

ROUTE 28

Fern Rock Transportation Center to Torresdale-Cottman

KEY SERVICE CHARACTERISTICS, ISSUES, AND OPPORTUNITIES

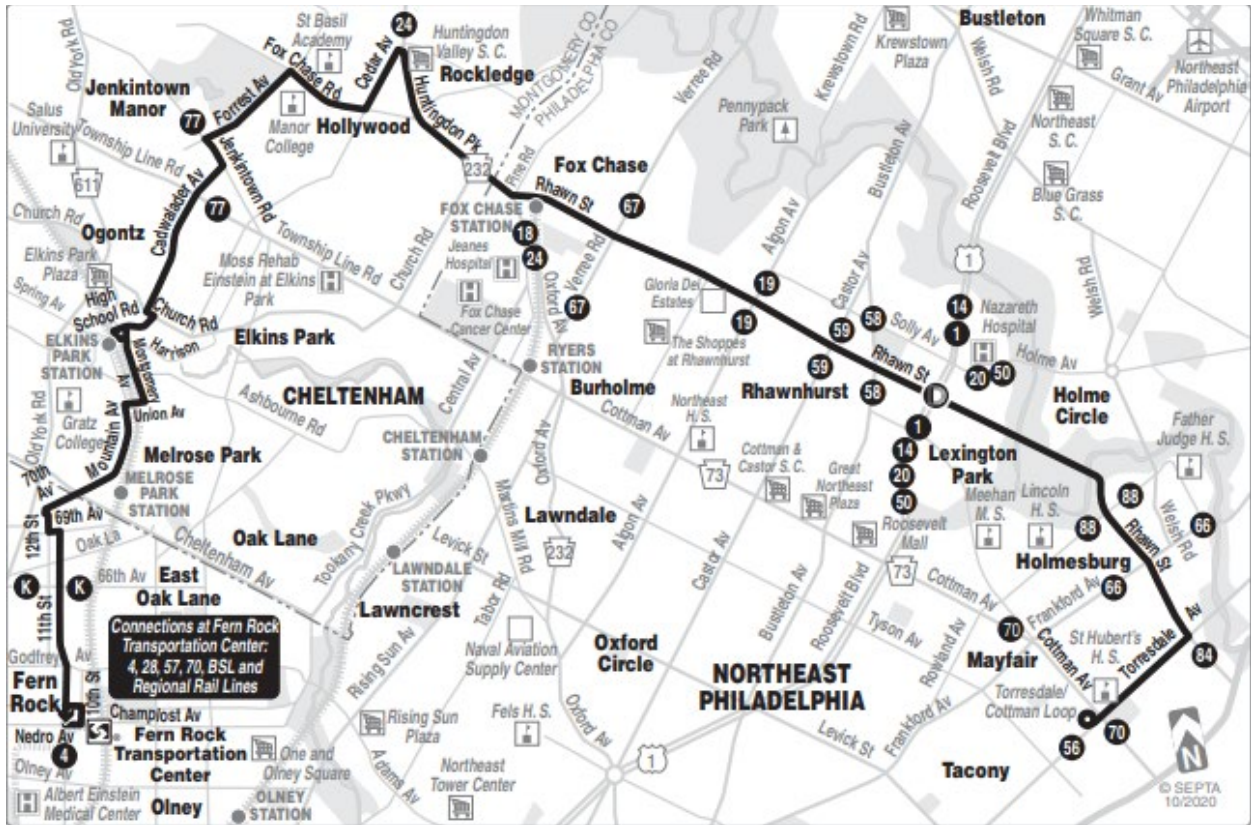
- *Route 28's primary function is to provide crosstown service between the Broad Street Line at Fern Rock Transportation Center, the Fox Chase and Trenton Regional Rail Lines, and neighborhoods and commercial corridors in Northeast Philadelphia. Its service is simple to understand.*
- *Route 28's usefulness as a crosstown service is undercut by its infrequent headways (especially on weekends) and its service span which does not offer Early AM service.*
- *Opportunities to improve Routes 28 involve focusing resources on the highest ridership crosstown segment of the route, and/or realigning the route to operate via the Old York Road corridor. There are also opportunities to shift Route 28's eastern end to serve additional destinations, begin service earlier in the day on weekdays, and improve the safety and amenities at the route's major transfer locations.*

ROUTE OVERVIEW

Route 28's east-west alignment from Fern Rock Transportation Center to the Torresdale Avenue and Cottman Avenue Loop is mostly direct (see Figure 1).

Route 28 serves a unique market in Northeast Philadelphia by providing crosstown service between the Broad Street Line, the Fox Chase Regional Rail Line, the Trenton Regional Rail Line, and several key commercial corridors, however its usefulness as a crosstown service is undermined by its infrequent headways.

Figure 1 | Route Map



SERVICE OVERVIEW

Schedule

Route 28 operates for 16 hours a day on weekdays from 5:55 AM until approximately 10:21 PM. Saturday service runs from 7:28 AM to 7:37 PM, while Sunday service runs from 8:33 AM to 6:26 PM (see Table 1):

- On weekdays, Route 28 provides moderately consistent service for most of the day. Peak period frequencies average 19 to 25 minutes and midday and evening frequencies average 31 to 36 minutes. Late night frequencies average 72 minutes. Actual frequencies vary during all time periods.
- On Saturdays, service frequencies average 60 minutes during the day and at night and on Sundays, frequencies average 72 to 74 minutes during the day and night. As on weekdays, actual frequencies vary from the averages.

Table 1 | Schedule Statistics

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
Weekdays	5:55 AM to 10:21 PM		
AM Peak	6:00 AM to 8:59 AM	1-35	19
Midday	9:00 AM to 2:59 PM	4-37	31
PM Peak	3:00 PM to 5:59 PM	12-39	25
Evening	6:00 PM to 9:59 PM	23-65	36

Late Night	After 10:00 PM	72-72	72
Saturdays	7:28 AM to 7:37 PM		
Day	8:00 AM to 5:59 PM	54-66	60
Night	Before 8:00 AM & After 5:59 PM	60-60	60
Sundays	8:33 AM to 6:26 PM		
Day	8:00 AM to 5:59 PM	68-75	74
Night	Before 8:00 AM & After 5:59 PM	69-75	72

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

Service Patterns

Route 28 operates with five service patterns (see Table 2). Most trips operate the full alignment, with limited service on two short-turn alignments.

The route has three terminals:

- Fern Rock Transportation Center (western terminal)
- Rhawn Street and Oxford Avenue/Elberon Avenue (central terminal for short turn trips), adjacent to Fox Chase Station on the Fox Chase Regional Rail Line
- Torresdale Avenue and Cottman Avenue Loop (eastern terminal)

Table 2 | Service Patterns

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
Eastbound							
229465	Fern Rock Transportation Center	Torresdale Ave & Cottman Ave Loop	Primary pattern	0	31	13	1
229463	Rhawn St & Elberon Ave	Torresdale Ave & Cottman Ave Loop	Short-turn alignment	0	1	1	1
Westbound							
229462	Torresdale Ave & Cottman Ave Loop	Fern Rock Transportation Center	Primary pattern	0	30	13	9
229461	Torresdale Ave & Cottman Ave Loop	Rhawn St & Oxford Ave	Short-turn alignment	0	4	0	0
229460	Rhawn St & Oxford Ave	Fern Rock Transportation Center	Short-turn alignment	0	1	0	0

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

RIDERSHIP

In Fall 2019, Route 28 carried 1,990 passengers on weekdays, 410 on Saturdays, and 250 on Sundays (see Table 3).

Table 3 | Fall 2019 Ridership and Productivity

	Weekdays	Saturdays	Sundays
Daily Ridership	1,988	413	251
Rank	77	93	89
Passengers per Revenue Vehicle Hour	37.5	20.9	19.3
Rank	72	87	86

Transfer Patterns

The largest transfer volumes on Route 28 are to and from:

- The Broad Street Line (18.4 percent of all trips)
- Route 66 (Frankford Avenue and Knights Road to Frankford Transportation Center) (6.5 percent)
- Route 14 (Oxford Valley Mall and Neshaminy Mall to Frankford Transportation Center) (6.1 percent)
- Route 58 (Neshaminy Mall and Somerton Avenue to Frankford Transportation Center) (5.4 percent)
- Route 56 23rd Street and Venango Street Loop or Bakers Centre to Torresdale Avenue and Cottman Avenue (3.7 percent)

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

Ridership by Stop

Route 28's primary function is to provide access to the Broad Street Line at Fern Rock Transportation Center and to provide crosstown service along the Rhawn Street corridor. Ridership is higher on the crosstown segment along Rhawn Street than the north/south segment running to and from the Broad Street Line (see Figure 2).

Eastbound ridership is shown Figure 2; westbound patterns generally mirror eastbound patterns. In more detail, eastbound trips:

- The largest number of passengers (214 riders) board at Fern Rock Transportation Center.
- Most other stops through to Fox Chase Station serve 25 or fewer boardings and alightings. The stop at Manor College, specifically Fox Chase Road and Forrest Avenue, is an exception with 35 passengers boarding and 20 alighting.
- There are 58 passengers boarding and nine alighting on Rhawn Street at Elberon Avenue. This is a transfer point with the Fox Chase Regional Rail Line at Fox Chase Station.
- Beyond Fox Chase Station, most bus stops have 25 or fewer boardings and alightings. Exceptions include:
 - Approximately 67 passengers board and 85 alight on Rhawn Street and both sides of Roosevelt Boulevard.
 - 50 passengers alight on Rhawn Street at Rowland Street. This is a transfer point with Route 88 (Bethayres Station and Holme Avenue and Pennypack Street to Frankford Transportation Center).

- 22 passengers board and 62 alight at Rhawn Street and Frankford Avenue. This is a transfer point with Route 66 (Frankford Transportation Center to Frankford Avenue and Knights Road).
- 88 passengers alight at Rhawn Street and Torresdale Avenue. This is a transfer point with Route 84 (Bustleton Avenue and County Line Road and Philadelphia Mills to Frankford Transportation Center) and is adjacent to Holmesburg Regional Rail Station on the Trenton Regional Rail Line.
- 98 passengers alight at the Torresdale Avenue and Cottman Avenue Loop.

Westbound patterns mirror eastbound patterns. Weekend patterns are similar but with significantly lower volumes.

Figure 2 | Weekday Eastbound Ridership by Stop



Ridership by Time of Day

Ridership by Hour

In Fall 2019, weekday ridership was very peaked, with most riders in the AM peak and between 2:00 PM and 6:00 PM (see Figure 3). The first eastbound trip of the day had high ridership, indicating there may exist unmet demand for service during the Early AM period. 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 quickly after 6:00 PM. Saturday and Sunday ridership did not exhibit peaks and gradually increased through mid-afternoon and stayed consistent throughout the day.

Ridership and Maximum Loads by Trip

In Fall 2019, weekday ridership was moderate on most trips between approximately 6:00 AM and 6:00 PM, and significantly lower during other periods (see Figure 3):

- AM peak trips carried 20 to 60 passengers
- Midday trips carried about 25 passengers
- PM peak trips carried 30 to 60 passengers
- After 6:00 PM, ridership gradually declined to about 10 passengers per trip after 8:00 PM.

All trips operated below seated maximum capacity.

Figure 3 | Ridership by Hour: Fall 2019

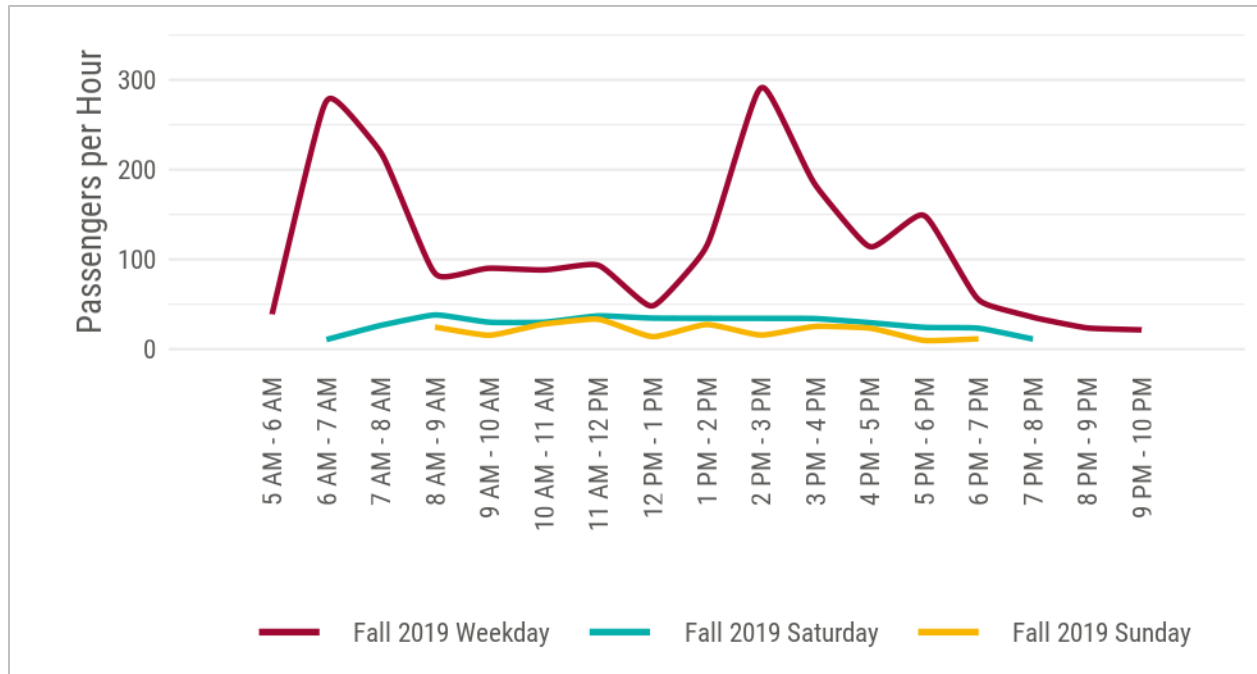
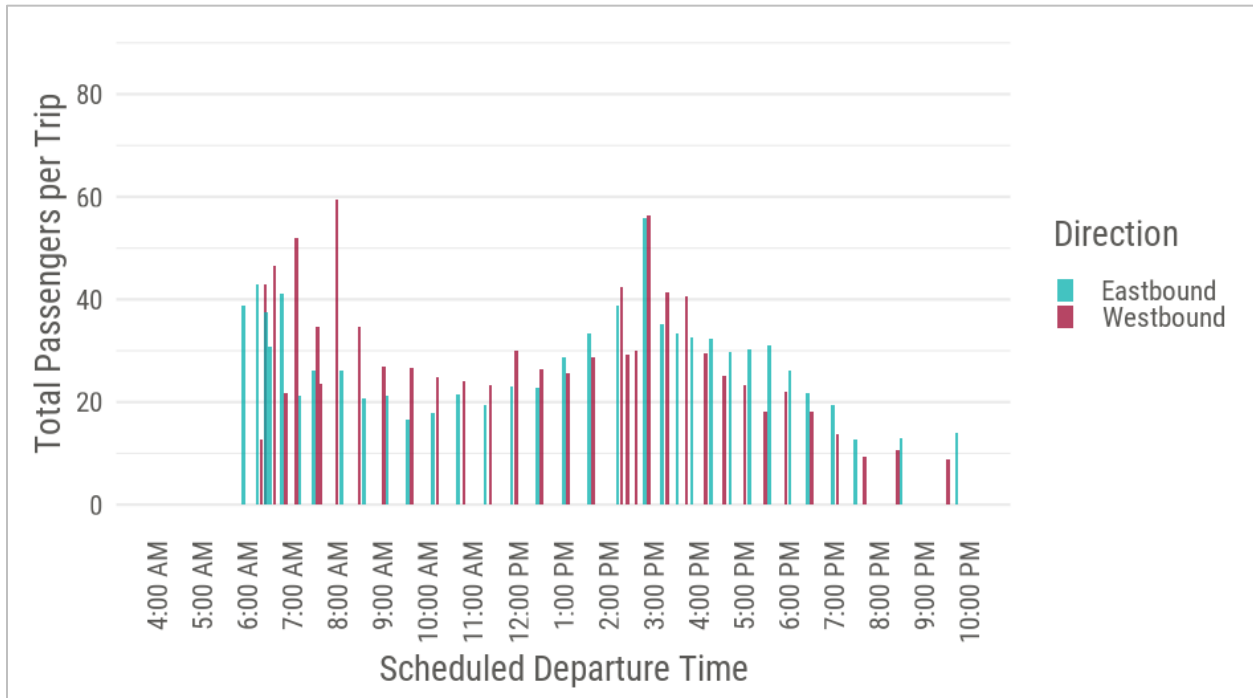


Figure 4 | Fall 2019 Weekday Ridership by Trip



On Saturdays, ridership ramps up to almost 20 riders per trip at 8:00 AM. It stays right around 20 passengers for most of the day until about 4:00 PM. It then declines to about 10 passengers per trip on the last trips. All trips operate well below seated capacity. Sunday ridership patterns are like those on Saturday but carry slightly lower ridership.

ON-TIME PERFORMANCE AND RUNNING TIMES

In Fall 2019, Route 28’s on-time performance was 83 percent on weekdays, 87 percent on Saturdays, and 88 percent on Sundays, with off-schedule performance split equally between early and late service (see Table 4). This indicates high levels of running time variability along the route. On weekdays, only 16 percent of trips were either early or late. Route 28 exceeds on-time performance standards on weekdays and weekends.

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	6.6%	83.1%	10.3%	1.3%
Saturday	9.9%	86.6%	3.4%	0.0%
Sunday	8.8%	87.9%	3.3%	0.0%

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

AVERAGE SPEEDS AND STOP SPACING

Route 28’s average weekday speed is 14.1 miles per hour, with some portions of the route slowing significantly during peak periods (see Figure 5).

Route 28 has an average of 10 stops per mile and over 11 stops per mile in some areas (see Figure 6).

Figure 5 | Fall 2019 PM Peak Eastbound Average Speeds

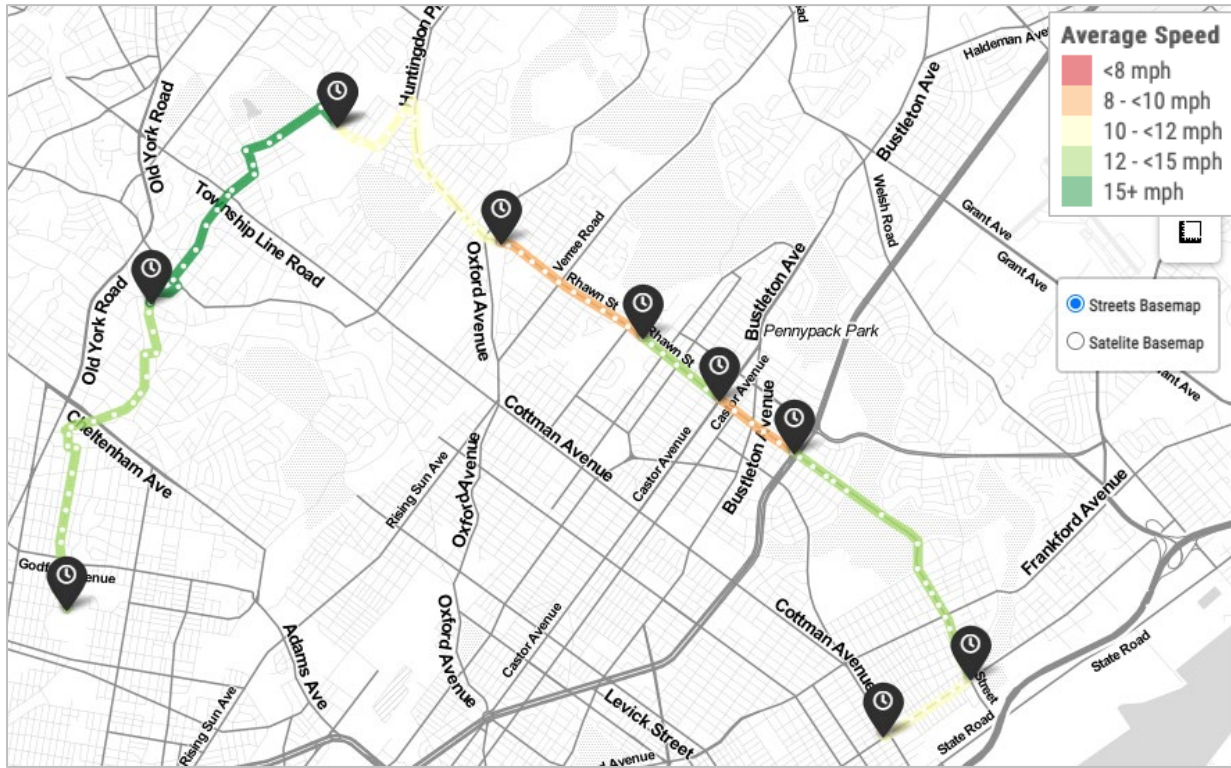
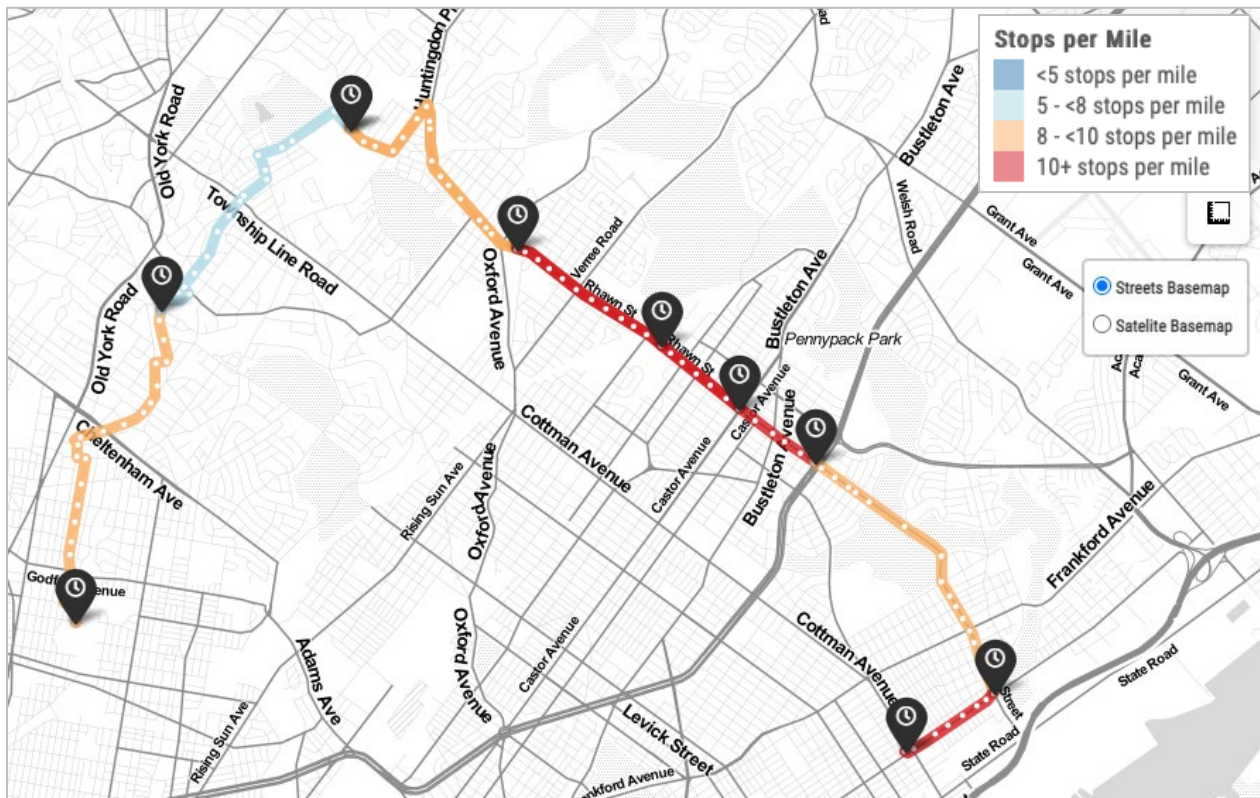


Figure 6 | Stop Spacing by Route Segment



RIDER CHARACTERISTICS

Route 28's ridership is characteristic of SEPTA's service area (see Table 5). However, there are some notable differences such as a lower percentage of Route 28 riders living in poverty and a lower percentage of riders without a vehicle. Additionally, there are a higher share of White riders on Route 28 while there is a lower share of Black riders.

Table 5 | Rider Characteristics

	Route G Riders	Systemwide Average
Median Household Income	\$32,512	\$32,713
Share in Poverty	24%	30%
Ethnicity		
White	45%	38%
Black	37%	46%
Hispanic	12%	10%
Other	6%	7%
Without a Vehicle	26%	37%
Seniors	15%	15%
With a Disability	2%	2%

SERVICE IMPROVEMENT OPPORTUNITIES

Opportunities to strengthen Route 28 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route:

- **Focus Service on Core Market:** Route 28 serves a north-south radial market and a crosstown market. These two corridors have different levels of transit demand and Route 28 could be adjusted to better allocate service to match that demand. There are several ways this could be implemented:
 - **Terminate Crosstown Service at Fox Chase Regional Rail Station:** Approximately 81 percent of Route 28's boardings occur between its eastern terminal at Torresdale Avenue and Cottman Avenue Loop and Fox Chase Station, with only 25 percent of passengers riding through Fox Chase Station. Route 28 could terminate at Fox Chase Station and its resources could focus on providing higher frequency crosstown service along Rhawn Street. The radial segment of Route 28 that travels through Elkins Park could be discontinued as many nearby and higher frequency services are available to riders in this neighborhood.
 - **Terminate Service at Jenkintown-Wyncote Regional Rail Station:** Similar to the above opportunity, Route 28 could terminate at Jenkintown-Wyncote Regional Rail Station and its resources could focus on providing higher frequency crosstown service. The radial segment of Route 28 that travels through Elkins Park could be discontinued.
 - **Shift Crosstown Service to Holme Avenue and Welsh Road through Pennypack Park:** Although this change would increase trip lengths, Route 28's crosstown service could be realigned to operate via Holme Avenue and Welsh Road through Pennypack Park. This shift would allow the route to serve many

more destinations and a larger share of this densely populated residential area. It would also allow for a new one-seat crosstown ride for more riders and a one-seat ride to the Torresdale-Cottman loop.

- **Shift Radial North-South Service to Old York Road:** If north-south service on Route 28 is maintained, Routes 28 could operate via Old York Road between Cheltenham Avenue and Jenkintown-Wyncote Regional Rail Station. Old York Road is also served by Route 55, which operates to and from Olney Transportation Center. This change would increase service along this corridor and increase transfer opportunities.
- **Begin Service Earlier in the Day:** Route 28's first few eastbound trips have high ridership (with some trips carrying greater than 40 riders), indicating that there exists unmet demand for Early AM service. Route 28 could begin operating at 5 AM instead of 6 AM on weekdays.
- **Improve Bus Stop Spacing and Amenities at Highest Ridership and Transfer Locations:** Most Route 28 riders transfer to other routes, and some of these transfers take place at locations with limited amenities. Route 28 could be targeted for bus stop upgrades at its highest ridership and transfer locations, including Bustleton Avenue and Castor Avenue, while also better balancing bus stop spacing.