

# ROUTE 17

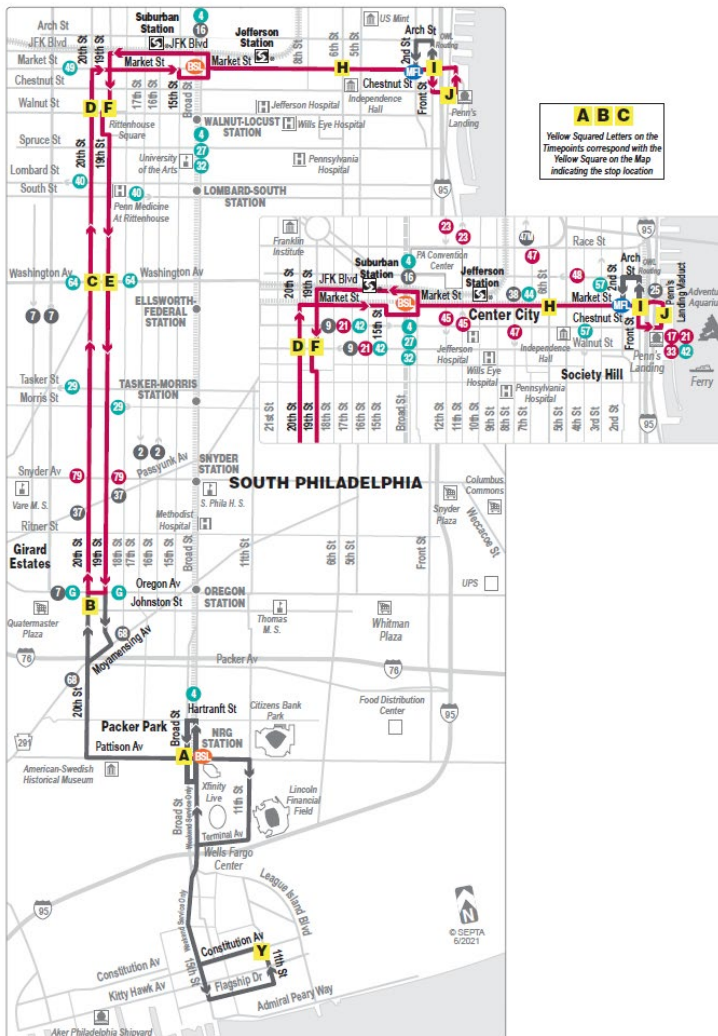
## Penn's Landing to 20<sup>th</sup>-Johnston and Broad-Pattison

### KEY SERVICE CHARACTERISTICS, ISSUES, AND OPPORTUNITIES

- Route 17 operates 24 hours per day and provides north-south service in South Philadelphia as well as east-west service through Center City on Market Street.
- Route 17 carries very high ridership but is also one of the slowest routes in the network. Priority treatments, fewer bus stops, and improved parking and curb management operations could improve speed and on-time performance.
- Much of the route overlaps with other routes and/or operates close to other nearby service. Consolidating services on fewer corridors can enable increased frequency.

### ROUTE OVERVIEW

Figure 1 | Route Map



Route 17 operates 24 hours per day and provides east-west service through Center City on Market Street, as well as north-south service via 19<sup>th</sup> Street and 20<sup>th</sup> Street through South Philadelphia (see Figure 1). The alignment is simple and direct, although virtually all the service overlaps with other routes and/or is parallel to nearby service.

### SERVICE OVERVIEW

#### Schedule

Route 17 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 7-8 minutes. Midday frequencies are approximately every 10 minutes on average.
- On weekend days, service frequencies average 8-11 minutes during the day and every 14-18 minutes at night.

**Table 1 | Schedule Statistics**

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
<b>Weekdays</b>	24 Hours		
Early AM	4:00 AM to 5:59 AM	0-30	14
AM Peak	6:00 AM to 8:59 AM	0-13	8
Midday	9:00 AM to 2:59 PM	5-11	10
PM Peak	3:00 PM to 5:59 PM	5-9	7
Evening	6:00 PM to 9:59 PM	0-25	9
Late Night	10:00 PM to 11:59 PM	0-30	18
Owl	Midnight to 3:59 AM	0-30	19
<b>Saturdays</b>	24 Hours		
Day	8:00 AM to 5:59 PM	0-16	8
Night	Before 8:00 AM & After 5:59 PM	0-30	14
<b>Sundays</b>	24 Hours		
Day	8:00 AM to 5:59 PM	0-29	11
Night	Before 8:00 AM & After 5:59 PM	0-32	18

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

## Service Patterns

Route 17 has thirteen weekday service patterns and fifteen patterns overall. The eastern terminus varies slightly on some trips. The southern terminus is extended from 20<sup>th</sup> Street and Johnston Street to Broad Street and Pattison Avenue on some weekday trips and to the Navy Yard (11<sup>th</sup> Street and Constitution Avenue) on some weekend trips (see Table 2).

**Table 2 | Service Patterns**

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
<b>Northbound</b>							
229297	20th St & Johnston St	Penn's Landing - 1	Primary Pattern	0	59	0	0
229295	20th St & Johnston St	Penn's Landing - 1	Short-turn	0	18	61	41
229296	Broad St & Pattison Av - 3 FS	Penn's Landing - 1	Short-turn	9	18	0	0
229292	20th St & Johnston St	Front St & Market St Loop	Short-turn	1	10	10	10
229286	20th St & Johnston St	Market St & 2nd St	Short-turn	0	10	0	0
229294	Broad St & Pattison Av - 3 FS	Penn's Landing - 1	Short-turn	9	8	3	3
229293	11th St & Constitution Av	Penn's Landing - 1	Short-turn (Weekend Service)	17	0	13	13

229298	Broad St & Pattison Av - 3 FS	Market St & 2nd St	Short-turn	9	2	0	0
229297	20th St & Johnston St	Market St & 2nd St	Short-turn (Last Trip)	0	1	0	0
<b>Southbound</b>							
229300	Penn's Landing - 1	20th St & Johnston St	Primary Pattern	0	57	0	0
229302	Penn's Landing - 1	20th St & Johnston St	Short-turn	0	22	61	41
229299	Penn's Landing - 1	Broad St & Pattison Av - 3 FS	Short-turn	11	18	0	0
229306	Front St & Market St Loop	20th St & Johnston St	Short-turn	1	10	10	10
229303	Penn's Landing - 1	Broad St & Pattison Av - 3 FS	Short-turn	11	10	4	3
229301	Penn's Landing - 1	11th St & Constitution Av	Short-turn (Weekend Service)	20	0	12	13

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

## RIDERSHIP

In Fall 2019, Route 17 carried 9,106 passengers on weekdays, 3,825 on Saturdays, and 2,975 on Sundays (see Table 3). Based on weekday ridership, it was SEPTA's 16th highest ridership route.

**Table 3 | Fall 2019 Ridership and Productivity**

	Weekdays	Saturdays	Sundays
<b>Daily Ridership</b>	<b>9,106</b>	<b>3,825</b>	<b>2,975</b>
Rank	16	21	20
<b>Passengers per Revenue Vehicle Hour</b>	<b>59.0</b>	<b>36.3</b>	<b>39.0</b>
Rank	26	46	36

## Transfer Patterns

While the single largest transfer percentage is with the Market-Frankford Line, many other Route 17 transfers are to SEPTA routes traveling north/south. The largest transfer volumes are to and from:

- Market Frankford Line (9.3% of all trips)
- Route 33 (Penn's Landing to 23<sup>rd</sup> Street and Venango Street) (2.9%)
- Route 57 (Whitman Plaza to Rising Sun Avenue and Olney Avenue or Fern Rock Transportation Center) (2.8%)
- Broad Street Line (2.8%)
- Route 47 (Whitman Plaza to 5<sup>th</sup> Street and Godfrey Avenue) (2.1%)

Weekend transfer percentages are similar to weekdays.

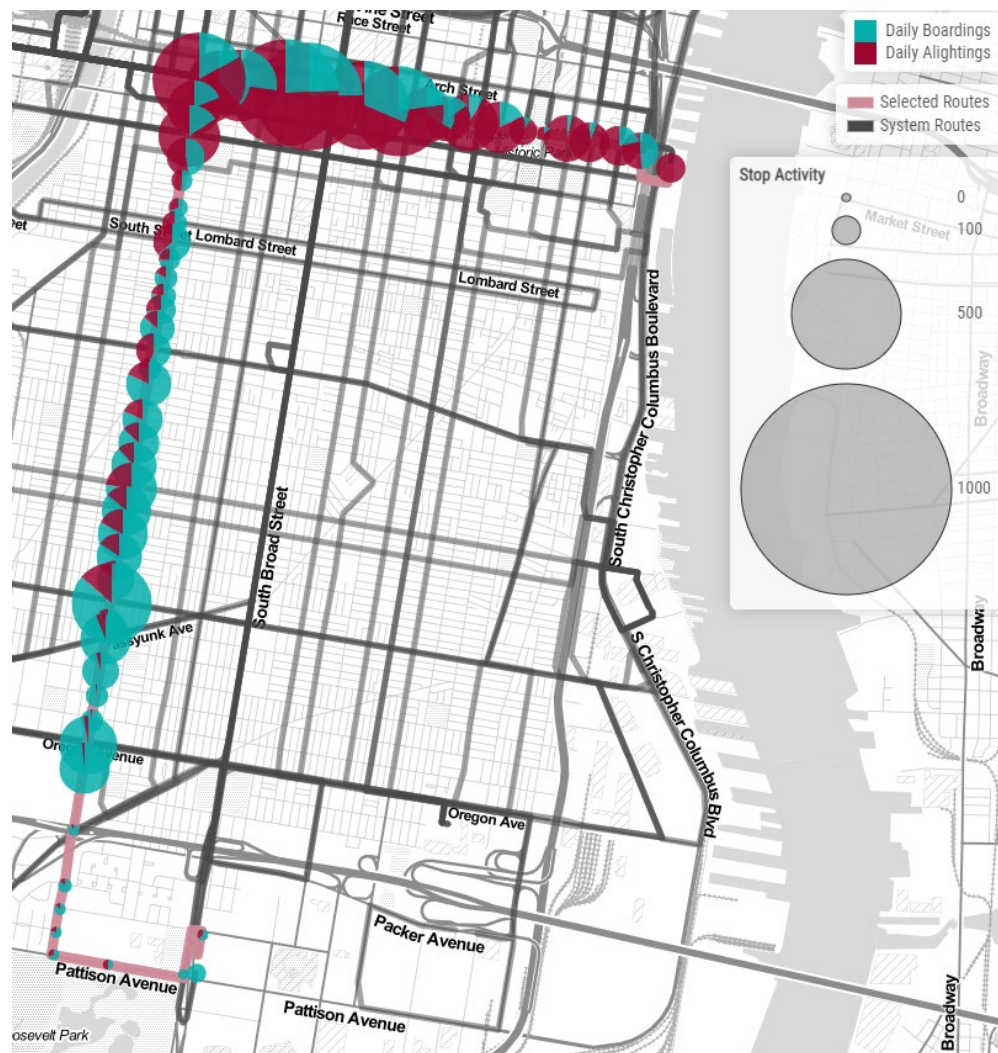
## Ridership by Stop

The stops along Market Street generally have more boarding and alighting activity than elsewhere on the route. The other area of greater activity is near the primary southern terminus at 20<sup>th</sup> Street and Johnston Street. The extensions south of Johnston Street have lower activity at all stops. For northbound weekday trips, some highlights include:

- 298 riders board and 47 alight at 20<sup>th</sup> Street and Snyder Avenue
- A combined 235 riders board and 724 alight at the two stops at 15<sup>th</sup>/16<sup>th</sup> and Market
- 43 riders board at Broad and Pattison which is served by some weekday trips

There are a significant number of boardings along Market Street for trips towards Penn's Landing indicating that some riders are using Route 17 primarily for travel within Center City.

**Figure 2 | Weekday Northbound Ridership by Stop**



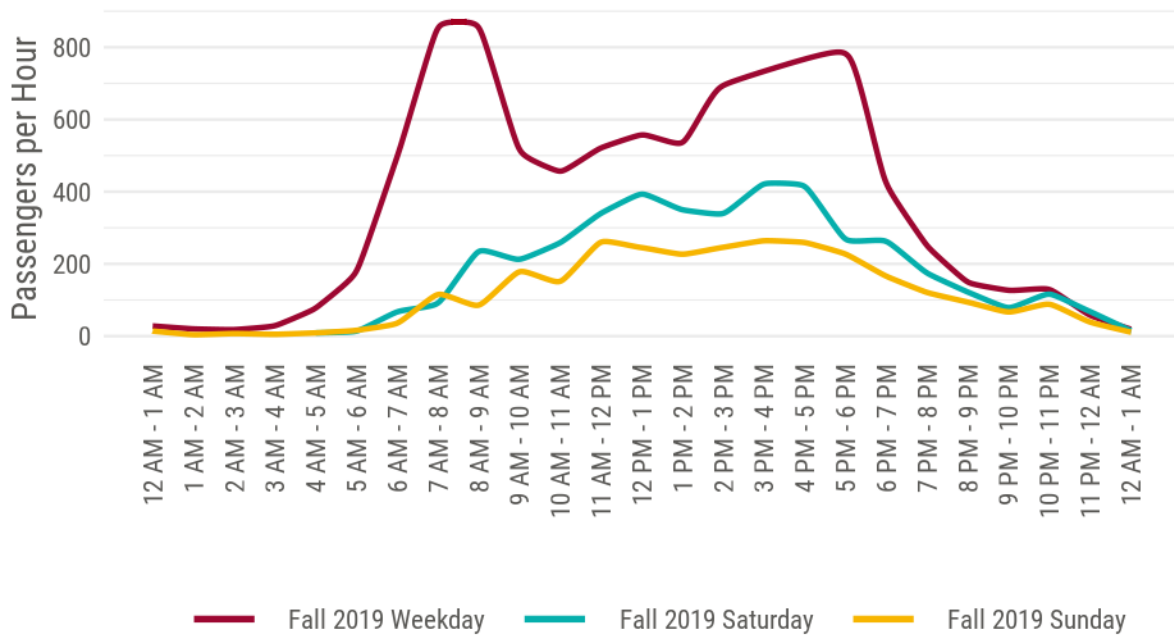
## Ridership by Time of Day

### Ridership by Hour

In Fall 2019, weekday ridership was somewhat peaked with the highest ridership during the AM peak. Ridership during the PM peak was also strong with the busiest hour between 5:00-6:00 PM (see Figure 3).

Midday ridership, on a per hour basis, was more than half of the peak periods. Evening ridership was much lower and fell quickly after 6:00 PM. Weekend ridership was steadier throughout the day and was highest between about 11:00 AM and 6:00 PM.

**Figure 3 | Ridership by Hour: Fall 2019**

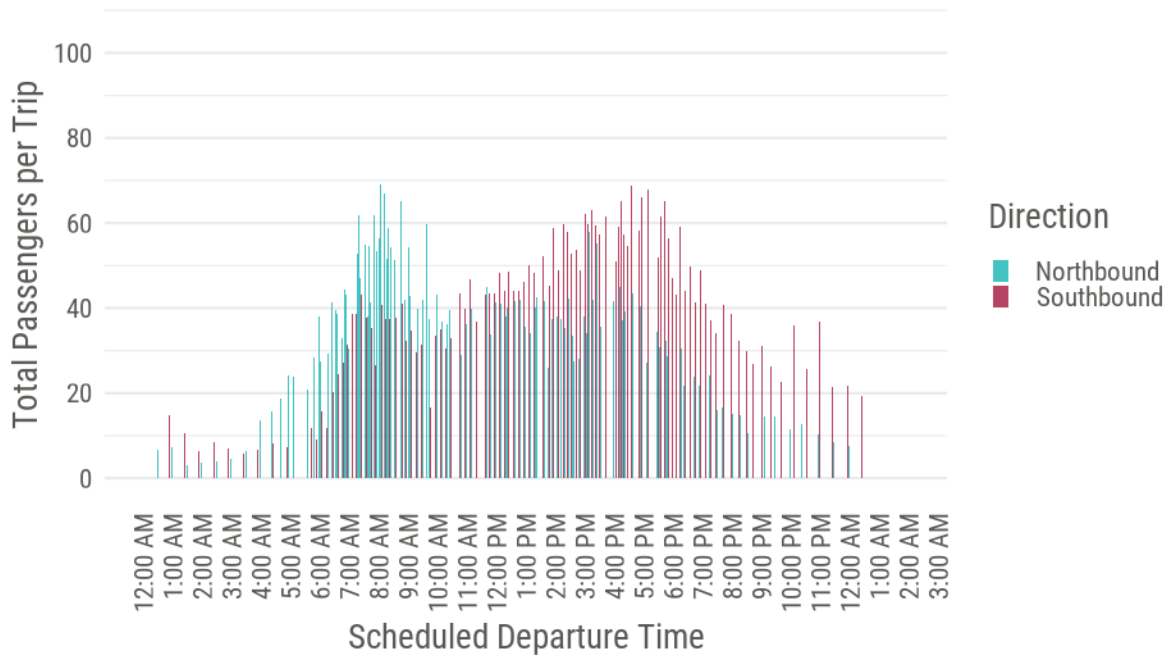
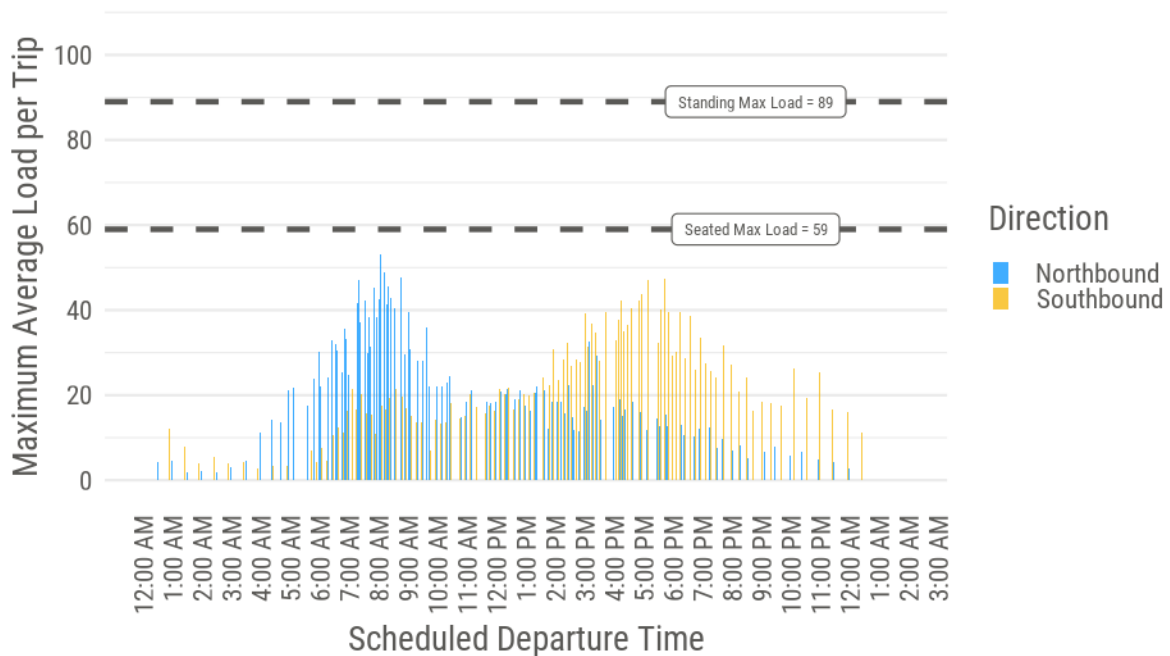


## Ridership and Maximum Loads by Trip

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

- AM peak trips carried 50 to 70 passengers
- Midday trips carried 35 to 50 passengers
- PM peak trips carried 50 to 70 passengers
- After 6:00 PM, ridership decreased steadily from 55 passengers to around 30.
- After 10 PM ridership continued to drop to around 25 per trip with some trips having more passengers

The combination of very frequent service during most of the day and the use of articulated buses indicates that maximum loads did not exceed the seating capacity (see Figure 5).

**Figure 4 | Fall 2019 Weekday Ridership by Trip**

**Figure 5 | Fall 2019 Weekday Maximum Loads by Trip**


Weekend trips carry 30-50 passengers through much of the day and less during mornings and evenings. Sunday ridership is somewhat lower than Saturday. Most weekend trips have loads within the seating capacity.

# ON-TIME PERFORMANCE AND RUNNING TIMES

## On-Time Performance

In Fall 2019, Route 17’s on-time performance was 71.9 percent on weekdays, 71.1 percent on Saturdays, and 79.0 percent on Sundays (see Table 4). Weekday trips are about as likely to be late than early but on weekend days, trips are more likely to be late than early.

**Table 4 | Fall 2019 On-Time Performance**

	Early (>2 Mins Early)	On Time (<2 Mins Early to 6 Mins Late)	Late (>6 Mins Late)	Missed Trips
<b>Goal</b>		<b>80%</b>		
<b>Fall 2019 Actual</b>				
Weekday	13.0%	71.9%	15.0%	3.9%
Saturday	9.2%	71.1%	19.7%	2.6%
Sunday	7.8%	79.0%	13.2%	5.2%

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 17 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 traffic congestion, narrow street widths, and close stop spacing along the route. Route 17 has an average of 10 stops per mile over its entire length; but some segments have more than 12 and as high as 15 stops per mile (see Figure 7).

**Figure 6 | Fall 2019 PM Peak Northbound Speeds**

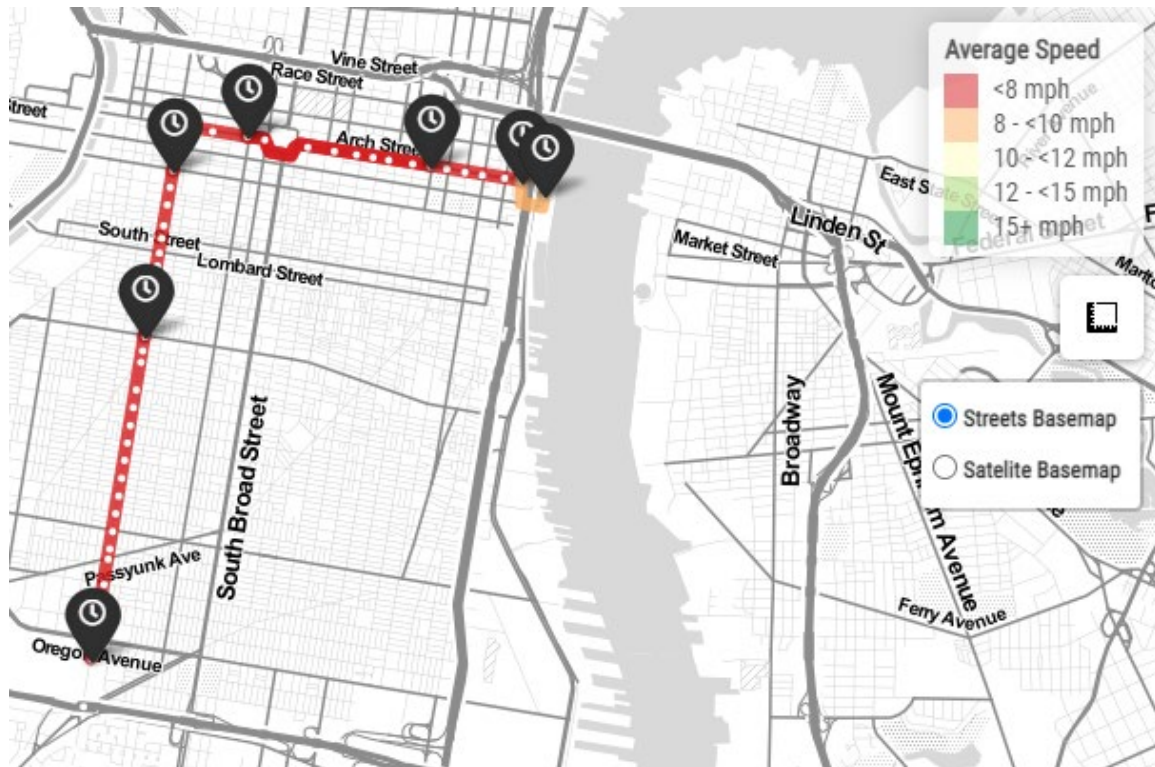


Figure 7 | Stop Spacing by Route Segment



## RIDER CHARACTERISTICS

Route 17’s rider demographics are slightly less typical of SEPTA’s entire service area (see Table 5). The route carries a higher percentage of white riders as well as a greater percentage of seniors and those who do not have access to a vehicle.

Table 5 | Rider Characteristics

	Route 17 Riders	Systemwide Average
Median Household Income	\$37,692	\$32,713
Share in Poverty	27%	30%
Ethnicity		
White	48%	38%
Black	38%	46%
Hispanic	9%	10%
Other	5%	7%
Without a Vehicle	46%	37%
Seniors	22%	15%
With a Disability	2%	2%



## SERVICE IMPROVEMENT OPPORTUNITIES

Opportunities to strengthen Route 17 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route.

- **Combine with Route 33:** These two routes overlap on Market Street and could be combined as more direct north-south service between North and South Philadelphia. A suitable transfer point with the Market-Frankford Line would need to be determined, possibly near City Hall.
- **Simplify Service to Navy Yard:** Route 17 is presently the only route directly serving the Navy Yard. There is an opportunity to provide more consistent service to the Navy Yard via Route 4 or Route 16. Service should also be coordinated with private shuttles including upcoming shuttle service using autonomous vehicles.
- **Consolidate with Route 2:** Route 2 and Route 17 provide similar service in South Philadelphia along parallel corridors a few blocks apart. Route 17 on 19<sup>th</sup> Street and 20<sup>th</sup> Street is a walkable distance from Broad Street, so the Route 2 service in between could be discontinued with resources reallocated to more frequent service on Route 17.
- **Move Northern Terminus to City Hall:** The route's Market Street stops east of Broad Street are well-used but other bus routes and the Market-Frankford Line duplicate this segment. Shortening Route 17 to City Hall would enable increased service.
- **Collaborate with the City on Parking/Curb Management:** New technology and policies may enable bus cameras to assist with improving parking and curb management operations around bus stops and routes. The improvements could increase Route 17's speed and on-time performance.
- **Discontinue Service to Broad and Pattison:** This would simplify service since most Route 17 trips do not serve Broad Street and Pattison Avenue, and the area is already served by Route 4 and the Broad Street Line.
- **Combine with Route 7:** A major pinch-point for Route 17 occurs on 19<sup>th</sup> Street due to the traffic around Rittenhouse Square. Route 17 could be combined with Route 7 in South Philadelphia and operate on 20<sup>th</sup> Street and 21<sup>st</sup> Street, which would minimize interactions with the high pedestrian volumes around Rittenhouse Square as well as traffic congestion on Walnut Street and Locust Street.