

ROUTE 47

Whitman Plaza to 5th-Godfrey

KEY SERVICE CHARACTERISTICS, ISSUES, AND OPPORTUNITIES

- *Route 47 operates 24 hours per day providing north-south service connecting North Philadelphia and South Philadelphia via 5th and 6th Streets on its northern half and 7th and 8th Streets on its southern half.*
- *On all days of the week, Route 47 carries more passengers than any other SEPTA bus route. Despite frequent service, there was some pre-COVID crowding on the route. If possible, changing to articulated buses for Route 47 could alleviate overcrowding (if full ridership returns).*
- *The route is one of the slowest in the SEPTA network and has more stops per mile than most other routes. Improved stop spacing and curb management operations could improve Route 47's speed and on-time performance.*

ROUTE OVERVIEW

Route 47 operates 24 hours per day and provides north-south service connecting North and South Philadelphia on the east side of Broad Street (see Figure 1). The alignment is simple and direct, with service on 5th and 6th Streets north of Susquehanna/Dauphin Streets, and on 7th and 8th Streets south of that point. Route 47 has the highest ridership in the SEPTA network on all days of the week. However, the route is also one of the slowest and has some of the closest stop spacing.

SERVICE OVERVIEW

Schedule

Route 47 operates 24 hours per day on all days of the week. Frequencies vary by time of day (see Table 1):

- On weekdays, peak period frequencies are roughly every 6-7 minutes. Midday frequencies are approximately every 9 minutes on average.
- On weekend days, service frequencies average 13-17 minutes during the day and every 27-30 minutes at night.

Figure 1 | Route Map

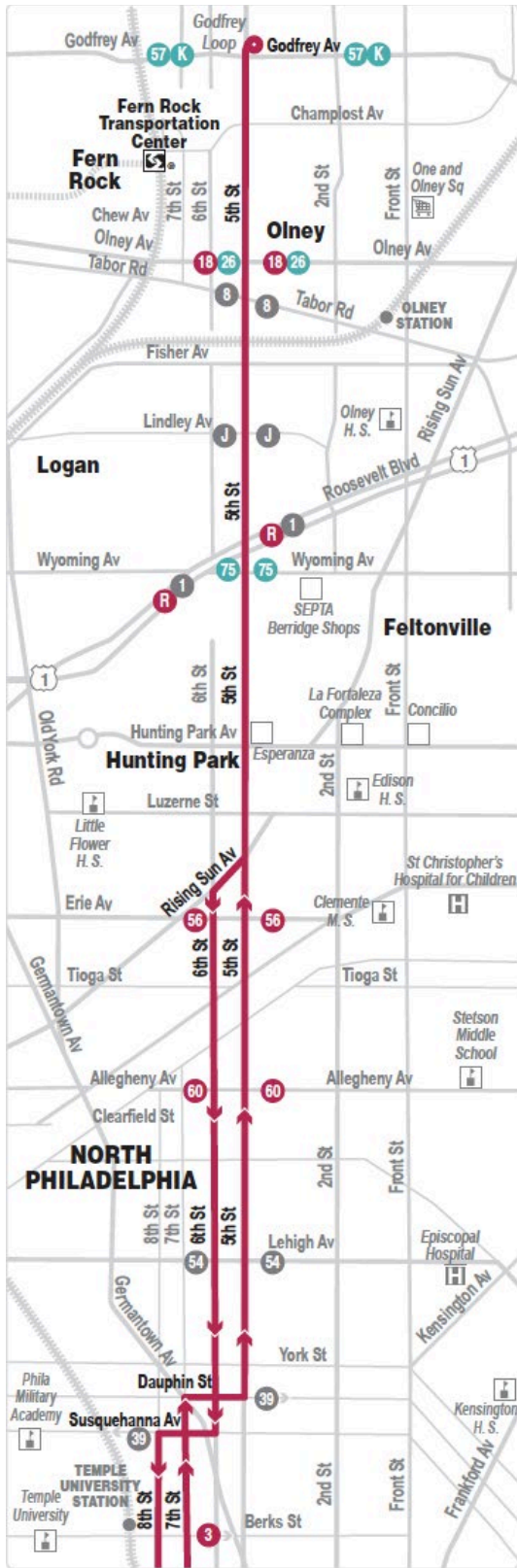


Table 1 | Schedule Statistics

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
Weekdays	24 Hours		
Early AM	4:00 AM to 5:59 AM	20-45	37
AM Peak	6:00 AM to 8:59 AM	6-16	7
Midday	9:00 AM to 2:59 PM	6-11	9
PM Peak	3:00 PM to 5:59 PM	3-9	6
Evening	6:00 PM to 9:59 PM	5-20	12
Late Night	10:00 PM to 11:59 PM	20-30	24
Owl	Midnight to 3:59 AM	29-46	39
Saturdays	24 Hours		
Day	8:00 AM to 5:59 PM	11-18	13
Night	Before 8:00 AM & After 5:59 PM	14-46	27
Sundays	24 Hours		
Day	8:00 AM to 5:59 PM	13-32	17
Night	Before 8:00 AM & After 5:59 PM	14-46	30

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

Service Patterns

Route 47 has three weekday service patterns, and four patterns overall. Most trips use the primary pattern, but a few trips are short-turns and/or bypass the Whitman Plaza (see Table 2).

Table 2 | Service Patterns

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
Northbound							
229592	Whitman Plaza	Godfrey Loop	Primary Pattern	-	129	72	62
229591	7th Street and Shunk St	Godfrey Loop	Short-turn: no Whitman Plaza	0	0	5	1
Southbound							
229586	Godfrey Loop	Whitman Plaza	Primary Pattern	-	126	76	62
229587	8th St and Market St	8th St and Shunk St	Short-turn from Center City; no Whitman Plaza	0	3	0	0

Note: Unique stops are those not served by the primary pattern

RIDERSHIP

In Fall 2019, Route 47 carried 17,768 passengers on weekdays, 8,942 on Saturdays, and 6,926 on Sundays (see Table 3). This was the highest ridership of any SEPTA bus route on all days of the week.

Table 3 | Fall 2019 Ridership and Productivity

	Weekdays	Saturdays	Sundays
Daily Ridership	17,768	8,942	6,926
Rank	1	1	1
Passengers per Revenue Vehicle Hour	65.5	57.5	57.0
Rank	18	13	13

Transfer Patterns

While the single largest transfer percentage is with the Market-Frankford Line, some Route 47 transfers are to connecting east-west service in North Philadelphia. The largest transfer volumes are to and from:

- Market-Frankford Line (9.4% of all trips)
- Route 60 (35th Street and Allegheny Avenue to Richmond Street and Westmoreland Street) (2.9%)
- Route 18 (Fox Chase Loop to Cedarbrook Plaza) (2.8%)
- Route 26 (Cheltenham Avenue Station to Frankford Transportation Center) (2.5%)
- Route 56 (23rd Street and Venango Street to Torresdale Avenue and Cottman Avenue) (2.2%)

Weekend transfer percentages are similar to weekdays.

Ridership by Stop

There is consistent demand all along Route 47, with the highest activity often at key transfer points. Center City stops between Walnut Street and Arch Street are all well-used. For northbound weekday trips, some highlights include:

- 323 passengers board at the origin at Whitman Plaza
- There are 230 boardings and 53 alightings at 7th Street and Snyder Avenue
- 184 riders board and 118 alight at 7th Street and Washington Avenue
- The single busiest stop at 7th Street and Market Street has 849 boardings and 836 alightings
- There are 231 boardings and 149 alightings at 7th Street and Girard Avenue
- 221 riders board and 160 alight at 5th Street and Lehigh Avenue
- 288 riders board and 215 alight at 5th Street and Allegheny Avenue
- There are 217 boardings and 194 alightings at 5th Street and Erie Avenue
- 132 riders board and 520 alight at 5th Street and Olney Avenue
- 597 combined riders alight at the final two stops on Godfrey Avenue

About 23 percent of all boarding and alighting activity occurs at stops between Bainbridge Street and Whitman Plaza in South Philadelphia. Approximately 24 percent of ridership activity occurs between Spring Garden Street and South Street in Center City. The remaining 53 percent of boardings and alightings occur north of Spring Garden Street.

Figure 2 | Weekday Northbound Ridership by Stop

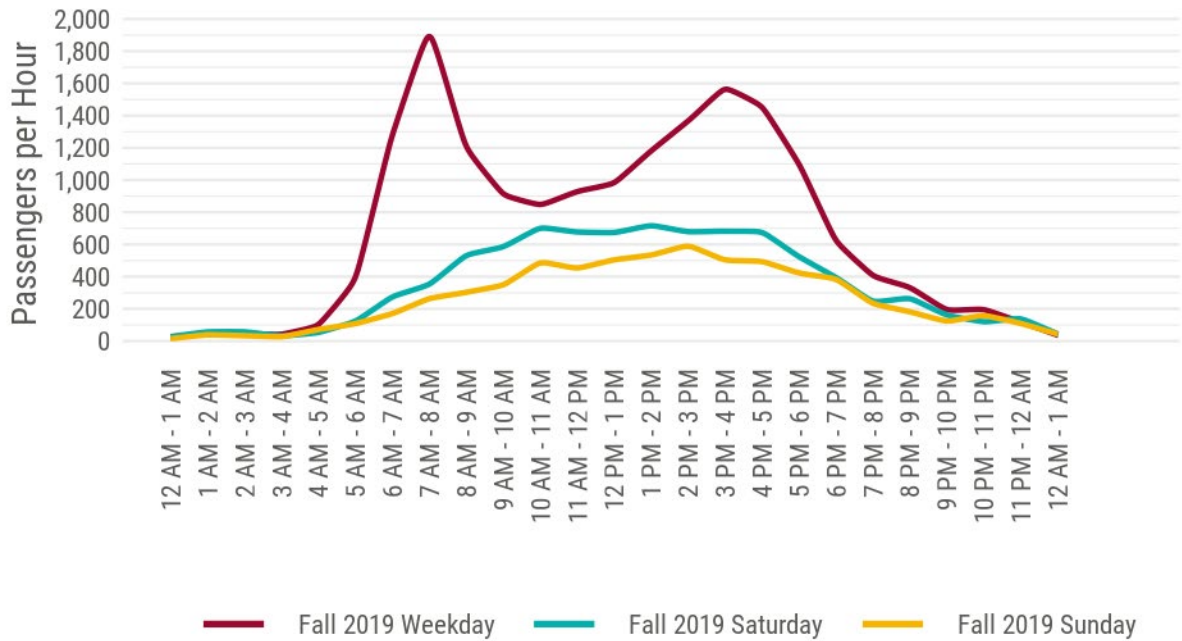

Ridership by Time of Day

Ridership by Hour

In Fall 2019, weekday ridership was fairly peaked with the highest ridership during the AM peak. Ridership during the midday was about half as much per hour as the AM peak and slightly more than half of the PM peak (see Figure 3).

Weekend ridership was strong throughout much of the day, and highest from about 10:00 AM to 6:00 PM. Sunday ridership was somewhat less than Saturday but still relatively high per hour.

Figure 3 | Ridership by Hour: Fall 2019



Ridership and Maximum Loads by Trip

In Fall 2019, weekday ridership per trip is high on most trips (see Figure 4):

- AM peak trips carried 85 to 110 passengers
- Midday trips carried 65 to 90 passengers
- PM peak trips carried 90 to 120 passengers
- After 6:00 PM, ridership decreased from 75 passengers to around 55
- After 11:00 PM ridership continued to drop to around 20 per trip during the overnight hours

Despite very frequent service and ridership turnover along the route, some peak period trips had standing loads on average (see Figure 5). In addition, bus bunching likely caused additional trips to exceed the seating capacity, including some afternoon trips around 3:00 PM for which students likely comprise a significant percentage of ridership.

Weekend trips carry 80-100 passengers through much of the day and less during mornings and evenings. Sunday ridership is somewhat lower than Saturday. Some weekend trips have loads exceeding the seating capacity.

Figure 4 | Fall 2019 Weekday Ridership by Trip

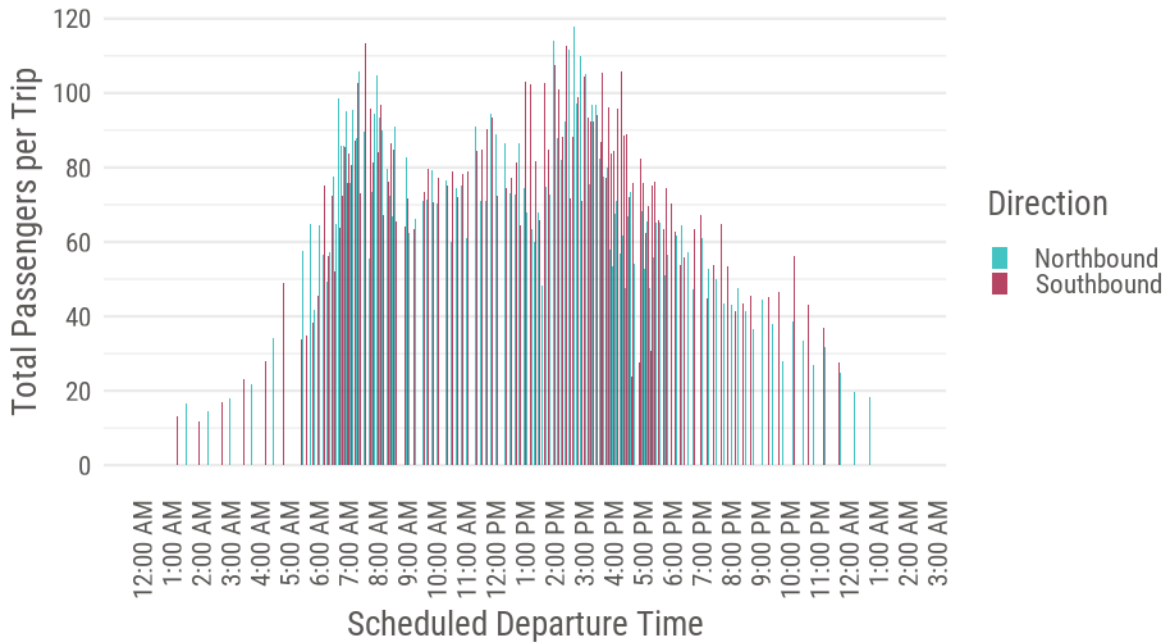
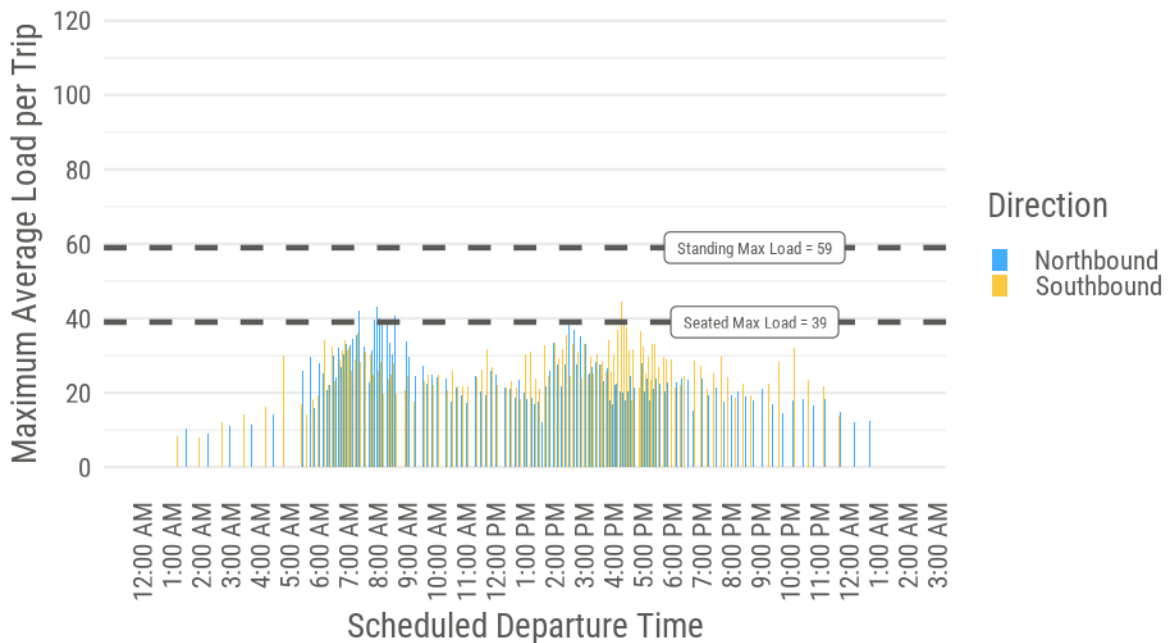


Figure 5 | Fall 2019 Weekday Maximum Loads by Trip



ON-TIME PERFORMANCE AND RUNNING TIMES

On-Time Performance

In Fall 2019, Route 47’s on-time performance was 63.5 percent on weekdays, 65.4 percent on Saturdays, and 73.9 percent on Sundays (see Table 4). On all days, trips are more likely to be late than early, and this is particularly true on weekdays and Saturdays. The relatively

substandard on-time performance is likely due to a combination of a long route, high ridership, close stop spacing, and congestion on narrow streets from parking and other activities. These challenges are difficult – a collaboration with the City in 2011 was only able to make modest improvements to the route’s on-time performance, partly by diverting trash trucks from the route during rush hour.

Table 4 | Fall 2019 On-Time Performance

	Early	On Time	Late	Missed Trips
	(>2 Mins Early)	(<2 Mins Early to 6 Mins Late)	(>6 Mins Late)	
Goal		80%		
Fall 2019 Actual				
Weekday	5.4%	63.5%	31.1%	6.1%
Saturday	8.9%	65.4%	25.8%	6.9%
Sunday	10.6%	73.9%	15.5%	4.5%

Note: On-time percentages are for trips that are run (do not include dropped trips)

AVERAGE SPEEDS AND STOP SPACING

On weekdays during the PM Peak, Route 47 travels at less than 8 mph along most of the route and is one of the slowest routes in the SEPTA system (see Figure 6). Slow speeds are attributable to high ridership, traffic congestion and stop spacing along the route. Route 47 has an average of more than 10 stops per mile over its entire length; but many segments have more than 13 stops per mile (see Figure 7). Overall, Route 47 has some of the closest stop spacing in the SEPTA bus network.

Figure 6 | Fall 2019 PM Peak Northbound Speeds

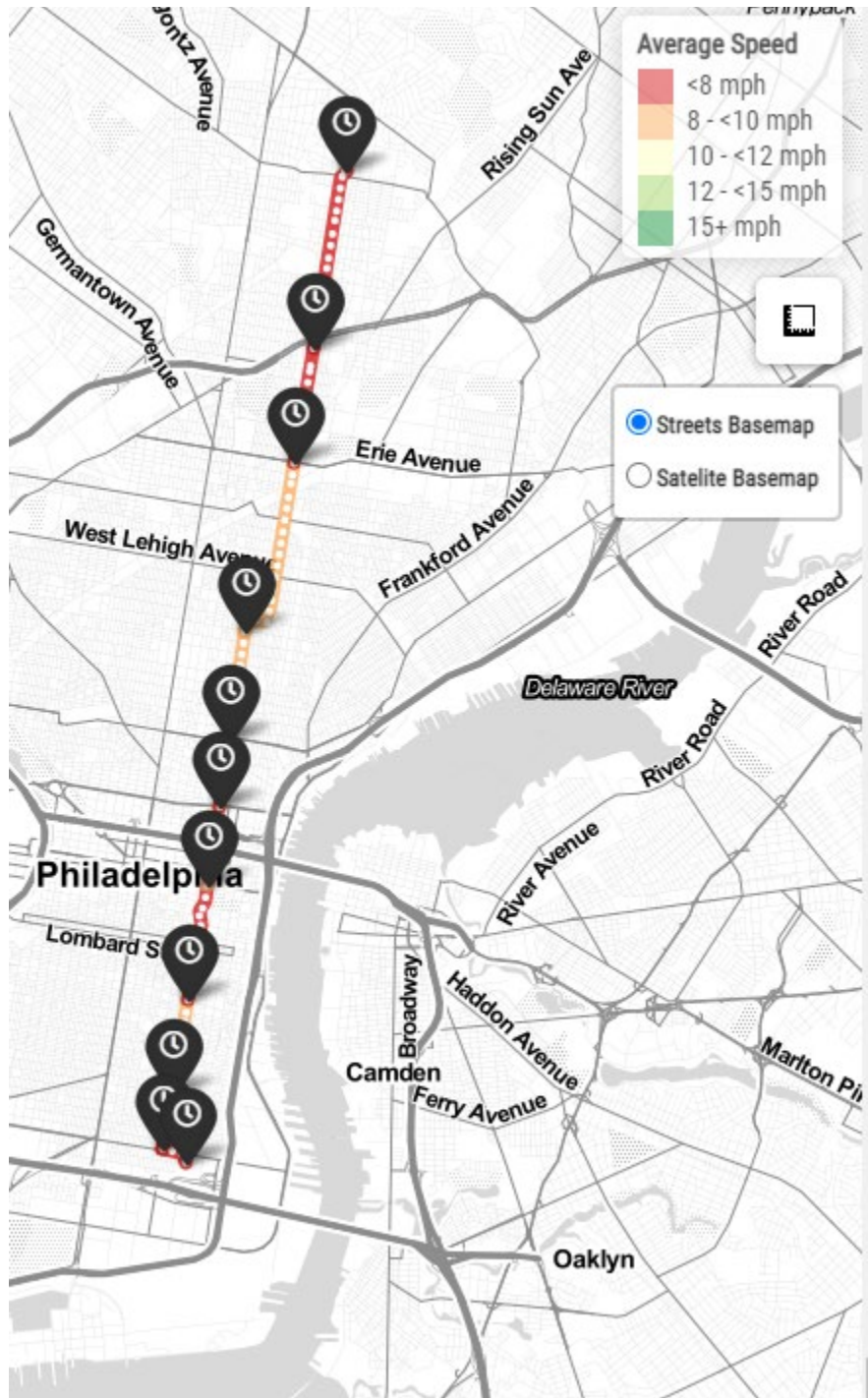
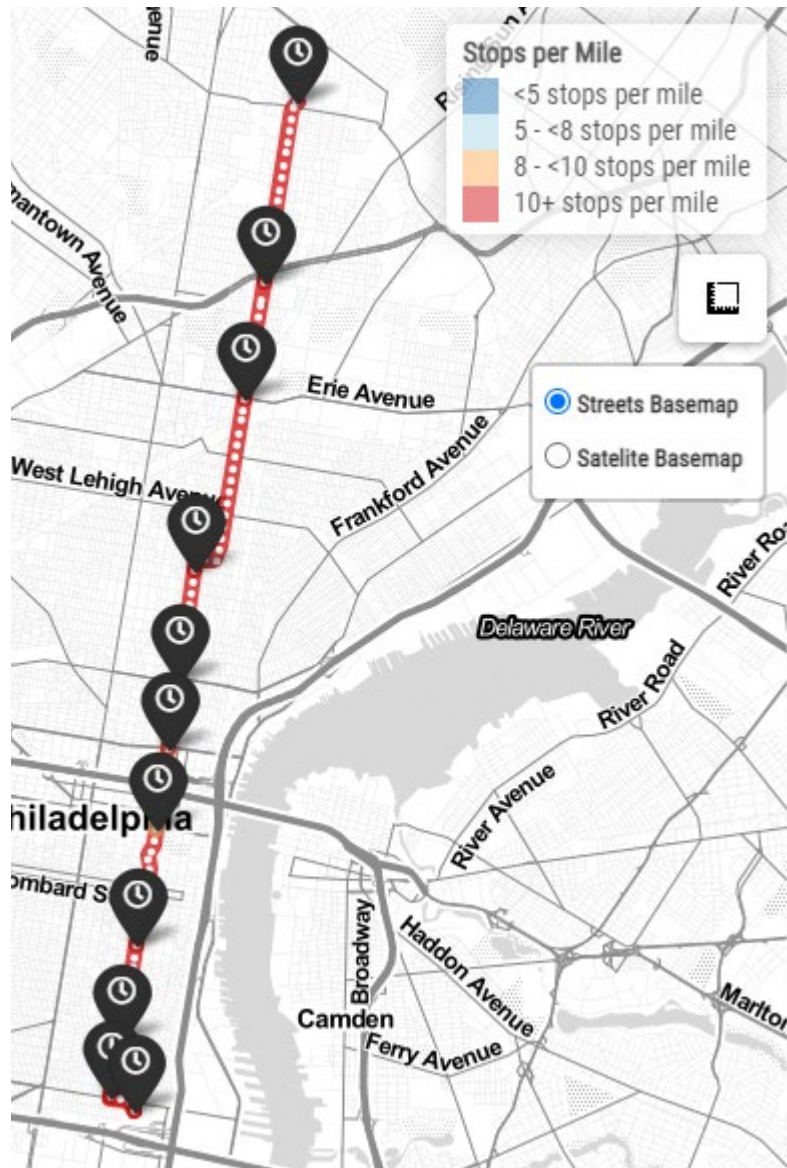


Figure 7 | Stop Spacing by Route Segment



RIDER CHARACTERISTICS

Route 47's rider demographics are similar to that of SEPTA's service area as a whole (see Table 5). The route's riders are more likely to be Hispanic and to be seniors, and somewhat more likely to be without a vehicle.

Table 5 | Rider Characteristics

	Route 47 Riders	Systemwide Average
Median Household Income	\$31,253	\$32,713
Share in Poverty	34%	30%
Ethnicity		
White	37%	38%
Black	38%	46%
Hispanic	18%	10%
Other	7%	7%
Without a Vehicle	42%	37%
Seniors	23%	15%
With a Disability	2%	2%

SERVICE IMPROVEMENT OPPORTUNITIES

Opportunities to strengthen Route 47 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route.

- Continue Collaboration with City on Improving On-Time Performance:** The previous pilot, deployed over a decade ago, was a step in the right direction and reduced conflicts between buses and trash trucks. New policies and technologies may allow bus cameras to assist with better parking and curb management operations.
- Use Articulated Buses:** Even with frequent service, the route's high ridership causes overcrowding. If possible, plan for a shift to 60-foot buses on this route at all times, or possibly only at peak times if post-COVID ridership patterns allow for some reallocation of vehicles from other routes.