

**PORT AUTHORITY OF ALLEGHENY  
COUNTY  
ANNUAL SERVICE REPORT  
2021**



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# LETTER FROM THE CEO

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## Letter from CEO Katharine Kelleman

To Our Valued Customers,

As we continue to work through the global health crisis that has affected the public transit industry in immeasurable and unprecedented ways, we at Port Authority are adapting to new ways of working and serving our riders.

Despite the challenges fiscal year 2021 presented, we are grateful and pleased to be making progress with our mission and vision at the center of our efforts, and I would be remiss here to note that federal funding has no doubt allowed us to maintain service and remain hopeful for our future.

Although we had been planning to build upon the success of fiscal year 2020, we abruptly found that FY21 would present major challenges that our industry had never before faced. While the world was asked to stay home, Port Authority employees continued to move Allegheny County forward, albeit with passenger restrictions, capacity limits, and policies aimed at helping to keep us all healthy.

Rather than continuing to grow our system, we instead focused our efforts on reallocating resources to meet customer demand, connecting our most vulnerable riders to essential services, and ensuring employees had the tools and resources they needed to work safely.

Despite low ridership as a direct result of the pandemic, we were still able to add weekend or Sunday service to ten routes, maintain the majority of our system despite significant employment shortages, roll out our mobile ticketing application for buses, and are well on our way to completing a robust long-range plan that will incorporate significant public input.

Federal funding has allowed us to continue providing service during one of the most tumultuous times in our agency's history, and I remain confident that we will soon find a replacement for Act 89, which since 2013 been instrumental in giving us the ability to make much-needed repairs, catch up on maintenance, and make long-overdue investments to modernize our system.

Despite these challenges, I remain positive and confident of our bright future. There are many opportunities to be excited about public transit in Allegheny County.

Sincerely,



Katharine Kelleman, CEO, Port Authority of Allegheny County



# INTRODUCTION

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## Overview of the Annual Service Report

Port Authority of Allegheny County strives to provide a range of safe, high quality transit services that satisfies three primary goals: efficiency, effectiveness and equity, all of which are critical to successful transit. Port Authority's Transit Service Standards, last amended by Port Authority's Board in July of 2020, puts forward various performance metrics to measure the agency's progress towards each of the overarching goals. At the end of each year the agency gathers all its service data and measures that year's performance against the service standards and compares it to the past four consecutive years. This way the agency is able to identify where it is doing well and find areas to improve for the upcoming year. This information is compiled in a report format to create the Annual Service Report, which is a public facing document.

This is the second year in which the Annual Service Report is being published using only fiscal year data (July 1 of the prior calendar year through June 30 of the stated year). Before the FY2020 publication, reports have compiled ridership and hours of revenue data on a calendar year basis, and cost and passengers per revenue service hour data on a fiscal year basis. This change provides alignment with budgetary and reporting calendars and simplifies comparisons to other systems.

Due to the upheaval caused by COVID-19, Port Authority did not evaluate service requests in FY21. Staff time was instead put towards monitoring the ridership impacts of the pandemic and making service changes to reduce crowding and cut back underused commute service. Both systemwide and route specific performance reporting data covers the entire fiscal year 2021 in this report. Crowding metrics in this report uses modified standards since the pandemic performance does not compare with the standards set in the guidelines.

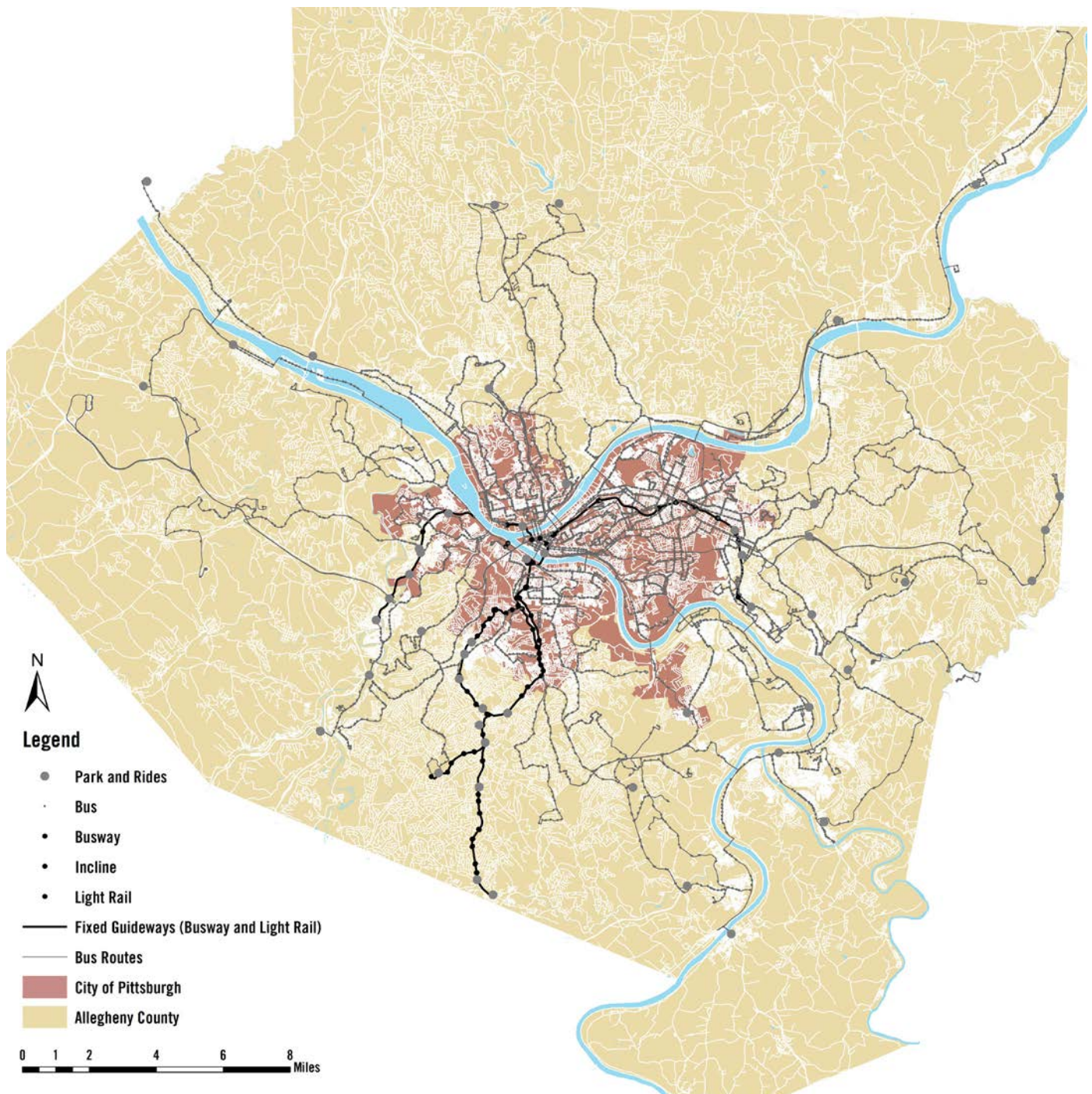
Port Authority hopes that this era of transparency and data-driven decision-making assures riders that the organization is constantly striving to better itself and evolve with new technologies and data, while maintaining its emphasis on local knowledge and a deep understanding of the communities it serves.



# SYSTEM OVERVIEW

## Overview of Port Authority's Transit Services

Port Authority of Allegheny County provides public transportation services within Allegheny County, including the City of Pittsburgh, in Southwest Pennsylvania. These services include 96 bus routes, three light rail routes, and two inclined planes (funiculars), one of which is operated by an outside entity and is therefore not included further in this report. Port Authority also sponsors the ACCESS paratransit program, which provides door-to-door, advance reservation, shared ride service which is contracted through a third-party provider. These services are all supported by almost 6,900 transit stops and stations, over 700 shelters, 51 Park and Ride lots, 123 locations where customers can purchase fare cards and tickets, three busways (designated bus-only roads), and various operational centers including one light rail center, four bus garages, one heavy maintenance bus facility, and one general maintenance facility.

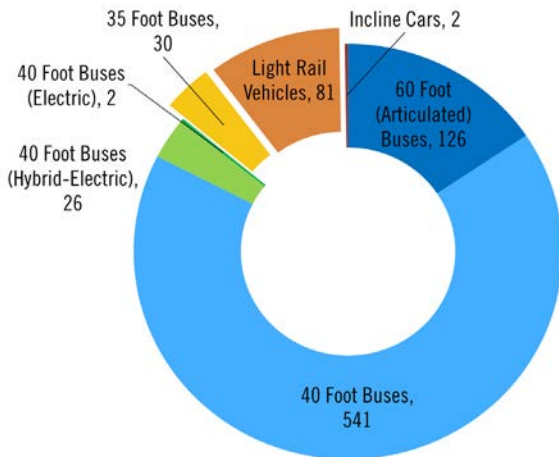




# SYSTEM OVERVIEW

## Fleet

Port Authority received 54 new buses in FY2021 and was able to retire buses that had reached the end of their useful life. The current fleet size is 725 buses and 81 light rail vehicles. The breakdown of the number of vehicles by type (as of June 30, 2021) can be seen in the chart below.

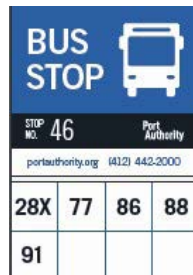


## Transit Stops and Stations

Port Authority has 6,869 transit stations and stops, of which 6,765 are for buses, 100 are for light rail, and four are for the inclines.

## Shelters

Port Authority has 148 shelters at fixed guideway (light rail and busway) stations and 141 shelters at bus stops throughout the county. Additionally, 297 bus stops have shelters owned by another entity (mostly advertising agencies). Overall, 586, or more than 8%, of Port Authority's transit stops/stations are sheltered.



## Park and Ride Lots

Port Authority riders have access to 51 park and ride lots with 13,673 parking spaces. Port Authority owns 25 of these lots totaling 7,349 spaces. The remaining 26 lots with 6,324 spaces are either leased by the Port Authority, or are owned by another entity but advertised in Port Authority's system due to their proximity to transit service.

Pandemic-driven changes in transit usage also translated to lower than normal usage of our park and ride facilities in FY21. These 51 parking lots were filled with approximately 2,583 vehicles (19% full), on average in FY21, providing access to over 5,000 trips per day, or about 7% of Port Authority's average weekday riders. Pre-pandemic the park and rides were over 70% full.





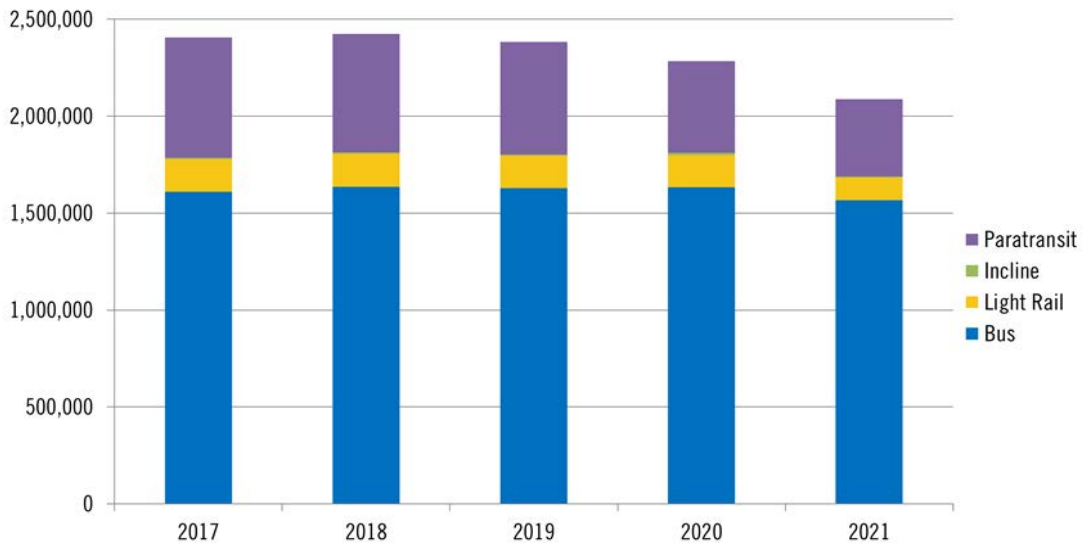
# SERVICE AND RIDERSHIP

## Service Levels

The pandemic hit in March 2020, and ridership fell over 75% almost instantly. Due to concerns around workforce availability Port Authority instituted a temporary 25% service reduction on most routes. Service was added back as ridership increased, and by September 2020 Port Authority was almost back to full service. This, however, proved unsustainable from a workforce perspective due to labor shortages and COVID-related absences. Additionally, since all vehicles had capacity limits to cap ridership at up to 30% of seated loads, crowding and pass-ups became an issue on some routes.

To prevent high out-of-service and reduce crowding, the agency instituted major service changes in November 2021. These included temporary cuts to underused commuter routes, adding weekend service to better connect essential workers to jobs and services, and temporary major service additions on several routes experiencing extreme overcrowding. FY21 revenue service hours totaled 2,088,408, or approximately 8.6% lower than FY20.

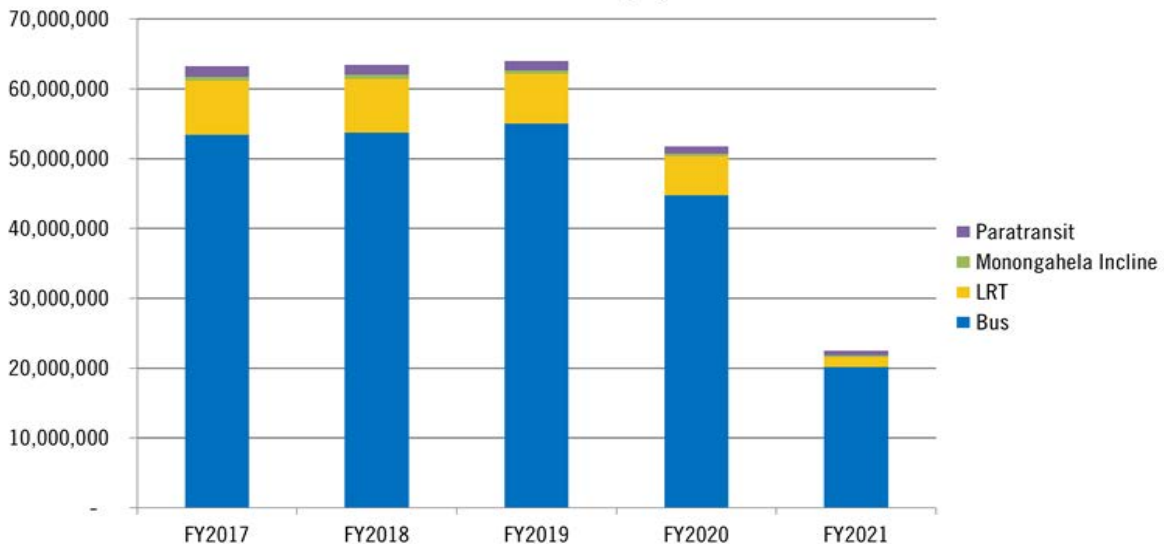
Historical Hours of Revenue Service by Mode



## Ridership

Port Authority's overall ridership totaled 22,468,123 in FY21, down 56.6% from FY20 ridership. This was due to the pandemic, which was only partially realized in FY20 with 4 months of reduced ridership, but which affected all of FY21. Bus ridership decreased by 55%, light rail dropped by 73.8%, ACCESS paratransit dropped by 38.6%, and incline ridership dropped by 41.7% from FY20 levels. Trends in ridership are explained further on the following page with more focus on comparable pandemic months in FY20 and FY21.

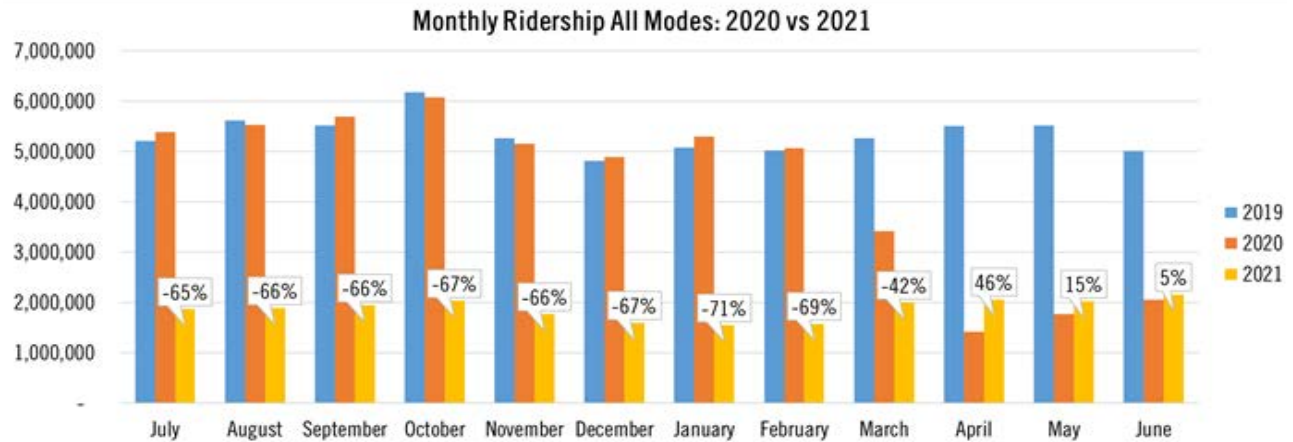
Historical Ridership by Mode



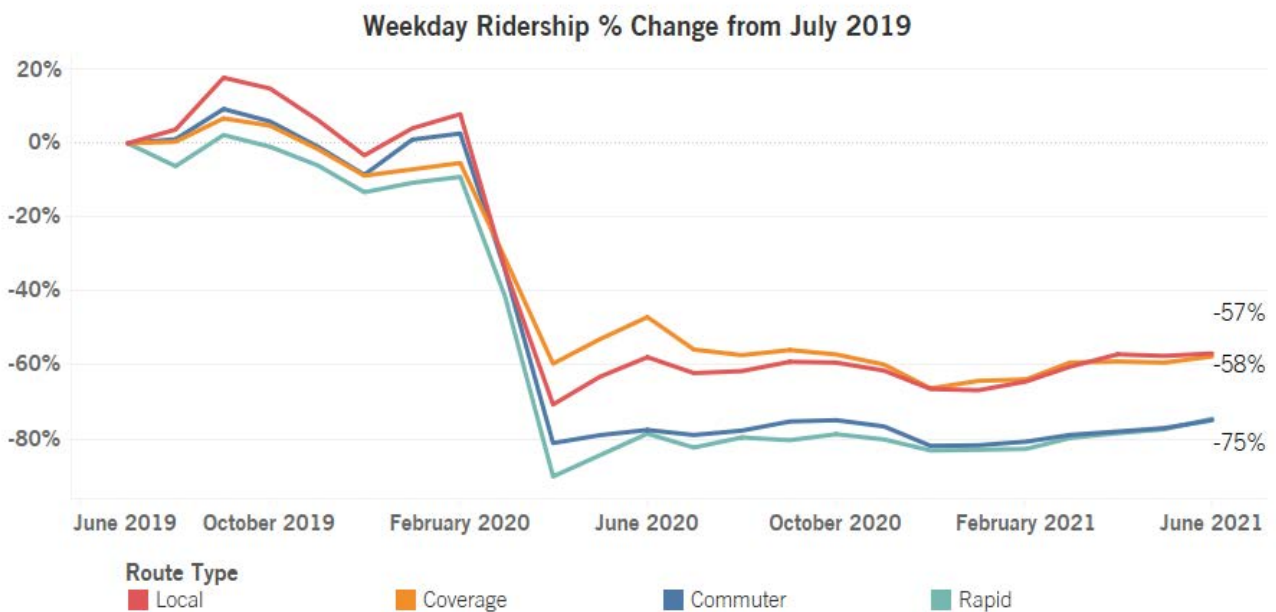
# SERVICE AND RIDERSHIP

## Trends in Ridership

On average, systemwide monthly ridership in FY21 was 65% below the same month's ridership in FY20 for pandemic months.



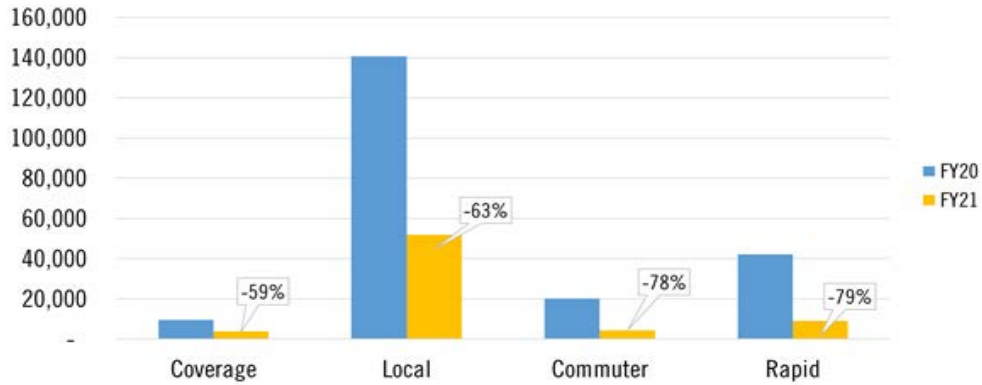
The FY21 decrease in ridership for the entire system is due to the Covid-19 pandemic. Due to most schools and employment areas functioning remotely during fall 2020 and spring 2021, Port Authority's heavy hauling Downtown and Oakland routes did not see a significant ridership uptick. However, the impact of pandemic closures was not distributed evenly on various route types. Comparing pre-pandemic (July 2019 is used as the baseline) and pandemic periods in the figure below, it is possible to observe how ridership on the different route types was affected and continues to be affected. April 2020 was the lowest ridership month during the pandemic; ridership dropped over 80% on commuter routes compared to a 70% drop on local routes and 60% drop on coverage routes. Ridership remained largely stagnant for much of FY21 and started to build back in spring of 2021. As of June 2021, the commute routes have increased from -80% to -75%, while the local and coverage routes have increased to -57% and -58% pre-pandemic ridership levels.



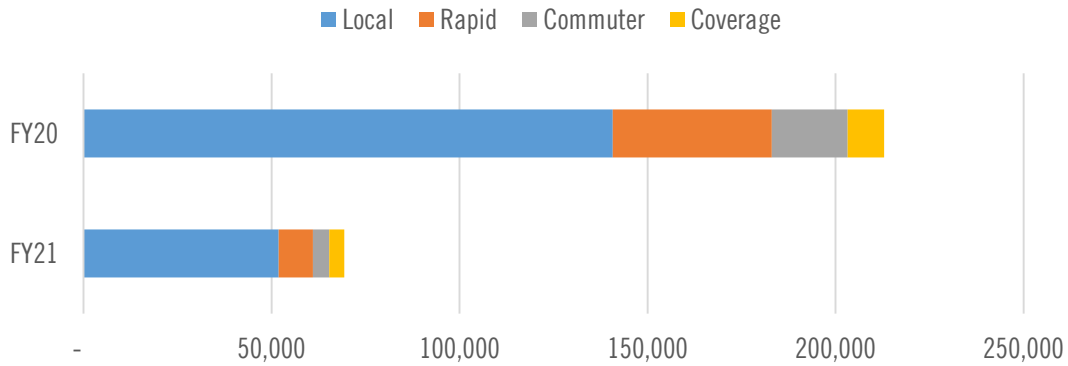
# SERVICE AND RIDERSHIP

Comparing entire FY20 and FY21 average weekday ridership for different route types, Port Authority saw over 78% ridership decline in both Commuter and Rapid routes, and a 63% decline and 59% decline for Local and Coverage routes respectively. This shows that Local and Coverage routes are indeed the lifeline routes that supported essential travel for riders during the pandemic.

**Average Weekday Ridership Change by Route Type FY20 vs FY21**



**Average Weekday Ridership by Route Type FY20 vs FY21**



# SERVICE AND RIDERSHIP

## Peer Agency Selection

The following pages describe Port Authority's efficiency and effectiveness metrics, which are provided both historically as well as in comparison with peer agencies. Port Authority compares itself to nine peer transit agencies around the U.S. with which it has some combination of similar city/metropolitan area population, similar transit service levels, and similar modes of service provided. Information about each of these attributes is collected from the National Transit Database (NTD), the primary source of information regarding transit agencies across the country. Each year, federal funds are allocated to these transit agencies based on the performance data provided to the NTD. Note that peer agency comparison data is only available on a one-year delay; therefore, peer data is compared for FY2020 across all metrics, and FY2020 data includes about four months of data with pandemic impacts.

Agency Name	Location	Service Area (in square miles)	Service Area Population	Bus	LRT	Para-transit	Inclined Plane	Annual Total Ridership	Annual Operating Expense
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	St. Louis, MO	558	1,566,004	x	x	x		30,271,677	\$282,175,101
Denver Regional Transportation District	Denver-Aurora, CO	2,342	2,920,000	x	x	x		52,314,687	\$623,982,843
King County Department of Metro Transit	Seattle, WA	2,134	2,260,800	x		x		60,165,932	\$919,121,265
Maryland Transit Administration	Baltimore, MD	2,560	7,811,145	x	x	x		77,761,174	\$805,145,982
Metro Transit	Minneapolis, MN	653	1,837,223	x	x			35,904,964	\$413,038,880
Milwaukee County	Milwaukee, WI	241	945,726	x		x		18,278,877	\$142,877,422
Niagara Frontier Transportation Authority	Buffalo, NY	383	981,771	x	x	x	x	23,851,680	\$141,163,925
Port Authority of Allegheny County	Pittsburgh, PA	775	1,415,244	x	x	x		51,787,150	\$434,687,600
The Greater Cleveland Regional Transit Authority	Cleveland, OH	458	1,412,140	x	x	x		16,862,459	\$259,797,759
Tri-County Metropolitan Transportation District of Oregon	Portland, OR-WA	382	1,570,254	x	x	x		78,183,734	\$529,476,490



# SYSTEM EFFICIENCY

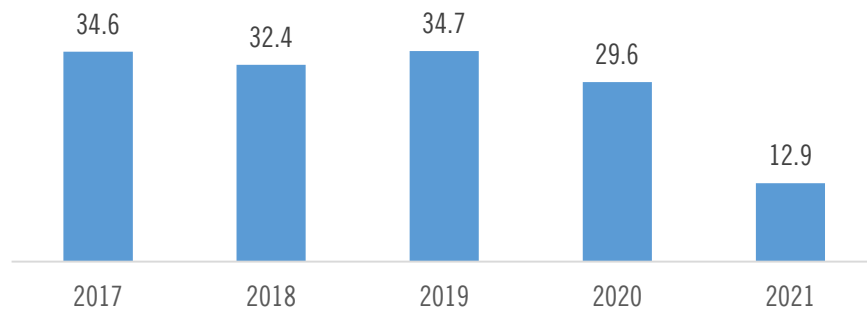
Port Authority strives to provide the highest amount of value to riders and taxpayers by using resources efficiently. This is achieved by maximizing the number of passenger trips provided with available resources, such as time, vehicles, and staff. Three metrics are used to evaluate Port Authority's efficiency: passengers per revenue vehicle hour, cost per passenger served, and percentage of time spent in revenue service.

Peer agency comparisons may include a mixture of data for different modes pertaining to the specific agencies and thus may not be directly comparable. Unless otherwise stated, they do not include paratransit.

## Passengers per Revenue Vehicle Hour

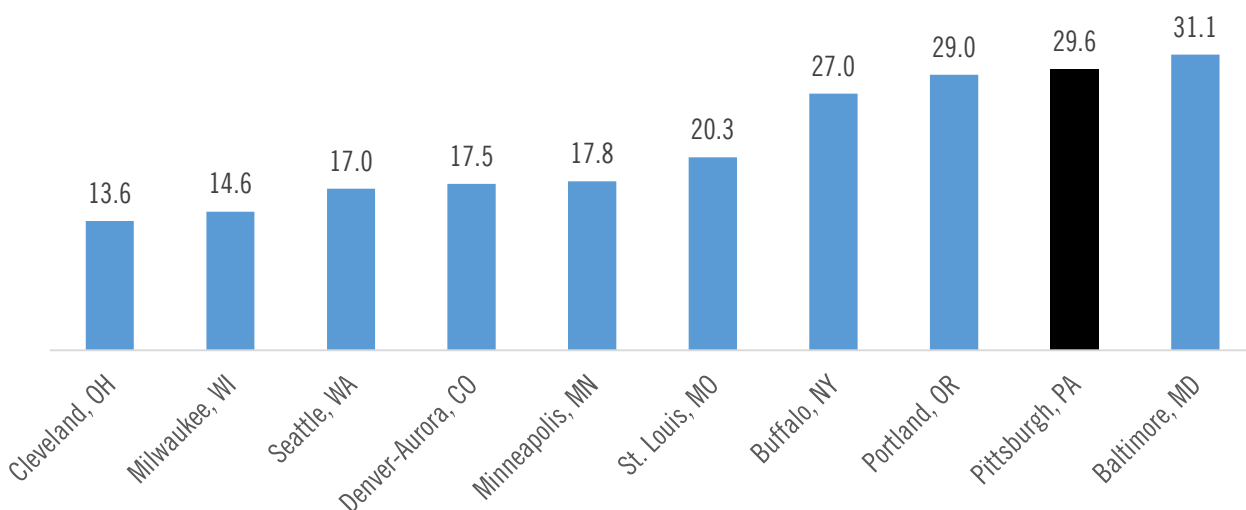
The amount of time spent transporting passengers is an important indicator of the efficiency of the transit system. Port Authority measures the number of passengers it carries per hour of revenue service (time spent picking up and dropping off passengers) it provides. In FY2021, Port Authority carried, on average, 12.9 passengers per hour of revenue service provided. This is approximately 56% less efficient than the FY2020 efficiency of 29.6 passengers per hour. The ridership decline during the same period was 57% not including paratransit. The low efficiency in FY21 is due to limited number of passengers allowed on vehicles to enforce social distancing measures and less overall ridership during COVID shutdown.

### Passengers per Revenue Service Hour



Port Authority ranks moderately high in efficiency of passengers carried per revenue vehicle hour compared to its peers. A breakdown of passengers per revenue service hour by transit mode can be seen on the following page. The relatively high usage of the Authority's bus in-service hours drive this high ranking.

### Passengers per Revenue Service Hour: All Modes (FY2020)



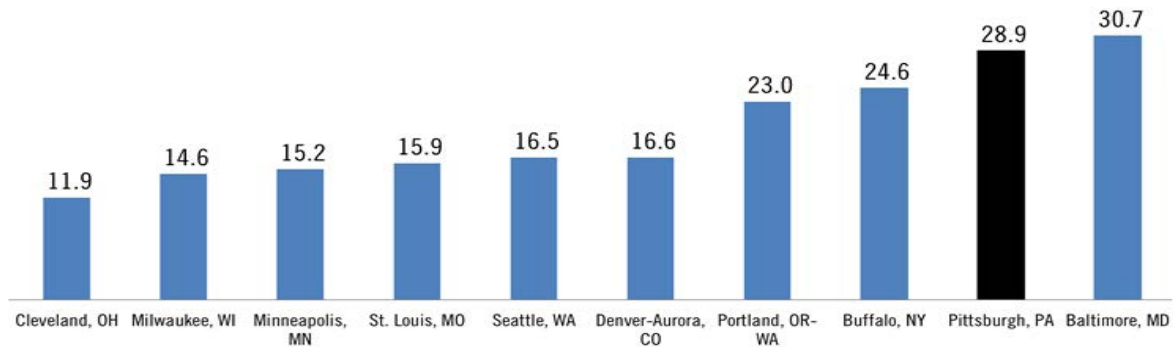
\*Note: Port Authority's peer agencies do not operate inclined planes; as such, there are no peer comparison graphs for this mode.

# SYSTEM EFFICIENCY

## Passengers per Revenue Vehicle Hour by Mode

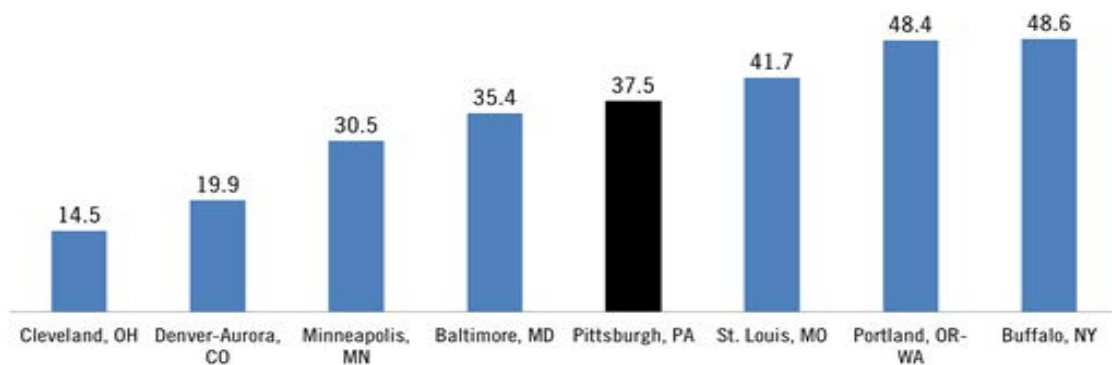
Bus performed moderately high in comparison with its peer agencies, carrying 28.9 passengers per hour of revenue service provided in FY2020.

### Passengers per Revenue Service Hour; Bus (FY2020)



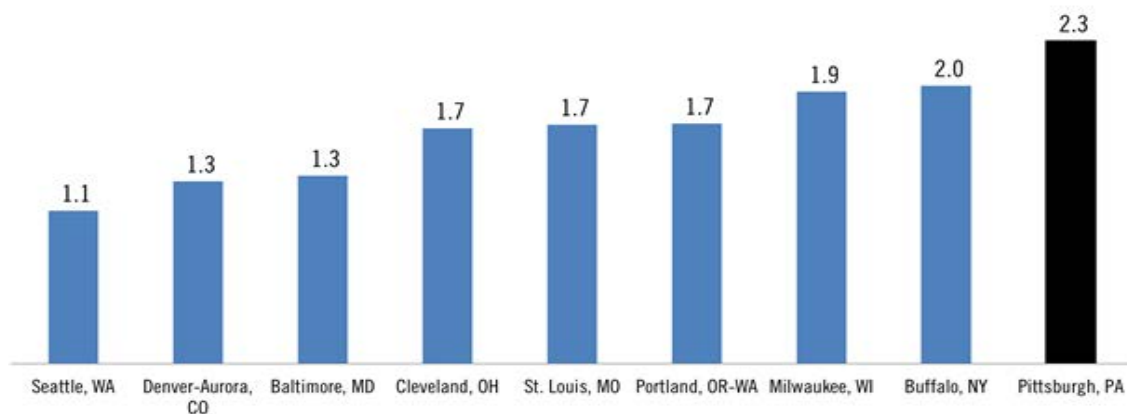
Light Rail performed moderately well in efficiency compared to its peers, carrying 37.5 passengers per hour of revenue service provided in FY2020.

### Passengers per Revenue Service Hour; Light Rail (FY2020)



ACCESS Paratransit performed the most efficiently of all its peers, carrying 2.3 passengers per hour of revenue service provided in FY2020.

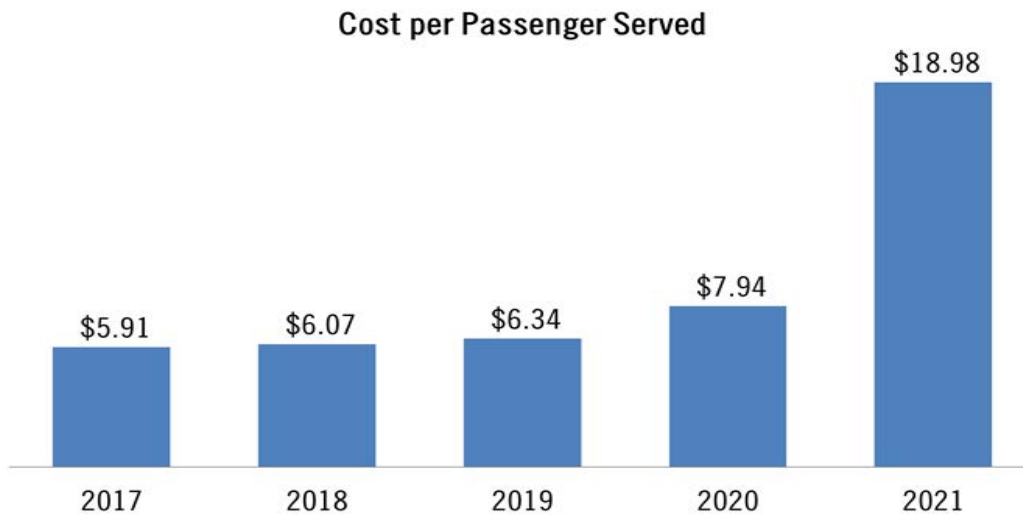
### Passengers per Revenue Service Hour; Paratransit (ACCESS, FY2020)



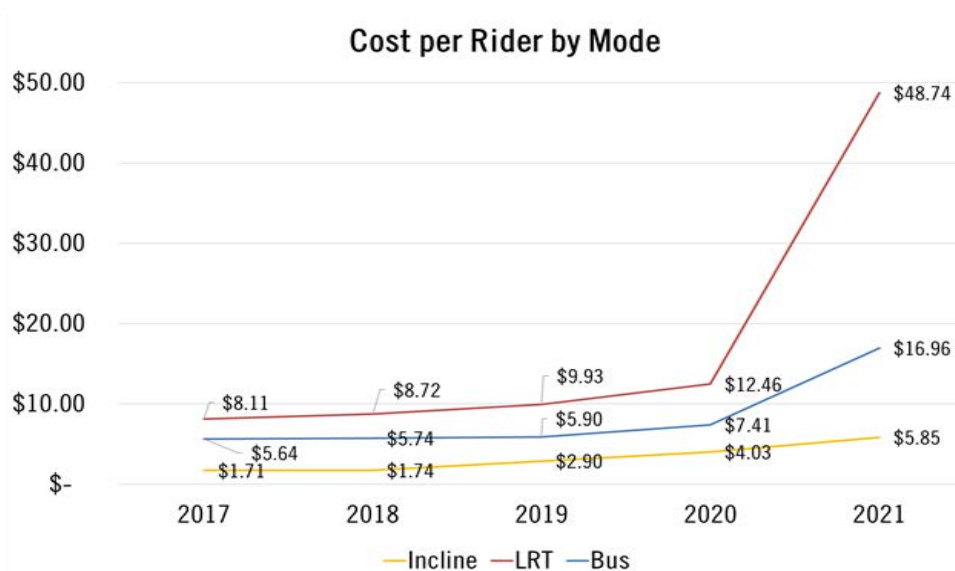
# SYSTEM EFFICIENCY

## Cost per Passenger Served

In addition to passengers served per revenue service hour and vehicle in-service time, cost per passenger served is another important measure of efficiency. In FY2021, it cost Port Authority an average of \$18.98 to transport each passenger it carried, a 139% increase from FY20. That increase was due to a sharp decline in ridership due to the COVID-19 pandemic without a subsequent reduction in costs. Port Authority implemented a cap on vehicle capacity to ensure social distancing onboard vehicles, which led to a leap in the operating cost per rider during this time. With an average fare revenue of \$1.41 (7.42% of the cost) per passenger trip provided, this left a \$17.57 subsidy per ride that was filled through various federal, state, and local funding sources.



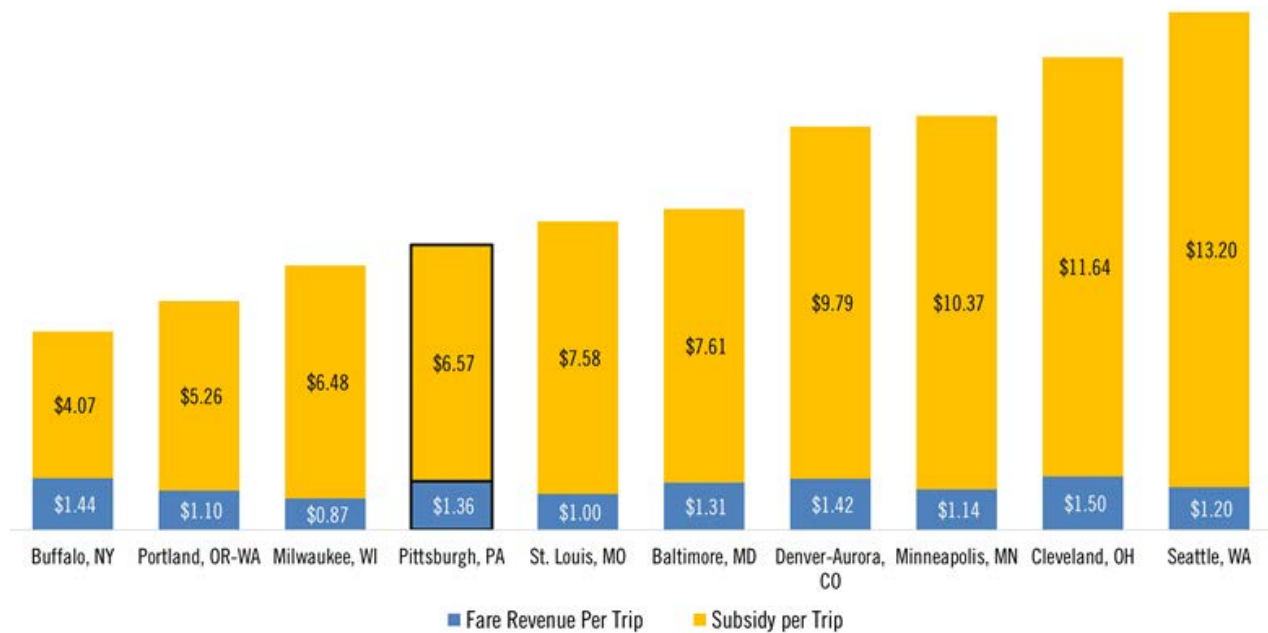
Port Authority’s year over year cost per rider by mode is shown below. Light rail has always had the highest cost per rider, but over the years, this mode has also had the highest rate of increase with 26% increase in FY2020 from the FY2019 levels, and a 291% increase in FY2021 from the FY2020 levels. The drastic increase in FY21 is due to the Covid-related 74% decline of ridership on rail which led to much higher costs of operation per passenger. Bus cost per rider, on the other hand, has been relatively steady over the last few years until the pandemic began. In FY2021 cost per ride increased 129% from FY2020 levels due to a 55% decline in ridership. Incline costs also saw an increase in cost per rider with a 39% increase in FY2020 (from FY2019) and a 45% increase in FY2021 (from FY2020).



# SYSTEM EFFICIENCY

Port Authority's cost per passenger served in FY2020 is the fourth lowest among its peers. Costs are not directly comparable due to different agencies having a unique mix of modes. At Port Authority the costs can be attributed to an older system with significant legacy costs, a strong labor union, significant congestion, and the region's unique topography, which affects the efficiency of vehicles getting to and from places where it begins service, as well as vehicle maintenance costs. A breakdown of cost per passenger served by mode is below.

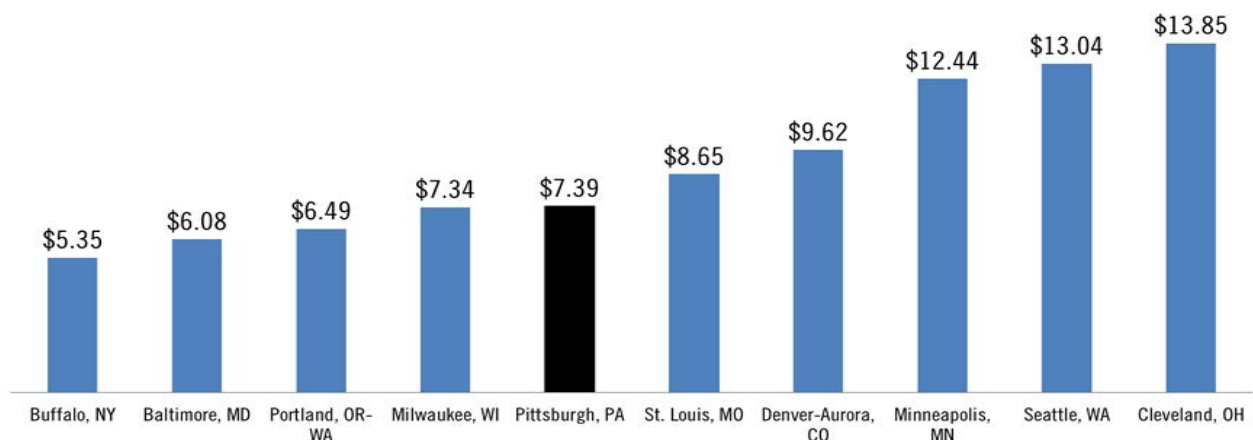
**Cost per Passenger Served: All Modes (FY2020)**



## Cost per Passenger Served by Mode

Bus performed moderately efficiently compared to its peer agencies in FY2020. While overall costs are relatively high compared to peer agencies, Port Authority also has higher ridership than many of its peers, resulting in a moderately efficient score.

**Cost per Passenger Served; Bus (FY2020)**

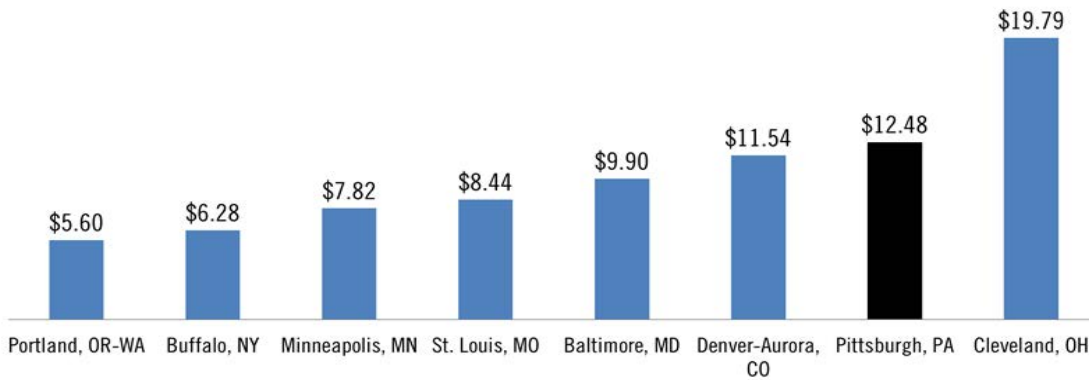




# SYSTEM EFFICIENCY

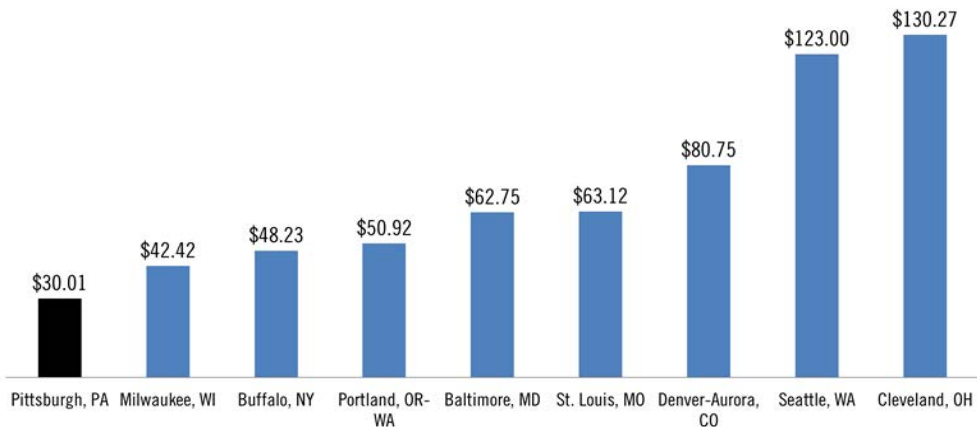
Light rail had the second highest cost per passenger served compared to its peers. As passengers carried per hour performed moderately, this performance is not due to the amount of service supplied for passengers but rather the costs of providing the service. This is due to comparatively high operator and maintenance employee wages and benefits, high maintenance costs (which are impacted by challenging topography and slopes), and closely spaced stations which cause the rail to travel at lower speeds. The Port Authority has initiated several studies to better identify actionable steps that can be taken to lower light rail costs.

**Cost per Passenger Served; Light Rail (FY2020)**



ACCESS paratransit performed most efficiently out of its peer agencies with a cost per passenger of only \$30.01 in FY20.

**Cost per Passenger Served; Paratransit (ACCESS, FY2020)**

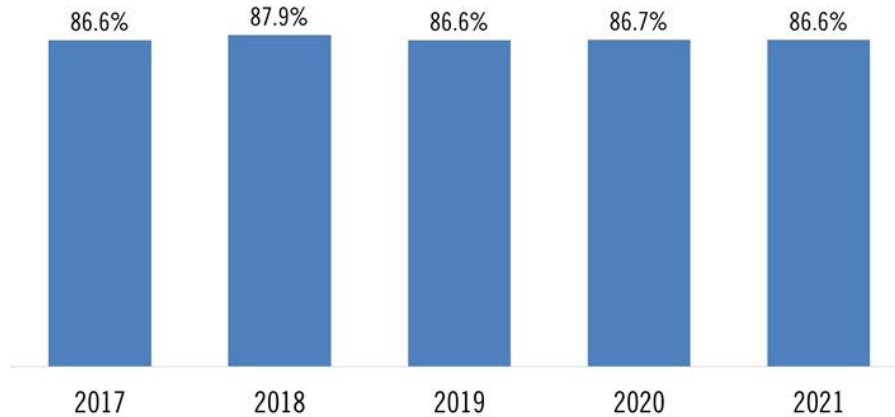


# SYSTEM EFFICIENCY

## Time Spent in Revenue Service

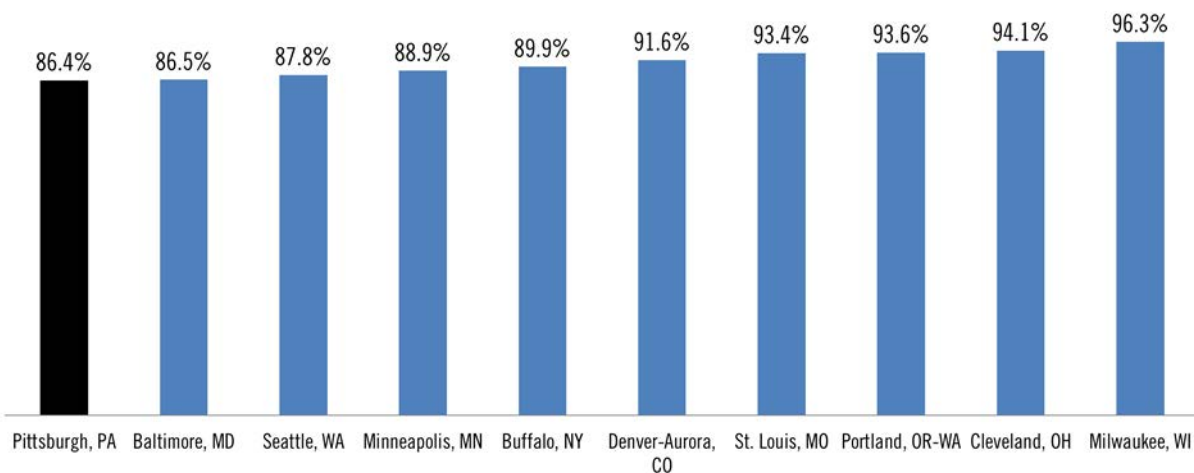
Port Authority continues to seek more efficient ways to provide service and attempts to maximize the amount of time that buses are in revenue service, as opposed to driving to/from garages to start or end their trips. This allows the Authority to provide the most transit service possible within the available resources of operator time and vehicles required. The amount of time vehicles spend in service has remained relatively constant over the last five years. In FY20, Port Authority had plans to test several initiatives intended to increase service efficiency, but those plans were shelved due to the Covid-19 pandemic.

**Percent Time Spent in Revenue Service**



Compared to its peers, the Authority has the lowest percentage of time spent in revenue service, a measure of system efficiency, due to geographical challenges of the area's street network, placement of bus divisions, and operational constraints. However, the Authority continues to look to ways to increase this efficiency. Revenue service time is further broken out by mode in the charts on the following page.

**Percent Time Spent in Revenue Service: All Modes (FY2020)**

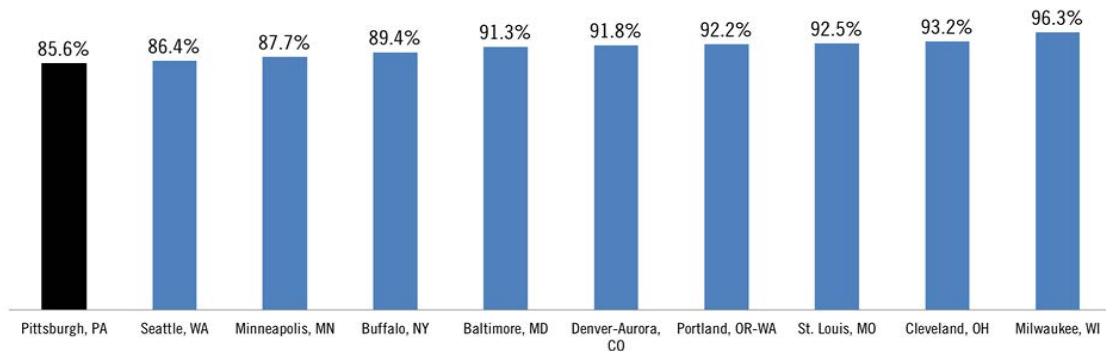


# SYSTEM EFFICIENCY

## Time Spent in Revenue Service by Mode

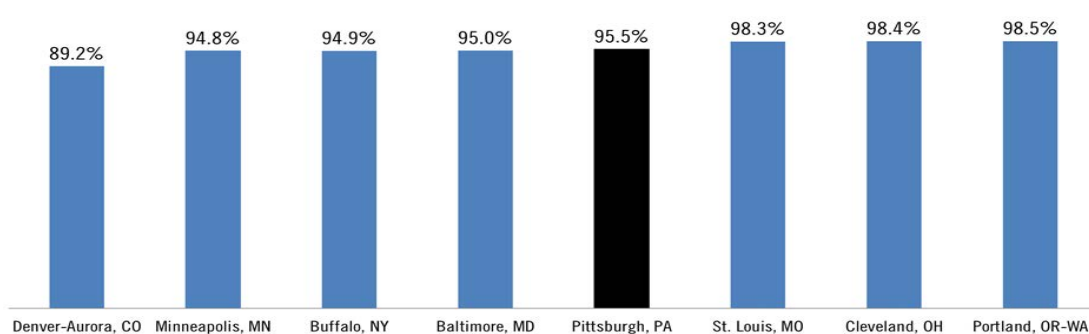
Compared to its peers, Port Authority buses spend the least percentage of their time in service. One challenge for the Authority in this regard is the location of its bus garages, two of which located further away from where service is provided. As the Authority explores adding another bus garage in the future, the convenience of its location is essential to maximizing the amount of service provided within available resources.

Percent Time Spent in Revenue Service; Bus (FY2020)



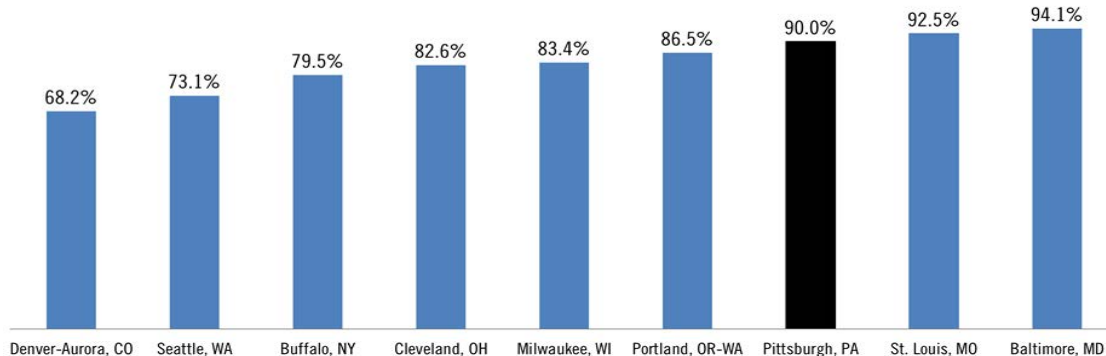
Port Authority's light rail in-service time is comparable to its peers. These numbers do not vary much from one agency to the next, as light rail vehicle storage and maintenance facilities are almost always built near the terminus of a light rail line.

Percent Time Spent in Revenue Service; Light Rail (FY2020)



Compared to its peers, ACCESS paratransit performs well with an average percent time spent in revenue service of 90%.

Percent Time Spent in Revenue Service; Paratransit (ACCESS, FY2020)



# SYSTEM EFFECTIVENESS

Providing effective transit services means providing services that maximize access to the variety of destinations around Allegheny County. This includes not only residents and jobs, but also medical institutions, shopping, cultural centers, places of worship, parks and recreational areas, and other community assets. The Port Authority defines effectiveness in a variety of ways. On a system level, this includes looking at how many residents and jobs are accessible to transit within a reasonable walking distance, the timeliness of those transit services (on-time performance) so that riders can get to their destinations when planned, and crowding on vehicles to ensure there is adequate space for riders.

## Walkable Service Area

While Port Authority transit service does not cover all of Allegheny County, nearly half of all residents and over half of all jobs are within walking distance of transit due to high population density in the urban core. On weekdays, 46% of residents and about 55% of jobs in the county have walkable access to transit. On Saturdays, this proportion falls to about 43% of residents and 54% of jobs. On Sundays, about 41% of residents and 51% of the jobs in the county have walkable access to transit.

Service additions in FY21 significantly expanded weekend access to transit. Sunday service was added to the 4, 22, 39, 60, and 74, and full weekend service was added on the 22, 29, 36, and 93. Weekend service on route 2 was extended to match weekday service. The population with access to transit on weekends subsequently increased by 7% on Saturdays and by 8% on Sundays.

## Frequent Service Area

Being able to access transit services is vital to many communities, but being able to access transit without having to schedule life activities around transit availability promotes mobility and allows residents the freedom of not owning a personal vehicle. In order to have such mobility, it is vital that transit is always on the way. In the industry, this is referred to as the frequent service area.

Port Authority defines a “frequent service area” as the 1/4 mile area around a transit stop or the 1/2 mile area around a transit station where transit vehicles come, on average, every fifteen minutes for fifteen hours of the day and every thirty minutes for an additional five hours of the day, every day of the week.

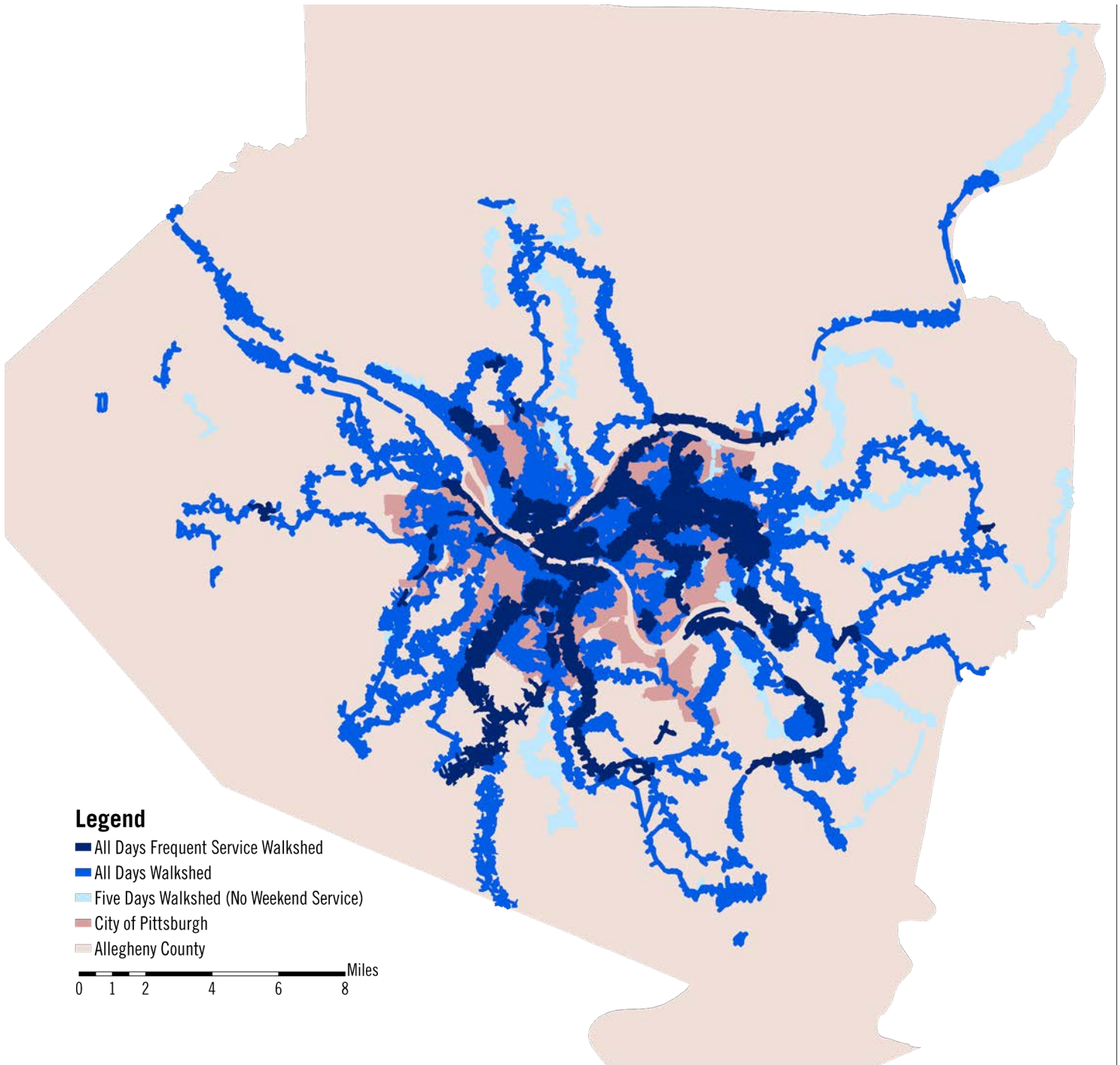
In FY2021, Port Authority’s frequent service area covered just 4.5% of the geographic area of Allegheny County but was available to 18% of the residents and 37% of the jobs.

Service Days	Service Area		Population		Jobs	
	Total (miles <sup>2</sup> )	Percent of Total	Total	Percent of Total	Total	Percent of Total
Five Day Service Walkshed (No weekends)	137.12	18.4%	564,382	46.1%	392,622	55.3%
All Days Service	113.86	15.3%	504,789	41.2%	363,267	51.1%
Frequent Service	33.2	4.5%	221,110	18.0%	261,351	36.8%
All of Allegheny County	745		1,225,561		710,479	

The map on the following page shows geographically where each of these walksheds occur within Allegheny County. The darkest walkshed represents the most robust service (the frequent service area), and the lightest walkshed represents the least robust service (the weekday only service area), with relative walksheds lightening in color respectively.



# SYSTEM EFFECTIVENESS



# SYSTEM EFFECTIVENESS

## System On-Time Performance

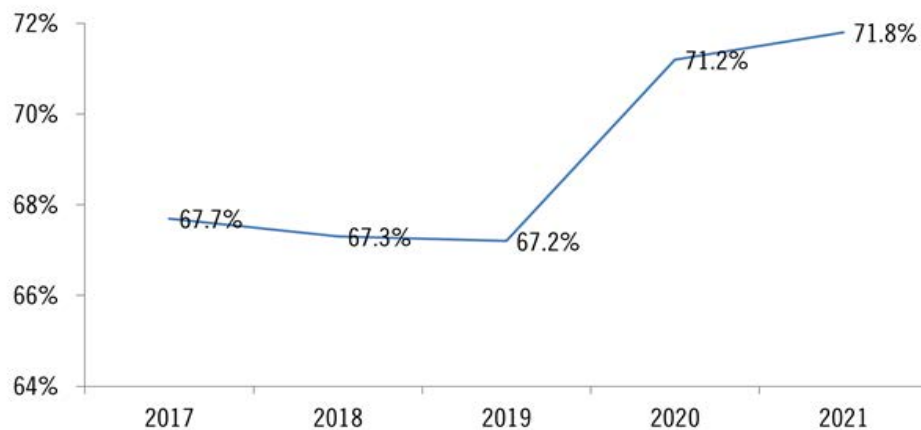
Port Authority measures on-time performance monthly. Bus and light rail schedules are updated quarterly to adjust for changes in running times along a route. The Monongahela Incline is not included in on-time performance, as its trips do not run on a schedule.

To be considered 'on-time,' a bus or light rail vehicle must arrive at its timepoint (key stops along its route) between one minute ahead of schedule and five minutes behind schedule. On-time performance (OTP) is collected at every timepoint on every trip through automatic vehicle location (AVL) systems linked to GPS aboard buses.

Bus on-time performance increased from 71.2% in FY20 to 71.8% in FY21. Decreased ridership and less heavy traffic during the pandemic affected the uptick in OTP.

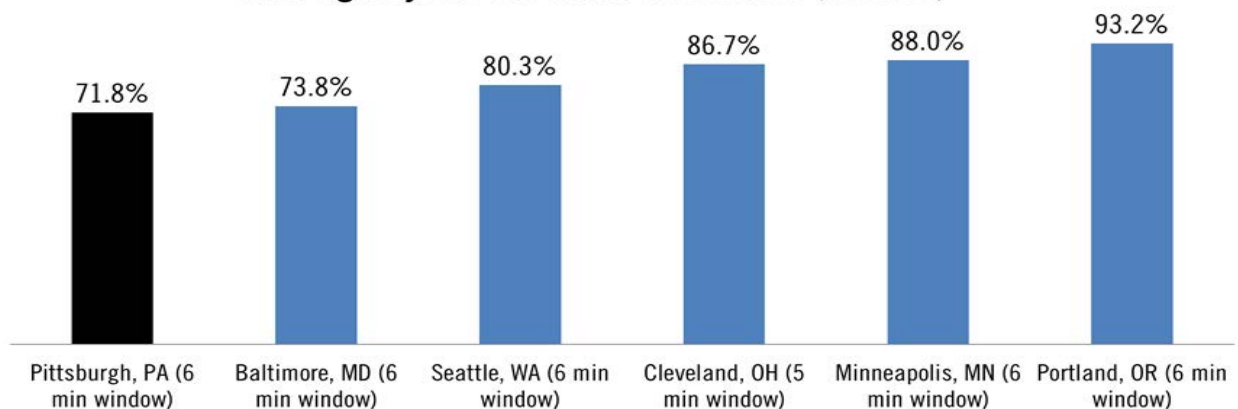
Light rail acquired the AVL system in late 2018; as such light rail on-time performance only has data for FY19, FY20 and FY21. Rail on-time performance increased from 83.7% in FY19 to 88.4% in FY20 and then to 88.7% in FY21. Like the bus, the pandemic on-time performance improvement for light rail is also due to the decline in ridership.

### Historical Bus On-Time Performance



Despite some efforts to improve OTP which have brought recent improvement, Port Authority still lags its peers in OTP. The FTA does not require agencies to report OTP, therefore it has different definitions at different agencies. Four peer agencies did not have data available for comparison, or data that was available was not detailed enough to ensure similar measurement techniques for comparative purposes, and are not reported below. Data was collected from agency websites and publically available reports.

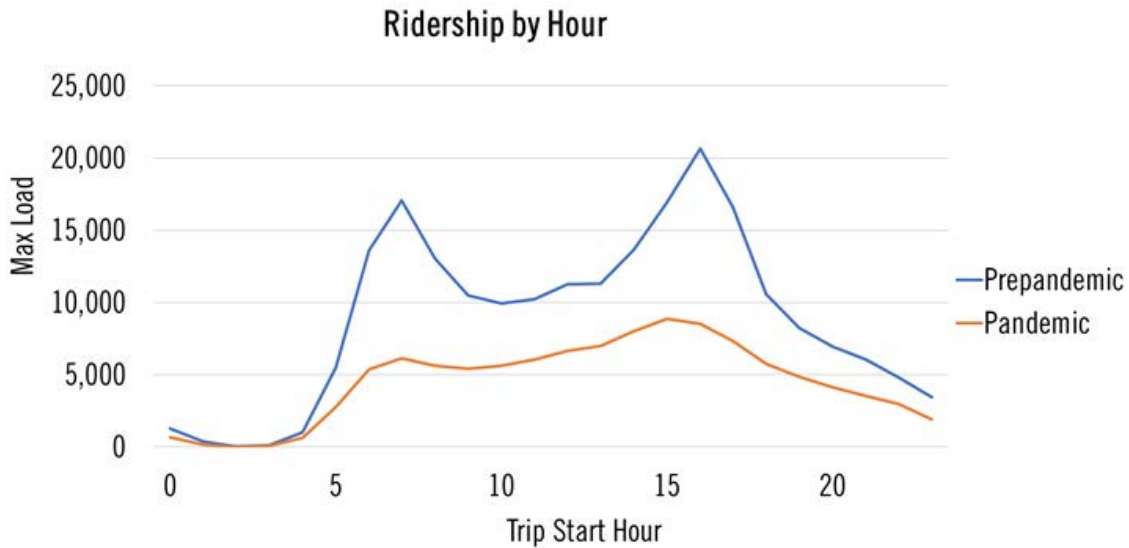
### Peer Agency Bus On-Time Performance (FY2021)



# SYSTEM EFFECTIVENESS

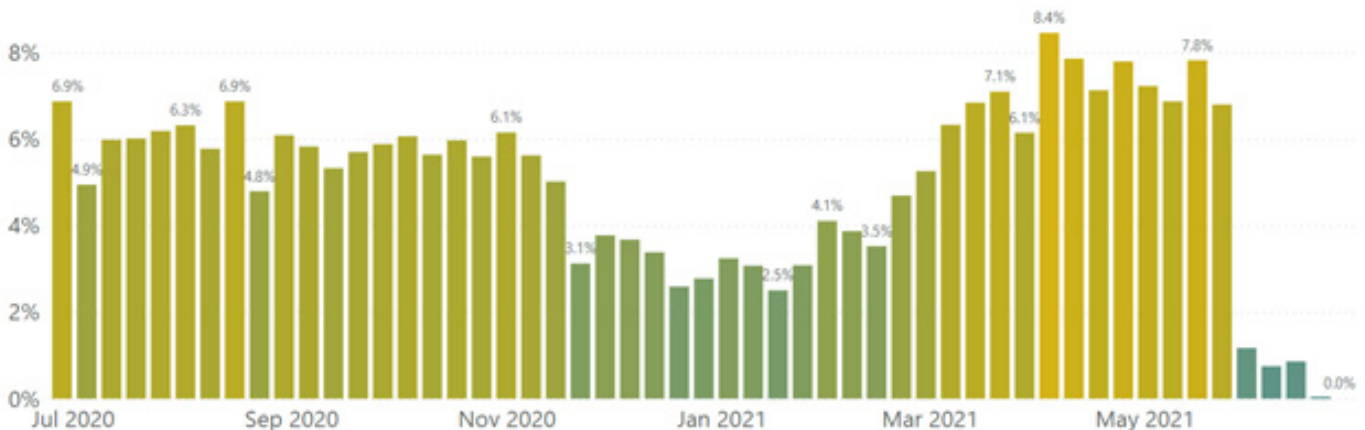
## Passenger Loads: Crowding

During the pandemic, commuter ridership dropped most significantly, resulting in a loss of the “peak” or rush hour-oriented ridership patterns the Authority used to have. Systemwide loads by hour can be seen in the graph below, with pandemic changes shown in orange. This reduction in commute activity allowed the Authority to redistribute some hours of service to routes where ridership remained relatively high.



At the beginning of the pandemic, Port Authority enforced capacity restrictions on vehicles to ensure social distancing and rider-safety. These capacity restrictions remained in effect from April 2020 until May 2021. During this restricted period, the Authority defined “crowding” as anytime when a 60-foot bus had more than 25 people, a 40-foot bus had more than 15 people, or a 35-foot bus had more than 10 people.

Staff monitored these crowding levels during the pandemic, and for routes that continually experienced crowding, additional trips were added to accommodate passengers. Most of these added trips went into effect in November 2020 to ease crowding on certain routes and ensure better utilization of resources. The changes reduced system crowding to 4.1% or less in the following winter/spring period. In March 2021, crowding crept back with businesses re-opening. The highest crowding experienced during this time was 8.4% system-wide. Capacity restrictions were scaled back to seated loads on May 31, 2021, which dropped crowding to 1% in the first week of June. Service went to full capacity on June 20, 2021.



# SYSTEM EQUITY

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Persons with higher mobility needs are critical to the sustainability of Port Authority. They are the people who ride most often and are most in need of service because they do not have as many options to get from place to place by other means. Data below includes information regarding the population of Allegheny County as a whole to give a broader view of riders and trends.

## Port Authority's Equity Index

Port Authority considers the following groups when looking at higher mobility need populations: people in poverty, persons of a minority race or ethnicity, persons with disabilities, persons under age 18 and over age 65, persons without access to a vehicle, persons who do not speak English very well and female heads of household. The report can be found on Port Authority's website. All of the data on where these groups reside around Allegheny County is taken from the US Census and American Community Survey. Port Authority uses a combination of the stated demographic indicators to develop an overall location-based equity index within Allegheny County. Each category and its reason for inclusion in the index is discussed below.

<https://PortAuthority.org/SurveysAndReports>

### People in Poverty:

Three types of data are used to capture the areas where people in poverty either live or work: household income (households earning less than \$25,000 per year), cost burdened renters (households that pay more than 30% of their household income for rent), and locations of low income jobs (jobs that pay less than \$1,250 per month).

### Racial or Ethnic Minority Persons:

People who are either Hispanic or do not identify as Caucasian are considered as racial and ethnic minorities. Minority populations are a historically disadvantaged group, making them more transit dependent irrespective of them being included in any of the other categories in the index.

### People with Disabilities:

People identified as having one or more disabilities are included in this group. Two data sets were used to identify areas where people with disabilities live and travel. One is Census data for households with one or more persons with a disability. The other is the trip origin and destination data of the Authority's ACCESS paratransit program, which provides rides primarily for seniors and people with disabilities.

### Older Adults:

Households with persons over age 65. Older adults may no longer have the ability to drive, making them dependent on transit.

### Persons Under Age 18:

Households with persons under age 18 are included in this index as they most likely do not possess a driver's license or have the means to own and operate a private vehicle.

### Households without Vehicles:

Households that do not have access to a vehicle are much more transit dependent.

### People with Limited English Proficiency:

Households where one or more persons speak a language other than English and do not report as speaking English very well are included in the index as they might not have the ability to take the written test for a driver's license or read road signs.

### Female Householders:

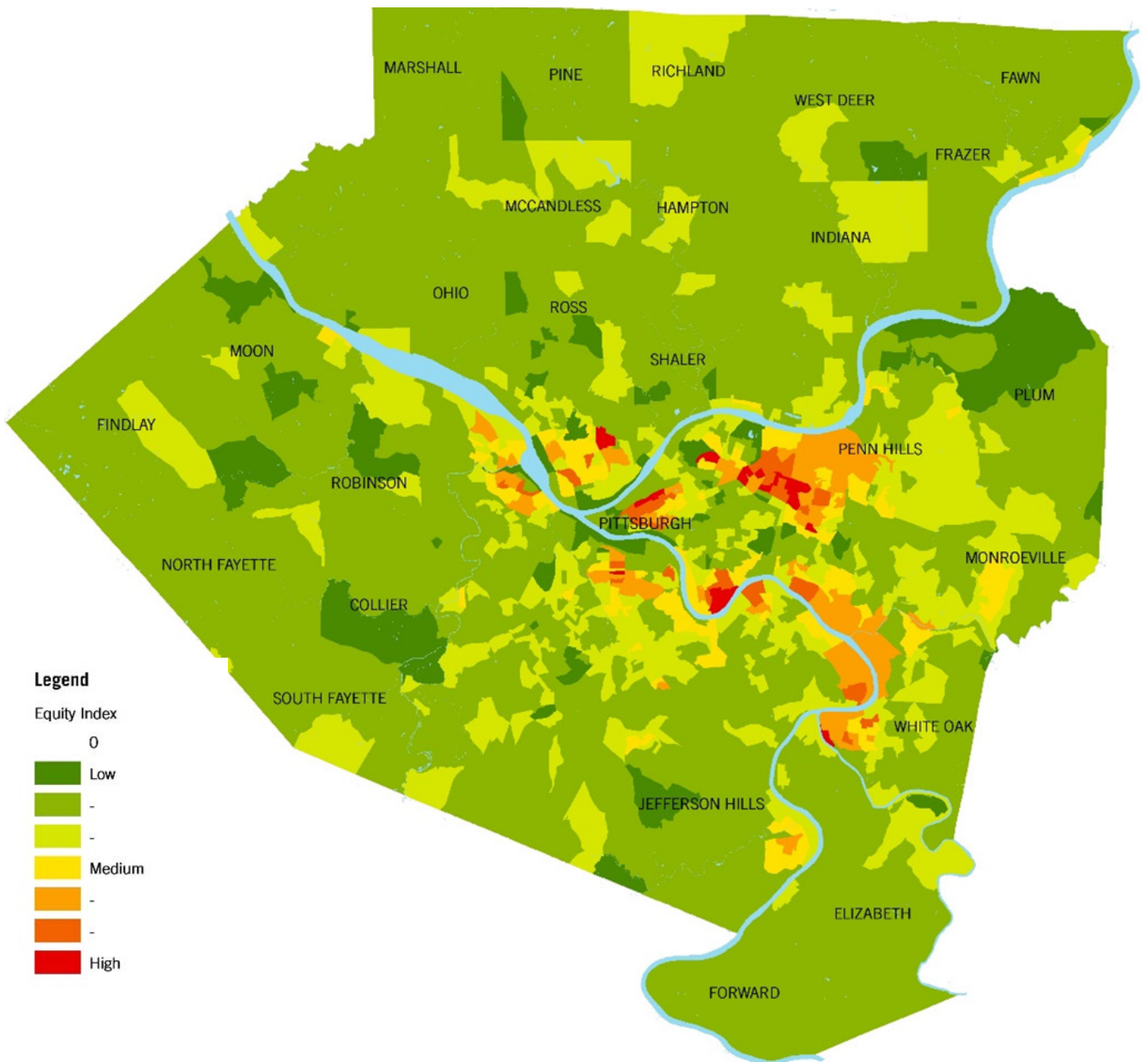
Research has shown that female-headed households with children are more likely to be transit dependent.



# SYSTEM EQUITY

## Equity Map of Allegheny County

The percentage of the population in each Census block group falling into the eight categories of the Equity Index is averaged (all eight indicators are weighed equally) together to create one final value of 'equity' for each location. Higher equity areas have higher percentages of the population falling into these eight demographic categories, and are higher priority areas for Port Authority to serve. These are shown in the map below for Allegheny County.



# ADHERENCE TO SERVICE GUIDELINES

## Summary of Service Guidelines

Each year, Port Authority evaluates transit routes against a set of service standards. These Board-approved standards were last updated in 2019 and amended in July 2020. The standards comprise metrics such as passengers per hour, crowding, on time performance, frequency, and stop spacing.

The coronavirus pandemic significantly disrupted PAAC service from March 2020 onwards. Ridership dropped 70% systemwide, on time performance fluctuated widely due to the drop in ridership and overall traffic, and service frequencies were adjusted several times to account for changing ridership. Additionally, capacity limits were set such that no more than 30-40% of a vehicle's seats could be occupied. The service went back to seated capacity on May 31, 2021 and went to full capacity on June 20, 2021.

For this section of the report, routes have been evaluated for the entire FY2021, whereas the pre-pandemic months (July 2019 through February of 2020) were considered in FY2020. Routes have been evaluated based on the service standards. However, these standards do not account for how pandemic-era transit ridership has changed drastically in the region. This leaves most of the route services performing below the standards and highlights the likely need of a reevaluation of the service standards to make sure they are in line with the 'new normal' of transit ridership.

## In-Service Time

In-service time refers to the percentage of time that vehicles are performing their scheduled route or on layover to allow operators to take their breaks between trips. Out-of-service time includes vehicles heading to and from the bus garages/rail center, as well as time spent moving from the end of one route to the beginning of another to start a different route. In FY21, all routes were in compliance with the in-service percent standards.

### Revenue Vehicle Hours as Percentage of Total Vehicle Hours

Service Type	Percentage In-Service Time
<b>Rapid Routes</b>	
LRT	80%
BRT	80%
<b>Commuter Routes</b>	50%
<b>Local and Coverage Routes</b>	70%

Note: Commuter routes use peak direction in service time only.

## Frequency of Service

The service frequency standards define the baseline frequency at which a route should operate. The minimum service frequencies for each route type are summarized below. For FY21, all routes met the service frequency standards.

### Minimum Service Frequency Standards (Minutes)

	Rapid Routes	Commuter Routes	Local Routes	Coverage Routes
<b>Weekdays</b>				
Early Morning	30	--	60	75
AM Peak	10	3 trips	30	60
Midday	20	--	60	75
PM Peak	10	3 trips	30	60
Evening/Night	30	--	60	75
<b>Saturdays</b>	30	--	60*	90*
<b>Sundays</b>	30	--	60*	90*

\*If the route has service at this time of day/day of week.

# ADHERENCE TO SERVICE GUIDELINES

## Distance Between Stops

Port Authority has minimum stop spacing guidelines to ensure efficient service. In FY20 Port Authority developed and began implementing a process for evaluating bus stop safety, accessibility and spacing that incorporated data analysis and public input, called the Bus Stop Balancing Program. This program will ultimately review all bus stops to ensure they meet the safety and spacing standards set out in the agency's Bus Stop and Street Design Guidelines. To improve service reliability and on-time performance, stop spacing should meet the below standards for all routes:

### Stop Spacing

Service Type	Stop Spacing Guideline
Rapid Routes	2600 feet   1/2 mile
Commuter Routes	1300 feet   1/2 mile
Local and Coverage Routes	900 feet   1/4 mile

The Bus Stop Balancing project is on hold due to the pandemic and is expected to resume in calendar year 2023. Routes will be prioritized for bus stop consolidation based on current stop spacing, on time performance, and suggestions from the public. At the end of FY21, 54 routes did not meet the stop spacing guidelines.

From November 2019 to March 2020, Port Authority conducted bus stop balancing on routes 16, 48, 51, and 88. Roughly 23% of stops were consolidated with no negative effects on ridership. On time performance improved by 8% on average before the pandemic hit in March 2020. Post-pandemic changes to ridership and traffic patterns has hurt OTP overall, but these four routes are still 4% more on time than pre-consolidation.

## Bus On-time Performance

In 2019 Port Authority raised its on time performance (OTP) standards to a minimum of 75%, with higher minimums for rapid and commuter routes.

### Bus On-time Performance Standards

Service Type	Minimum Percentage of On-time Trips
Rapid Routes	85% on busway routes, 90% on light rail routes
Commuter Routes	80%
Local and Coverage Routes	75%

In FY2020, 79 routes did not meet the OTP standard. Of these routes, 52 improved their OTP in FY21, while 27 routes declined. Of the 79 routes not meeting OTP standards, the following routes were more than 10% below the standard for their route type. These routes will be prioritized for OTP improvements in FY22. Interventions may include schedule adjustments, stop optimization, and additional recovery time.

Route Type	Route	FY20 Avg OTP	OTP Standard	Route Type	Route	FY20 Avg OTP	OTP Standard
31	Local	58%	75%	54	Local	64%	75%
77	Local	60%	75%	28X	Commuter	64%	80%
2	Local	60%	75%	G31	Commuter	64%	80%
19L	Commuter	61%	80%	52L	Commuter	64%	80%
012	Commuter	61%	80%	P78	Commuter	65%	80%
29	Coverage	61%	75%	P13	Commuter	67%	80%
67	Local	62%	75%	O1	Commuter	67%	80%
1	Local	62%	75%	P10	Commuter	68%	80%
86	Local	63%	75%	P16	Commuter	68%	80%
88	Local	63%	75%	P69	Commuter	70%	80%
P68	Local	64%	75%				

# ADHERENCE TO SERVICE GUIDELINES

## ACCESS Paratransit On-time Performance

ACCESS Paratransit defines on-time performance as arriving not more than 20 minutes after the scheduled pickup time, and within 45 minutes of a will-call return. For FY2021, ACCESS's on-time performance was 95.1%.

## Passengers per Revenue Vehicle Hour

Passengers per revenue vehicle hour (PPH) measures the ridership levels of all routes during in-service hours. The number of people the vehicle carries per hour of service that it provides is a standard measure of general efficiency in public transportation. Productivity levels apply only to days of week which routes operate.

### Minimum Productivity Levels (Passengers per Revenue Vehicle Hour)

	Rapid Routes		Commuter Routes	Local Routes	Coverage Routes
	LRT	BRT			
<b>Weekday</b>	80	50	25	30	20
<b>Saturdays</b>	50	40	-	20	15
<b>Sundays</b>	45	30	-	20	15

\* LRT routes are at this point to be considered as one route with one overall performance of passengers per revenue vehicle hour calculated (due to limits on passenger counting by station, separating routes is infeasible as of the writing of this document).

Sharp ridership declines, coupled with mostly minor reductions in service levels, meant that efficiency levels were reduced. Additionally, the period in which capacity restrictions were in place caused even fewer passengers per service hour. As Port Authority had vehicle capacity limits for all of FY21 and focused its efforts on limiting crowding rather than providing cost-effective service, passengers per service hour was not meaningful for adherence to service standards. The only routes that met PPH standards in FY2021 were routes 16, 48, 51, 82 and 83.

## Loads: Crowding

The service standards set maximum crowding levels for each route type. However, due to capacity restrictions and ridership decline during the pandemic, crowding was not evaluated in keeping with the standards. Instead, the Authority defined a bus trip to be "crowded" if the maximum load on a vehicle exceeded the capacity restrictions in place between April 2020 until May 2021. The crowding levels for various vehicle sizes are below:

### Maximum Passenger Loading (Based on Vehicle Size)

Vehicle Size	People more than
60'	25
40'	15
35'	10

In FY21, the following six routes were out of compliance for crowding more than 10% of the time for peak or off-peak periods.

Route	Percent of Peak	Route	Percent of Peak
1	17%	61C	15%
51	17%	83	11%
59	16%	12	11%

Crowding can be addressed by larger vehicles and/or more frequent service. Only about a third of PAAC routes can accommodate the larger 60' vehicles. Budget restrictions and driver shortage during the pandemic severely limited the possibility of adding frequency to address crowding on all routes. Nevertheless, frequency was almost doubled on routes 1, 12, and 59 in November 2020 to lessen crowding and pass-ups. Trips were also added to 51, 83 and 61D in spring 2021. The 61D additions were made to relieve pressure on the 61C.

# ROUTE PERFORMANCE

## Summary of Route Performance

Metrics by route for July 2020 to June 2021 are shown below. Highlighted values fall below service standards for that route type. As Port Authority had vehicle capacity limits for all of FY21 and focused its efforts on limiting crowding rather than providing cost-effective service, passengers per service hour was not meaningful for adherence to service standards and is therefore not included.

Route	Mode	Route Type	Days of Service	Average Weekday Riders	Average Saturday Riders	Average Sunday Riders	In-Service Percent	Percent of Trips Crowded	On-Time Performance	Average Stop Spacing
1	Bus	Local	All Days	1,094	850	615	83%	17%	62%	1,119
2	Bus	Local	All Days	434	89	50	87%	1%	60%	945
4	Bus	Coverage	All Days	208	107	2	97%	3%	75%	705
6	Bus	Local	All Days	520	274	232	90%	5%	76%	603
7	Bus	Commuter	Weekday Only	67	-	-	90%	8%	71%	807
8	Bus	Local	All Days	1,339	865	501	91%	5%	76%	671
11	Bus	Coverage	All Days	283	123	80	86%	4%	79%	672
12	Bus	Local	All Days	677	783	490	83%	11%	68%	1,432
13	Bus	Local	All Days	1,022	822	408	92%	6%	72%	722
14	Bus	Local	All Days	656	309	192	83%	2%	76%	1,274
15	Bus	Local	All Days	466	414	241	88%	3%	73%	657
16	Bus	Local	All Days	1,723	1,169	789	86%	8%	74%	787
17	Bus	Local	All Days	655	315	285	99%	5%	68%	953
18	Bus	Commuter	Weekday Only	43	-	-	89%	0%	94%	713
20	Bus	Coverage	All Days	275	72	30	84%	0%	70%	1,213
21	Bus	Local	All Days	642	373	286	78%	3%	72%	1,358
22	Bus	Coverage	All Days	350	221	47	82%	2%	74%	1,287
24	Bus	Local	All Days	777	660	448	79%	6%	70%	1,539
26	Bus	Coverage	All Days	450	312	200	82%	2%	84%	768
27	Bus	Local	All Days	507	363	259	81%	3%	82%	808
29	Bus	Coverage	All Days	490	161	82	76%	6%	61%	1,284
31	Bus	Local	All Days	640	440	307	81%	2%	58%	949
36	Bus	Coverage	All Days	169	44	30	69%	0%	70%	1,120
38	Bus	Local	All Days	396	141	81	90%	0%	73%	1,059
39	Bus	Local	All Days	409	142	35	73%	1%	75%	868
40	Bus	Coverage	All Days	192	90	62	74%	2%	76%	722
41	Bus	Local	All Days	505	241	133	88%	0%	75%	864
43	Bus	Coverage	All Days	194	137	96	78%	3%	76%	817
44	Bus	Local	All Days	431	138	107	74%	7%	75%	854
48	Bus	Local	All Days	1,077	897	482	79%	5%	76%	710
51	Bus	Local	All Days	3,669	2,803	1,805	96%	17%	73%	982
53	Bus	Local	Weekend Only	-	228	92	83%	1%	76%	832
54	Bus	Local	All Days	1,608	1,157	534	88%	8%	64%	728
55	Bus	Local	All Days	601	533	409	97%	5%	77%	1,440
56	Bus	Local	All Days	664	369	270	85%	5%	71%	1,211
57	Bus	Local	All Days	511	429	306	84%	2%	70%	1,187
58	Bus	Local	All Days	219	93	55	89%	0%	70%	872
59	Bus	Local	All Days	1,462	1,254	814	87%	16%	72%	1,053
60	Bus	Coverage	All Days	259	112	31	94%	1%	82%	637
64	Bus	Local	All Days	891	936	511	85%	6%	76%	854
65	Bus	Commuter	Weekday Only	46	-	-	78%	0%	79%	878
67	Bus	Local	All Days	661	446	254	87%	5%	62%	963
69	Bus	Local	All Days	559	178	124	93%	3%	67%	974
71	Bus	Local	Weekday Only	44	-	-	96%	0%	73%	600
74	Bus	Coverage	All Days	362	235	38	93%	0%	68%	587
75	Bus	Local	All Days	1,294	876	605	90%	9%	72%	735
77	Bus	Local	All Days	966	547	361	88%	9%	60%	881

# ROUTE PERFORMANCE

Route	Mode	Route Type	Days of Service	Average Weekday Riders	Average Saturday Riders	Average Sunday Riders	In-Service Percent	Percent of Trips Crowded	On-Time Performance	Average Stop Spacing
79	Bus	Coverage	All Days	601	406	314	94%	0%	73%	620
81	Bus	Local	All Days	770	499	312	84%	2%	74%	678
82	Bus	Local	All Days	1,923	1,457	1,002	91%	8%	66%	565
83	Bus	Local	All Days	1,161	845	483	85%	11%	72%	696
86	Bus	Local	All Days	1,194	1,291	766	97%	4%	63%	640
87	Bus	Local	All Days	792	341	118	88%	1%	72%	633
88	Bus	Local	All Days	905	746	589	98%	1%	63%	886
89	Bus	Coverage	All Days	133	119	78	93%	0%	80%	601
91	Bus	Local	All Days	1,580	941	534	82%	6%	66%	764
93	Bus	Local	All Days	761	153	91	87%	1%	71%	683
19L	Bus	Commuter	Weekday Only	134	-	-	67%	7%	61%	1,214
28X	Bus	Commuter	All Days	738	725	596	98%	5%	64%	3,606
51L	Bus	Commuter	Weekday Only	200	-	-	55%	8%	81%	1,311
52L	Bus	Commuter	Weekday Only	129	-	-	77%	1%	64%	1,020
53L	Bus	Local	Weekday Only	553	-	-	98%	5%	71%	1,227
61A	Bus	Local	All Days	1,643	1,327	905	84%	4%	73%	682
61B	Bus	Local	All Days	1,312	1,075	695	81%	3%	71%	774
61C	Bus	Local	All Days	2,129	1,827	1,275	82%	15%	70%	956
61D	Bus	Local	All Days	1,580	1,277	779	85%	6%	74%	869
71A	Bus	Local	All Days	1,757	1,143	755	91%	6%	74%	591
71B	Bus	Local	All Days	1,267	819	489	91%	4%	74%	610
71C	Bus	Local	All Days	1,948	1,396	866	97%	9%	67%	672
71D	Bus	Local	All Days	1,235	773	533	96%	2%	70%	644
BLUE	Light	Rapid	All Days	1,352	430	299	100%		88%	2,441
G2	Busway	Rapid	All Days	943	522	368	87%	1%	83%	2,835
G3	Bus	Commuter	Weekday Only	103	-	-	71%	1%	79%	6,279
G31	Bus	Commuter	Weekday Only	94	-	-	64%	1%	64%	1,576
INC	Incline	Rapid	All Days	432	1,164	602	100%			
O1	Bus	Commuter	Weekday Only	87	-	-	69%	0%	67%	4,262
O12	Bus	Commuter	Weekday Only	187	-	-	79%	0%	61%	2,297
O5	Bus	Commuter	Weekday Only	20	-	-	57%	0%	71%	1,093
P1	Busway	Rapid	All Days	2,931	2,091	1,337	95%	1%	86%	4,226
P10	Bus	Commuter	Weekday Only	143	-	-	64%	1%	68%	1,896
P12	Bus	Commuter	Weekday Only	123	-	-	72%	0%	72%	2,579
P13	Bus	Commuter	Weekday Only	43	-	-	63%	0%	67%	1,208
P16	Bus	Commuter	Weekday Only	185	-	-	70%	2%	68%	1,556
P17	Bus	Commuter	Weekday Only	117	-	-	83%	4%	77%	1,045
P2	Busway	Rapid	Weekday Only	156	-	-	89%	0%	82%	4,221
P3	Bus	Commuter	Weekday Only	794	-	-	74%	4%	89%	2,062
P67	Bus	Commuter	Weekday Only	93	-	-	76%	1%	71%	1,920
P68	Bus	Local	All Days	632	440	311	90%	9%	64%	1,253
P69	Bus	Commuter	Weekday Only	94	-	-	64%	5%	70%	1,347
P7	Bus	Commuter	Weekday Only	174	-	-	74%	3%	74%	1,615
P71	Bus	Local	Weekday Only	74	-	-	86%	0%	71%	1,248
P76	Bus	Commuter	Weekday Only	167	-	-	64%	2%	77%	2,082
P78	Bus	Commuter	Weekday Only	467	-	-	87%	4%	65%	1,224
RED	Light	Rapid	All Days	2,177	2,041	1,416	100%		89%	1,997
SLVR	Light	Rapid	All Days	1,087	583	396	94%		89%	2,390
Y1	Bus	Commuter	Weekday Only	69	-	-	62%	3%	70%	2,512
Y45	Bus	Commuter	Weekday Only	53	-	-	57%	0%	75%	1,189
Y46	Bus	Local	All Days	639	371	279	89%	3%	70%	1,377
Y47	Bus	Local	No Sundays	423	254	-	89%	1%	70%	1,293
Y49	Bus	Local	All Days	530	376	245	87%	5%	67%	1,338



# TITLE VI EVALUATION

Port Authority takes seriously its responsibility to serve communities that have the greatest need for public transit services. This includes two demographic communities which are protected under Title VI of the Civil Rights Act of 1964: Minority race and ethnicity communities (“minority communities”) and low-income communities. The following section examines route performance to determine whether a significant performance difference exists between routes serving low-income and non low-income communities, and routes serving minority and non-minority communities.

Routes are categorized as low-income or minority by whether their service areas have higher proportions of low-income and minority populations than the average of the Authority’s overall service area. In Allegheny County, the percent of low-income population is 11.63% (ACS 2019) and the percent of minority populations is 24.97% (Census 2020). Any area with a low-income or minority population composition exceeding the 11.63% and 24.97% threshold respectively are identified as “Low-income” and “Minority” areas.

Metrics examined include on time performance, out of service (meaning cancelled trips due to manpower shortages or equipment failures), crowding, service span, and service frequency. PAAC’s Title VI policy defines an adverse impact when a greater than 20 percentage point difference occurs between the two groups both for income and for race/ethnicity. For this analysis, any difference greater than 10 percentage points is deemed “at-risk” so that efforts can be made to right these differences before they become “significant” at the 20 percentage point level. If at least a significant difference exists on any of these metrics, the bottom five scoring routes are listed as an area for improvement in FY22. Data for all metrics encompasses the entire FY21 period.

## Summary of Title VI Findings by Income

Metric	Low Income Route	Non Low Income Route	Raw Difference	Pct. Difference	Direction of Difference
Number of Routes	68	31	N/A	N/A	N/A
Average On Time %	72.6%	71.8%	0.8%	1.1%	Favorable
Average Out of Service %	2.6%	2.2%	0.4%	18.7%	Adverse, At-risk
<b>Average Crowding %</b>	<b>4.5%</b>	<b>2.1%</b>	<b>2.4%</b>	<b>117.7%</b>	<b>Adverse, Significant</b>
Average Service Span - Weekday (Hours)	18	17	1	8.0%	Favorable
Average Service Span - Saturday (Hours)	19	17	2	11.2%	Favorable
Average Service Span - Sunday (Hours)	16	14	2	14.7%	Favorable
Average Trips per Service Hour - Weekday	1.5	1.3	0.3	20.0%	Favorable
Average Trips per Service Hour - Saturday	1.6	1.5	0.1	6.1%	Favorable
Average Trips per Service Hour - Sunday	1.3	1.2	0.1	6.7%	Favorable

## Low-Income Routes: Service Reliability and Quality

Out of service showed a significant adverse difference between low-income and non-low-income routes. Low-income routes were slightly more likely to go out of service in FY21, with 3% of total service hours cancelled on low-income routes compared to 2% on the non-low-income routes. The ten low-income routes with the worst out of service are listed below. Seven of these routes are Local routes. The garage locations for these routes are mostly East Liberty and West Mifflin. At both garages, COVID-19 related employee absences and having a higher proportion of low-income populations in their service areas contributed heavily towards this issue. When manpower shortages force the cancellation of trips, Port Authority works within manpower and resource limitations to cancel less-used trips on very frequent routes such as the P2 and preserve service on infrequent routes. Canceling infrequent routes has a larger impact on riders.

Route	Garage	Out of Service Percent	Route	Garage	Out of Service Percent
P17	East Liberty	11.57%	P7	West Mifflin	5.47%
P2	East Liberty	7.39%	86	East Liberty	5.23%
83	West Mifflin	6.37%	53L	West Mifflin	4.86%
15	Ross	6.35%	61B	West Mifflin	4.63%
82	East Liberty	5.55%	13	Ross	4.62%

# TITLE VI EVALUATION

In FY2021, the percent of crowded trips in low-income and non-low-income routes were 4% and 2% respectively. The ten low-income routes with the worst crowding are listed below. All these routes are Local routes. Port Authority almost doubled service on the 1 and 59 to alleviate crowding, while also adding service to the 51, 83, and P68. The Authority was hampered from adding service by continued manpower shortages caused by continued COVID-19 related absences, as well as broader labor market shortages being experienced by transit systems and a variety of other employers nationwide.

Route	Route Type	Percent of Trips Crowded	Route	Route Type	Percent of Trips Crowded
1	Local	17%	P68	Local	9%
51	Local	17%	77	Local	9%
59	Local	16%	71C	Local	9%
61C	Local	15%	75	Local	9%
83	Local	11%	16	Local	8%

## Summary of Title VI Findings by Race

Metric	Minority Route	Non Minority Route	Raw Difference	Pct. Difference	Direction of Difference
Number of Routes	77	22	N/A	N/A	N/A
Average On Time %	72.9%	70.3%	2.6%	3.8%	Favorable
Average Out of Service %	2.5%	2.4%	0.1%	5.8%	Adverse, At-risk
<b>Average Crowding %</b>	<b>4.0%</b>	<b>2.9%</b>	<b>1.1%</b>	<b>38.5%</b>	<b>Adverse, Significant</b>
Average Service Span - Weekday (Hours)	18	17	1	4.2%	Favorable
Average Service Span - Saturday (Hours)	18	17	2	9.5%	Favorable
Average Service Span - Sunday (Hours)	16	14	2	14.0%	Favorable
Average Trips per Service Hour - Weekday	1.5	1.3	0.2	15.0%	Favorable
Average Trips per Service Hour - Saturday	1.6	1.4	0.1	8.9%	Favorable
Average Trips per Service Hour - Sunday	1.3	1.1	0.1	12.4%	Favorable

## Minority Routes: Service Reliability and Quality

About 80% of PAAC routes serve minority communities. In general minority routes scored slightly lower on out of service and crowding than non-minority routes, but better on OTP.

Out of service showed a minor adverse difference between minority and non-minority routes. In FY21 2.5% of total service hours on minority routes were cancelled compared to 2.4% for non-minority routes. The ten minority routes with the highest out of service percent are listed here. Five of these routes operate out of the West Mifflin Garage. In FY20, eight of the top routes belonged to East Liberty garage, whereas the current list only has 4 routes from that garage. However, the top five routes from FY20 still remain on this year's list, all four from East Liberty. COVID-19 related employee absences in both of these larger garages, broader labor market shortages, and having a higher proportion of minority populations in their service areas contributed heavily towards the increased higher out of service percentage.

It should be noted that the P2's out of service is high by design: the route exists to supplement morning rush hour service on the P1, and trips can be cancelled without significantly impacting trip headways.

# TITLE VI EVALUATION

Route	Garage	Out of Service Percent
P17	East Liberty	11.6%
P2	East Liberty	7.4%
83	West Mifflin	6.4%
15	Ross	6.4%
82	East Liberty	5.5%

Route	Garage	Out of Service Percent
P7	West Mifflin	5.5%
86	East Liberty	5.2%
P76	West Mifflin	4.9%
53L	West Mifflin	4.9%
61B	West Mifflin	4.6%

Crowding worsened significantly on minority routes during the pandemic. The ten minority routes with the worst crowding are listed below and nine of them are local routes. Ridership on the minority routes dropped disproportionately less than the non-minority routes. As capacity limits were implemented based on vehicle size, not ridership, minority routes did see more crowding. The only way to address this problem was to add additional service.

To that end, Port Authority implemented 20 major temporary service changes in November 2020. The agency cut trips on commuter routes since the rush hour ridership had dropped dramatically, and redistributed resources to routes with the worst crowding issues. Routes 1, 12, 59 and P68 added a significant number of trips (more than 30% of their existing service hours), but routes 51, 75 and 83 also added trips to resolve ongoing crowding problems.

Route	Percent of Trips Crowded
51	16.6%
59	16.1%
61C	14.5%
83	11.0%
P68	9.4%

Route	Percent of Trips Crowded
77	9.3%
71C	9.1%
75	8.9%
16	8.4%
51L	8.0%

# SERVICE CHANGES

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## Service Request Process

Port Authority's Service Guidelines include a process for the public to submit a request for a major service change. However, in FY2021, the Authority decided not to spend significant staff time evaluating these requests due to the ongoing pandemic and significant ridership changes being experienced. These changes had no recent historical comparators and came at a time when Port Authority could not reasonably predict when ridership would return or what it might look like post-pandemic.

## FY2021 Major Service Changes

Port Authority did not evaluate any major requests in fiscal year 2021 in an effort to focus staff time on adjusting existing services in response to the changing pandemic conditions. This led to continuous monitoring and evaluation of service and making major and minor changes during the FY21 period. In November 2020, the Port Authority of Allegheny County implemented 30 major service changes. Twenty of these changes were intended to rebalance service away from underused commuter routes and toward routes serving low-income riders who were experiencing crowding and pass-ups on a regular basis. These changes were considered temporary changes responding to COVID-19, including cutting commuter routes, and adding trips to local and feeder routes which provided lifelines to transit-dependent riders during the pandemic. The other ten major changes added permanent weekend service to connect transit-reliant riders to services and jobs any day of the week.

Route	Permanent Change Type
2	Extension of weekend routing
20	Addition of weekend service
29	Addition of weekend service
36	Addition of weekend service
93	Addition of weekend service
4	Addition of Sunday service
22	Addition of Sunday service
39	Addition of Sunday service
60	Addition of Sunday service
74	Addition of Sunday service

Route	Temporary Change Type
1	Addition of weekly trips
12	Addition of weekly trips
38	Reduction of weekly trips
58	Reduction of weekly trips
59	Addition of weekly trips
65	Reduction of weekly trips
19L	Reduction of weekly trips
G2	Reduction of weekly trips
G3	Reduction of weekly trips
G31	Reduction of weekly trips
O1	Reduction of weekly trips
O12	Reduction of weekly trips
P12	Reduction of weekly trips
P13	Reduction of weekly trips
P68	Addition of weekly trips and route extension
P7	Reduction of weekly trips
P76	Reduction of weekly trips
Y1	Reduction of weekly trips
Y45	Reduction of weekly trips
RED Line	Addition of weekly trips

While Port Authority still considers the twenty major COVID-related trip additions and reductions to be changes temporary in nature, FTA regulations require the agency to treat them as permanent since they continued for more than 12 months. A public comment period that will include a public hearing concerning the changes was scheduled from December 1, 2021 through February 1, 2022.

# SERVICE CHANGES

## Major Service Updates

The following table provides a summary of service changes made since FY20 to maintain service guidelines and to expand service using the Service Evaluation process where budget allowed. Route extensions are often inefficient on their own due to the nature of ridership near the end of a route. Changes which do not perform well over time may be adjusted to improve efficiency.

The FY21 changes were all implemented in November 2020, except for Route 4 which was implemented in June 2021 and is too new to evaluate for FY21 reporting.

Fiscal Year Implemented	Route	Major Change	FY21 Passengers per Hour	FY21 Cost per Passenger
FY20	2	Addition of weekend service (Downtown to Millvale)	5.7	\$37.74
FY20	53	Addition of Sunday service	8.5	\$25.18
FY20	60	Addition of Saturday service	12.0	\$17.79
FY20	67	Extension of weekend route	7.6	\$28.17
FY20	68	Extension of weekend route (conversion to P68)	10.7	\$20.04
FY21	20	Addition of weekend service	5.6	\$38.12
FY21	29	Addition of weekend service	9.3	\$22.99
FY21	36	Addition of weekend service	6.6	\$32.67
FY21	93	Addition of weekend service	10.6	\$20.26
FY21	22	Addition of Sunday service	11.0	\$19.37
FY21	39	Addition of Sunday service	6.3	\$34.07
FY21	60	Addition of Sunday service	5.6	\$38.50
FY21	74	Addition of Sunday service	4.9	\$43.89
FY21	2	Extension of weekend service (Millvale to North Hills Village)	4.0	\$53.35
FY21	4	Addition of Sunday service	N/A	N/A

## Minor Service Updates

The following table provides a summary of minor service changes made in fiscal year 2021 to address various efficiency metrics. Minor service changes are made four times each year and use mostly existing resources to adjust services to improve service quality. This includes adding or removing individual trips to better serve riders and adjusting the scheduled time for buses to get from one point to another to improve on-time performance.

Issue Addressed	Route(s)
On Time Performance	2, 36, 74, 91
Span of Service or Frequency	4, 14, 22, 26, 27, 31, 36, 39, 40, 41, 48, 57, 88, 89, 53L, P1, P10, P16, P2, P3, P67, P71, P78, Y46, Y47, Y49, BLUE, SLVR
Added Trips or Adjusted Trip Times	1, 2, 7, 15, 29, 31, 44, 51, 59, 60, 67, 75, 82, 83, 61D, G31
Minor Extensions (or reductions)	69
Reroutes	2, 7, 13, 16, 17, 29, 31, 69, 81, 83, 86, 87, 88, 91, P2, P69, G31

# FY2022 HIGHLIGHTS

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## Service Additions and Changes

Ridership trends continue to evolve as we approach the second year of the pandemic. With schools and universities fully reopening in fall of 2021, some routes have almost fully recovered their pre-pandemic ridership. However, many commuter routes are still at less than a third of pre-pandemic ridership, and with increased remote work opportunities for many office jobs, these routes may never fully recover.

Ridership used to fall into a consistent peak/off-peak pattern of very high morning rush hour ridership, followed by a midday slump, and spiking again in late afternoon. As of fall 2021, the difference between ridership at 7:00 AM and 10:00 AM is now only 11%. Port Authority will continue to monitor changing ridership patterns to adapt as we move into the future.

In 2022 Port Authority will develop a new set of transit service standards. These standards were last updated in 2019. The revisions will set new baselines for expected passengers per hour, and cost per rider, taking into account the changed conditions. This will ensure resources are redeployed fairly and equitably across Port Authority's service area.

Routes that underperformed in previous years continue to rank at the bottom of the pack for FY21. Several commuter routes are averaging only 50 or fewer riders per day. Additionally, some routes have underused variants and are expensive to serve, while running too infrequently to attract much ridership. Port Authority intends to hold community feedback sessions to present options for reshaping parts of the transit network to better serve post-pandemic rider needs.

Finally, a Title VI analysis on commuter routes that were cut back due to low pandemic ridership found disparate impacts an/or disproportionate burdens on 5 routes: the 58, 65, P12, P7, and P76. A public hearing and comment period has been scheduled from December 1, 2021 through February 1 to collect public input on these changes, concluding with a public hearing on January 27, 2022 from 3:00-6:30 PM.

## Summary

This was the sixth year that Port Authority has released route level data with respect to meeting service guidelines. As this process continues, the Authority hopes that it not only improves the transparency of decision-making processes, but that it leads to better efficiency, effectiveness, and equity in the system as a whole so that Allegheny County's transit system evolves along with the communities that it serves.

