

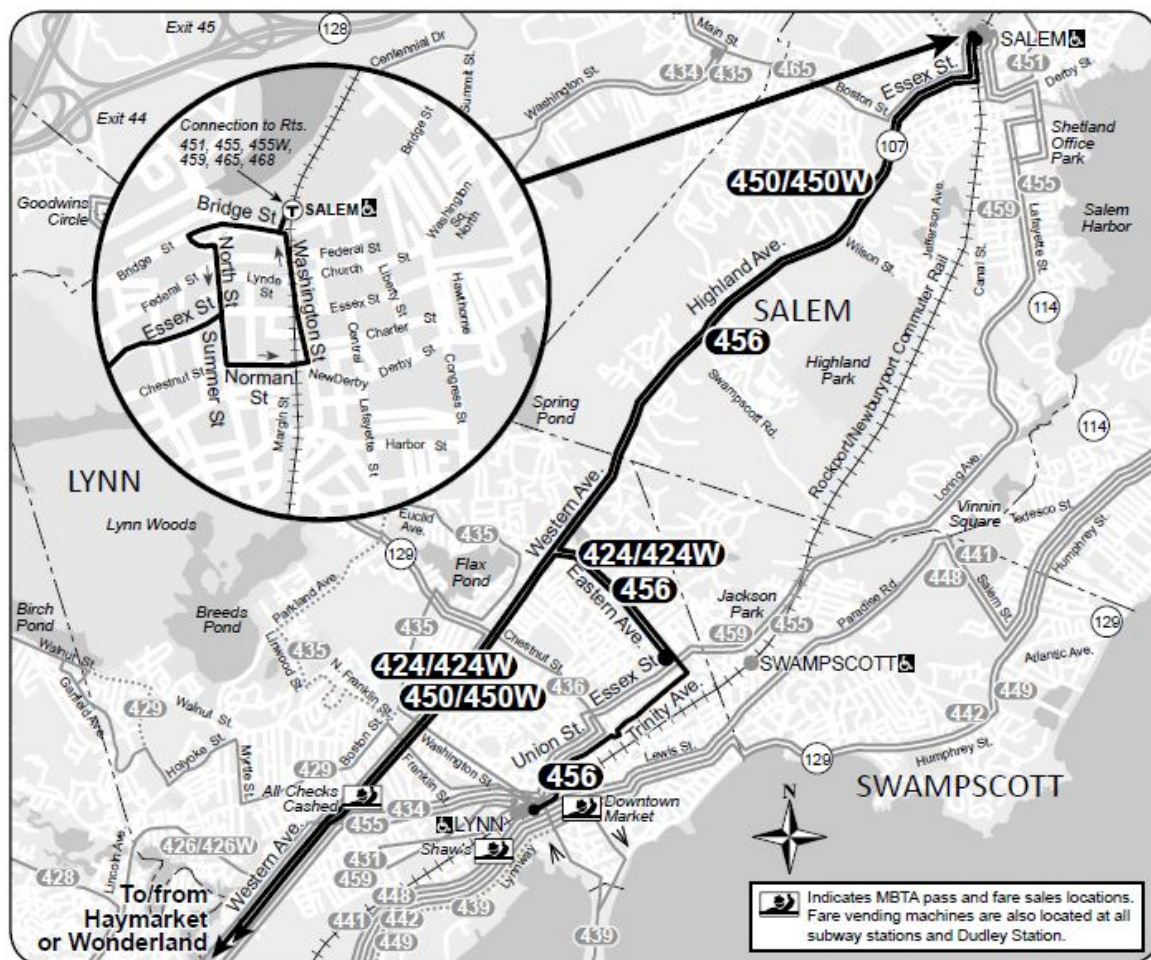
Route 456

Salem Depot – Central Square, Lynn

Route Overview

Route 456 Salem Depot – Central Square, Lynn is a local route that operates between Salem Commuter Rail Station and Central Square, Lynn via Highland Avenue, Western Avenue, Eastern Avenue, and Trinity Avenue (see Figure 1).

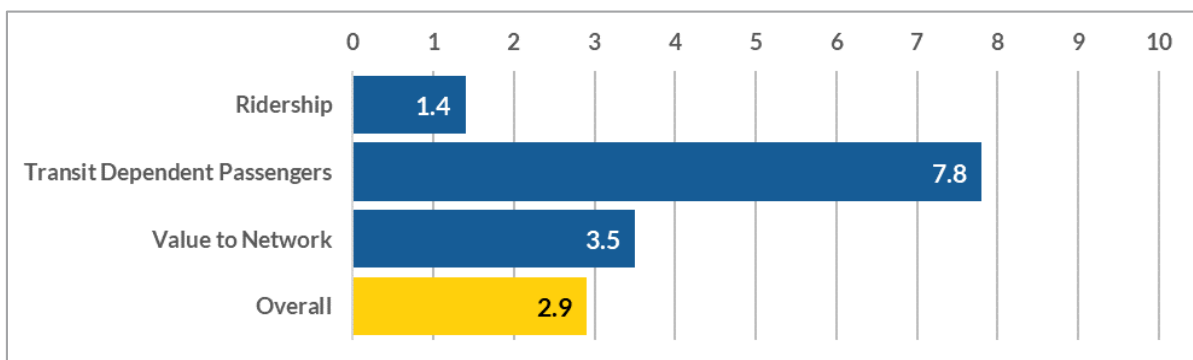
Figure 1 | Service Map



Network Importance

Route 456 has low importance within the MBTA bus network (see Figure 2). On a relative scale of 0 to 10, Route 456 rates 1.4 in terms of ridership, 7.8 in terms of transit dependent ridership, and 3.5 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 2.9.

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



Service Overview

Schedule

Route 456 operates on weekdays from 6:52 AM until 4:52 PM (See Table 1). It does not operate on weekends.

On weekdays, inbound trips operate from 9:40 AM until 4:52 PM with 80 minute average headways. Outbound service operates from 6:52 AM until 4:11 PM with headways that are generally 80 minutes.

Route 456 does not meet the MBTA's span of service standards, frequency, or day of service standards:

- Days of service: Service in high-density areas should run seven days a week. Route 456 serves many high-density areas in Salem and Lynn, as well as lower density areas in between, and thus there is some interpretation as to whether the SDP weekend service standard should apply.
- Span of service: Weekday service should operate from 7:00 AM to 7:00 PM, but service ends at 4:52 PM.
- Service frequencies: Service should operate every at least every 30 minutes during peak periods and every 60 minutes during off-peak periods, but most service operates every 80 minutes.

Table 1 | Schedule Statistics

| SERVICE DAY | SPAN OF SERVICE | FREQUENCY (RANGE) | FREQUENCY (AVERAGE) | DAILY TRIPS (INBOUND/OUTBOUND) |
|----------------------|--------------------|-------------------|---------------------|--------------------------------|
| Monday-Friday | 6:52 AM to 4:52 PM | | | 6/7 |
| Sunrise | - | - | - | - |
| Early AM | 6:00 AM to 6:59 AM | 1 trip | - | 0/1 |
| AM Peak | - | - | - | - |
| Midday Base | 9:00 AM to 1:29 PM | 75 - 128 | 80 | 3/4 |
| Midday School | 1:30 PM to 3:59 PM | 80 | 80 | 2/2 |
| PM Peak | 4:00 PM to 4:52 PM | 1 trip | - | 1/0 |
| 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.

Service Patterns

Pattern 456.0 makes all trips except one operate as shown in Table 2.

Pattern 456.9 makes the first outbound trip of the day, starting at the Lynn Garage.

Table 2 | Service Patterns

| PATTERN | ORIGIN | DESTINATION | UNIQUE FEATURE | TRIPS per WKD | TRIPS per SAT | TRIPS per SUN |
|-----------------|----------------------|---------------|---------------------|---------------|---------------|---------------|
| INBOUND | | | | 6 | - | - |
| 456.0 | Salem Station | Lynn Station | Primary pattern | 6 | - | - |
| OUTBOUND | | | | 7 | - | - |
| 456.0 | Central Square, Lynn | Salem Station | Primary pattern | 6 | - | - |
| 456.9 | Lynn Garage | Salem Station | First outbound trip | 1 | - | - |

Ridership

Route 456 serves 250 passengers per day and is one of the MBTA's lowest ridership bus routes (only 18 routes have lower ridership).

Ridership by Stop

Most passengers use Route 456 to ride between Salem and Central Square, Lynn. On inbound trips (see Figure 3):

- 20 passengers board at Salem Station. This is the highest volume boarding station.
- 70 passengers board and 20 alight at the 22 stops between Salem Station and Eastern Avenue.
- 10 passengers board and 10 alight at the six stops along Eastern Avenue.
- Only five passengers board and 30 alight at the 11 stops between Eastern Avenue and Lynn Station.
- 40 passengers alight at Central Square, Lynn.

Ridership by Trip

Ridership per trip is very low on nearly all Route 456 trips (see Figure 4 and Figure 5). Inbound:

- The first four inbound trips of the day carry 13 to 14 passengers each.
- The last two inbound trips of the day (3:00 PM and 4:20 PM) carry 23 passengers each.

Outbound:

- The highest ridership, at 32 passengers, is on the 6:52 AM outbound trip, which is the first of the day.
- Ridership declines to 16 and 13 passengers on the 9:00 AM and 10:15 AM trips and then increases to 26 passengers served on the 3:35 PM trip.

Figure 3 | Weekday Inbound Ridership by Stop Map

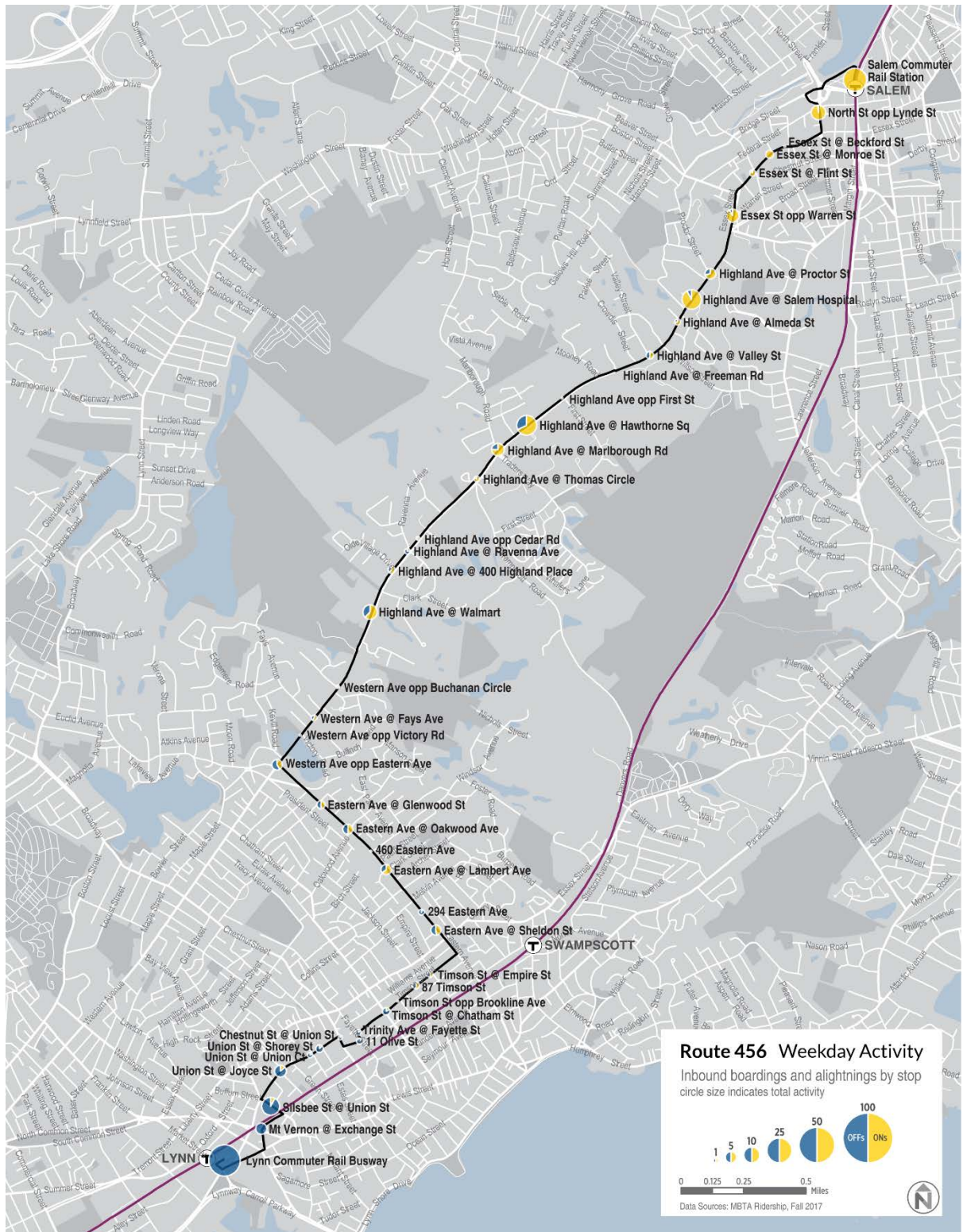


Figure 4 | Weekday Ridership by Trip: Inbound

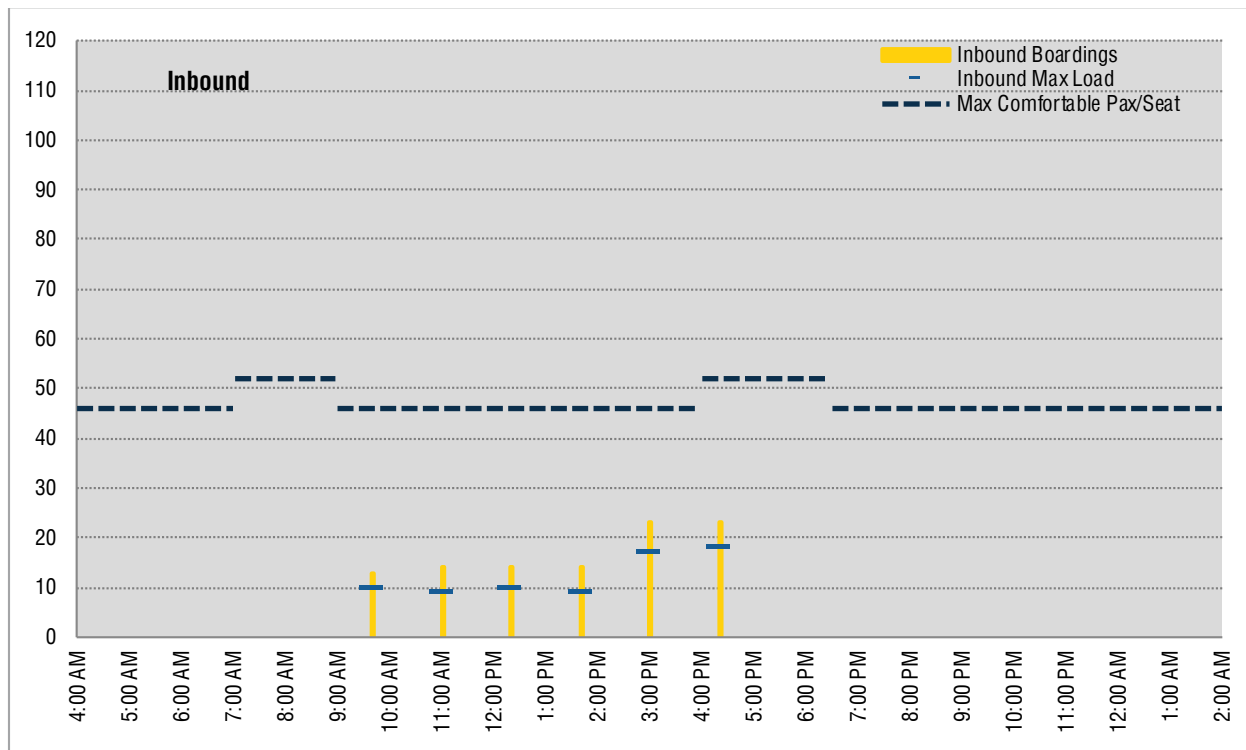
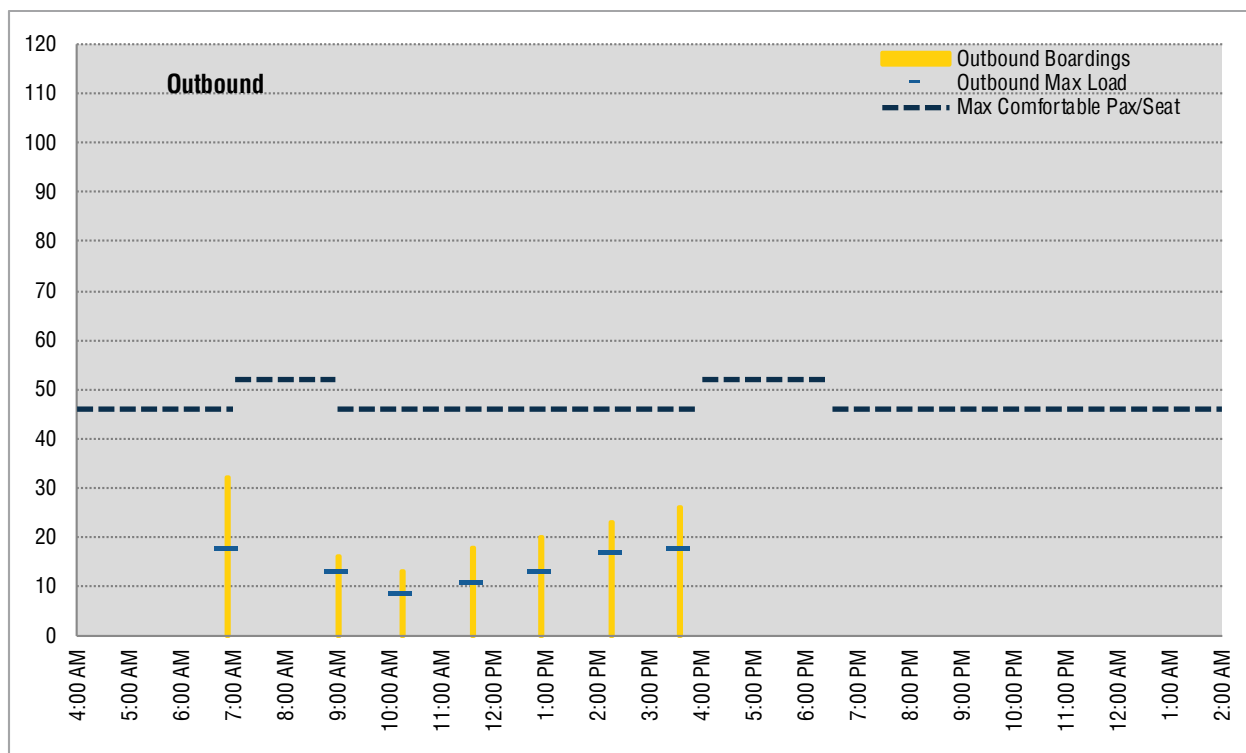


Figure 5 | Weekday Ridership by Trip: Outbound



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 456, 98.2% of passenger minutes are in comfortable conditions, which exceeds the target of 96% (see Table 3).

Table 3 | Passenger Time Spent Traveling in Comfortable Conditions

| | WEEKDAYS | SATURDAYS | SUNDAYS |
|-------------------------|----------|-----------|---------|
| Minimum Standard | 92% | 92% | 92% |
| Target | 96% | 96% | 96% |
| Actual | 98% | - | - |

Reliability and Speed

Reliability

Route 456's overall reliability is 72%. This is above the minimum standard of 70% but below the target of 75%.

Table 4 | Reliability

| SERVICEDAY | ORIGIN/MID-ROUTE ON-TIME PERFORMANCE | DESTINATION ON-TIME PERFORMANCE | OVERALL RELIABILITY | DROPPED TRIPS |
|----------------------|--------------------------------------|---------------------------------|---------------------|---------------|
| Monday-Friday | 72% | 70% | 72% | 0.0% |
| Saturday | - | - | - | - |
| Sunday | - | - | - | - |

Running Times

Actual travel times for Route 456 are generally within 5 minutes of scheduled travel times, with differences both plus and minus (see Figure 6 and Figure 7).

Stop Spacing

There are 6.4 stops per mile along Route 456 which is at the upper range of the MBTA's standards for the average number of stops per mile. There are stops spaced close to each other throughout Route 456. For example, less than 300 feet separate stops in Lynn at Union Street at Union Court and Union Street at Shore Street.

Figure 6 | Scheduled & Median Travel Time by Trip: Route 456 Inbound

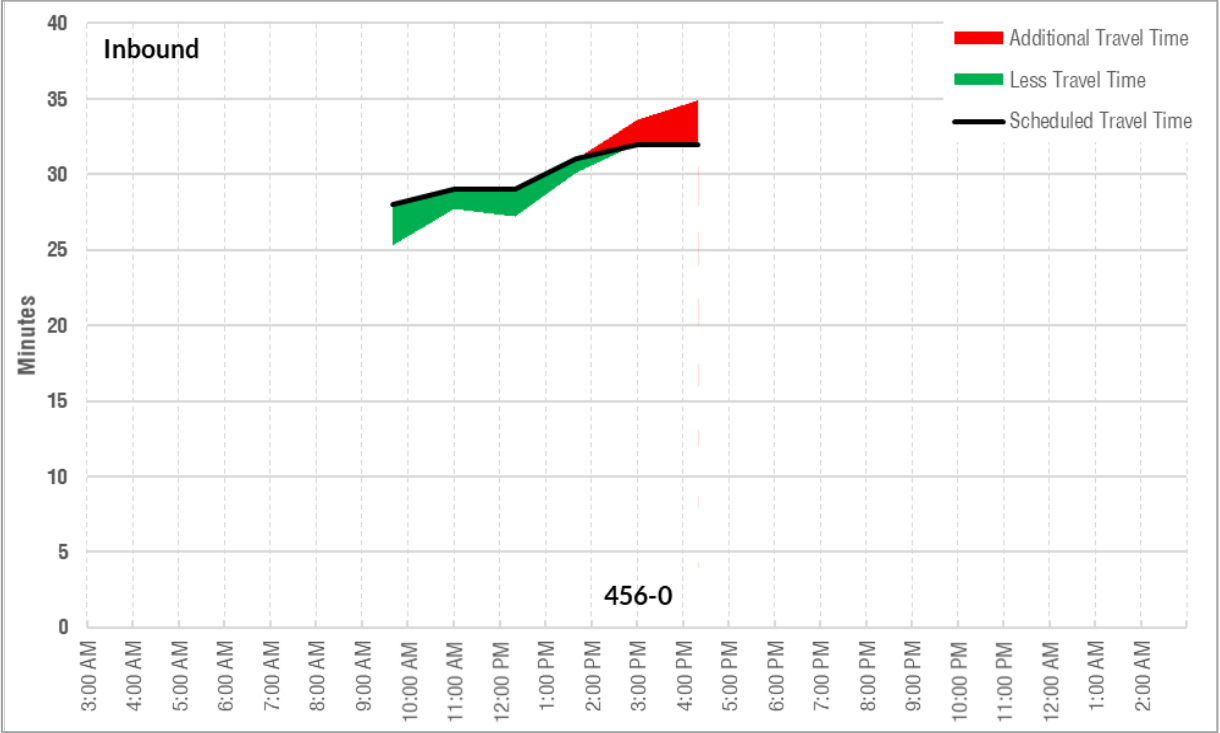
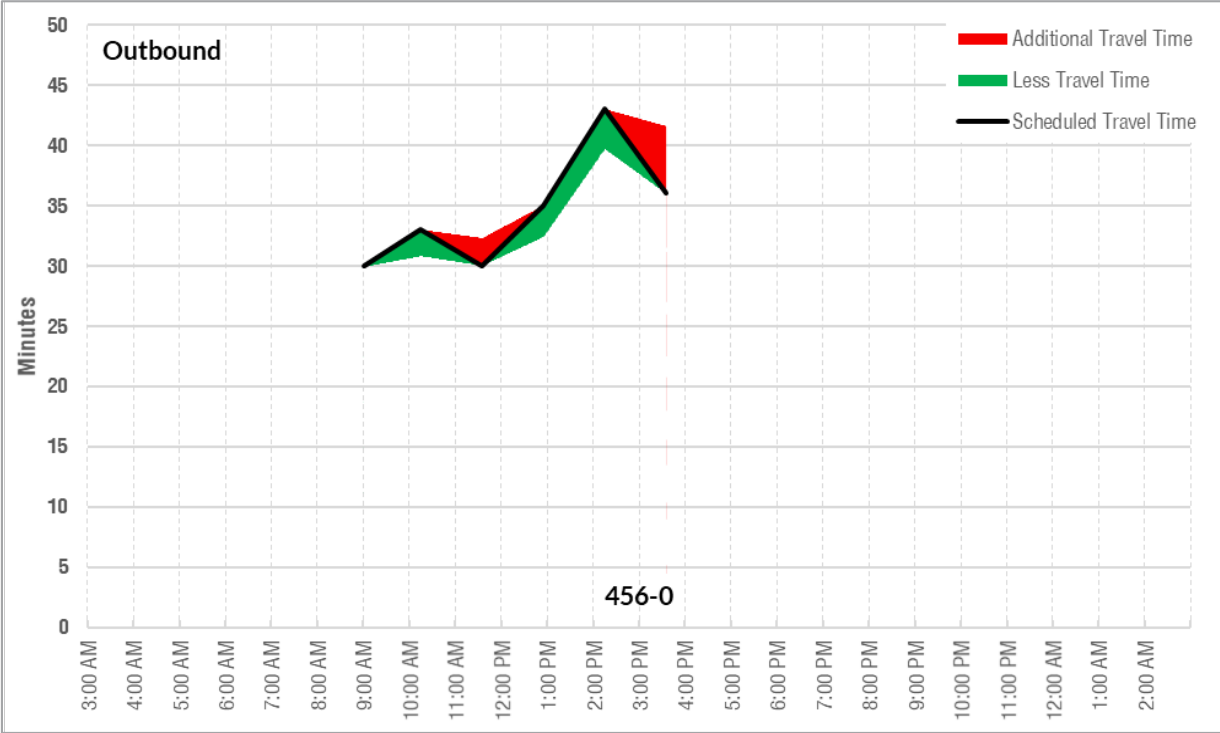


Figure 7 | Scheduled & Median Travel Time by Trip: Route 456 Outbound



Summary

Route 456 is a very low ridership route that serves a small market that is also served by other routes that provide better service for most area residents. Its service fails to meet the SDP service span and frequency guidelines.