

ROUTE 59

Trackless Trolley: Castor-Bustleton to Arrott Transportation Center

KEY SERVICE CHARACTERISTICS, ISSUES, AND OPPORTUNITIES

- *Route 59 is a strong route operating a unique radial service on Castor Avenue between the Northeast Philadelphia neighborhoods of Rhawnhurst and Oxford Circle and Arrott Transportation Center.*
- *Route 59 service has moderately high ridership. Its service is simple and direct, and it has very high productivity and good on-time performance. Many riders transfer at Arrott Transportation Center or along its alignment to crosstown/ connecting services like Route 58, Route 70, and Route R.*
- *Major opportunities to improve Route 59 include making off-peak and weekend service more frequent and improving amenities at its high ridership and transfer bus stops.*

ROUTE OVERVIEW

Route 59 is a trackless trolley route that operates between the Bells Corner Loop and the Arrott Transportation, primarily via Castor Avenue and Oxford Avenue. Route 59's alignment is straight and direct, and its service is simple.

Route 59's simplicity and the fact that it operates in a unique market contributes to its moderately high ridership and very strong productivity. It has the fifth highest number of passengers per revenue mile of any route in SEPTA's system.

SERVICE OVERVIEW

Schedule

Route 59 operates over 21 hours a day from 4:13 AM until approximately 1:33 AM seven days a week (see Table 1):

- On weekdays, Route 59 provides frequent service from early in the morning through the evening service period. Peak period frequencies average every 9 minutes and early and midday frequencies average about every 14 to 20 minutes. Early morning and late-night service is much less frequent. However, actual frequencies vary from the average during all time periods.
- On Saturdays and Sundays, service frequencies average 20 minutes during the day and every 30 minutes or less at night. As on weekdays, actual frequencies vary from the averages.

Table 1 | Schedule Statistics

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
Weekdays	4:13 AM to 1:33 AM		
Owl	Before 4:00 AM	41 - 61	55
Early AM	4:00 AM - 5:59 AM	11 - 43	23
AM Peak	6:00 AM - 8:59 AM	7 - 13	9
Midday	9:00 AM - 2:59 PM	10 - 15	14
PM Peak	3:00 PM - 5:59 PM	9 - 11	10
Evening	6:00 PM - 9:59 PM	11 - 35	20
Late Night	After 10:00 PM	35 - 59	50
Saturdays	4:13 AM to 1:33 AM		
Day	6:00 PM - 7:59 AM	19 - 31	22
Night	Before 8:00 AM & After 5:59 PM	20 - 61	36
Sundays	4:13 AM to 1:33 AM		
Day	6:00 PM - 7:59 AM	29 - 31	30
Night	Before 8:00 AM & After 5:59 PM	30 - 61	39

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

Service Patterns

All Route 59 trips operate with the same pattern, running along the Castor Avenue corridor between the Bells Corner Loop and Arrott Transportation Center (see Table 2).

Table 2 | Service Patterns

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
Inbound/Northbound							
229721	Arrott Transportation Center	Bells Corner Loop	Primary Pattern	0	83	47	38
Outbound/Southbound							
229725	Bells Corner Loop	Arrott Transportation Center	Primary Pattern	0	68	38	33
229724	Bells Corner Loop	Oxford Av & Frankford Av	Identical to the primary pattern in service, except it terminates one stop prior to ATC	0	15	9	5

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

RIDERSHIP

In Fall 2019, Route 59 carried 4,770 passengers on weekdays, 1,750 on Saturdays, and 1,510 on Sundays (see Table 3). The route is very productive; it had the fifth highest number of passengers per revenue vehicle hour on weekdays and Sundays.

Table 3 | Fall 2019 Ridership and Productivity

	Weekdays	Saturdays	Sundays
Daily Ridership	4,782	2,027	1,574
Rank	44	48	46
Passengers per Revenue Vehicle Hour	79.8	62.1	62.1
Rank	6	9	5

Transfer Patterns

A plurality of Route 59 trips involves a transfer to or from the Market Frankford Line. The largest transfer volumes are to and from:

- The Market Frankford Line (40.6% of all trips)
- Route 70 (Frankford-Gregg and Torresdale-Cottman to Fern Rock Transportation Center) (6.6%)
- Route 58 (Neshaminy Mall and Somerton to Frankford Transportation Center) (3.6%)
- Route R (Henry Av & Midvale Av or Wissahickon Transportation Center to Frankford Transportation Center) (2.7%)
- Route 3 (33rd and Cecil B Moore to Frankford Transportation Center) (2.0%)

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

Ridership by Stop

Route 59's primary function is to transport people to and from the connection to the Market Frankford Line at Arrott; and 69% of all passengers board or alight at Arrott. There is also a significant amount of ridership turnover at a few key transfer locations: the terminus location at Bells Corner Loop, Castor Avenue & Cottman Avenue, near Oxford Circle, and Castor Avenue & Pratt Street (see Figure 3).

Ridership patterns on southbound trips by stop are as shown in Figure 3; northbound patterns generally mirror southbound patterns. In more detail, and again on southbound trips (also see Figure 3):

- 354 passengers board at the Bells Street Loop and the next two stops. This is a transfer location with Route 58.
- There is moderate rider turnover along Castor Avenue until the route reaches stops near Cottman Avenue, another heavily used corridor in Northeast Philadelphia and a transfer point to Routes 70 and 77.
 - The daily average on-board load increases until the route reaches this part of the Castor Avenue corridor. The on-board load jumps from around 670 to 1,040 after passing Cottman Avenue.
 - Cottman Avenue is a major transfer location; however, it is an uncomfortable location for passengers to wait for the bus, sited next to a gas station and without a shelter. Shelters at Cottman Avenue and the intersecting bus corridors would be of particular value to customers

Figure 2 | Castor Northbound at Cottman (Transfer to Route 70)



- There is turnover at stops near Cottman Avenue: Castor Avenue & Elgin Avenue has 354 boardings and 90 alightings, and the next stop at Castor Avenue & Saint Vincent Street has 116 boardings and 10 alightings.

Figure 3 | Weekday Southbound Ridership by Stop: Fall 2019



- There is low rider turnover along Castor Avenue until the route reaches Magee Avenue, which offers a transfer to Route 26.

- There is large rider turnover at Castor Avenue & Magee Avenue: 168 boardings and 111 alightings.
- There is low rider turnover along Castor Avenue until the route reaches stops near Oxford Circle, which offers transfer opportunities to bus Routes 1, 19, and 67.
- There is moderate rider turnover around Oxford Circle, which is the intersection of Castor Avenue and Roosevelt Boulevard.
 - Daily average on-board loads gradually increase before this segment, and gradually decreases as the route approaches the terminus location at Arrott.
- An additional 258 passengers alight at the stop preceding Arrott at Oxford Avenue & Frankford Avenue.
- A daily average of 2,163 passengers alight at the final stop at Arrott.

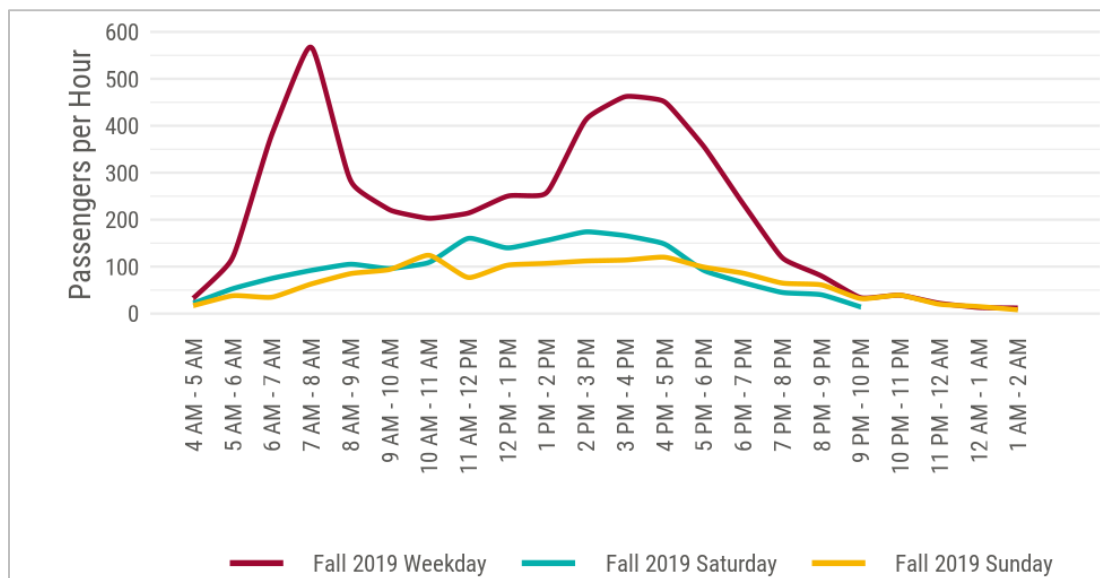
Northbound patterns mirror southbound patterns. Weekend patterns are similar but with lower volumes.

Ridership by Time of Day

Ridership by Hour

In Fall 2019, weekday ridership was very peaked, with over 65% of all ridership in the AM peak and between 2:00 PM and 6:00 PM (see Figure 4). Midday ridership, on a per hour basis, was generally about a third as high as peak period ridership. Evening ridership was lower than midday ridership and fell quickly after 6:00 PM. Saturday and Sunday ridership did not exhibit peaks and gradually increased through mid-afternoon and then gradually decreased.

Figure 4 | Ridership by Hour: Fall 2019

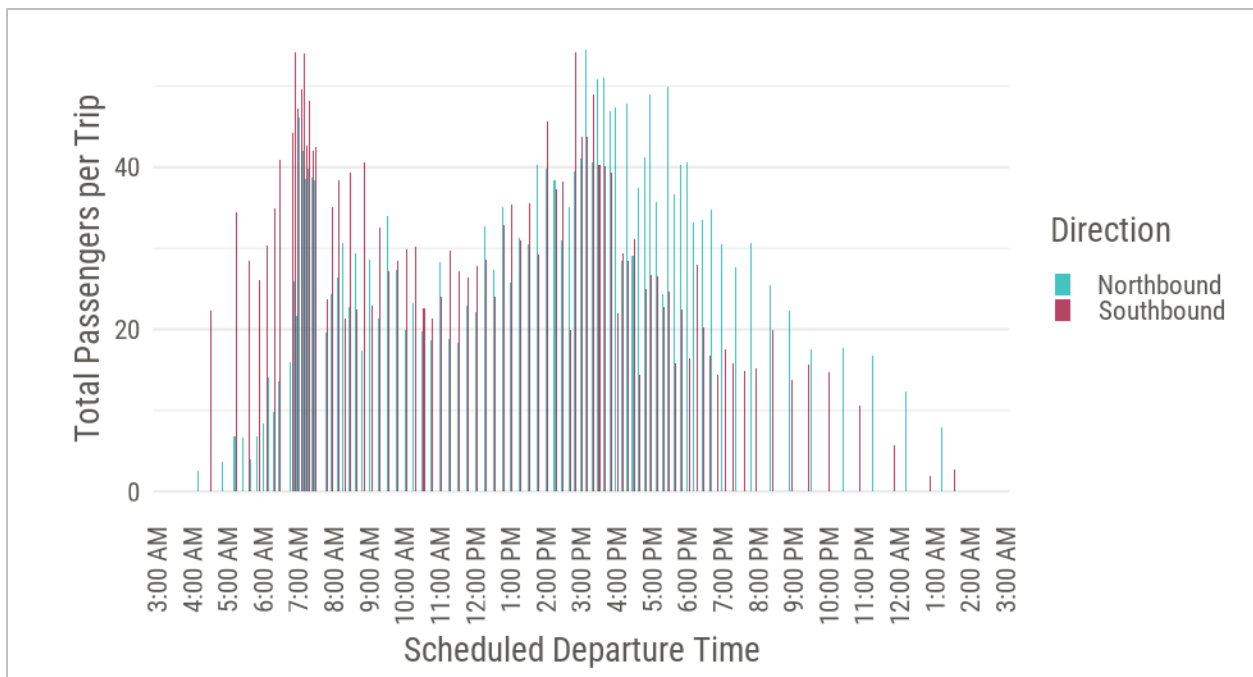


Ridership and Maximum Loads by Trip

Weekday ridership per trip is moderate on most trips, due to high turnover for transfer opportunities and the direct path of the route (see Figure 5):

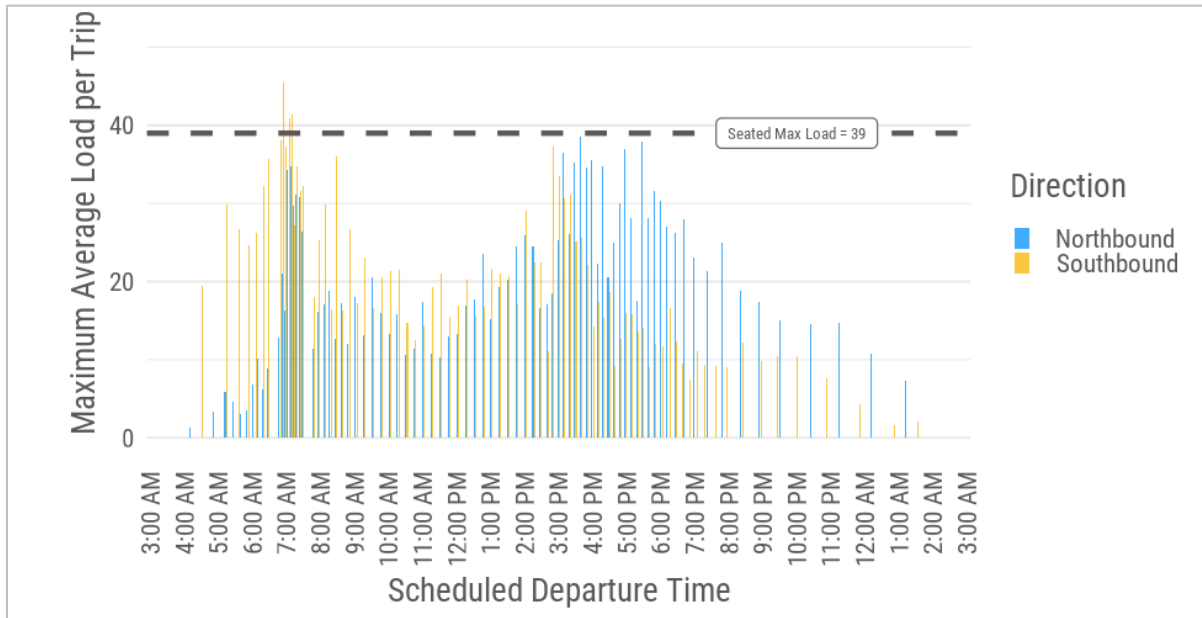
- Early morning trips before 6:00 AM carried about 10 passengers in the northbound direction and up to 45 passengers in the southbound direction.
- AM and PM peak trips carried 20 to 55 passengers
- Midday trips carried 20 to 40 passengers
- After 6:00 PM, ridership gradually declined to about 5 to 10 passengers per trip after midnight.

Figure 5 | Weekday Ridership by Trip: Fall 2019



The highest maximum loads are concentrated between 6:00 AM to 8:00 AM. During this time, three trips slightly exceed maximum seated load on average. At other times in the peak periods, maximum loads are often 30 passengers or fewer. Midday trips generally carry more than 30 passengers and have maximum loads of 20 passengers or less. Ridership increases to PM peak levels at 3:00 PM, when average maximum loads increase to close to seated capacity. In the evening, ridership ramps down from approximately 30 passengers per trip to around 20 at 8:00 PM, and then to 15 or less after midnight (see Figure 6).

Figure 6 | Weekday Maximum Loads by Trip: Fall 2019



On Saturdays, ridership ramps up to approximately 30 riders per trip at 8:00 AM. It remains between 20 and 35 passengers per trip until about 5:00 PM. It then slowly declines to fewer than 20 passengers per trip on the last trips. All trips operate well below seated capacity.

Sunday ridership by trip patterns is similar to those on Saturday but carry lower ridership throughout the day.

ON-TIME PERFORMANCE AND RUNNING TIMES

On-Time Performance

In Fall 2019, Route 59’s on-time performance was 85% on weekdays and weekends (see Table 4), with off-schedule performance skewed late on weekdays, split relatively equally between early and late service on Saturdays, and skewed early on Sundays. This indicates moderate levels of running time variability along the route.

Table 4 | On-Time Performance: Fall 2019

	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	4.4%	84.8%	10.8%	1.0%
Saturday	8.7%	84.9%	6.4%	1.0%
Sunday	10.1%	84.9%	5.0%	0.9%

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

AVERAGE SPEEDS AND STOP SPACING

Route 59’s average weekday speed is 11.3 mph. Route 59 is slowed by a congested operating environment and too many stops. During peak periods, Route 59 is especially slow along Castor Avenue south of Cottman Avenue. For example, northbound in the PM peak, service averages between eight and ten mph along Castor Avenue (see Figure 7). It is only marginally faster during other periods.

Route 59 has an average of nine stops per mile and over ten stops per mile in some areas (see Figure 8) This means that Route 59’s stops, on average, are 600 feet, or only a two-minute walk apart.

Figure 7 | Average Speeds: PM Peak Northbound

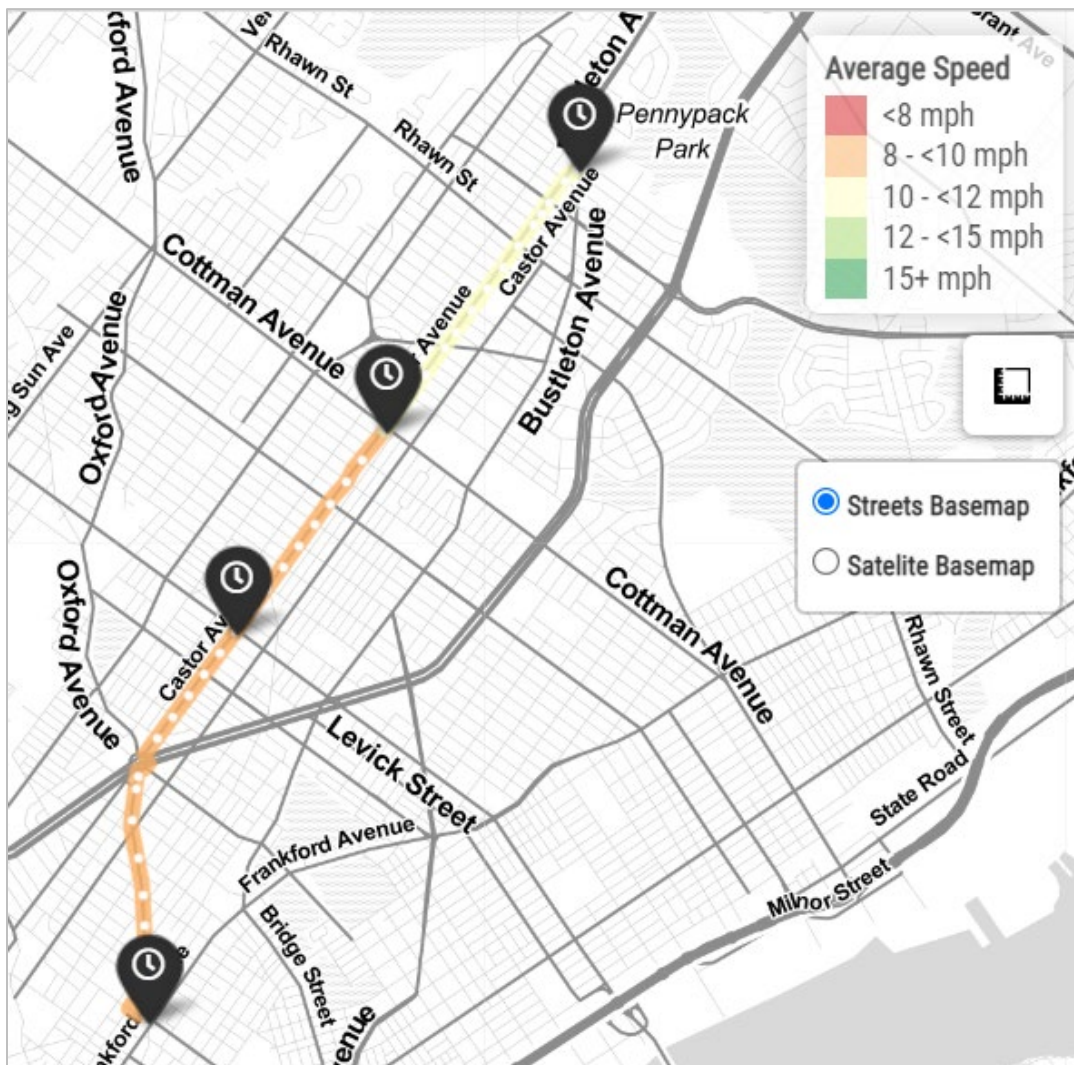
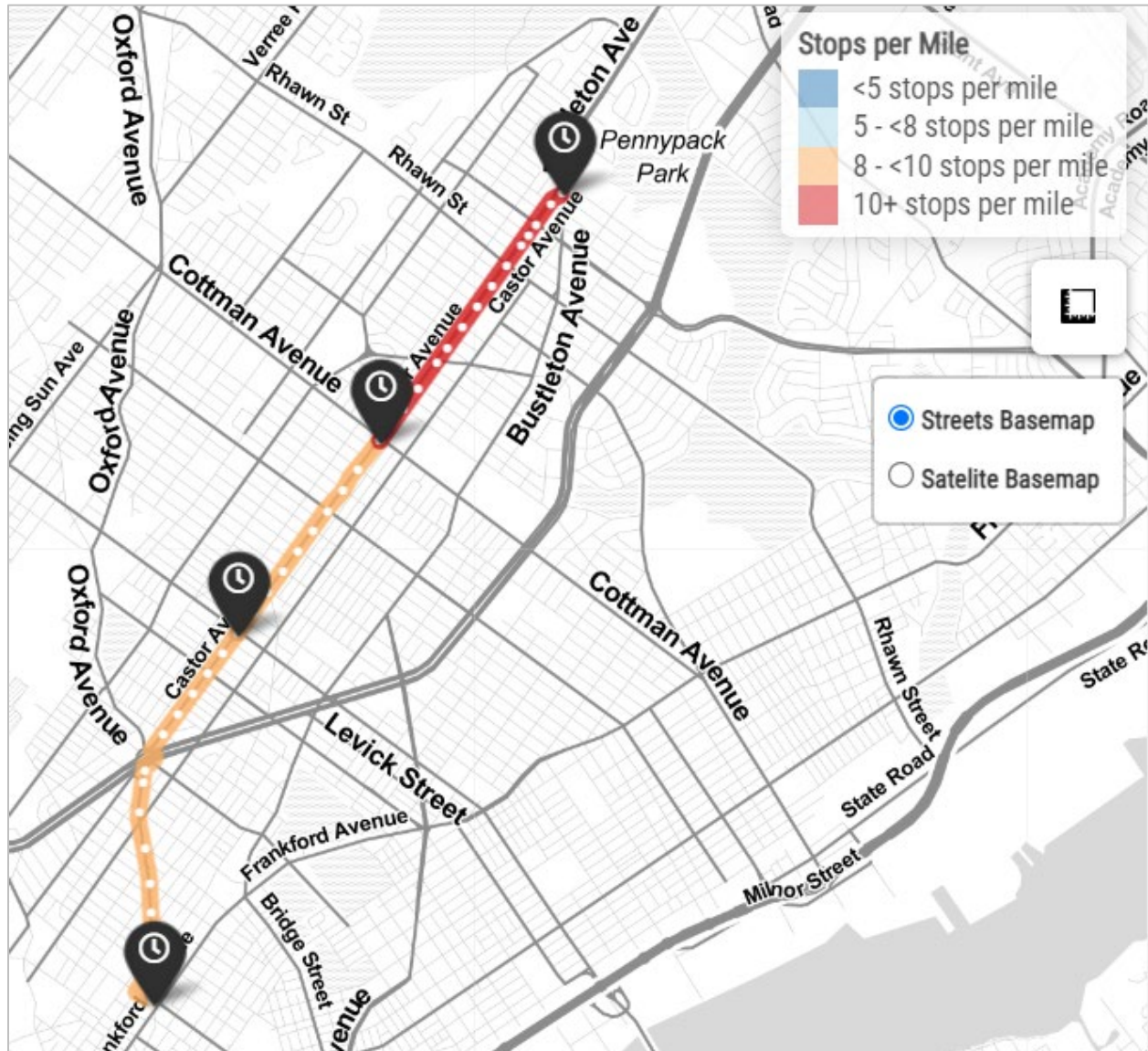


Figure 8 | Stop Spacing by Route Segment


RIDER CHARACTERISTICS

Route 59's service area is very typical of SEPTA's service area as a whole (see Table 5). One major difference is that the route carries a lower percentage of Black riders, and a significantly higher percentage of riders identifying as Hispanic or Other race or ethnicity. Additionally, the service area has a higher percentage of riders with access to a vehicle.

Table 5 | Rider Characteristics

	Route 59 Riders	Systemwide Average
Median Household Income	\$27,165	\$32,713
Share in Poverty	32%	30%
Ethnicity		
White	33%	38%
Black	37%	46%
Hispanic	19%	10%
Other	11%	7%
Without a Vehicle	29%	37%
Seniors	16%	15%
With a Disability	2%	2%

SERVICE IMPROVEMENT OPPORTUNITIES

Opportunities to strengthen Route 59 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route:

- **Improve Stop Amenities and Safety at Highest Ridership and Transfer Locations:** Most Route 59 riders transfer to other routes, and some of these transfers take place at dangerous and uncomfortable bus stops. Route 59 could be targeted for stop upgrades at its highest ridership and transfer locations, including Castor Avenue at Cottman Avenue and Oxford Avenue at Pratt Street. A proposed PennDOT project would implement boarding islands at key locations along Route 59’s alignment.
- **Increase Off-Peak Frequencies:** Service during weekday off-peak, Saturday evening and the entirety of Sunday service is infrequent. Post-COVID travel patterns are likely to be less peak-oriented and will support higher off-peak service frequencies. The following recommendations should be implemented to provide additional service for workers that need to use the route during late-night or Sunday service periods.

 - **Weekdays and Saturdays:** Extend 15-minute headways through 8:30 PM. Operate service on half-hour headways from 8:30 PM to 11:00 PM. Operate service on one-hour headways through the remaining service period.
 - **Saturdays:** Change schedule to operate on 15-minute to 20-minute headways during day-time service.