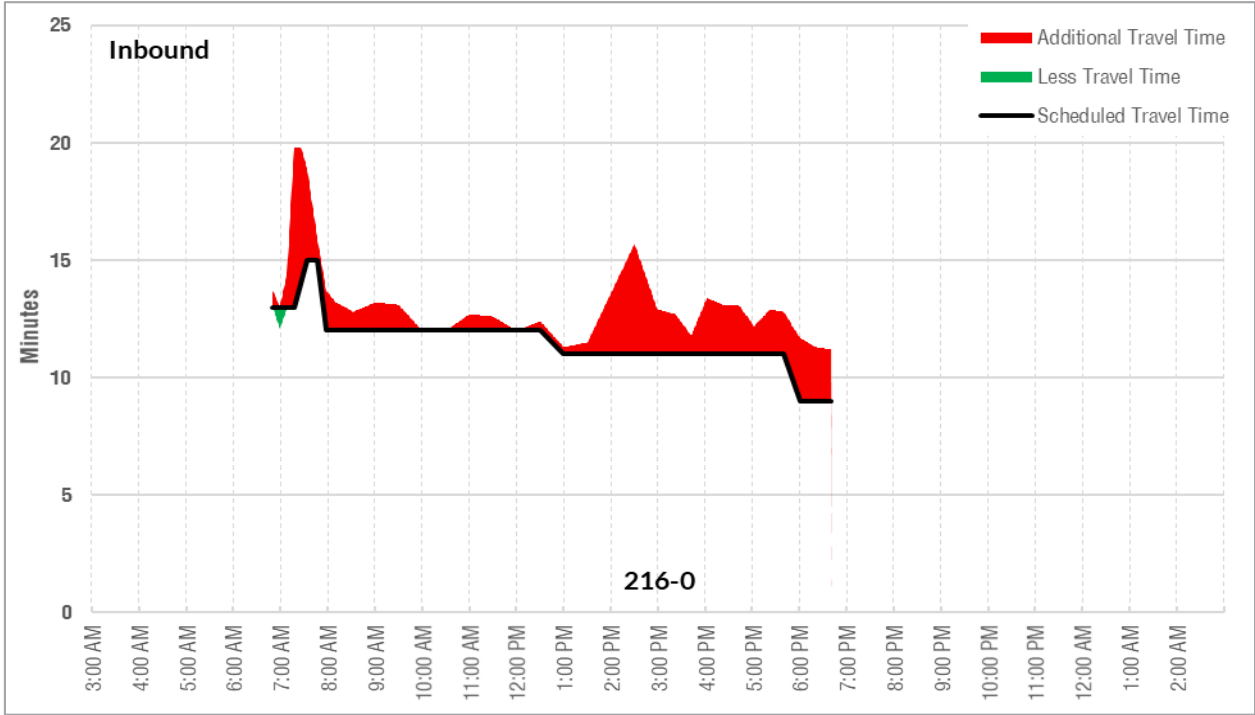
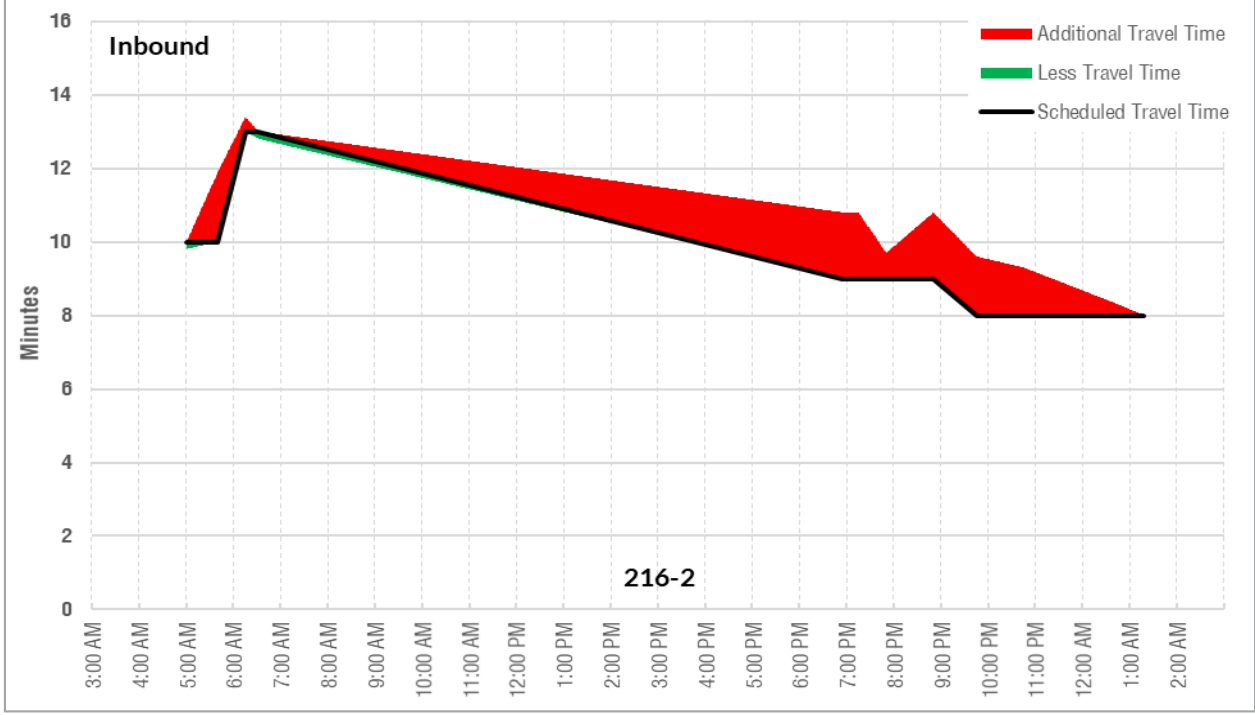


Figure 17 | Scheduled & Median Travel Time by Trip: Route 216-2 Inbound



Stop Spacing

Stops are very closely spaced in the Germantown portion of Route 214. Between O'Brien Towers and the stop at Palmer Street and Wilgus Road, there are 13 stops, with an average stop spacing of 400 feet. However, the lack of sidewalks along most of Palmer Street may make this close stop spacing necessary.

The stops along Sea Street are ideally spaced for the low-density nature of this corridor.

Stops are too closely spaced in Quincy Center, resulting in ridership imbalances and late trips. For example, the stops at Washington Street at Coddington Street and 1250 Hancock Street are only 250 feet apart.

Summary

Route 214 and Route 216 provide an important connection between Quincy Center, a major activity and transit center, and the neighborhoods of Germantown and Houghs Neck. However, the complex operation of both routes—Route 216 provides Route 214's alignment during the early AM, evening, and weekend periods, as well as other select service patterns on both routes, makes service somewhat difficult to understand. The routes are also challenged with reliability and on-time performance issues. Additionally, current ridership patterns indicate the routes may need additional Service frequency on weekdays and Sundays, as well as additional span on Sunday.