



***JFK BOULEVARD
AND MARKET STREET***



Evaluation Report
August 2023





Length
0.92 Miles

Transit Trips
1.2k buses per day

Ridership (2019)
23,369 People/Day

BUS LANE PILOT EVALUATION REPORT

MARKET STREET & JFK BOULEVARD

Project Background

What: Bus Lane Pilot Project on JFK Boulevard and Market Street

Where: JFK Boulevard from 15th to 19th Streets, and Market Street from 20th to 15th Streets.

Why: Improve bus speeds and reliability on one of the city and region's most important bus corridors.

Who: This project was a collaboration between the City of Philadelphia, SEPTA, and PennDOT.



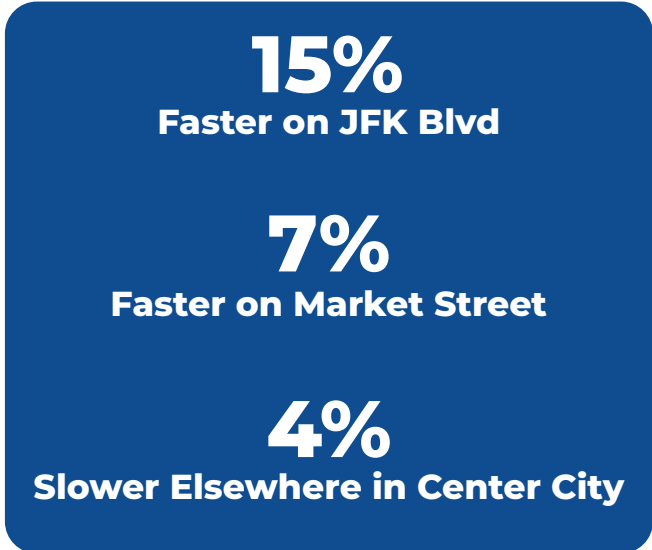
--- Existing Bus Lanes
— Project Limits

SUMMARY OF FINDINGS

Bus Lanes Improved Bus Travel Times

Within the pilot, buses on JFK Boulevard got roughly 15 percent faster after bus lanes were installed. Buses on Market Street got roughly seven percent faster after bus lanes were installed.

In the same time period, buses on other routes in Center City Philadelphia slowed down by roughly four percent.



Good Compliance with Room for Improvement

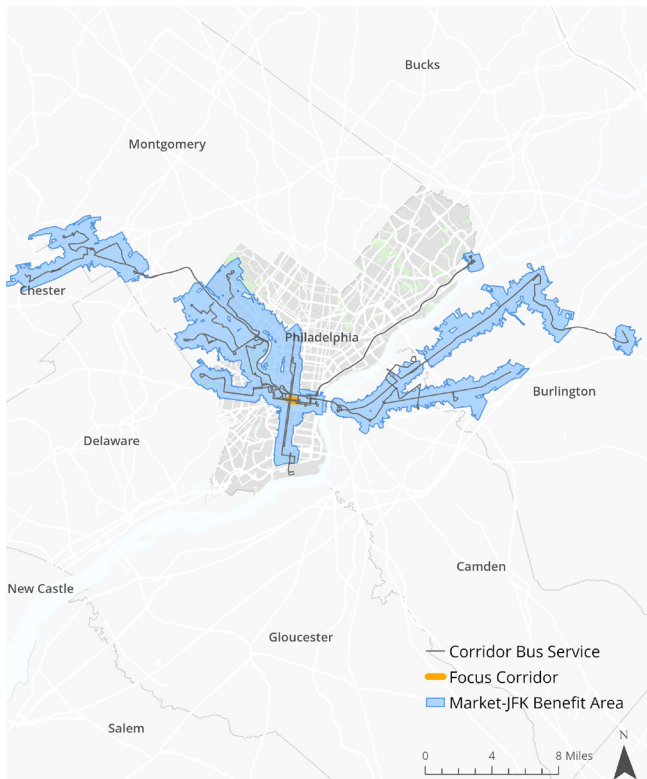
Most drivers complied with the new bus lanes. On JFK Boulevard, 92 percent of cars and trucks stayed out of the bus lane, while on Market Street, 81 percent stayed out of the lane. Although compliance is generally high, the eight to 19 percent of cars and trucks that improperly use the bus lanes can cause significant delays to the bus, as these vehicles are often stopped in the lane.



Traffic is Still Moving

The bus lanes did not cause congestion in travel times. Like the rest of Center City, driving times on JFK Boulevard and Market Street were 20 to 40 seconds *faster* than they were prior to the bus lane installation, due to post-COVID-19 pandemic changes in travel patterns, so the reduction of a single general travel lane did not affect traffic levels.

PROJECT OVERVIEW



JFK/Market Corridor Benefit Area
Where Buses on this Corridor Go

Why Bus Lanes?

The 2021 Philadelphia Transit Plan establishes transit-first priority corridors throughout the city. The Transit Plan sets goals to get transit moving faster and more reliably along these corridors. It also outlines tools, such as bus lanes, to apply to these corridors to achieve these goals. The Transit Plan identifies JFK Boulevard and Market Street in Center City as a “tier 1” priority corridor for transit improvements transit speed, reliability, and connections. Prior to this pilot project, this corridor saw some of the highest bus ridership, with some of the lowest transit speeds.

SEPTA is currently developing its bus network redesign plan, Bus Revolution. The new bus network will maintain high-frequency bus service on several routes on these corridors. Prioritizing buses on JFK Boulevard and Market Street will be instrumental to ensure that this plan is a success.

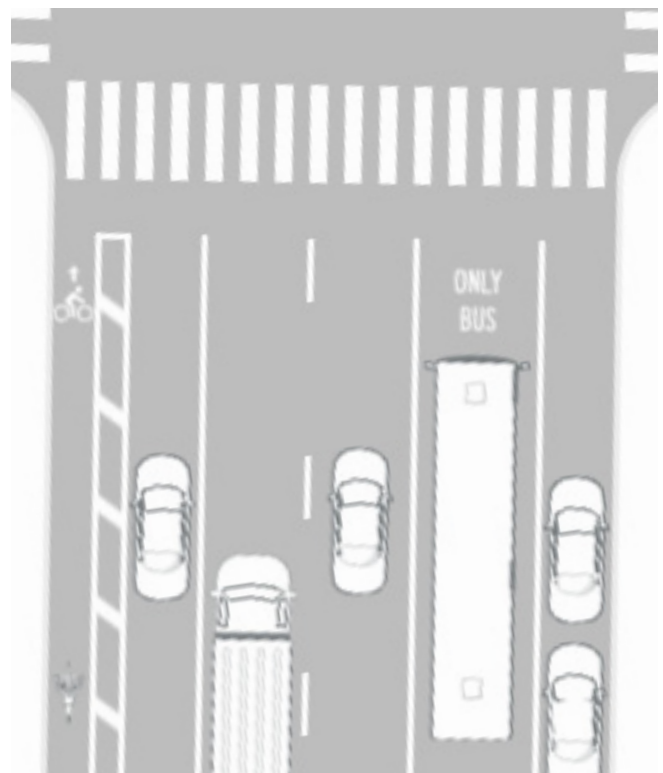
Corridor Status Before the Pilot

Market Street and JFK Boulevard form a major east/west arterial in Center City between City Hall and the Schuylkill River. Naturally, this area is a major corridor for all transportation modes due to the central location. Prior to the pilot bus lane project in 2019, the corridor saw over 23,000 bus riders from 20th to 15th Streets. Bus riders made up 50% of all road users along this corridor. At that time, the bus speed at peak hour was 4 miles per hour.

Routes

Corridor Serving: 17, 31, 32, 33, 38, 44, 48, 62, 78, 124, 125, NJT 555, NJT 414

Connecting: MFL, BSL, Regional Rail, Trolleys, and Bus Routes 2, 7, 49



Project Timeline

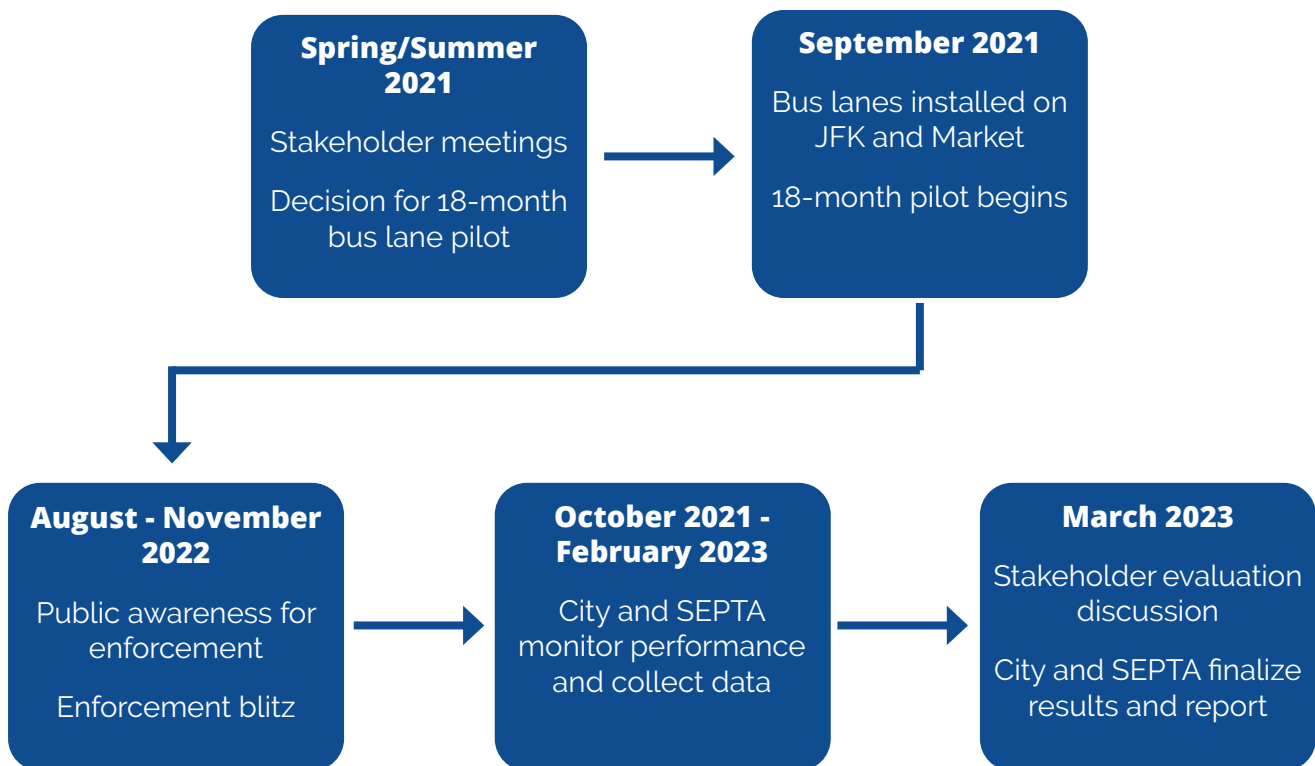
This project began in September 2021, with an 18-month pilot period that concluded March 2023. Meetings with stakeholders helped to shape the project limits and pilot duration. The bus lanes were installed on JFK Boulevard, from 15th to 19th Streets, and on Market Street, from 20th to 15th Streets. The goal of the project was to increase bus speeds and reliability by creating dedicated space for buses on this busy transit corridor.

In June 2022, red paint was installed on the Chestnut Street bus lane from Broad Street to 2nd Street. After the Chestnut Street lane was painted red, the City worked with partners to spread driver awareness of bus lane enforcement along JFK Boulevard, Market Street, and Chestnut Street. Project awareness helps reduce violations and reduce congestion from private vehicles in the bus lane.

Following this outreach, PPD, SEPTA Transit Police, and the PPA oversaw an enforcement blitz of the newly painted bus lanes. Evaluation, concentrated on effects of this initiative on transit and drivers and the frequency of violations, occurred throughout the study period from approximately August to November 2022.

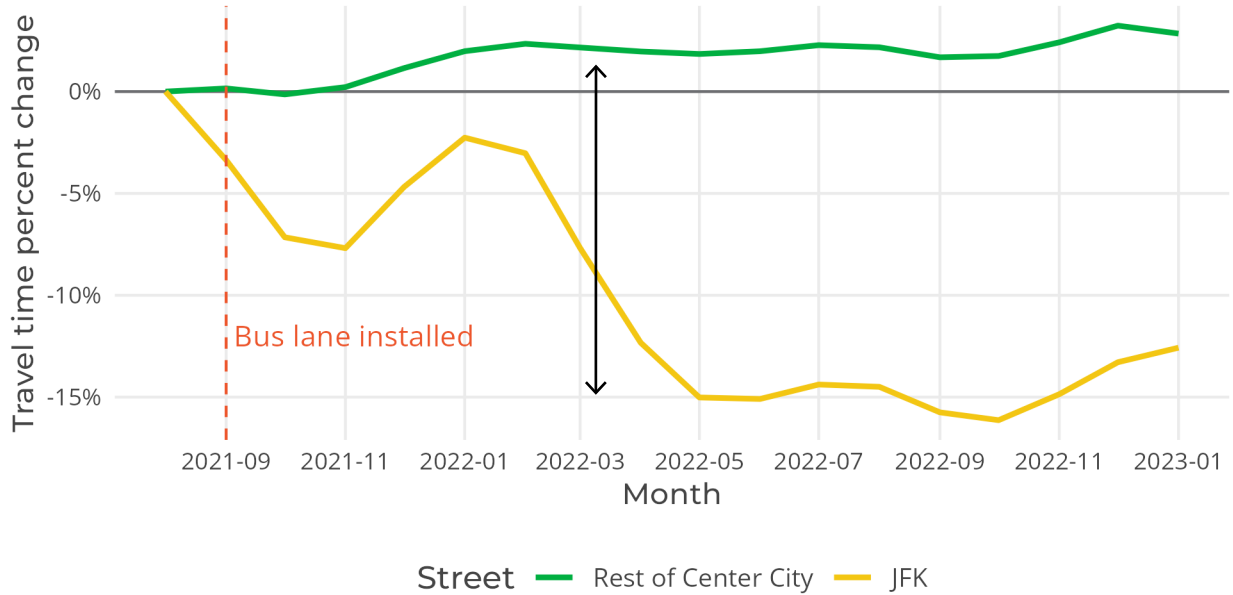
The City and SEPTA met with stakeholders again at the conclusion of the pilot to discuss evaluation and next steps.

This report gives a detailed overview of the initiative, why it was needed, how it was implemented and then evaluated, and the results of this evaluation and their implications for future improvements.



JFK BOULEVARD BUS TRAVEL TIMES

Buses on JFK Boulevard got 15% Faster

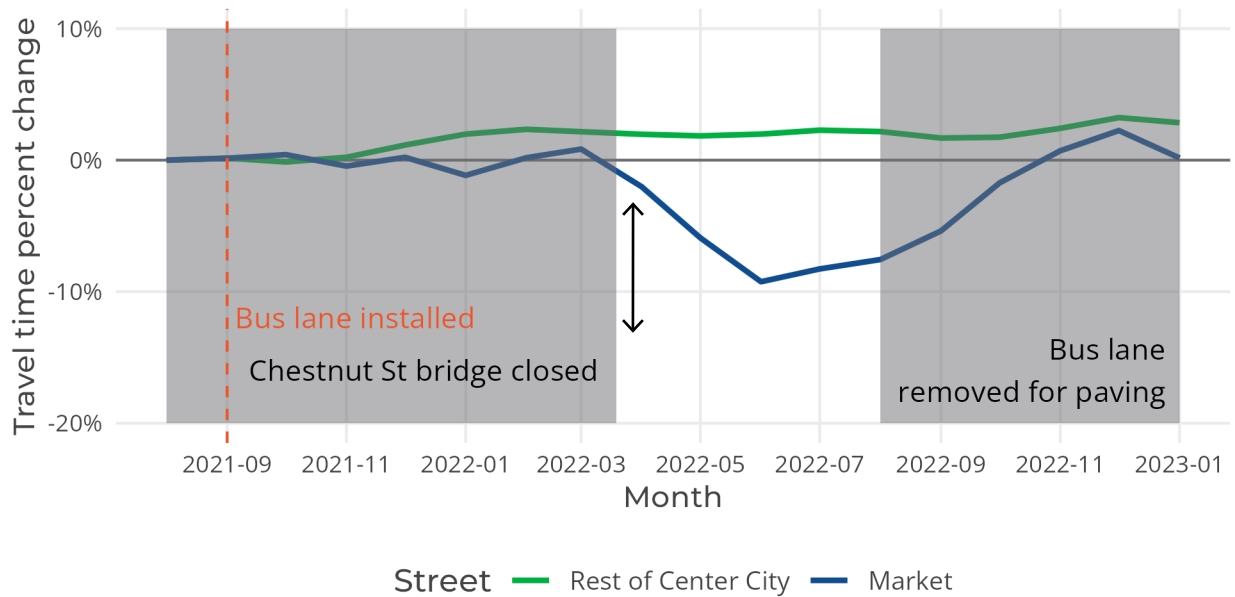


To compare transit travel times before and after the bus lane installation, bus speeds in August 2021 were set as a baseline, as shown through the horizontal zero percent line. A decrease in travel time means that the bus is moving faster. Bus travel times were captured using SEPTA on-board bus sensors through January 2023.

The yellow line shows that bus travel time decreased by 15 percent on JFK Boulevard over the course of the pilot period. In the same time period, bus travel time in the rest of Center City increased by three to four percent. A 15 percent decrease in travel time is a significant improvement in transit speed that substantially benefits bus riders.

MARKET STREET BUS TRAVEL TIMES

Buses on Market Street got 7% Faster



On Market Street, bus speeds also improved compared to the August 2021 pre-bus lane installation baseline, as shown by the blue line. Over the course of the pilot, buses got faster on Market Street, with a maximum decrease in travel time of about 7 percent.

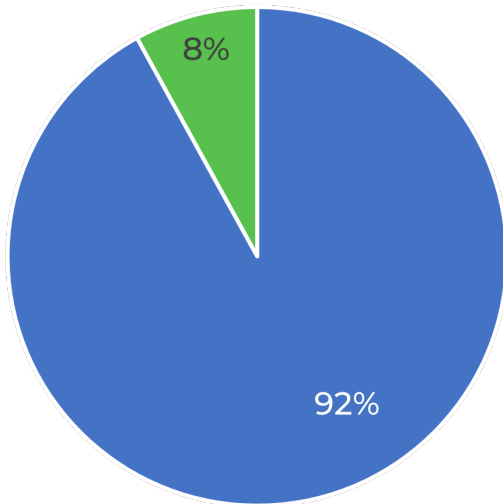
This improvement in bus travel times did not take place until around March 2022 when the Chestnut Street bridge reopened, likely because of large traffic volumes that were detoured onto Market Street until this date. Bus travel times on Market Street then began to increase again around August 2022, likely because the bus lane

was removed at this time for repaving.

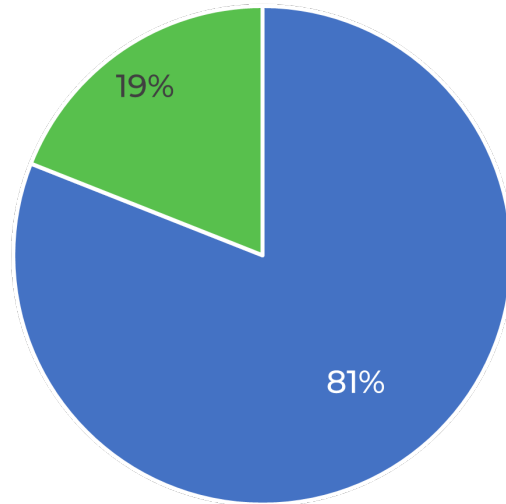
In contrast to JFK Boulevard, this decrease in travel time is far less pronounced and took place in the context of several complicating factors. The 7 percent decrease in travel time represents a less than .5 mile per hour increase in bus speed at the peak hour. The shortened observation period due to the complications of diverted traffic from the Chestnut Street bridge closure during the early months of the pilot, and the removal of the bus lane before the end of the pilot period makes it difficult to make specific claims of the exact effect of the bus lane on bus

MARKET STREET BUS TRAVEL TIMES

92% Compliance on JFK Boulevard



81% Compliance on Market Street



■ Cars and trucks in compliance
■ Cars and trucks in the bus lane

Source: DVRPC
November 9 - 18, 2021
1800 block of JFK Blvd and Market St

To determine the rate of compliance with the bus lanes, an analysis of traffic volumes on JFK Boulevard and Market Streets was performed using counts provided by the Delaware Valley Regional Planning Commission (DVRPC). This analysis looked at vehicle class by lane, i.e., whether cars, trucks, and buses were in the left, middle, or right (bus) lane.

This information was used to produce an overall compliance rate. The compliance rate represents the percent of cars and trucks using the lanes designated for them: the left and middle lanes. The noncompliance rate represents the percent of cars and trucks improperly using the bus lane.

On JFK Boulevard, the compliance rate was found to be 92 percent, and on Market Street,

the compliance rate was found to be 81 percent. While this means that the majority of cars and trucks have been respecting the bus lane, there are still eight and 19 percent (respectively on JFK Boulevard and Market Street) of drivers that are not in compliance.

Even a small number of bus lane infractions can lead to large disruptions for bus riders, especially when cars or trucks are double-parked or loading in the bus lane for an extended period of time.

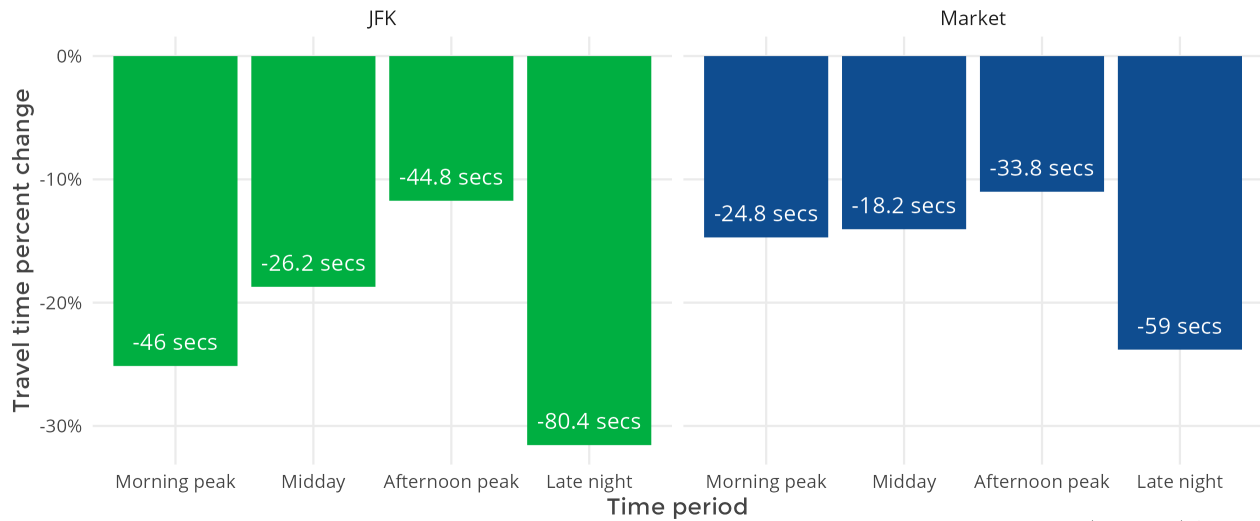
Overall, compliance rates are good, but there is still room for improvement. Increased compliance would lead to even greater increases in bus speeds, and shorter travel times for the many transit users on this corridor.

TRAFFIC RESULTS

Traffic is Still Moving

Change in travel time, 2019-2022

From 16th St to Schuylkill Ave



Source: RITIS Probe Data Analytics, INRIX

The evaluation showed that a dedicated bus lane did not cause increased travel times for non-transit users. People driving experienced a decrease in overall travel time from before the bus lanes were installed in August 2019 to 2022, a year after the 2021 bus lane installation.

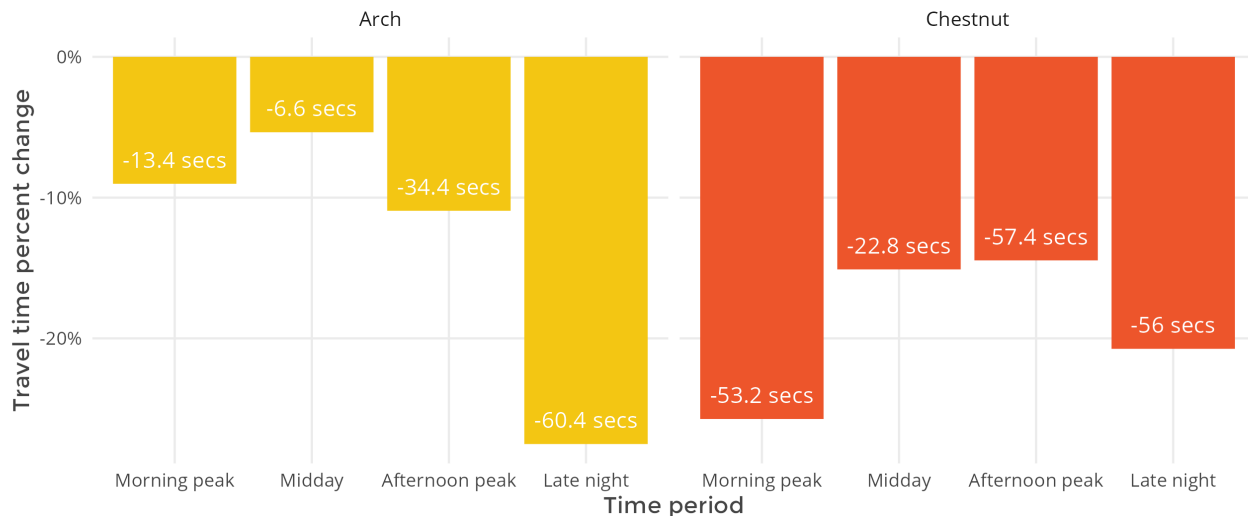
decrease in travel time. Similarly decreased travel times on Arch St from Broad St to 23rd St, and Chestnut St from Broad St to Schuylkill Ave are shown below. This indicates that the bus lane did not cause drivers to congest parallel alternate routes.

Using INRIX data, it was found that travel times on both JFK Boulevard and Market Street through Center City West decreased between 20 to 50 seconds, representing about a 15 to 30 percent

The decrease in travel time for people driving is likely primarily caused by the overall changes in travel patterns post-pandemic and a decrease in the number of people commuting by car.

Change in travel time, 2019-2022

Arch from Broad to 23rd St, Chestnut from Broad to Schuylkill Ave



Source: RITIS Probe Data Analytics, INRIX

Outside Factors Affect Traffic Volumes

Date	Market		JFK	
	Count	% change	Count	% change
Mar 2018	16,131		14,636	
Jul 2021	13,575	-16%	10,523	-28%
<i>Market/JFK bus lane installed (Sep 2021)</i>				
Nov 2021	15,330	13%	13,999	33%
<i>Chestnut St Bridge reopened (Mar 2022)</i>				
2022*	11,189	-27%	13,154	-6%

*Market count in Mar 2022, JFK count in Aug 2022

While traffic volumes decreased overall during the pandemic along the corridor, volumes increased right after the bus lane pilot was launched in November 2021, likely due to the closing of the Chestnut Street Bridge. After the bridge was reopened in March 2022, volumes

dropped below their pre-pilot levels on Market Street, and remained similar on JFK Boulevard. It appears that detours and general shifts in travel patterns have affected vehicle usage of the corridor, while bus lanes have little, if any, effect on traffic volumes.

BUS RIDERSHIP

Corridor Ridership Remains High

Bus ridership has steadily rebounded since the pandemic. Of all SEPTA modes, bus ridership has recovered the most.

Along the Market and JFK bus corridor, transit ridership has risen to 68 percent of pre-pandemic ridership (baseline February 2020). This is in line with bus ridership recovery throughout the system.

In contrast, rail ridership on has only reached

53 and 45 percent of pre-pandemic levels, on Regional Rail and the MFL/BSL/NHSL, respectively.

As the transit network continues to rebound in ridership post-pandemic, it is more important than ever to ensure fast and reliable bus service along this corridor which continues to serve twelve bus routes, connects to major transit hubs, and carries a high proportion of all transit riders.

STAKEHOLDER ENGAGEMENT

Stakeholders Encouraged by Bus Lane Successes

As part of the evaluation process, the City and SEPTA met with stakeholders at the end of the pilot period to discuss the results and hear feedback from those who live and work along the corridor.

Stakeholders reported they had directly benefitted from the decrease in bus travel times. Several meeting participants shared frustrating experiences with double-parked vehicles blocking the bus lanes, and suggested increasing enforcement and awareness measures such as camera-aided enforcement

and expanding red-painted lanes. Stakeholders were also interested in how the bus lanes will complement changes that will be implemented with SEPTA's upcoming Bus Revolution project, such as increasing spacing between bus stops, and how transfer times might affect bus riders' overall travel time.

As a whole, stakeholders had positive personal experiences with the bus lanes and would like to see increased compliance with and expansion of bus lanes.



NEXT STEPS

Summary and Next Steps

The primary goal of this initiative was to improve transit speed and reliability. As shown in the summary of findings in this report, the pilot achieved shorter travel times for buses along the project corridor. Furthermore, this success did not come at the expense of other road users.

Despite achieving the main goal of improving travel times, there is room for improvement in compliance with the lanes. Through increased compliance with bus lanes, further travel time savings could be garnered for transit users.

Given the successes, it is appropriate to make the pilot buses permanent on both JFK Boulevard and Market Street. It is also appropriate to pursue measures that will lead to increased bus lane compliance. Market Street will be restriped in the spring of 2023, presenting an opportunity to apply red paint to the existing bus lanes between 20th and 15th Streets. The red paint will help increase awareness, thus reducing bus lane infractions. Additionally, the City, SEPTA, and PennDOT should pursue legislation to allow camera-aided enforcement and work together to pursue its implementation.



Post-Pilot Plans

- Make Bus Lanes Permanent
- Add Red Paint to Market Street Bus Lanes