

ROUTE 45

Broad-Oregon to Center City

KEY SERVICE CHARACTERISTICS, ISSUES, AND OPPORTUNITIES

- *Route 45 connects Center City and South Philadelphia traveling on the east side of Broad Street (via 11th and 12th Streets). Its alignment is simple and direct, and the route carried more than 6,000 riders per weekday in the fall of 2019.*
- *While Route 45 is a strong route in terms of ridership, it operates parallel service to several other SEPTA routes including the nearby Broad Street Line and bus routes 4 and 47. There may be an opportunity to consolidate better service on fewer corridors.*
- *Route 45 has more stops per mile than almost any other SEPTA bus route. Improved stop spacing and better parking/curb management can increase speed and on-time performance.*

ROUTE OVERVIEW

Route 45 operates between Center City and Broad Street and Oregon Avenue in South Philadelphia (see Figure 1). It runs parallel to the Broad Street Line and serves a similar market as other SEPTA routes that operate north-south through Center City. Route 45 has a simple and direct alignment traveling northbound on 11th Street and southbound on 12th Street. This route was the southernmost segment of Route 23 until 2015 and the two routes still have coordinated schedules for transfers.

SERVICE OVERVIEW

Schedule

Route 45 operates until 2:34 AM on all days of the week, beginning service at 5:15 AM on weekdays and approximately 5:30 AM on weekends. 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 14 minutes during the day on Saturday and every 19-22 minutes at other times.

Figure 1 | Route Map

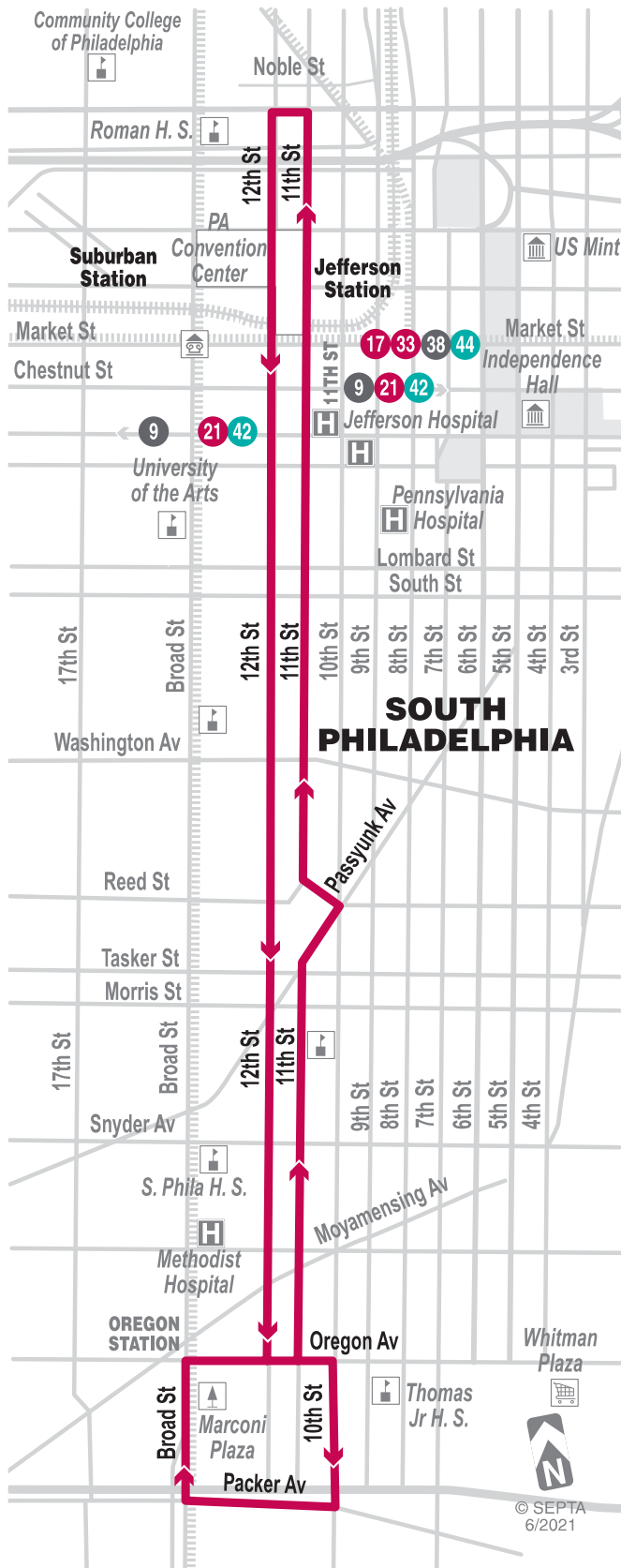


Table 1 | Schedule Statistics

Service Day	Span Of Service	Frequency (Range)	Frequency (Average)
Weekdays	5:15 AM to 2:34 AM		
Early AM	5:15 AM to 5:59 AM	8-15	10
AM Peak	6:00 AM to 8:59 AM	5-10	6
Midday	9:00 AM to 2:59 PM	6-11	9
PM Peak	3:00 PM to 5:59 PM	6-8	7
Evening	6:00 PM to 9:59 PM	6-24	11
Late Night	10:00 PM to 11:59 PM	21-27	24
Owl	Midnight to 2:34 AM	23-30	28
Saturdays	5:28 AM to 2:34 AM		
Day	8:00 AM to 5:59 PM	11-17	14
Night	Before 8:00 AM & After 5:59 PM	14-30	20
Sundays	5:29 AM to 2:34 AM		
Day	8:00 AM to 5:59 PM	17-22	19
Night	Before 8:00 AM & After 5:59 PM	15-30	22

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

Service Patterns

Route 45 has only two service patterns, one in each direction. All trips on all days use the primary pattern (see Table 2).

Table 2 | Service Patterns

Pattern	Origin	Destination	Unique Feature	Unique Stops	Trips Per Day		
					Wkd	Sat	Sun
Northbound							
229579	Broad St & Oregon Ave	Noble St & 12th St	Primary Pattern	-	129	77	62
Southbound							
229578	Noble St & 12th St	Broad St & Oregon Ave	Primary Pattern	-	130	78	62

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

RIDERSHIP

In Fall 2019, Route 45 carried 6,213 passengers on weekdays, 3,186 on Saturdays, and 2,269 on Sundays (see Table 3). Based on weekday ridership, it was SEPTA's 29th highest ridership route.

Table 3 | Fall 2019 Ridership and Productivity

	Weekdays	Saturdays	Sundays
Daily Ridership	6,213	3,186	2,269
Rank	29	31	33
Passengers per Revenue Vehicle Hour	51.6	47.3	45.3
Rank	34	24	28

Transfer Patterns

Except for the Broad Street Line, most Route 45 transfers are to connect with east-west service. Only 1.6 percent of Route 45 trips involve a transfer with Route 23 – the two routes were a single combined route until being separated in November 2015. The largest transfer percentages are to and from:

- Market-Frankford Line (8.0% of all passengers)
- Route 79 (Columbus Commons to 29th Street and -Snyder Avenue) (3.4%)
- Route 29 (Pier 70 to 33rd Street and Dickinson Street) (3.2%)
- Broad Street Line (3.2%)
- Route 21 (Penn's Landing to 69th Street Transportation Center) (2.2%)

Weekend transfer percentages are similar to weekdays.

Ridership by Stop

Most riders use Route 45 to travel in and out of Center City; about 76 percent of all trips begin or end at the nine stops between Locust Street and the northern terminus at Noble Street (see Figure 2). The stop at Market Street has the most activity, with 890 weekday northbound alightings. Outside of Center City, demand is consistent along the route; some examples of South Philadelphia bus stops with higher activity on weekday northbound trips include:

- 355 riders board at the origin at Broad Street and Oregon Avenue
- 190 riders board at 11th Street and Oregon Avenue
- 242 riders board and 33 alight at 11th Street and Snyder Avenue
- There are 154 boardings and 53 alightings at 10th Street and Passyunk Avenue
- 140 riders board and 86 alight at 11th Street and Catharine Street

Figure 2 | Weekday Northbound Ridership by Stop

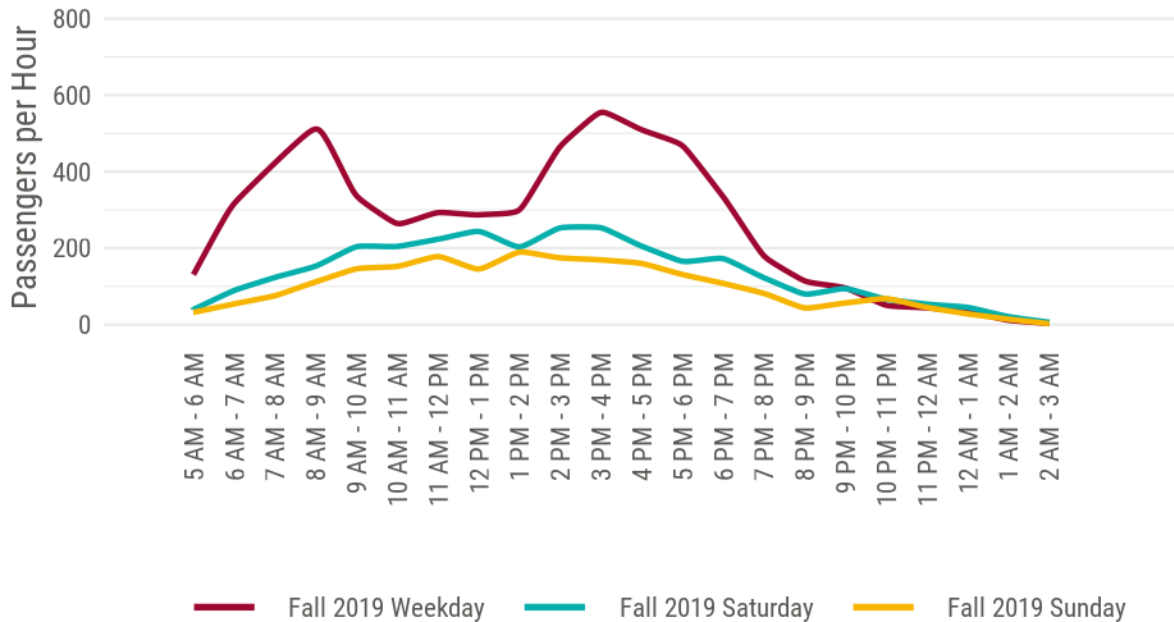


Ridership by Time of Day

Ridership by Hour

In Fall 2019, weekday ridership was somewhat peaked with slightly higher ridership in the afternoon (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 7:00 PM. Weekend ridership did not exhibit peaks and remained steady between 9:00 AM and 7:00 PM.

Figure 3 | Ridership by Hour: Fall 2019



Ridership and Maximum Loads by Trip

In Fall 2019, weekday ridership per trip is high on peak trips and moderate at other times (see Figure 4):

- AM peak trips carried 50 to 60 passengers
- Midday trips carried 20 to 30 passengers
- PM peak trips carried 40 to 50 passengers
- After 6:00 PM, ridership decreased steadily from 40 passengers to around 20.
- After 10 PM ridership continued to drop to fewer than 10 on the last trips.

Due in part to the lack of turnover along the route, there are a handful of peak period trips where maximum loads approach or exceed seating capacity on average (see Figure 5). Bus bunching likely increased the number of trips which had standing loads on occasion. Outside of the peak periods, average loads remain below the seated capacity, due in part to relatively frequent off-peak service.

Weekend trips each carry 25 to 40 passengers through much of the day and somewhat fewer passengers during mornings and evenings. Some Sunday trips carry more than 40 passengers since there are fewer trips on Sundays as compared to Saturdays. Maximum loads were also higher on Sunday, but no trips have standing loads on average.

Figure 4 | Fall 2019 Weekday Ridership by Trip

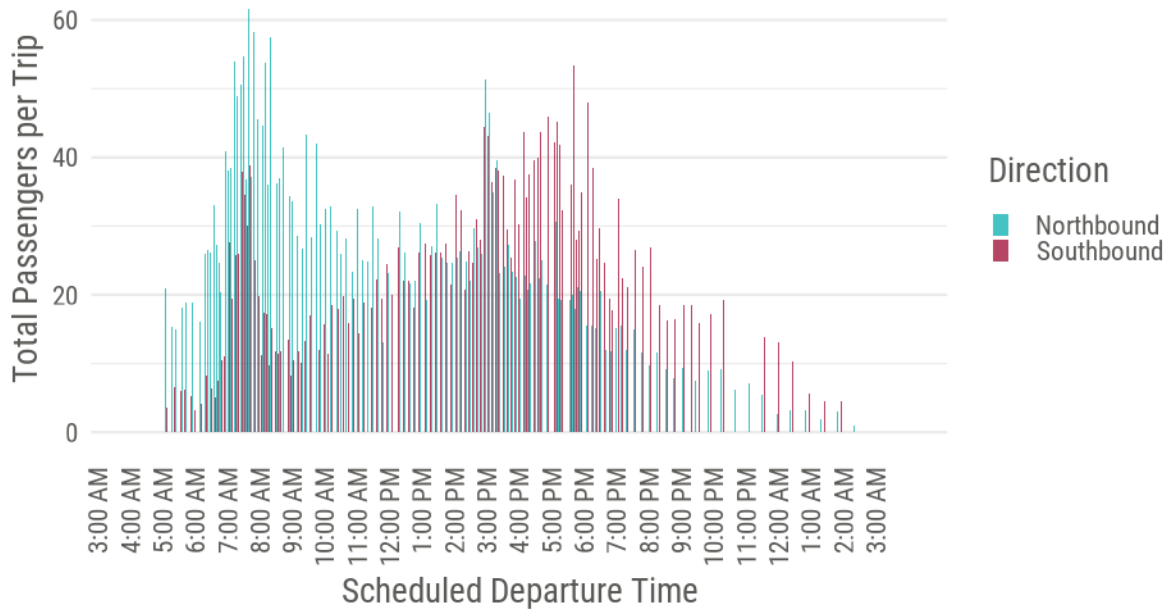
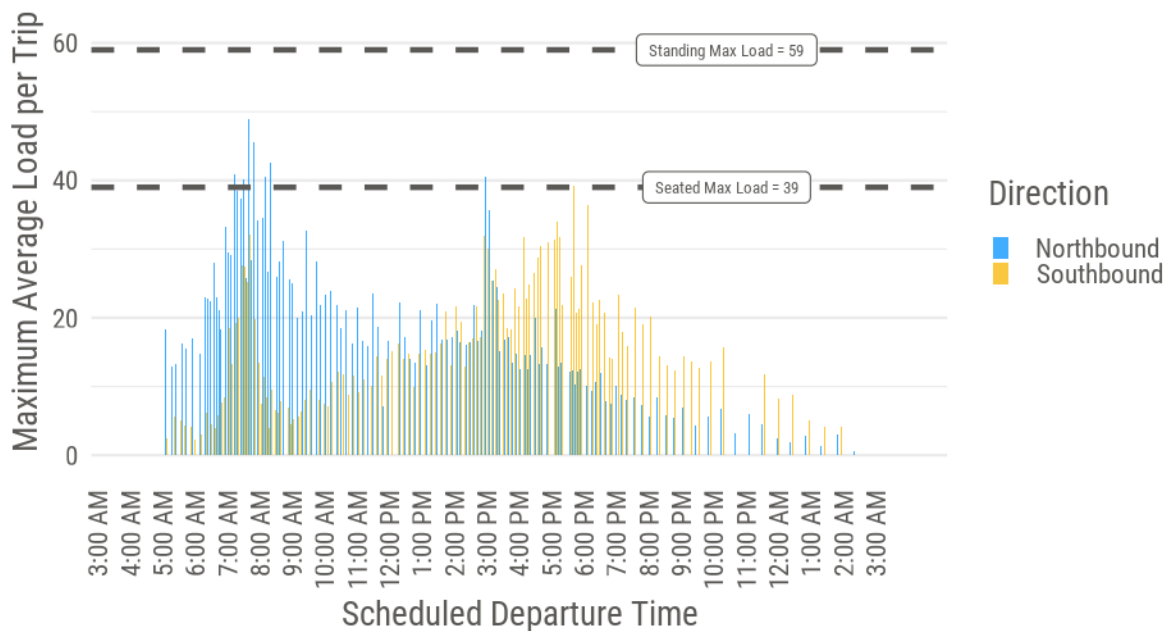


Figure 5 | Fall 2019 Weekday Maximum Loads by Trip



ON-TIME PERFORMANCE AND RUNNING TIMES

On-Time Performance

In Fall 2019, Route 45’s on-time performance was 69.7 percent on weekdays, 72.5 percent on Saturdays, and 80.6 percent on Sundays (see Table 4). On weekdays 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
Goal		80%		
Fall 2019 Actual				
Weekdays	15.1%	69.7%	15.2%	0.0%
Saturdays	6.3%	72.5%	21.3%	0.0%
Sundays	4.8%	80.6%	14.6%	0.0%

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

AVERAGE SPEEDS AND STOP SPACING

On weekdays, Route 45 travels between 8 and 10 mph along much of the route and somewhat faster in the middle segment of the route (see Figure 6). Slow speeds are attributable to traffic congestion in Center City as well as stop spacing along the route. Route 45 has an average of more than 11 stops per mile over its entire length; but some segments have more than 13 stops per mile (see Figure 7). Overall, this route has the fourth closest stop spacing of any SEPTA bus route.

RIDER CHARACTERISTICS

Route 45’s rider demographics are typical in some ways of SEPTA’s service area (see Table 5). Route 45 riders are more likely to be white, somewhat more likely to be without access to a vehicle, and more likely to be seniors.

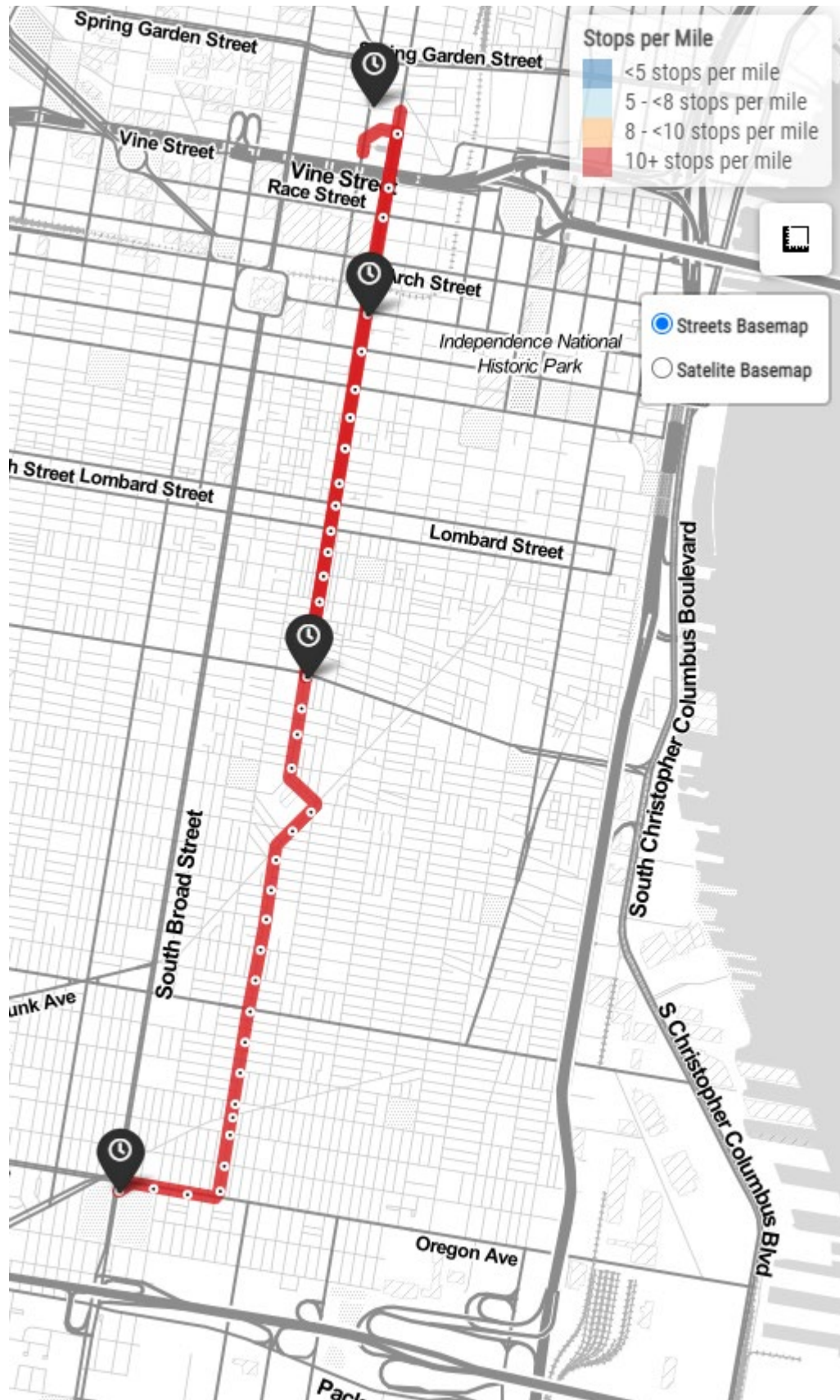
Table 5 | Rider Characteristics

	Route 45 Riders	Systemwide Average
Median Household Income	\$37,376	\$32,713
Share in Poverty	26%	30%
Ethnicity		
White	56%	38%
Black	26%	46%
Hispanic	9%	10%
Other	9%	7%
Without a Vehicle	43%	37%
Seniors	26%	15%
With a Disability	2%	2%

Figure 6 | Fall 2019 PM Peak Northbound Speeds



Figure 7 | Stop Spacing by Route Segment



SERVICE IMPROVEMENT OPPORTUNITIES

Opportunities to strengthen Route 45 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route.

- **Consolidate Route 45 with Route 47:** These two routes provide parallel service only a few blocks apart. Discontinuing Route 45 and consolidating service on 7th Street and 8th Street would enable better frequency on Route 47, while still maintaining reasonable distance from service on Broad Street to the west. Additionally, the consolidation should be coordinated with any changes to Route 23 to allow for transit supportive street and signal treatments.
- **Reduce Route 45 Frequency:** With less peak commuter demand expected in a post-COVID environment, some resources from Route 45 could be reallocated to other nearby routes while still maintaining some Route 45 service. The current practice of coordinating schedules between Routes 23 and 45 is no longer needed as there are very few transfers between the routes.
- **Collaborate with City on Parking/Curb Management:** New technology and policies may enable bus cameras to assist with parking and curb management operations, and these improvements could in turn increase Route 45's speed and on-time performance.