

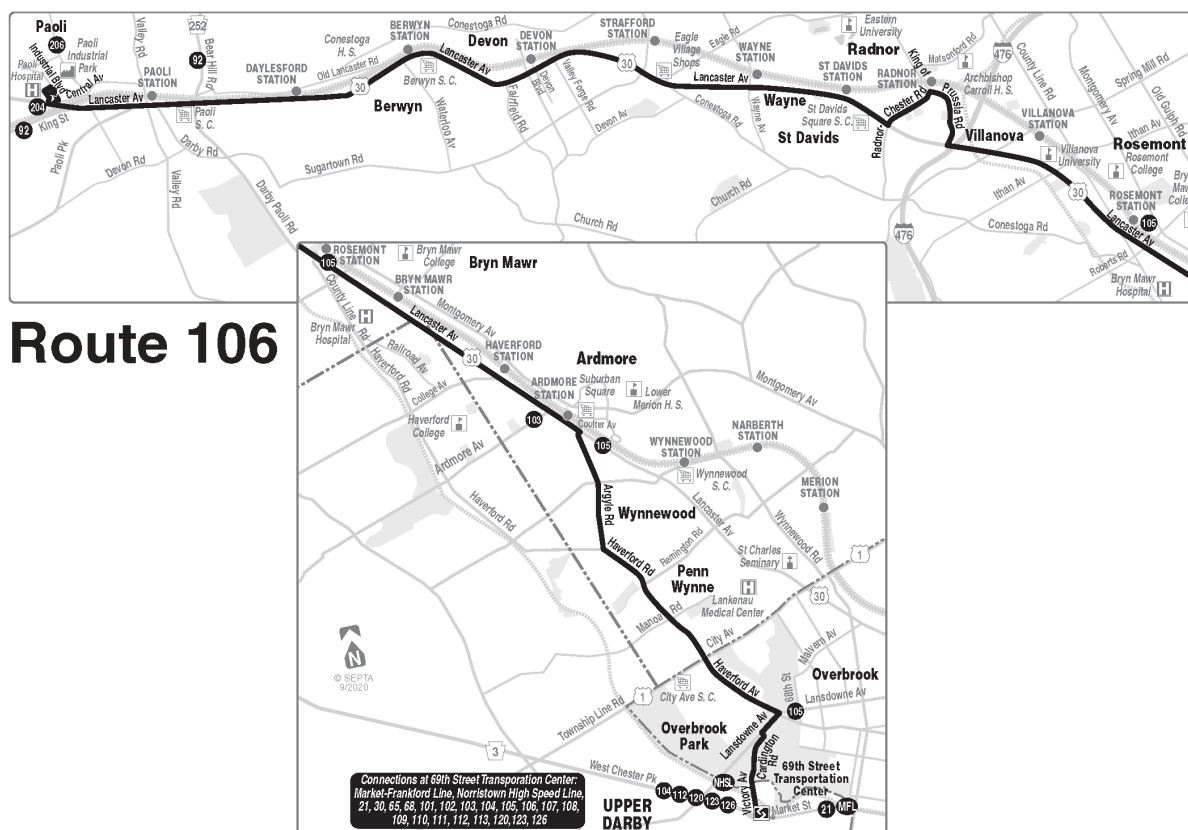
ROUTE 106

Paoli – 69th Street Transportation Center

KEY SERVICE CHARACTERISTICS, ISSUES, AND OPPORTUNITIES

- Route 106 connects Paoli and 69th Street Transportation Center via Ardmore and Overbrook Park. Ridership is moderate, and the route operates at a healthy speed. However, on-time performance is poor largely due to late service and there is lower ridership activity at many stops.
- Route 106 provides similar service to Regional Rail and duplicates Route 105 between Rosemont Station and Ardmore Station.
- Opportunities to improve Route 106 could include designing a more direct alignment and only operating using one service pattern.

Figure 1 | Route Map



ROUTE OVERVIEW

Route 106 operates between Paoli and 69th Street Transportation Center. It is a long route, traveling 16.3 miles from end to end with a direct alignment along Lancaster Avenue. The route provides connections to and from destinations and communities and provides connections to SEPTA Regional Rail Stations, the Norristown High Speed Line, and 69th Street Transportation Center.

SERVICE OVERVIEW

Schedule

Route 106 operates for 15 hours per day from 5:42 AM until 8:30 PM on weekdays and approximately 12 hour per day from 6:59 AM to 7:00 PM on Saturdays (see Table 1). There is no Sunday service.

- On weekdays, frequencies averaged around 28 minutes during the peak periods and 39 minutes during the midday.
- Average weekday frequencies during the evening were 24 minutes.

On Saturdays, frequencies averaged 39 minutes during the day and 50 minutes at night. Actual frequencies vary from the average all days and during all periods.

Table 1 | Schedule Statistics

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
Weekdays	5:42 AM to 8:30 PM		
Early AM	5:02 AM to 5:59 AM	-	-
AM Peak	6:00 AM to 8:59 AM	0 - 61	28
Midday	9:00 AM to 2:59 PM	0 - 70	39
PM Peak	3:00 PM to 5:59 PM	0 - 67	28
Evening	6:00 PM to 9:59 PM	0 - 58	24
Late Night	10:00 PM to 11:59 PM	-	-
Owl	Midnight to 1:06 AM	-	-
Saturdays	6:59 AM to 7:00 PM		
Day	8:00 AM to 5:59 PM	0 - 65	39
Night	Before 8:00 AM & After 5:59 PM	0 - 68	50

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

Service Patterns

Route 106 operates with four service patterns (see Table 2). The primary service pattern operates between 69th Street Transportation Center and Paoli Memorial Hospital, while the secondary patterns are short-turns.

Table 2 | Service Patterns

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
Eastbound							
228936	Paoli Memorial Hospital	69 th Street Transportation Center	Primary Pattern	0	17	11	-
228937	Haverford Ave & City Ave	69 th Street Transportation Center	Short-turn Pattern	0	1	0	0

Westbound							
228934	69 th Street Transportation Center	Paoli Memorial Hospital	Primary Pattern	0	17	11	-
228932	69 th Street Transportation Center	Lancaster Ave & Station Ave	AM peak short-turns and last two trips	0	3	2	0

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

RIDERSHIP

In Fall 2019, Route 106 carried 1,303 passengers on weekdays and 596 on Saturdays (see Table 3).

Table 3 | Fall 2019 Ridership and Productivity

	Weekdays	Saturdays	Sundays
Daily Ridership	1,303	596	N/A
Rank	85	84	
Passengers per Revenue Vehicle Hour	36.2	28.6	N/A
Rank	73	72	

Transfer Patterns

Most transfers occur at 69th Street Transportation Center or with Route 204 Paoli to Eagleview. The largest transfer volumes are to and from:

- The Market-Frankford Line (28.3% of all trips)
- The Norristown High-speed Line (7.8%)
- Route 108 69th Street Transportation Center to the Airport and Airport Business Center (2.8%)
- Route 204 Paoli to Eagleview (2.7%)
- Route 113 69th Street Transportation Center to Darby (2.5%)

Saturday transfer patterns are similar but at a slightly lower rate.

Ridership by Stop

Ridership is stronger on the eastern end of the route, east of the Norristown High Speed Line Radnor Station. Within the eastern portion of the ridership, ridership is strongest between Overbrook Park and the 69th Street Transportation Center. High ridership stops heading eastbound include eastbound trips (also see Figure 2):

- 41 board at Paoli Memorial Hospital (3.6% of all riders)
- 28 people board and 1 alight at Lancaster Avenue and Saint David's Square (2.5%)
- 3 riders board and 42 alight at King of Prussia Road and Norristown High Speed Line Radnor Station Drive (4.0%)
- 2 board and 25 alight at Lancaster Avenue and Villanova University (2.4%)
- 26 board and 10 alight at Haverford Avenue and Overbrook Avenue (3.2%)

- 5 board and 355 alight at the 69th Street Transportation Center (31.7%)

Over 70% of stops serve 10 or fewer boardings and alightings combined.

Westbound patterns mirror eastbound patterns. Saturday patterns are similar but with lower volumes.

Figure 2 | Weekday Eastbound Ridership by Stop



Ridership by Time of Day

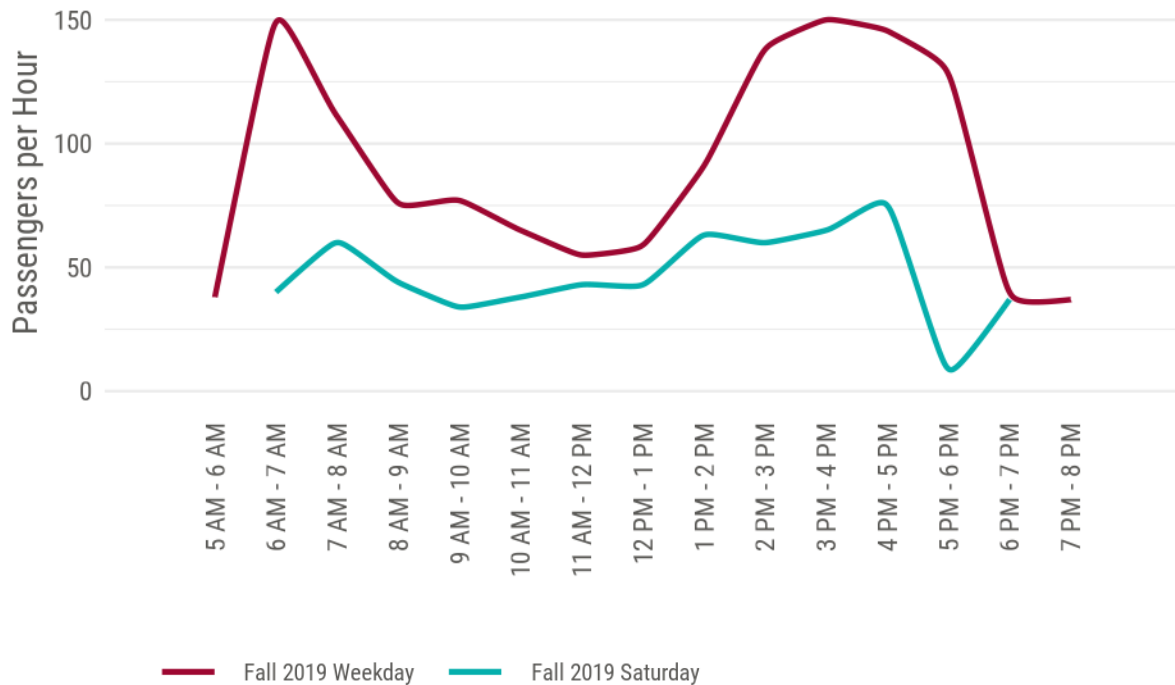
Ridership by Hour

On weekdays in Fall 2019, ridership was peaked with a shorter, sharper peak in the AM hour (approximately 150 riders per hour) and a more sustained peak between 2:00 PM and 6:00 PM (see Figure 3).

Midday ridership, on a per hour basis, was about one third as high as peak period ridership. Evening ridership was lower than midday ridership and fell after 6:00 PM.

Saturday ridership was highest during the afternoon, with roughly 75 passengers per hour between 3:00 PM and 4:00 PM. Ridership fell dramatically after 4:00PM before rising at the end of the day.

Figure 3 | Ridership by Hour: Pre-Pandemic; Fall 2019



Ridership and Maximum Loads by Trip

Ridership and Maximum Loads by Trip

Ridership by trip shows a peak period and peak directional pattern, with ridership stronger on trips headed west in the morning and east in the afternoon (see Figure 4). Most weekday trips carried between 20 and 40 riders:

- During the AM peak, westbound trips carried between 40 and 50 riders, with one trip carrying nearly 60 riders. Demand on eastbound trips was lower, between 20 and 35 riders.
- Midday trips generally carried 20 to 40 passengers.
- During the PM peak, eastbound trips carried between 25 and 60 riders, while westbound trips carried between 20 and 40 riders.
- In the evening, ridership declined to 20 to 30 riders per trip with one trip serving approximately 10 passengers.

Average maximum loads are lower than total ridership, and all trips but one morning westbound trip operate below seated capacity (see Figure 5).

Saturday ridership has a similar peak period and peak direction pattern, with stronger demand headed west in the morning and in the afternoon, and stronger eastbound ridership just in the afternoon. Most trips carried between 15 and 40 riders. All trips operated below seated capacity.

Figure 4 | Weekday Ridership by Trip

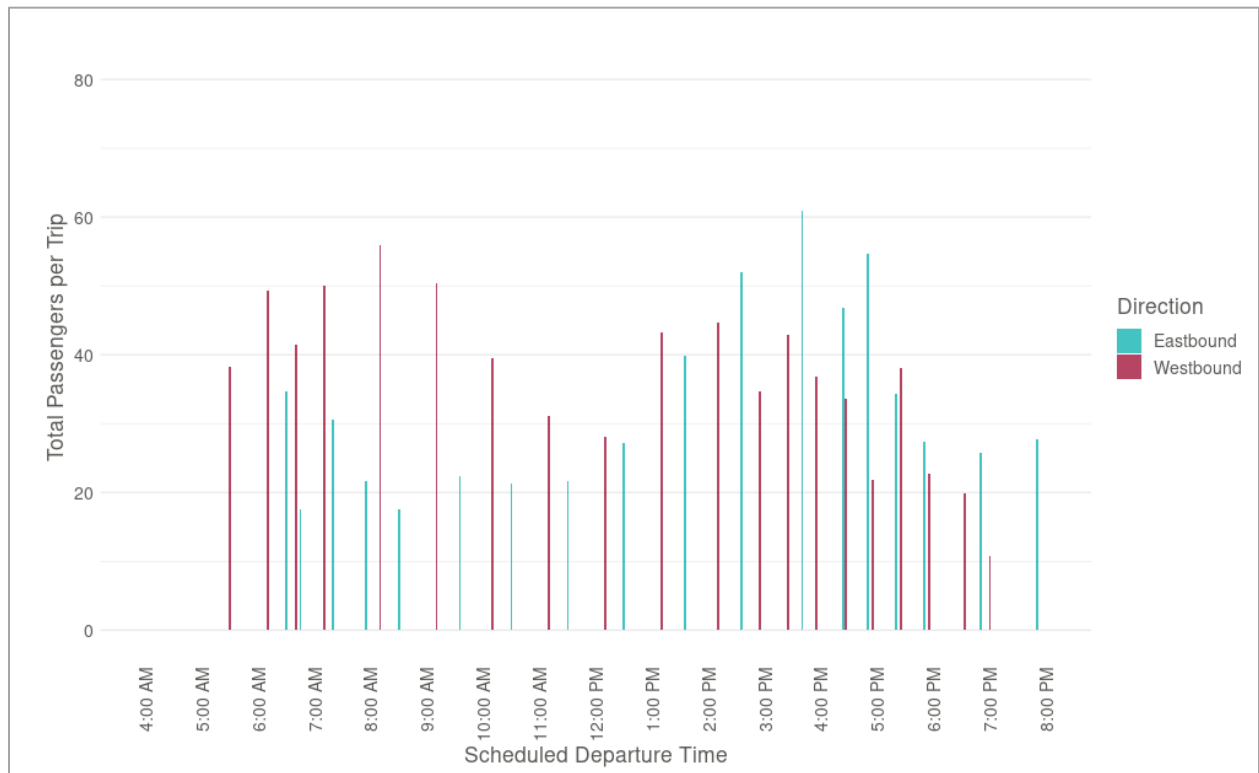
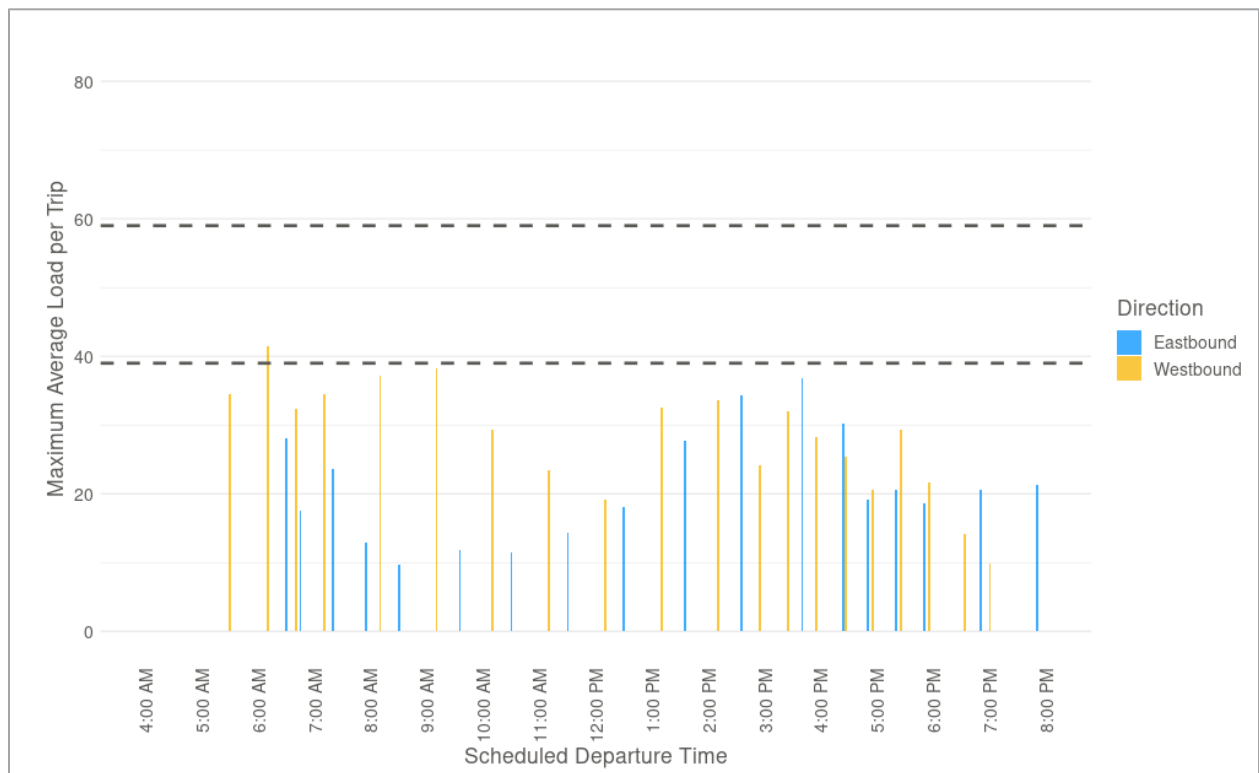


Figure 5 | Weekday Maximum Loads by Trip



ON-TIME PERFORMANCE

On-Time Performance

In Fall 2019, Route 106's on-time performance was 69% on weekdays and 62% on Saturdays (see Table 4). Off-schedule trips were more often late than early.

Table 4 | Fall 2019 On-Time Performance

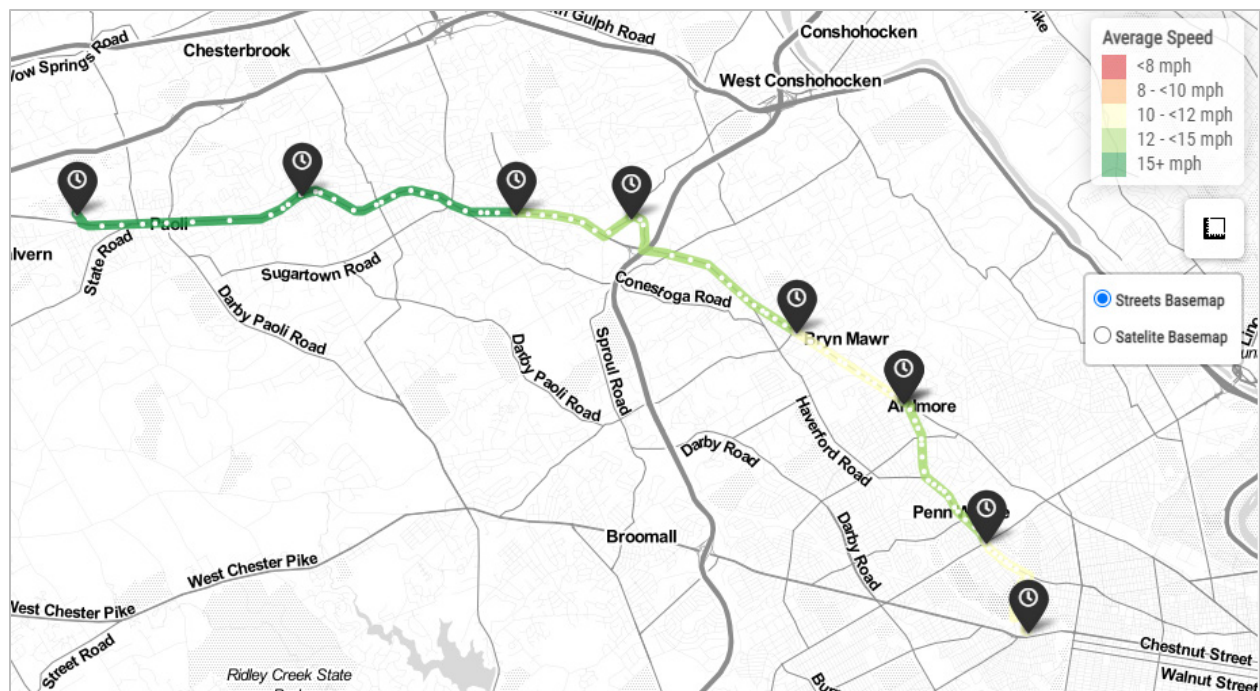
	Early (>2 Mins Early)	On Time (<2 Mins Early to 6 Mins Late)	Late (>6 Mins Late)	Missed Trips
Goal		80%		
Fall 2019 Actual				
Weekday	7.9%	68.8%	23.4%	1%
Saturday	4.3%	62.4%	33.3%	0.6%

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

AVERAGE SPEEDS AND STOP SPACING

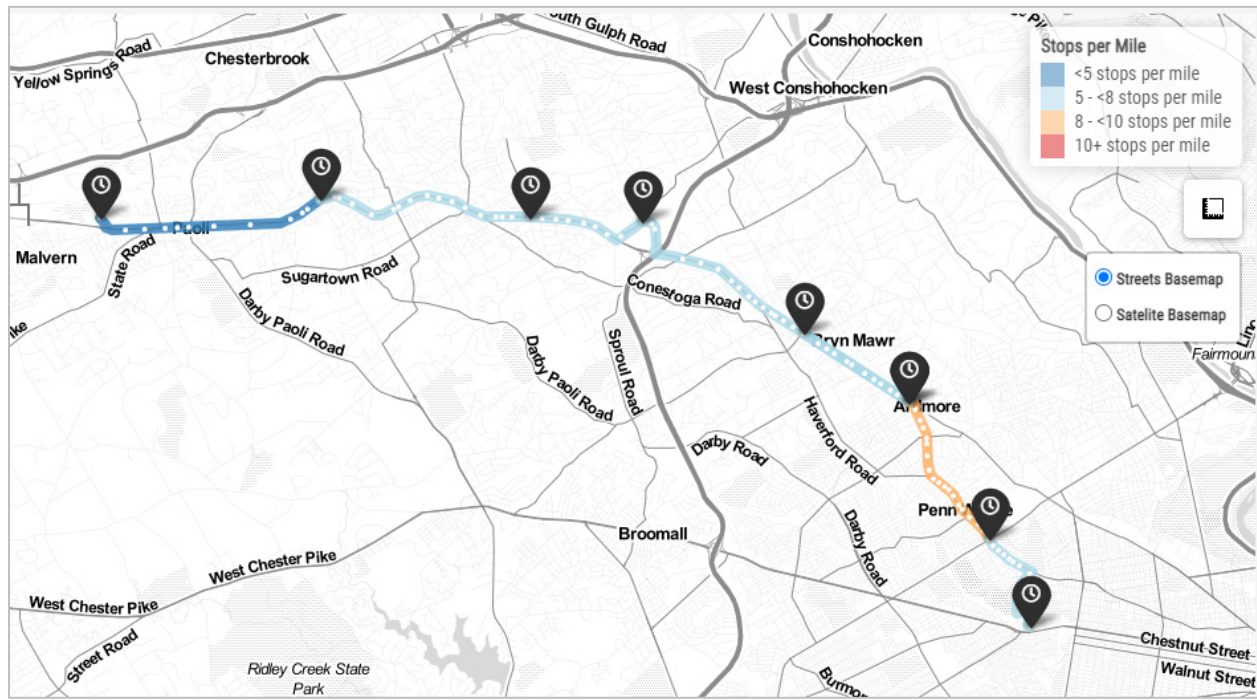
In Fall 2019, Route 106's average weekday speed is 16.3 mph. On weekdays during the PM Peak, Route 106 operated with speeds greater than 12 mph for most of the alignment, except for the segment between Bryn Mawr and Ardmore and from City Line Avenue to 69th Street Transportation Center, where speeds were slower. Speeds were especially slow in the westbound direction in Philadelphia and Upper Darby (see Figure 6).

Figure 6 | Fall 2019 PM Peak Eastbound Speeds



For most of the corridor, stops are spaced at 8 per mile or less. Between Ardmore and City Avenue, however, stops are spaced more closely with between 8 and 10 stops per mile (see Figure 7).

Figure 7 | Stop Spacing by Route Segment



RIDER CHARACTERISTICS

Route 106's riders have many similarities with the SEPTA's service area overall (see Table 5). Key differences include riders with higher median incomes and more likely to have access to vehicle. There are also fewer older adults on Route 106 as compared with the overall system.

Table 5 | Rider Characteristics

	Route 106 Riders	Systemwide Average
Median Household Income	\$38,764	\$32,713
Share in Poverty	25.3%	30%
Ethnicity		
White	36.4%	38%
Black	46.4%	46%
Hispanic	6.3%	10%
Other	10.9%	7%
Without a Vehicle	31.2%	37%
Seniors	10.3%	15%
With a Disability	1.6%	2%

SERVICE IMPROVEMENT OPPORTUNITIES

Opportunities to strengthen Route 106 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route.

- **Operate All Service Along the Full Route:** All but a handful of trips currently operate along the length of the route from Paoli to 69th Street Transportation Center. Service could be simplified by operating all service along the length of the route and eliminating the short-turn patterns.
- **Discontinue Service Along Haverford Road and Argyle Road:** Ridership along Haverford Road is low. Consider accessing Lancaster Avenue via Malvern Avenue, using Route 105's alignment, instead. An alternative service could be developed to serve Overbrook Park and connect people to 69th Street Transportation Center and communities west of Township Line Road.
- **Combine Route 106 with Route 105 between Ardmore and Paoli:** Routes 106 and 105 use different paths to connect Lancaster Avenue and 69th Street Transportation Center. These two paths offer coverage and serve riders, albeit at relatively low numbers. Between Ardmore and Rosemont, Routes 105 and 106 follow the same alignment, with Route 106 continuing to Paoli. An alternative service design would be to combine the two routes into a single route with two branches that travel from Lancaster Avenue to 69th Street Transportation Center. This approach has strengths and weaknesses; it can be more challenging for riders who want to get one of the unique branches, but it can be easier for people traveling along Lancaster Avenue.
 - **Operate Route 105 between Suburban Square and 69th Street Transportation Center Only:** Another approach would be to operate Route 105 just between Suburban Square and the 69th Street Transportation Center and let Route 106 serve the western end of Lancaster Avenue.
- **Change Alignment South of Ardmore to Provide New Connection to a Potential SEPTA Transit Center at Overbrook Station:** Operate between 69th Street Transportation Center and Overbrook Station. Extend Route 44 5th-Market to Ardmore to serve Overbrook Park. This would create a two-seat ride for some Overbrook Park riders.
- **Increase the Span of Service:** Ridership data suggests that there is demand for additional service in the early morning and later in the evening on weekdays, and earlier in the day on Saturdays. Evening service on weekdays (eastbound), for example, had strong demand until around 8:00 PM. In addition, the first trip of the day carried nearly 40 riders, suggesting service could start earlier. Ridership per trip data also shows strong demand on the first trip of the day on Saturdays (39 riders).