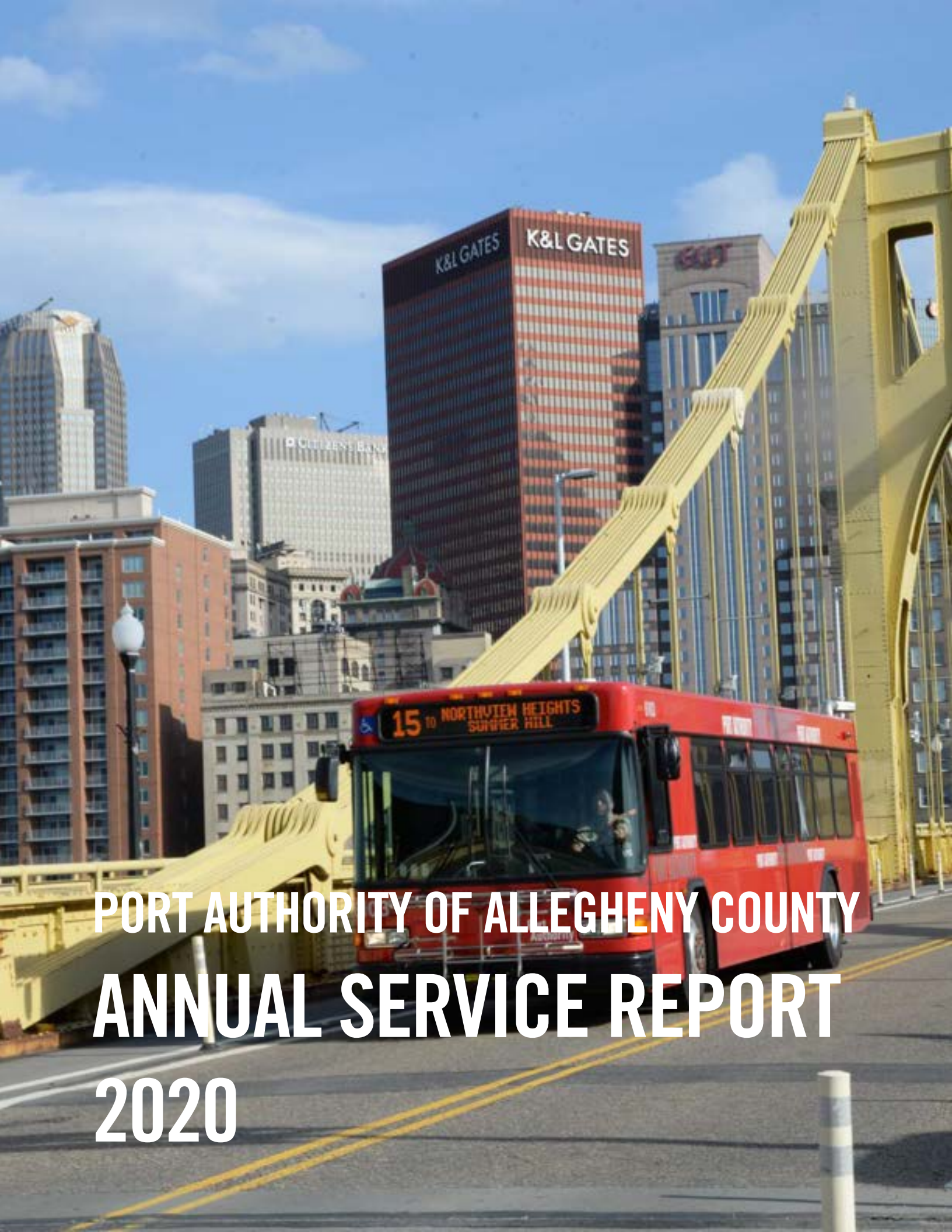




PORT AUTHORITY OF ALLEGHENY COUNTY ANNUAL SERVICE REPORT 2020

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INTRODUCTION

Letter from CEO Katharine Kelleman

To Our Valued Customers,

Fiscal Year 2020 began with excitement and promise. The state had successfully defended its right to use turnpike tolls to fund public transit, we began efforts to improve on-time performance, we introduced electric buses to our fleet, our mobile payment application was well into development, and public meetings to provide updates on the progress of our future Downtown-Uptown-Oakland-East End Bus Rapid Transit project and other key initiatives were well underway.

Then, in early March, the COVID-19 pandemic trickled across North America before sweeping over us like a wave, leaving public transit in its wake. Within days, the virus had claimed more than 80 percent of our ridership; within weeks, we had dozens of employees out for COVID-related reasons.

We remain thankful that Congress recognized the threat that public transit and other industries were about to face and acted swiftly by approving the Coronavirus Aid, Relief, and Economic Security Act. While the CARES Act means we don't need to worry as much about immediate funding issues, we remain extremely concerned about the long-term devastation and potential future funding needs.

Even today, in early January, we continue to feel the effects of the virus in our daily lives, both personally and professionally. Ridership remains down by two-thirds, vehicle capacity limits remain in place, many employees are still working remotely, and we consider the virus in almost every decision we make.

But like with most challenges this agency has faced, we've still been able to find the silver lining. Dealing with the virus has brought us together to face these hurdles; we have become nimbler, more agile and more adaptable as an agency; and we have found creative solutions to continue to keep our customers and employees safe.

Although the virus has made providing public transit difficult, it has not prevented progress. We have been able to find efficiencies that allow us to offer additional weekend service and have worked with communities and businesses to grow our footprint in Allegheny County.

There's no doubt that we will feel the impact of this pandemic for quite some time and we will continue to adjust as quickly as we can.

Providing safe, reliable and affordable public transit isn't just what you, our riders, want. It's what you deserve.

Respectfully,



Katharine Kelleman, CEO, Port Authority of Allegheny County



Overview of the Annual Service Report

The Port Authority of Allegheny County strives to provide a range of safe, high quality transit services in a manner that satisfies three primary goals: efficiency, effectiveness and equity, all of which are critical to successful transit. Port Authority's Transit Service Standards, last updated by the Port Authority Board in November of 2019, 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 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.

Although this is the fifth year that the Annual Service Report is being published, it is the first year in which the report is being published using only fiscal year data (July 1st of the prior calendar year through June 30th of the stated year). Past 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. The current change will provide alignment with budgetary and reporting calendars and simplify comparisons to other systems.

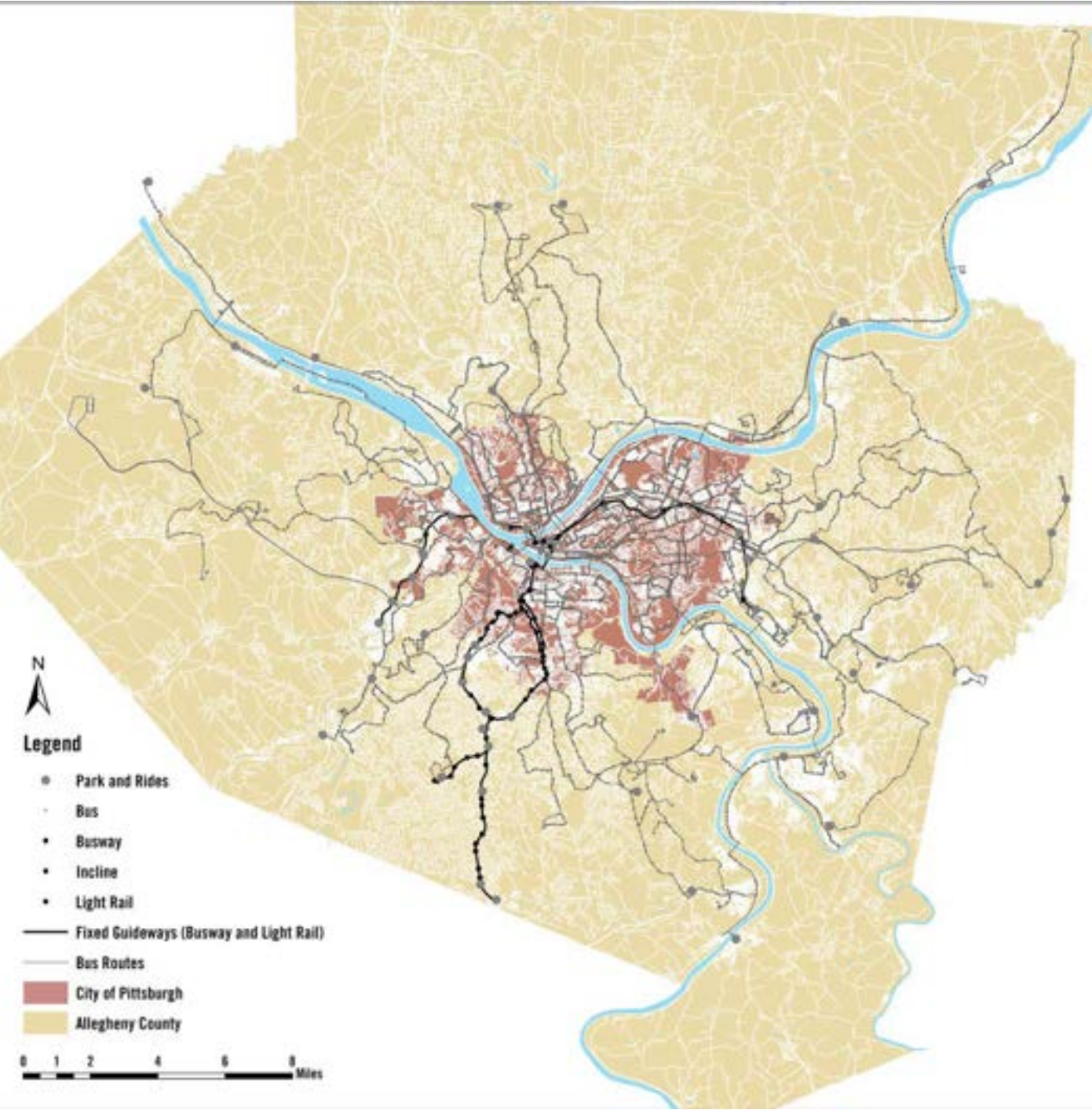
Additionally, this report is unique in that it comprises part of a year deeply affected by the COVID-19 coronavirus pandemic. References to "normal" conditions throughout this document refer to the time period prior to March 2020. Crowding metrics and route specific metrics to measure adherence to the service guidelines in this report uses only "normal" conditions for reporting so that service decisions are not made due to decreased ridership from the pandemic. Systemwide performance reporting data still covers the entire fiscal year in this report.

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

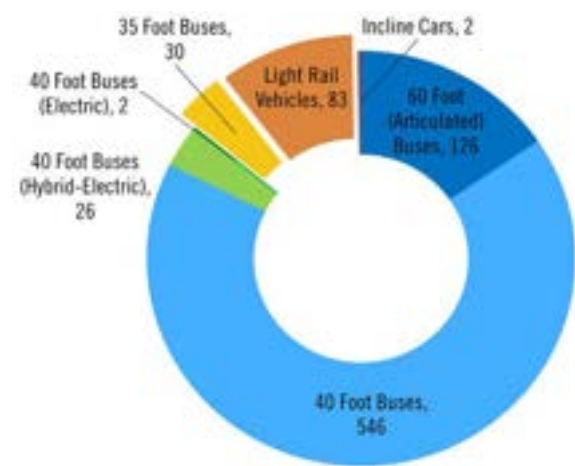
Port Authority of Allegheny County provides public transportation services within Allegheny County, including the City of Pittsburgh, in Southwest Pennsylvania. These services include 96 bus routes (three of which are fixed guideways, and run exclusively on bus-only roads), three light rail routes, and 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 about 7,000 transit stops and stations, over 700 shelters, 51 Park and Ride lots, 123 locations where customers can purchase fare cards and tickets, 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 61 new buses in FY2020 and was able to retire buses that had reached the end of their useful life. The current fleet size is 741 buses and 83 light rail vehicles. The breakdown of the number of vehicles by type can be seen in the chart below.



Transit Stops and Stations

Port Authority has 6,901 transit stations and stops, of which 6,795 are for buses, 102 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 142 shelters at bus stops throughout the county. Additionally, 294 bus stops have shelters owned by another entity (mostly advertising agencies). Overall, 584, or eight percent, of Port Authority's transit stops/stations are sheltered. These shelters cover over 41% of the Authority's average weekday boardings.

Park and Ride Lots

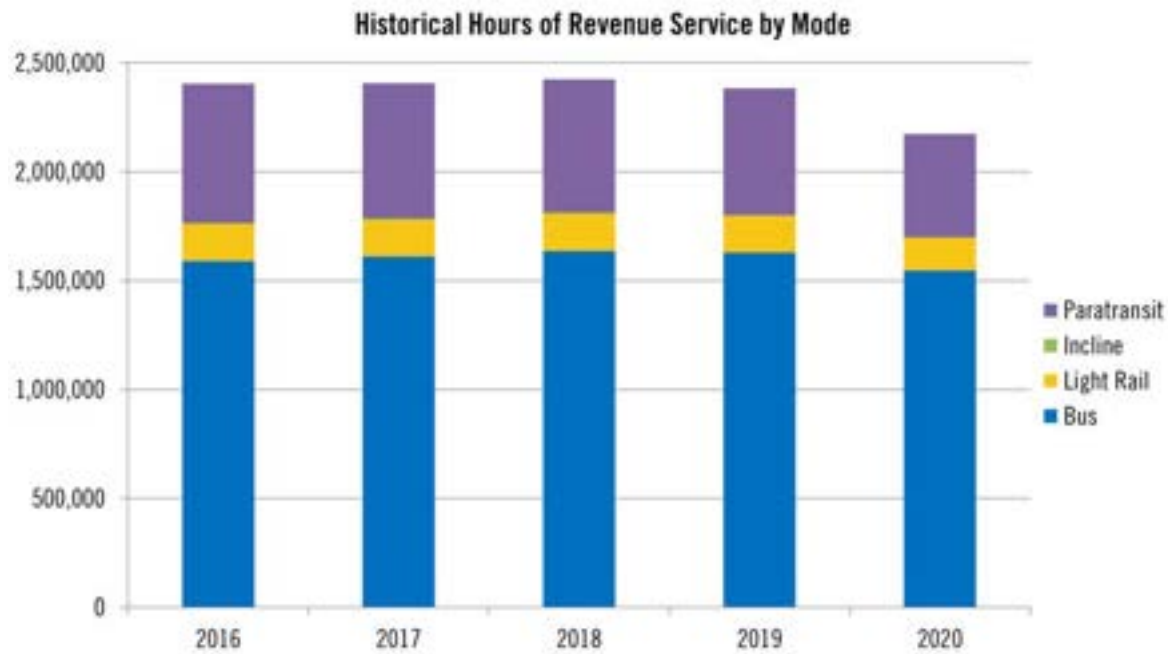
Port Authority riders have access to 51 park and ride lots with 13,814 parking spaces. Port Authority owns 29 of these lots (totaling 8,290 spaces). The remaining lots (22 lots with 5,524 spaces) are either leased by the Port Authority or are owned by another entity but advertised in Port Authority's system due to their proximity to transit service. Parking spaces in all lots were filled with a total of approximately 9,489 vehicles (68 percent full), on average in FY20, providing access to almost 19,000 trips per month.



SERVICE AND RIDERSHIP

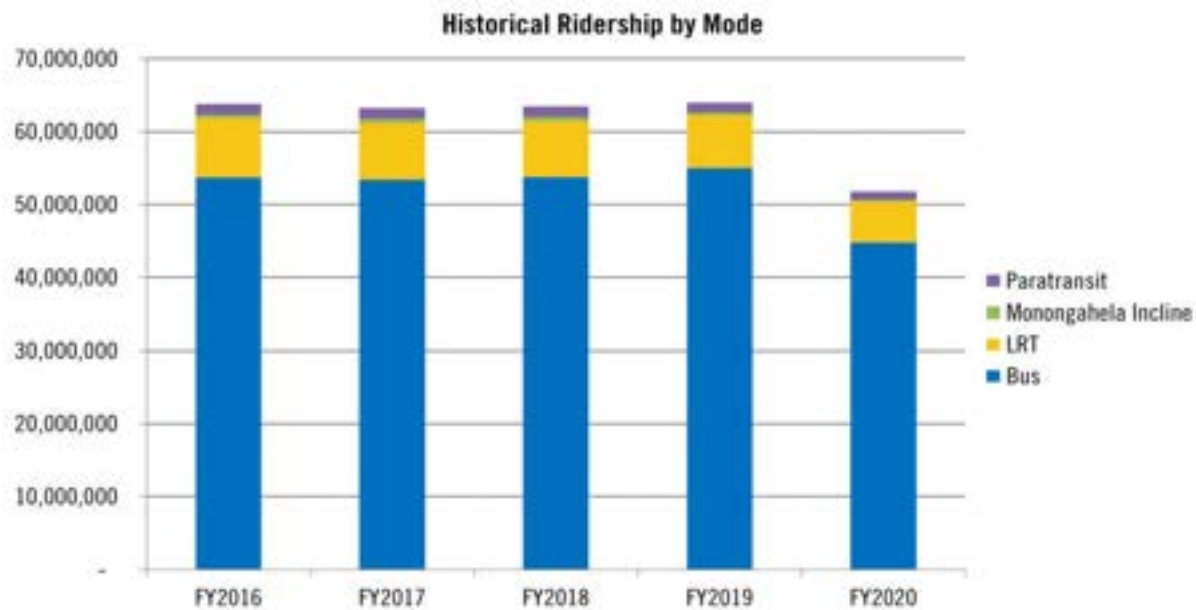
Service Levels

Port Authority has undergone three major service reductions since the early 2000s, which reduced service hours by 18%. Since 2013, service has gradually increased by about 6% to its levels in FY18. In FY20, revenue service hours provided by the Authority totaled 2,173,774, approximately 8.8% lower than levels in FY19. The significant dip in FY20 was due to COVID-19 related service reductions. Revenue service hours for bus declined by 5.1%, light rail decreased by 11.7%, ACCESS paratransit dropped by 18.5%, and incline service hours increased by 13.4% from FY19 levels. Closure due to maintenance and repair significantly reduced incline revenue hours in FY19, so the service levels in FY20 is appearing as an increase.



Ridership

Port Authority's overall ridership totaled 51,788,599 in FY20, down 19.1% from FY19 ridership. Bus ridership decreased by 18.6%, light rail dropped by 22.2%, ACCESS paratransit dropped by 21.9%, and incline ridership dropped by 18.5% from FY19 levels. Trends in ridership are explained further on the following page.



SERVICE AND RIDERSHIP

Trends in Ridership

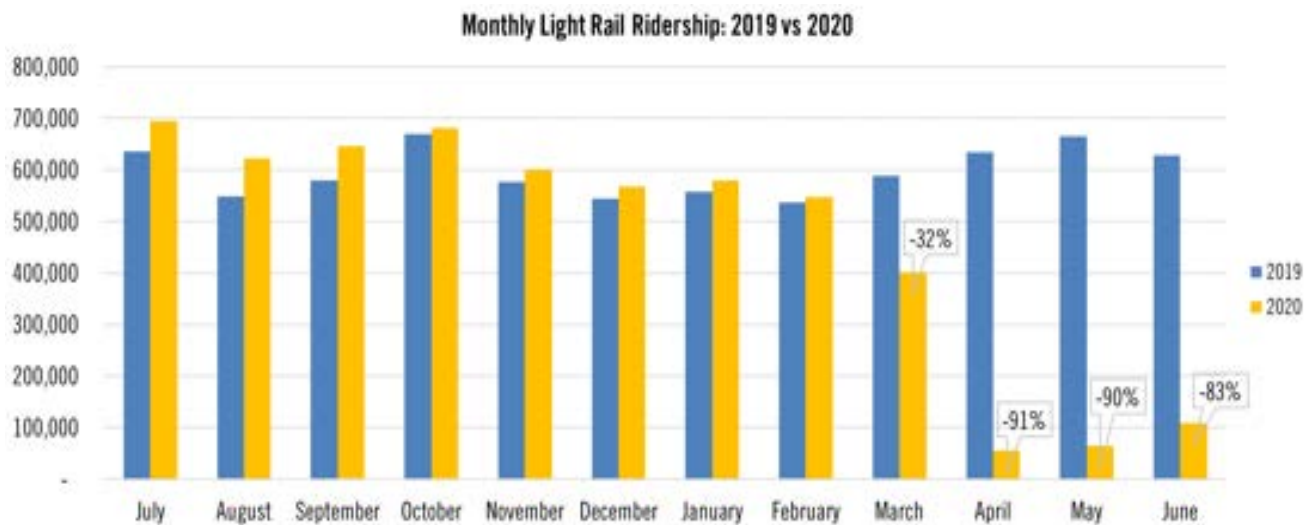
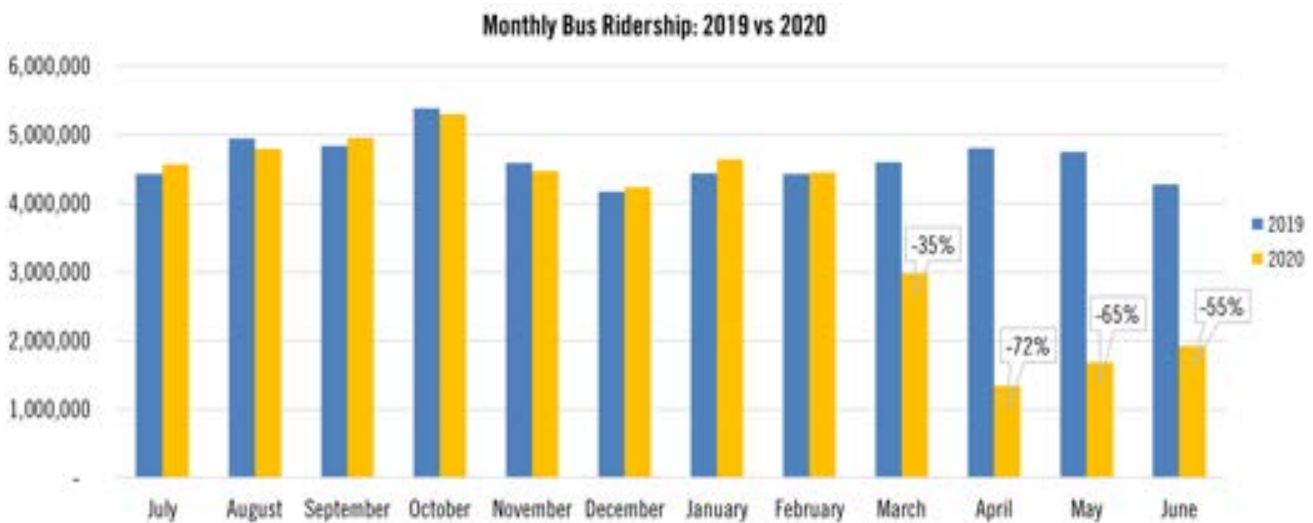
The FY20 decrease in ridership for the entire system is due to COVID-19 pandemic shutdowns. Through February 2020, ridership systemwide was up about 1% over FY2019 for the same period. The graphs showing monthly ridership indicate that the sharp decline in ridership started in March 2020. Even though there was slight improvement during the end of the fiscal year for all modes, it was still significantly lower than FY19 levels.

Bus ridership was relatively stable until February 2020 and had grew 0.53% compared to the FY19 levels. During the last four months of the fiscal year combined ridership was 57% less than the same months in FY19. The sharpest drop from FY19 levels was in April 2020 with a 72% decline in ridership. The decrease of bus ridership during COVID closedowns was relatively more attributed to routes that depend heavily on commuter or student ridership.

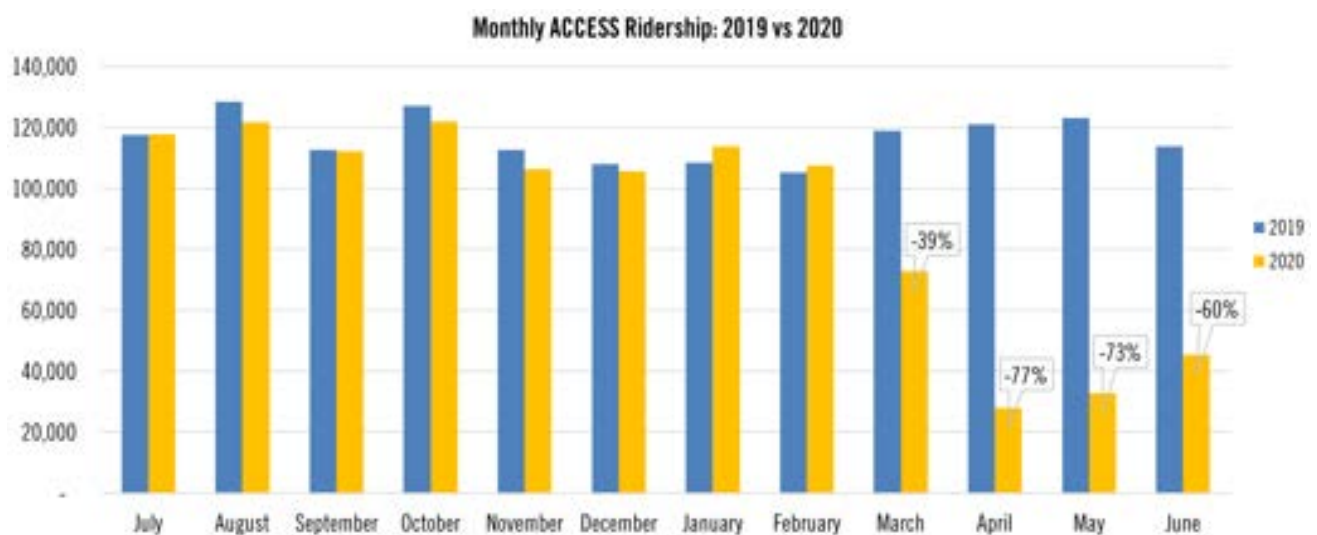
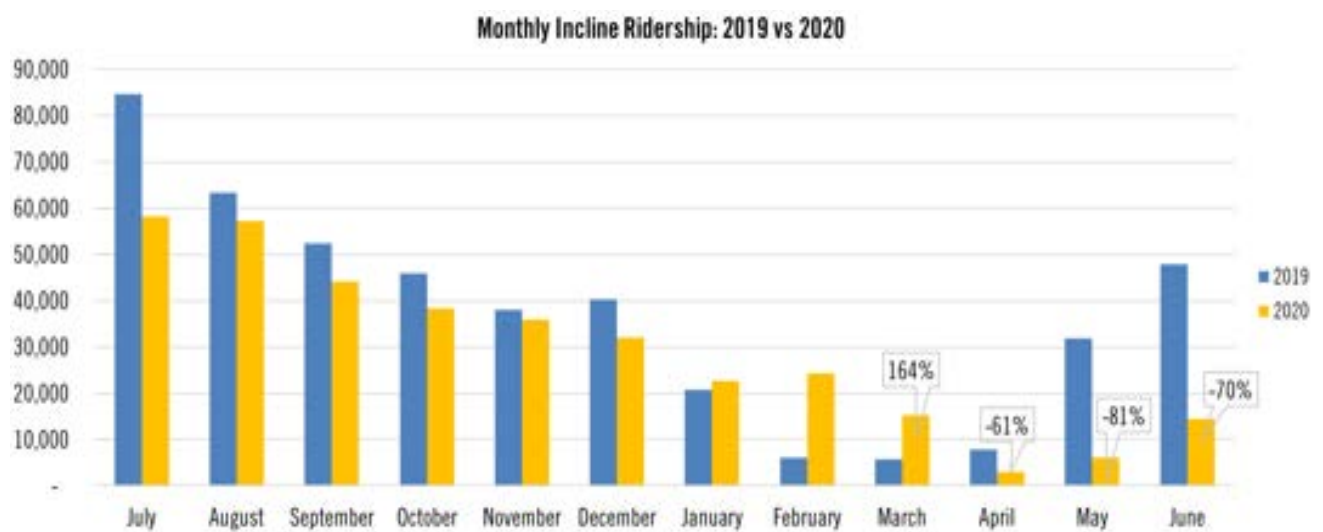
Ridership on light rail (LRT) in the months up to February 2020 saw a total 6.35% increase from the FY19 levels. After the closedowns in March 2020, LRT ridership saw the largest decline among all modes by about 75% from the FY19 levels. Similar to bus, LRT saw the sharpest decline in ridership in April 2020 (down 91%) from the FY19 levels.

Incline ridership declined by 18.5% in FY2020. It was down 11.03% from FY19 levels during the pre-COVID period due to maintenance closures and declined even further during the COVID shutdowns. ACCESS ridership also dropped by 21.9% in FY2020.

A month over month comparison between the 2019 and 2020 ridership for the four modes: bus, light rail, incline and ACCESS have been shown below and on the following page.



SERVICE AND RIDERSHIP



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 FY2019 across all metrics, and FY2019 data does not include any pandemic impacts.

Location	Agency Name	Service Area (miles ²)	Service Area Population	Bus	LRT	Para-transit	Inclined Plane	Annual Total Ridership	Annual Operating Budget
Buffalo, New York	Niagara Frontier Transportation Authority (NFTA)	383	981,771	x	x	x		23,982,380	\$143,241,656
Milwaukee, Wisconsin	Milwaukee County Transit System (MCTS)	247	948,201	x		x		29,423,783	\$146,069,060
St. Louis, MO	Bi-State Development Agency of the Missouri-Illinois Metropolitan District	924	2,150,706	x	x	x		36,642,036	\$281,199,984
Cleveland, Ohio	The Greater Cleveland Regional Transit Authority (RTA)	458	1,412,140	x	x	x		32,171,825	\$300,662,840
Minneapolis, Minnesota	Metro Transit (Metro)	653	1,837,223	x	x			77,927,237	\$426,019,463
Pittsburgh, Pennsylvania	Port Authority of Allegheny County (PAAC)	775	1,415,244	x	x	x	x	64,007,925	\$433,535,787
Portland, Oregon	Tri-County Metropolitan Transportation District of Oregon (TriMet)	383	1,565,010	x	x	x		96,633,005	\$519,559,059
Denver, Colorado	Regional Transportation District (RTD)	2,342	2,920,000	x	x	x		105,207,476	\$644,361,264
Seattle, Washington	King County Metro Transit (Metro)	2,134	2,149,970	x		x		128,666,612	\$797,569,050
Baltimore, Maryland	Maryland Transit Administration (MTA)	2,560	7,811,145	x	x	x		94,036,949	\$836,206,553

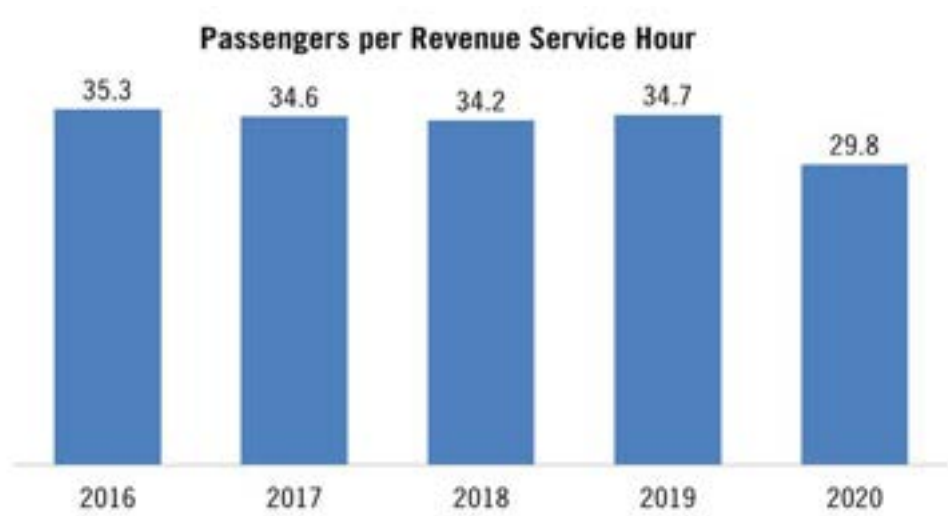
SYSTEM EFFICIENCY

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.

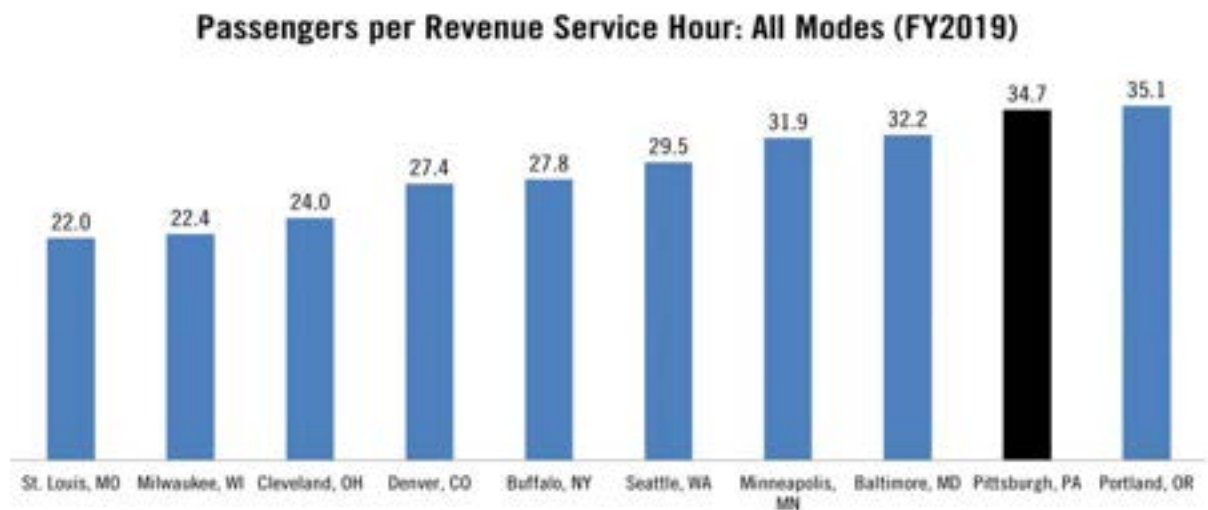
Peer agency comparisons may include a mixture of data for different modes pertaining to the specific agencies and thus not be directly comparable (unless otherwise stated, they do not include paratransit).

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 FY2020, Port Authority carried, on average, 29.8 passengers per hour of revenue service provided. This is approximately 14% less efficient than the FY2019 efficiency of 34.7 passengers per hour. The low efficiency in FY20 is due to the limited number of passengers allowed on vehicles to enforce social distancing measures during COVID shutdown.



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 service hours drive this high ranking.

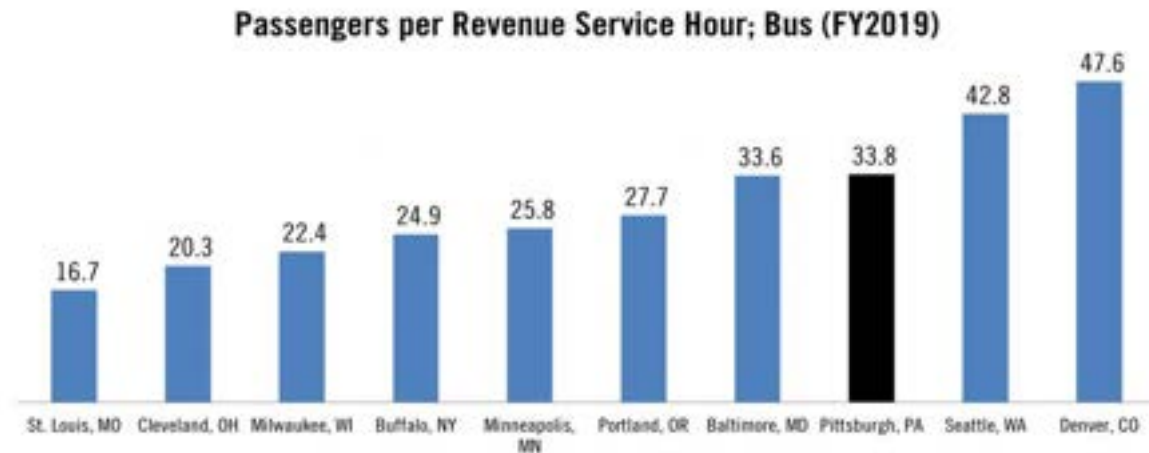


*Note: Port Authority's peer agencies do not operate inclined planes; as such, there are no peer comparison graphs for this mode.

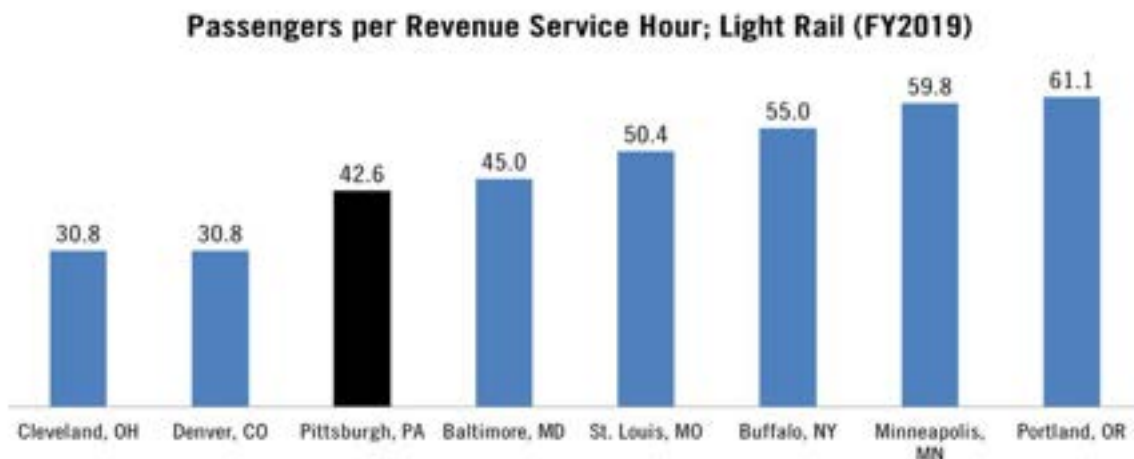
SYSTEM EFFICIENCY

Passengers per Revenue Vehicle Hour by Mode

Bus performed moderately well in comparison with its peer agencies, carrying 33.8 passengers per hour of revenue service provided in FY2019.



Light Rail performed moderately in efficiency compared to its peers, carrying 42.6 passengers per hour of revenue service provided in FY2019.



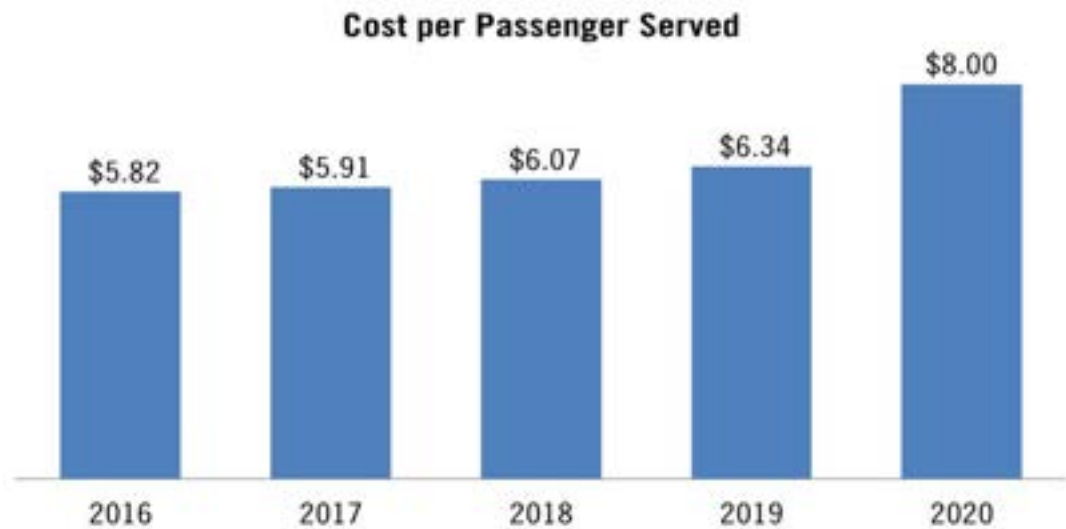
ACCESS Paratransit performed the most efficiently of all its peers, carrying 2.4 passengers per hour of revenue service provided in FY2019.



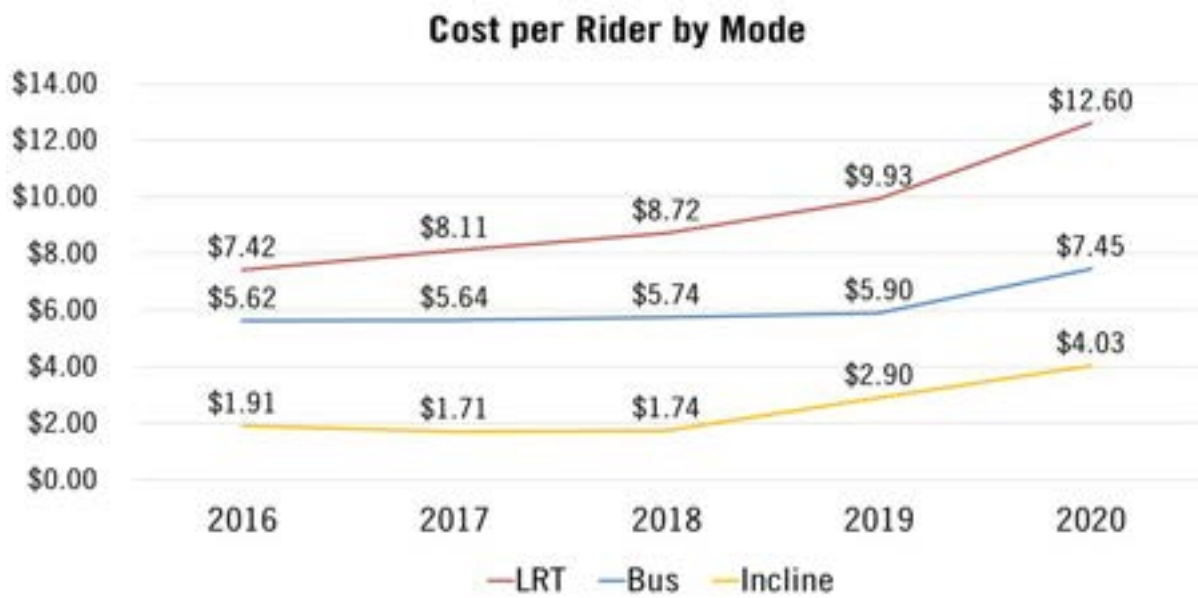
SYSTEM EFFICIENCY

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 FY2020, it cost Port Authority an average of \$8.00 to transport each passenger it carried, over 26% from FY19. That increase was due to sharp decline in ridership due to the COVID-19 pandemic without a subsequent reduction in costs. To ensure social distancing the vehicle capacity was reduced while maintaining a similar frequency to minimize crowding, which led to a leap in the operating cost during this time.

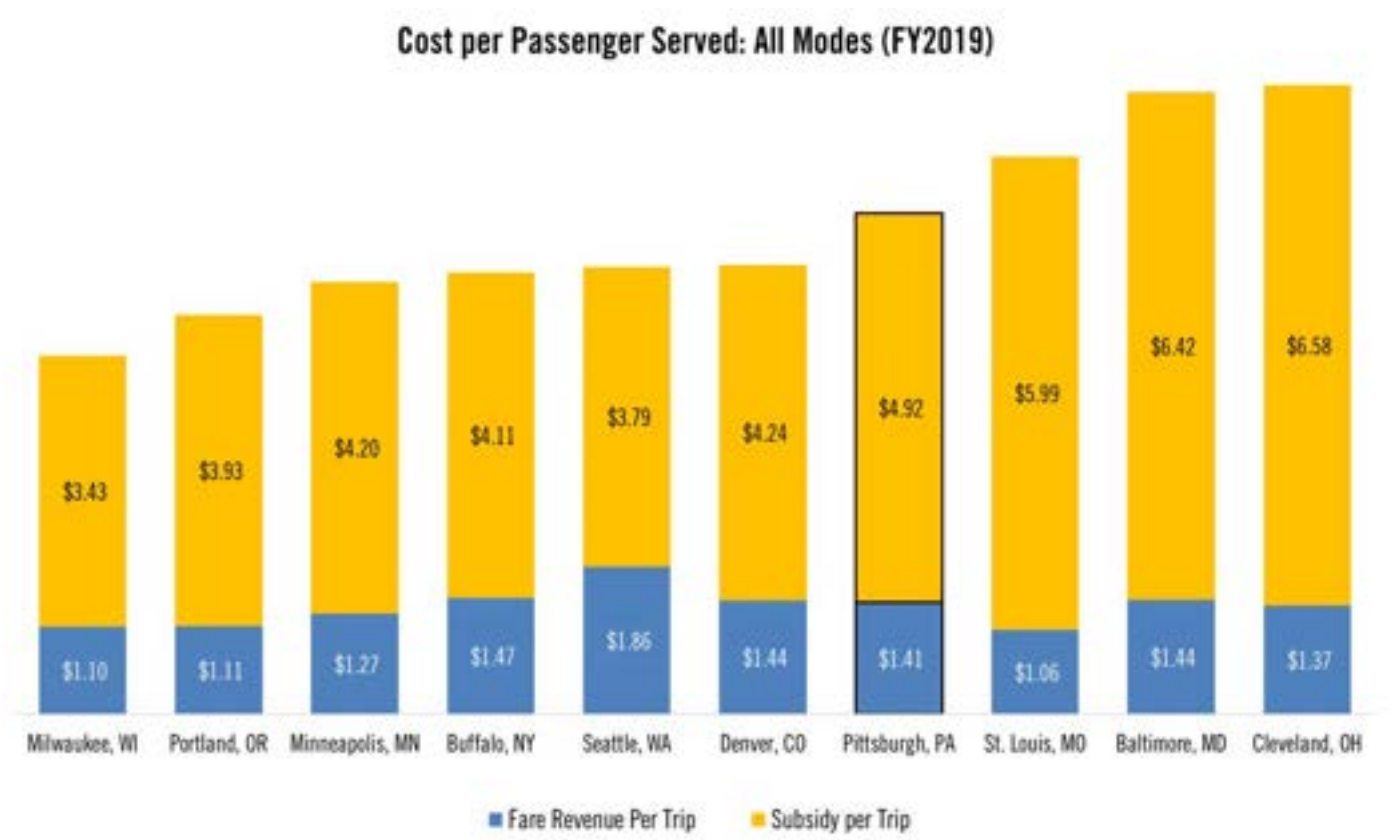


Port Authority’s year over year cost per rider by mode is below. Light rail has always had the highest cost per rider, but over the years this mode has had the highest rate of increase with 14% increase in FY2019 from the FY2018 levels, and a 27% increase in FY2020 from the FY2019 levels. Natural disaster and maintenance related closedsowns on the LRT routes could have an impact in the gradual decline of ridership on rail and thus contributing to higher costs of operation. Bus cost per rider on the other hand has been relatively steady over the last few years. In FY2020 it suffered a 26% increase in costs from FY2019 levels, but that can be largely attributed to the COVID-19 pandemic ridership decline and the increased cleaning costs. Incline costs have been steady until FY2018 after which this mode has seen a sharp increase in cost per rider with a 67% increase in FY2019 (from FY2018) due to flood damage and a 39% increase in FY2020 (from FY2019).



SYSTEM EFFICIENCY

Port Authority’s cost per passenger served in FY2019 is the fourth highest among its peers. The cost might not be directly comparable due to different agencies having a unique mix of modes. In 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.



SYSTEM EFFICIENCY

Cost per Passenger Served by Mode

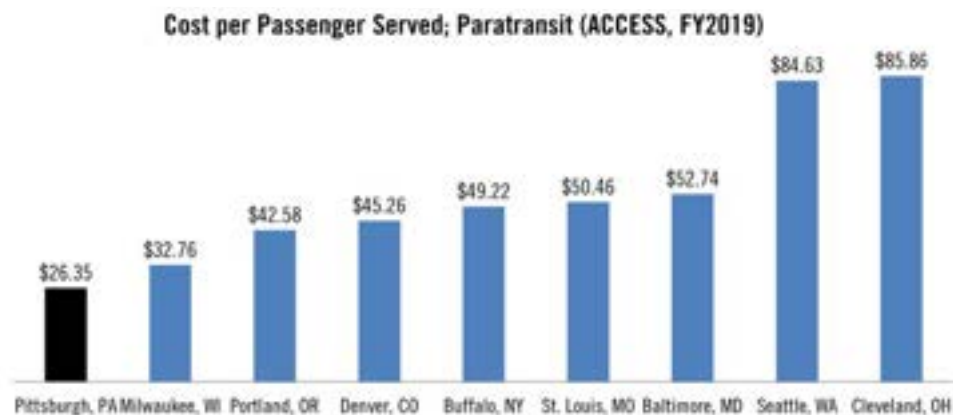
Bus performance was moderately efficient compared to its peer agencies in FY2019. As passengers carried was not a factor in this cost, this performance is not due to the number of passengers served but the cost of providing the service. Comparatively high operator and maintenance employee wages and benefits, as well as high maintenance costs, are reasons for this.



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. 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 are reasons for this. Also, the LRT system does not have automatic passenger counters that give a more accurate ridership information at station level. The Port Authority has initiated several studies to better identify actionable steps that can be taken to lower LRT costs.



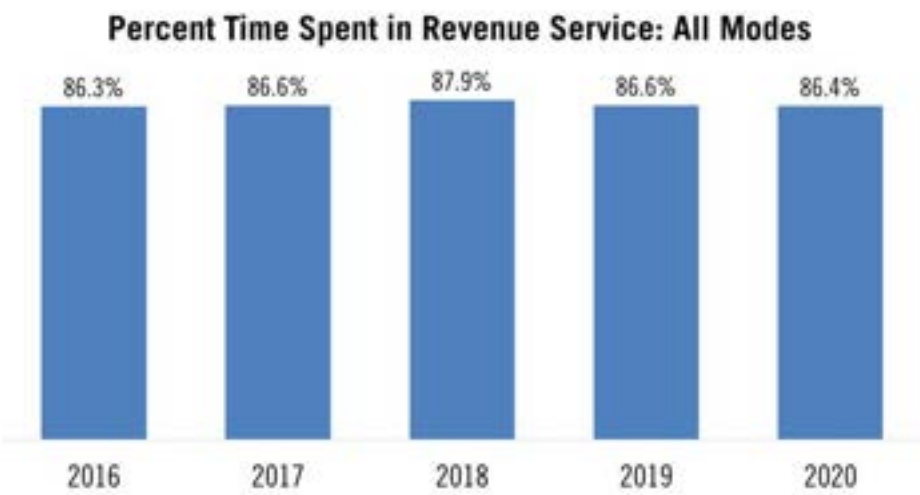
ACCESS paratransit performed most efficiently out of its peer agencies with a cost per passenger of only \$26.35 in FY19.



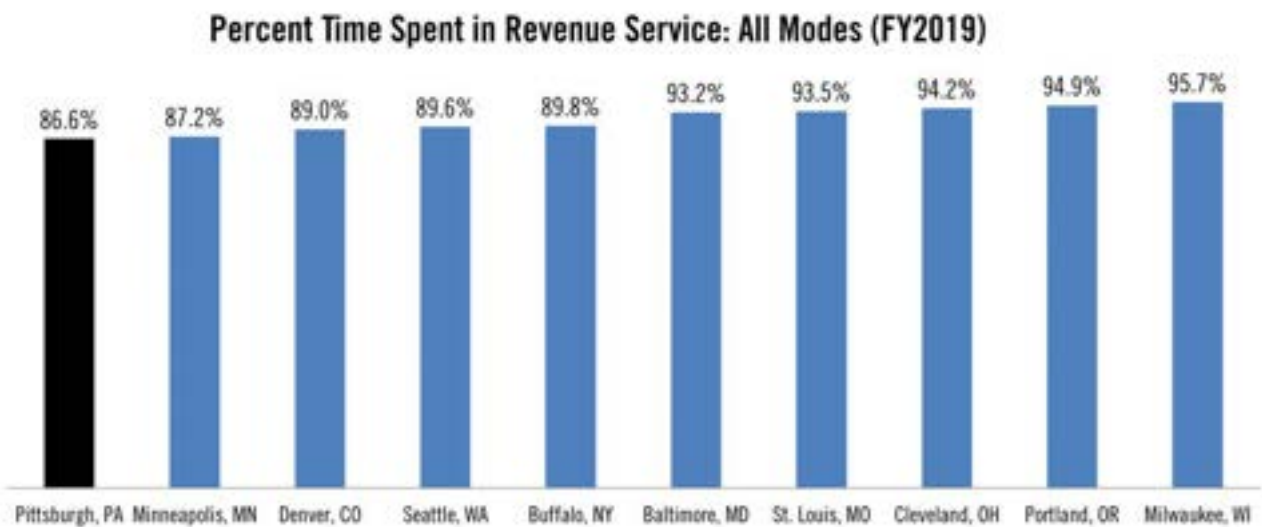
SYSTEM EFFICIENCY

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 consistent over the last five years.



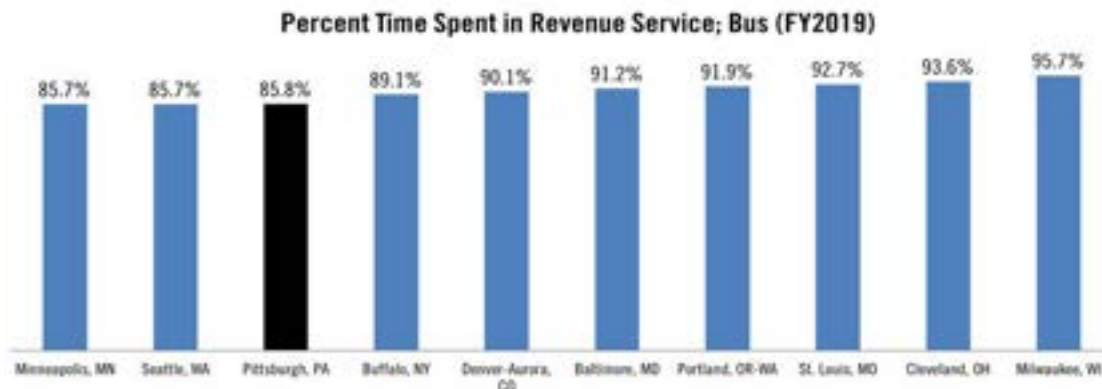
Compared to its peers, the Authority is the least efficient due to geographical challenges of Allegheny County's street network. However, the Authority continues to look to ways to increase this efficiency. Revenue service time is further broken out by mode in the charts on the following page.



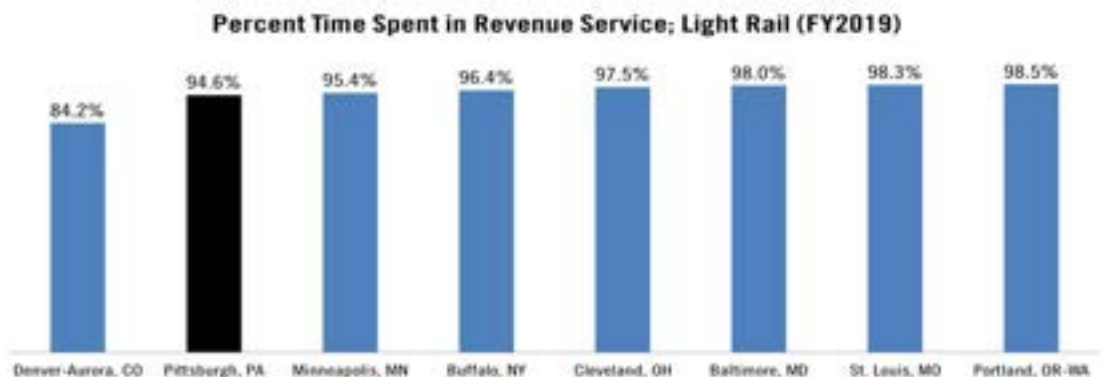
SYSTEM EFFICIENCY

Time Spent in Revenue Service by Mode

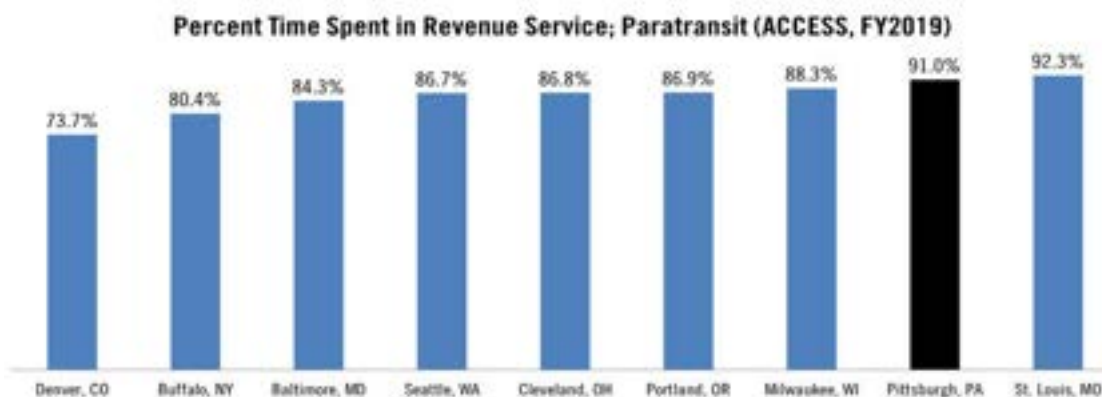
Compared to its peers, Port Authority buses spend the third least percentage of their time in service. One challenge for the Authority in this regard is the location of its bus garages - two of which are relatively convenient to areas where service begins or ends, but the other two are further away from where service is provided. As the Authority looks towards adding another bus garage in the future, the convenience of its location is essential to maximizing the amount of service provided within available resources.



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.



Compared to its peers, ACCESS paratransit performs very well with an average percent time spent in revenue service of more than 91%.



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 walkable service area), the timeliness of those transit services (on-time performance) so that riders can get to their destinations as planned, and crowding on vehicles to ensure there is space for people to access those transit services when they arrive.

Walkable Service Area

Over the last decade, Port Authority has seen a substantial decrease in the total area in which its services are provided (defined as the 'walkshed', this includes anywhere within a five minute walk of a bus stop or a ten minute walk of a light rail, incline, or busway station). Service cuts on and before 2011 caused the Authority to lose more than 27 percent of its total hours of transit service provided. During the same period, it also lost a significant portion of its walkable service area. Even though this service area has been reduced, Port Authority still serves a substantial part of Allegheny County, covering nearly half of all residents and over half of all jobs in the county in FY2020.

The walkable service area is also dependent upon service availability. Though a little over 11 percent of the county is walkable to transit service on any day of the week, this walkable area serves over 33 percent of residents and over 46 percent of the jobs in Allegheny County due to population and job density. This service area is slightly larger for six-day-a-week service (areas without Sunday transit service), which serves about 36 percent of residents and 47 percent of jobs, and again slightly larger for areas that have service only on weekdays 40 percent of residents and about 51 percent of jobs in the county have walkable access to transit.

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 schedules 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.

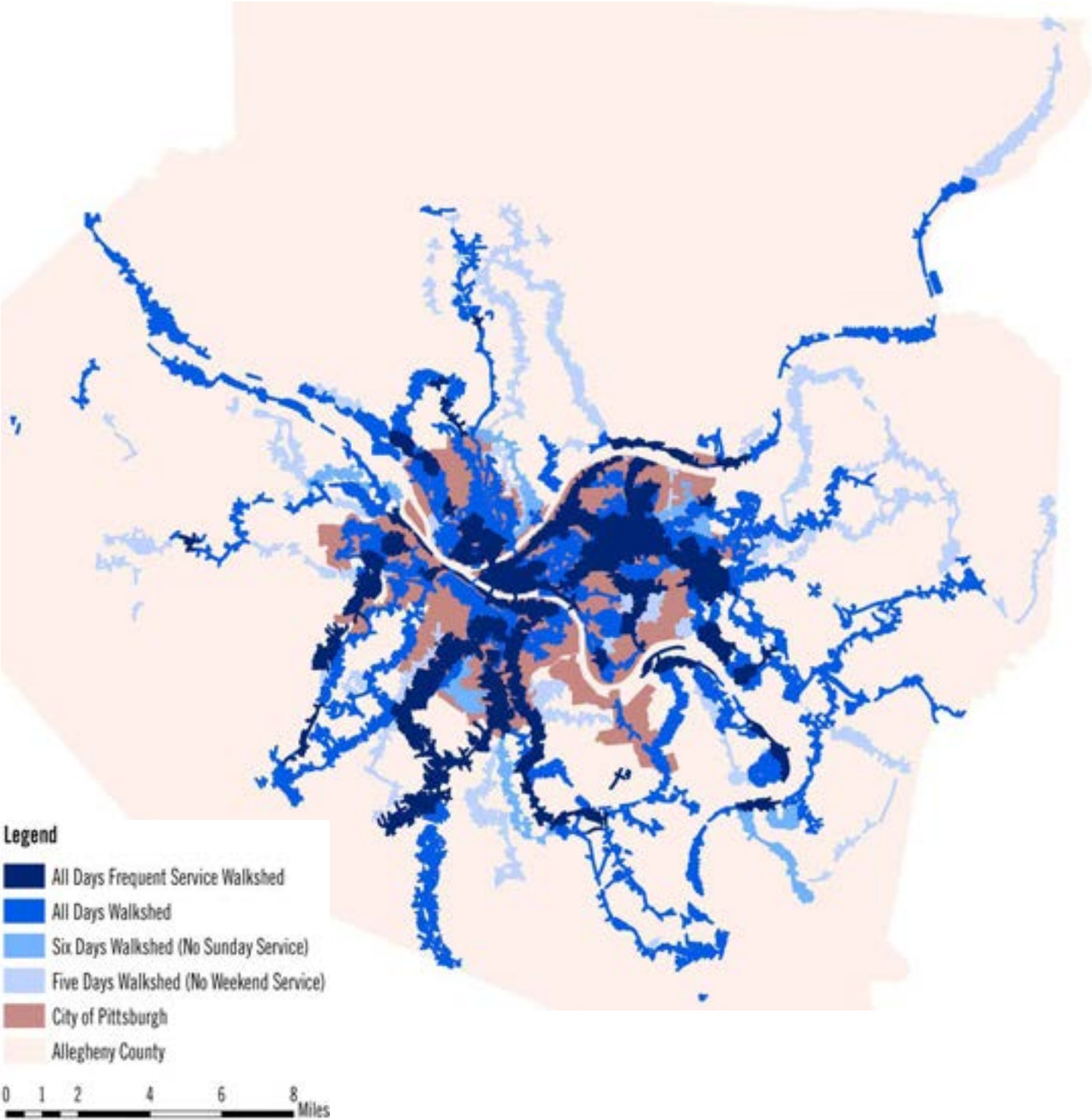
Port Authority defines a "frequent service area" as the 1/4 mile area around a transit stop or the 1/2 mile area around a transit station where transit vehicles come, on average, every fifteen minutes for fifteen hours of the day and every thirty minutes for an additional five hours of the day, every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

In FY2020, Port Authority's frequent service area covered just 4.1 percent of the geographic area of Allegheny County, but encapsulated nearly 19 percent of the residents and 38 percent of the jobs.

Service Days	Service Area		Population		Jobs	
	Total (miles ²)	Percent of Total	Total	Percent of Total	Total	Percent of Total
Five Day Service Walkshed (No weekends)	113.33	15.2%	492,707	40.2%	365,854	50.7%
Six Day Service Walkshed (No Sundays)	88.81	11.9%	437,774	35.7%	344,143	47.7%
All Days Service	83.28	11.2%	410,286	33.5%	336,395	46.6%
Frequent Service	30.59	4.1%	232,871	19.0%	274,384	38.0%
All of Allegheny County	745		1,225,561		721,175	

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

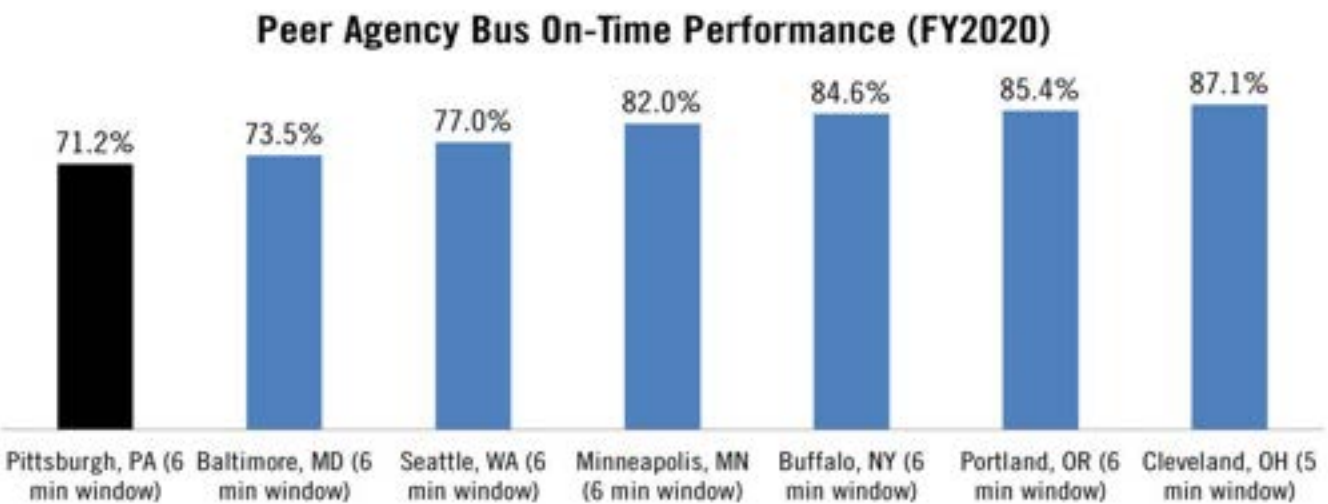
Bus on-time performance increased from 67.2% in FY19 to 71.2% in FY20. In July 2019 the Authority switched to a new OTP tracking system that more accurately tracks trip timepoints; this is a major reason for the OTP improvement. PAAC implemented schedule adjustments for 19 bus routes to better match schedules to field conditions. Additionally, PAAC initiated the Bus Stop Balancing program on the 16, 51, 48, and 88 to increase service reliability on those routes. Details about this program are discussed on page 22.

The pandemic also drove OTP improvements. Prior to March 2020 (pre-pandemic FY20), the average OTP was 70%. A large drop in ridership and less traffic congestion raised bus OTP to 73% during March to June 2020.

Automatic OTP tracking technology was installed on the light rail system in late 2018; as such light rail on-time performance only has data for FY19 and FY20. Rail on-time performance increased from 83.7% in FY19 to 88.4% in FY20, again due to the new, more accurate OTP tracking software. Pre-pandemic rail on-time performance was 87%, rising to 91% during the pandemic. The huge drop in ridership during the pandemic drove this increase.



Compared to its peer agencies who report on-time performance data (which is not required by the FTA and therefore has different definitions at different agencies), Port Authority buses perform the least effectively. Three 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, therefore they are not reported below. Peak hour congestion contributes to relatively unreliable travel times, especially within the City of Pittsburgh, making the scheduling of and adherence to specified times difficult.

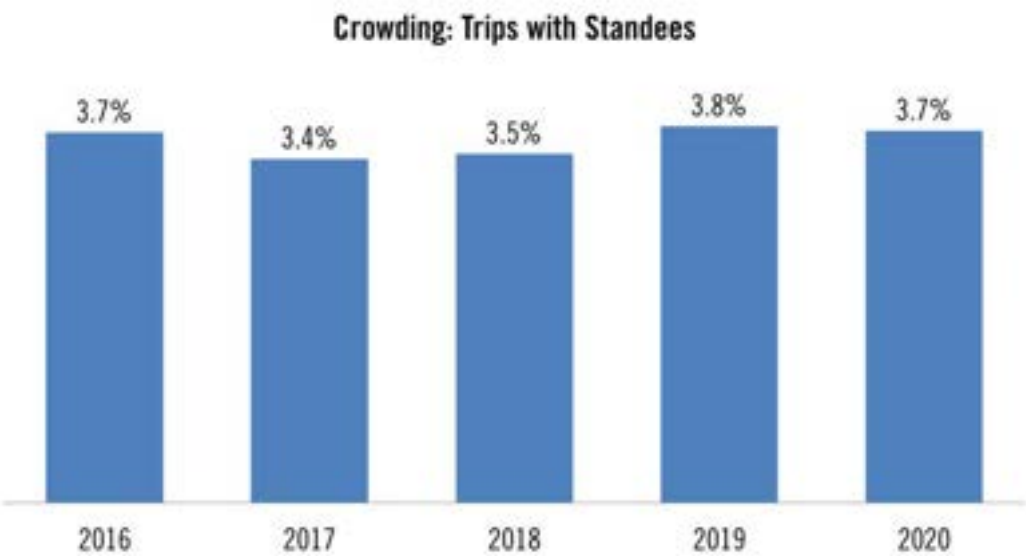


SYSTEM EFFECTIVENESS

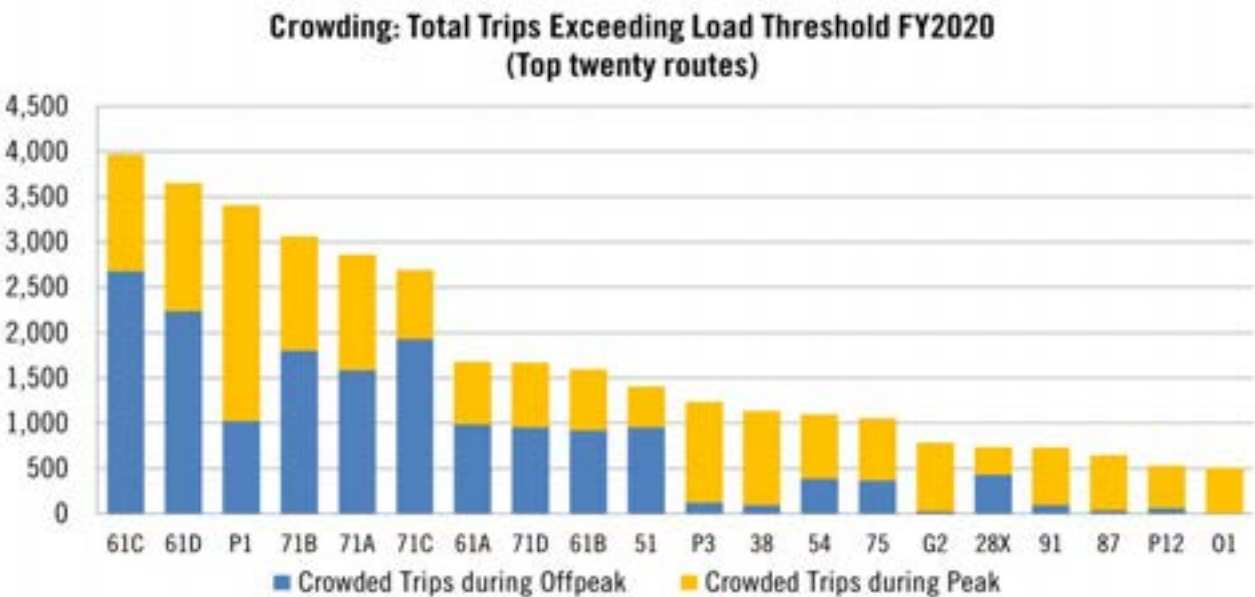
Passenger Loads: Crowding

Port Authority considers a bus trip to be “crowded” when the number of people on board the vehicle (load) at any point along the trip is equal to or greater than the number of seats on the vehicle. For example, a standard 40-foot bus may have 40 seats. With 40 people on the bus, the bus will be at a 100% seated load. Beyond this, the bus is considered crowded. Due to limitations on the number of vehicles the Authority owns during rush hour it is allowable for buses on Rapid routes (P1, P2, G2) to run, on average, at 140% seated loads and all other routes are allowed to be, on average, at 120% seated loads. During all other times, buses on Rapid routes (P1, P2, G2) are allowed to run, on average, at 120% seated loads and all other routes are allowed to be on average, at 100% seated loads. If a specific bus route averages more than these allowed loads, additional service must be considered for this route in order to minimize passenger discomfort and the possibility of a passenger getting passed up by a full bus and having to wait for the next trip.

In FY2020 (July 2019 to mid-March 2020), 3.7% of trips were considered crowded, representing a more than 1% decrease of over-crowded trips from FY2019 levels.



In FY2020 (up to mid-March 2020) crowding continues to be a problem on select routes, and Port Authority continues to prioritize reducing crowding to manageable levels wherever possible given labor force and availability of vehicles. More than 55 percent of this crowding occurs on bus trips during peak periods on weekdays when resources are already being utilized near maximum capacity. Over 50 percent of crowding occurs on only 7 bus routes; the P1, 61C, 61D, 71A, 71B, 71C, and 51.



SYSTEM EQUITY

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 head of households (with no husband present). The 2015 Equity Index included five of the stated indicators and was updated in 2019 to also include persons under age 18, female householders and persons who do not speak English very well (the report can be found on Port Authority's website, <https://www.portauthority.org/siteassets/inside-the-pa/transparency/data-and-statistics/paac-2019-equity-index.pdf>). 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 their reason for inclusion in the index has been discussed below.

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 \$1250 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 drivers license yet.

Households without Vehicles:

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

People with Limited English Proficiency:

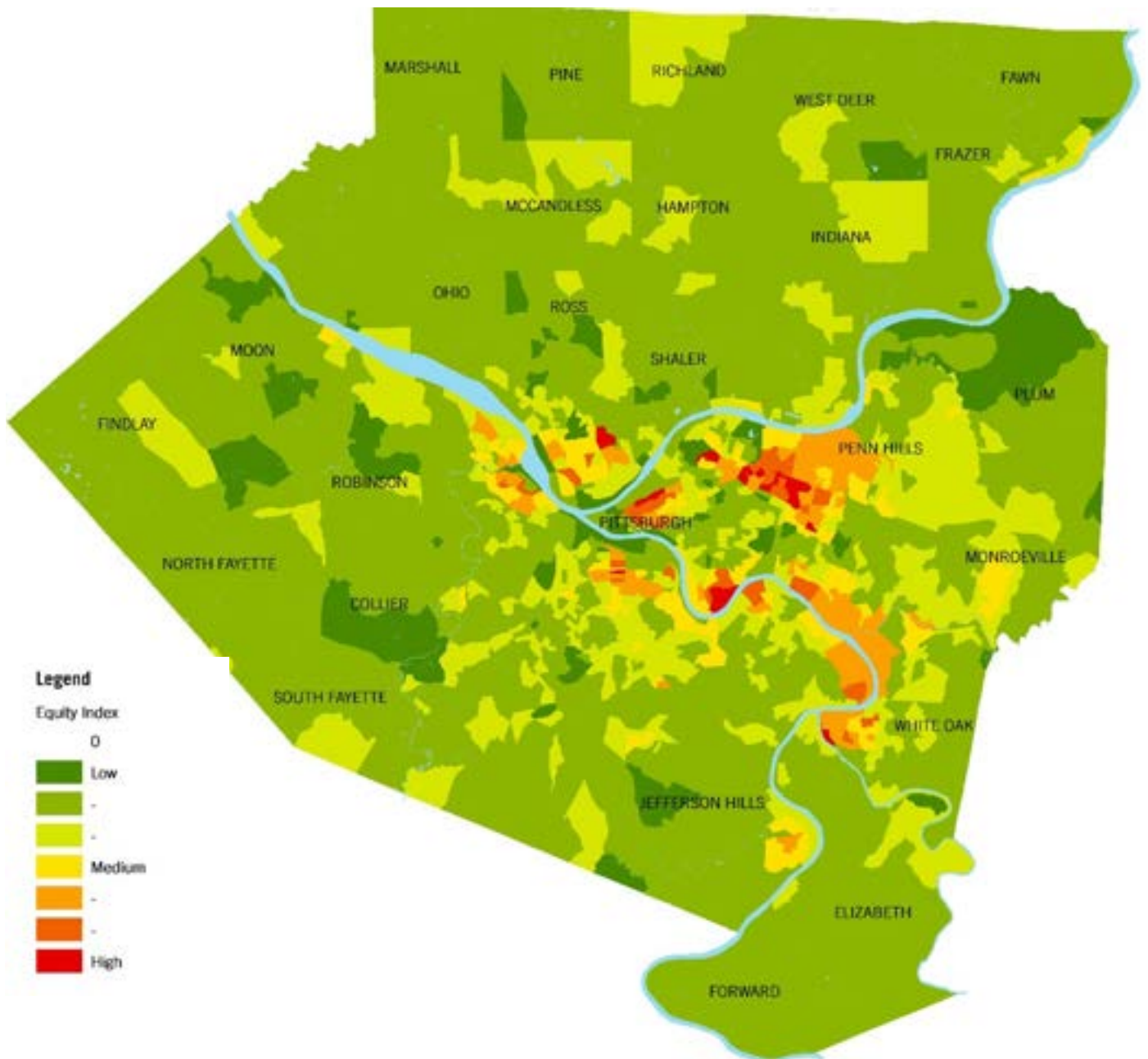
Households where one or more persons speak a language other than English and do not report as speaking English very well are included in the index as they might not have the ability to take the written test for a drivers license or read road signs.

Female Householders:

Households with a female parent or guardian and children but no husband have added vulnerability which can make them transit dependent.

SYSTEM EQUITY

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 set a series of recommended minimum standards for each route type. The standards comprise metrics such as passengers per hour, 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.

For this section of the report, all routes are evaluated solely on performance from July 2019 through February 2020. Routes not meeting the standards during this period are flagged and listed with potential solutions where applicable. Due to the pandemic, PAAC will not be pursuing ridership per hour improvements until capacity limits are lifted. Additionally, the profile of routes experiencing crowding under the new limits of 15-25 riders per vehicle has shifted dramatically. The Authority implemented major service changes in November 2020 to ease crowding on certain routes and will continue to monitor and adjust frequencies and vehicle capacities.

Planned changes set forth in this document are not set in stone; budgetary, vehicle, and/or labor force constraints may limit the agency's ability to address these areas in near term. See the 2019 Transit Service Standards report on Port Authority's website for more detailed information.

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 FY20, 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
Rapid Routes	
LRT	80%
BRT	80%
Commuter Routes	50%
Local and Coverage Routes	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 FY20, all routes met the service frequency standards.

Minimum Service Frequency Standards (Minutes)

	Rapid Routes	Commuter Routes	Local Routes	Coverage Routes
Weekdays				
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
Saturdays	30	--	60*	90*
Sundays	30	--	60*	90*

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

ADHERENCE TO SERVICE GUIDELINES

Distance between Transit Stops

Port Authority has minimum stop spacing guidelines to ensure efficient service. During FY20 Port Authority developed and implemented a process for evaluating bus stop safety, accessibility and spacing that incorporated data analysis and public input. This Bus Stop Consolidation project 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 (in feet)

	Stop Spacing Guideline
Rapid Routes	2,600 feet ½ mile
Commuter Routes	1,300 feet ¼ mile
Local and Coverage Routes	900 feet 1/6 mile

Bus stops balancing was completed on four routes: the 16 and 51 for the November 2019 service change, and the 48 and 88 for the March 2020 service change. The process included data collection and analysis on current stop amenities and spacing; field visits to assess stop conditions; initial recommendations on stops to eliminate or move; a public comment phase; a reassessment of the recommendations in light of public comments; and a final decision for implementation during the next schedule change.

The program consolidated about 20% of stops on the four routes and increased the average stop spacing from roughly 670 feet apart to 860 feet apart. The changes made to the 16 and 51 significantly improved on-time performance without reducing ridership prior to the COVID-19 pandemic. The November 2019 to February 2020 period was compared to the same period in FY2019, to find that OTP on route 16 improved from 72% to 76% and the OTP on 51 improved from 64% to 73%. However, impacts to the 48 and 88 stop eliminations could not be assessed because the changes were implemented just before COVID-19 disrupted ridership and traffic patterns.

At the end of FY20, 55 routes did not meet the stop spacing guideline. The bus stop balancing project is expected to resume in 2021 and the Oakland Bus Rapid Transit project is planning to change stop spacing on route 71B in 2023. Routes will be prioritized for bus stop consolidation based on current stop spacing, on time performance, and suggestions from the public.

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.

- Rapid: 85% on busway routes, 90% on light rail routes
- Commuter: 80%
- Local: 75%
- Coverage: 75%

In 2018 Annual Service Report, 77 routes did not meet the OTP standard. Of these routes, 58 improved their OTP in FY20, while 19 routes declined. The bottom 20 routes in CY2018 improved from an average of 58% to 64% in FY20.

ADHERENCE TO SERVICE GUIDELINES

The following routes were more than 10% below the OTP standard for their route type. These routes will be prioritized for OTP improvements in FY21.

Route Type	Route	FY20 Avg OTP	OTP Standard
Commuter	P69	53%	80%
Commuter	P7	57%	80%
Coverage	29	57%	75%
Commuter	P78	59%	80%
Local	77	59%	75%
Local	82	59%	75%
Local	71C	59%	75%
Commuter	28X	60%	80%
Local	2	60%	75%
Local	61C	60%	75%
Local	86	61%	75%
Local	67	62%	75%
Local	1	63%	75%
Local	88	63%	75%
Local	P68	63%	75%

Route Type	Route	FY20 Avg OTP	OTP Standard
Local	57	64%	75%
Local	71	64%	75%
Local	61A	64%	75%
Local	61B	64%	75%
Commuter	P12	65%	80%
Local	61D	65%	75%
Local	71B	65%	75%
Commuter	65	66%	80%
Commuter	01	66%	80%
Commuter	19L	67%	80%
Commuter	52L	67%	80%
Commuter	P17	67%	80%
Commuter	P76	67%	80%
Commuter	P10	68%	80%

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 FY2020, ACCESS's on-time performance was 95.1%.

Passengers per Revenue Vehicle Hour

Passengers per revenue vehicle hour measures the ridership levels of all route 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 the realm of public transportation.

Minimum Productivity Levels (Passengers per Revenue Vehicle Hour)

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

Notes:

- Productivity levels apply only to days of week which routes operate.

- 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). All other modes can easily be separated by route.

ADHERENCE TO SERVICE GUIDELINES

Since the last Annual Service Report in 2018, some routes have been reclassified into new Route Type categories with higher passengers per hour (PPH) standards. In CY2018, only 14 routes fell out of compliance with PPH standards. Two of those 14 routes have since boosted ridership and now meet the standards for FY20: the 40 Sunday passengers per hour increased from 12 to 18, and the G2 Saturday PPH increased from 39 to 40.

All the remaining 12 routes not meeting CY2018 PPH standards remain on the list. They are joined by 4 new routes. The O5 and 28X did not meet weekday commuter standards; the 40 fell below Saturday standards; and the 38 fell below Sunday standards.

Due to the coronavirus pandemic, no actions are planned for increasing ridership on these routes beyond OTP improvements and installing APCs (automatic passenger counters) on the rail lines to more accurately count ridership. As ridership builds back from the pandemic's impact, PAAC will continue to monitor ridership per hour and trip to ensure service levels remain productive.

The full table of routes not meeting PPH standards is printed below. Note that the 2019 Service Standards document misprinted PPH standards for local routes; they are actually 20 weekday passengers and 15 weekend passengers per hour, the same as coverage routes.

Service Day	Route Type	Route	FY20 PPH	Standard	Planned Changes
Weekday	Commuter	18	18	25	No changes planned due to pandemic
		28X	23	25	No changes planned due to pandemic
		O5	22	25	No changes planned due to pandemic
	Local	2	17	20	No changes planned due to pandemic
		44	17	20	No changes planned due to pandemic
		71	11	20	No changes planned due to pandemic
Saturday	Rapid	SLVR	77	80	Install APCs to improve rider count accuracy
	Coverage	40	14	15	No changes planned due to pandemic
		BLUE	25	50	Install APCs to improve rider count accuracy
		SLVR	34	50	Install APCs to improve rider count accuracy
	Coverage	40	11	15	No changes planned due to pandemic
Sunday	Local	38	14	15	No changes planned due to pandemic
		55	14	15	No changes planned due to pandemic
		BLUE	27	50	Install APCs to improve rider count accuracy
	Rapid	G2	29	40	No changes planned due to pandemic
		SLVR	30	50	Install APCs to improve rider count accuracy

*Port Authority does not have automatic passenger counters (APCs) on the light rail system and has identified APCs as a potential capital budget item for FY21 pending PennDOT funding. Installation of APCs should better account for light rail free rides in the Downtown area that are not accounted for in these figures.

ADHERENCE TO SERVICE GUIDELINES

Loads: Crowding

The service standards set maximum crowding levels for each route type. Maximum crowding levels are higher during peak times.

Maximum Passenger Loading (as a Percentage of Seating Capacity)

Maximum Passenger Loading (as a percentage of seating capacity)				
	Rapid Routes		Commuter Routes	Local and Coverage Routes
	LRT	BRT		
Weekday				
Peak Hour	250%	140%	120%	120%
Off-Peak	140%	120%	100%	100%
Saturdays				
All Day	140%	120%		100%
Sundays				
All Day	140%	120%		100%

Compared to CY2018, 15 routes experienced more crowding, 26 routes experienced less crowding, and 56 routes did not change. The routes experiencing more crowding were the 54, 65, 87, 93, 61D, 71A, 71B, 71C, 71D, O1, P3, P10, P17, P67, and Y46. Most of these routes serve Oakland and Downtown and have high ridership throughout the day with especially crowded peak periods.

In FY20, the following routes were out of compliance for crowding at least 10% of the time for peak or off-peak periods.

Route	Percent of Peak Trips Crowded	Route	Percent of Off-Peak Trips Crowded
61C	19%	P10	17%
71B	17%	61C	16%
61D	16%	P76	15%
71A	16%	71C	13%
54	14%	61D	13%
P1	12%	71B	11%
71C	11%		
71D	11%		
G31	11%		
P3	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 can limit the possibility of adding frequency to address overcrowding. Additionally, the 61C, 71B and P3 routes are planned to become bus rapid transit routes in 2023 which is intended to help with reliability and overcrowding through infrastructure improvements. The 61D, 71A, 54, 71C, and 71D routes should also benefit from these improvements.

ROUTE PERFORMANCE

Summary of Route Performance

Metrics by route for June 2019 to February 2020 are shown below. Highlighted values fall below service standards for that route type.

Route	Mode	Route Type	Days of Service	Average Weekday Riders	Average Saturday Riders	Average Sunday Riders	Passengers per Revenue Service Hour	In-Service Percent	Cost / Rider Served	Percent of Trips Crowded	On-Time Performance	Average Stop Spacing
1	Bus	Local	All Days	1,736	1,313	970	28	83%	\$9.92	1%	63%	1,119
2	Bus	Local	Weekday Only	1,020	-	-	18	89%	\$12.81	0%	60%	949
4	Bus	Coverage	No Sundays	651	257	-	24	98%	\$8.92	0%	77%	721
6	Bus	Local	All Days	1,209	525	476	38	88%	\$7.40	1%	79%	603
7	Bus	Commuter	Weekday Only	143	-	-	29	90%	\$8.35	0%	73%	816
8	Bus	Local	All Days	3,199	1,630	1,022	36	91%	\$6.79	0%	79%	681
11	Bus	Coverage	All Days	533	210	133	28	86%	\$11.25	0%	78%	672
12	Bus	Local	All Days	1,267	1,389	916	25	83%	\$10.44	2%	66%	1,453
13	Bus	Local	All Days	2,126	1,392	738	36	91%	\$6.60	1%	73%	711
14	Bus	Local	All Days	1,368	626	402	24	81%	\$12.98	0%	79%	1,265
15	Bus	Local	All Days	1,088	780	458	33	88%	\$8.37	0%	74%	632
16	Bus	Local	All Days	3,869	2,158	1,513	51	85%	\$5.39	1%	74%	775
17	Bus	Local	All Days	1,330	624	583	26	99%	\$8.38	0%	73%	943
18	Bus	Commuter	Weekday Only	93	-	-	19	89%	\$16.68	0%	95%	697
20	Bus	Coverage	Weekday Only	699	-	-	22	80%	\$12.71	0%	78%	1,213
21	Bus	Local	All Days	1,453	770	608	30	76%	\$9.56	0%	68%	1,358
22	Bus	Coverage	No Sundays	957	467	-	40	76%	\$7.54	0%	71%	1,270
24	Bus	Local	All Days	1,698	1,416	978	41	77%	\$6.97	0%	66%	1,516
26	Bus	Coverage	All Days	959	560	332	29	82%	\$10.27	0%	84%	768
27	Bus	Local	All Days	1,082	662	458	33	79%	\$8.74	0%	81%	808
29	Bus	Coverage	Weekday Only	1,032	-	-	24	80%	\$10.94	0%	57%	1,281
31	Bus	Local	All Days	1,623	866	607	27	91%	\$8.81	0%	67%	974
36	Bus	Coverage	Weekday Only	697	-	-	27	78%	\$10.77	0%	71%	1,120
38	Bus	Local	All Days	3,042	321	174	38	88%	\$6.93	5%	72%	1,059
39	Bus	Local	No Sundays	1,567	230	-	31	77%	\$10.46	2%	80%	878
40	Bus	Coverage	All Days	597	208	147	21	79%	\$14.48	0%	81%	731
41	Bus	Local	All Days	1,606	504	307	27	89%	\$9.01	2%	70%	841
43	Bus	Coverage	All Days	681	343	245	33	79%	\$9.12	0%	79%	829
44	Bus	Local	All Days	967	291	225	18	76%	\$15.96	0%	77%	861
48	Bus	Local	All Days	2,971	1,884	1,040	55	78%	\$5.39	2%	78%	711
51	Bus	Local	All Days	8,190	5,342	3,452	53	96%	\$4.43	4%	68%	990
53	Bus	Local	Saturday Only	-	371	-	19	83%	\$14.03	0%	68%	830
54	Bus	Local	All Days	4,297	2,353	1,192	36	87%	\$7.86	5%	69%	731
55	Bus	Local	All Days	1,115	827	643	21	98%	\$10.98	0%	75%	1,396
56	Bus	Local	All Days	1,693	886	659	33	95%	\$7.84	1%	67%	1,150
57	Bus	Local	All Days	1,230	860	635	33	85%	\$8.03	0%	64%	1,172
58	Bus	Local	All Days	1,187	283	174	31	90%	\$7.94	0%	73%	864
59	Bus	Local	All Days	2,096	1,916	1,307	26	89%	\$9.34	0%	69%	1,038
60	Bus	Coverage	Weekday Only	542	-	-	40	96%	\$5.21	0%	82%	625
64	Bus	Local	All Days	1,899	1,921	1,115	24	85%	\$12.11	0%	75%	854
65	Bus	Commuter	Weekday Only	487	-	-	49	73%	\$6.09	2%	66%	878
67	Bus	Local	All Days	2,148	979	508	31	92%	\$7.90	5%	62%	971
68	Bus	Local	Weekend Only	-	476	249	27	97%	\$8.53	0%	46%	-
69	Bus	Local	All Days	1,652	368	268	26	95%	\$9.13	5%	65%	892
71	Bus	Local	Weekday Only	75	-	-	11	96%	\$20.87	0%	64%	600
74	Bus	Coverage	No Sundays	954	483	-	24	94%	\$9.82	0%	69%	587
75	Bus	Local	All Days	3,680	1,674	1,250	45	94%	\$5.72	6%	70%	729
77	Bus	Local	All Days	2,318	1,053	717	31	89%	\$7.74	1%	59%	889
79	Bus	Coverage	All Days	982	805	441	30	93%	\$8.52	0%	67%	620

ROUTE PERFORMANCE

Route	Mode	Route Type	Days of Service	Average Weekday Riders	Average Saturday Riders	Average Sunday Riders	Passengers per Revenue Service Hour	In-Service Percent	Cost / Rider Served	Percent of Trips Crowded	On-Time Performance	Average Stop Spacing
81	Bus	Local	All Days	1,704	911	591	44	83%	\$6.44	0%	66%	658
82	Bus	Local	All Days	3,864	2,547	1,927	54	92%	\$4.37	0%	59%	565
83	Bus	Local	All Days	2,548	1,524	863	52	85%	\$5.15	1%	67%	679
86	Bus	Local	All Days	2,866	2,718	1,598	44	97%	\$5.25	1%	61%	622
87	Bus	Local	All Days	2,880	703	264	47	89%	\$5.71	4%	71%	608
88	Bus	Local	All Days	3,149	1,700	1,202	53	98%	\$4.48	1%	63%	843
89	Bus	Coverage	All Days	402	266	154	28	95%	\$9.66	0%	74%	601
91	Bus	Local	All Days	4,478	2,144	1,156	41	84%	\$7.01	3%	69%	744
93	Bus	Local	Weekday Only	2,248	-	-	40	87%	\$7.12	3%	74%	683
19L	Bus	Commuter	Weekday Only	650	-	-	44	68%	\$8.18	6%	67%	1,214
28X	Bus	Commuter	All Days	2,074	1,770	1,600	23	99%	\$10.08	4%	60%	3,606
51L	Bus	Commuter	Weekday Only	664	-	-	62	57%	\$6.70	5%	71%	1,312
52L	Bus	Commuter	Weekday Only	478	-	-	31	77%	\$9.41	1%	67%	1,020
53	Bus	Local	Saturday Only	-	371	-	19	83%	\$14.03	0%	68%	830
53L	Bus	Local	Weekday Only	1,444	-	-	26	96%	\$8.27	1%	70%	1,225
61A	Bus	Local	All Days	5,138	3,437	2,403	46	85%	\$5.57	7%	64%	682
61B	Bus	Local	All Days	4,632	2,943	1,944	48	81%	\$5.64	7%	64%	774
61C	Bus	Local	All Days	6,435	4,693	3,422	54	84%	\$4.66	17%	60%	956
61D	Bus	Local	All Days	5,835	3,601	2,266	55	85%	\$4.82	14%	65%	869
71A	Bus	Local	All Days	5,747	2,763	1,931	63	92%	\$3.91	11%	66%	591
71B	Bus	Local	All Days	5,189	2,499	1,662	61	91%	\$4.15	13%	65%	610
71C	Bus	Local	All Days	5,878	3,312	2,296	57	97%	\$3.90	13%	59%	672
71D	Bus	Local	All Days	4,591	2,105	1,457	48	96%	\$4.85	8%	65%	644
SLVR	Light	Rapid	All Days	6,180	1,931	1,617	70	92%	\$7.96	No data	85%	2,390
BLUE	Light	Rapid	All Days	8,873	1,369	1,302	76	99%	\$6.55	No data	88%	2,441
G2	Busway	Rapid	All Days	3,845	996	724	51	85%	\$5.51	3%	83%	2,835
G3	Bus	Commuter	Weekday Only	949	-	-	34	69%	\$9.80	7%	75%	6,279
G31	Bus	Commuter	Weekday Only	654	-	-	33	77%	\$9.28	9%	72%	1,616
INC	Incline	Rapid	All Days	1,095	2,261	1,202	86	100%	\$4.03	No data	-	-
O1	Bus	Commuter	Weekday Only	1,238	-	-	79	65%	\$5.12	8%	66%	4,401
O12	Bus	Commuter	Weekday Only	1,376	-	-	48	69%	\$7.20	6%	73%	2,297
O5	Bus	Commuter	Weekday Only	105	-	-	23	57%	\$15.61	0%	70%	1,087
P1	Busway	Rapid	All Days	10,249	5,325	3,425	108	97%	\$2.43	7%	84%	4,226
P2	Busway	Rapid	Weekday Only	1,560	-	-	113	88%	\$2.54	6%	88%	3,529
P10	Bus	Commuter	Weekday Only	702	-	-	29	63%	\$11.26	10%	68%	1,896
P12	Bus	Commuter	Weekday Only	1,169	-	-	33	69%	\$9.38	10%	65%	2,579
P13	Bus	Commuter	Weekday Only	354	-	-	36	67%	\$9.82	0%	71%	1,229
P16	Bus	Commuter	Weekday Only	842	-	-	30	69%	\$10.91	3%	71%	1,550
P17	Bus	Commuter	Weekday Only	396	-	-	41	84%	\$6.17	2%	67%	1,045
P3	Bus	Commuter	Weekday Only	3,139	-	-	63	77%	\$5.02	7%	89%	2,062
P67	Bus	Commuter	Weekday Only	544	-	-	39	74%	\$7.95	6%	73%	1,920
P68	Bus	Local	Weekday Only	1,440	-	-	37	87%	\$6.95	2%	63%	1,185
P69	Bus	Commuter	Weekday Only	251	-	-	32	68%	\$10.24	2%	53%	1,329
P7	Bus	Commuter	Weekday Only	684	-	-	29	82%	\$9.03	0%	57%	1,615
P71	Bus	Local	Weekday Only	592	-	-	38	86%	\$7.12	3%	76%	1,230
P76	Bus	Commuter	Weekday Only	957	-	-	38	61%	\$9.00	6%	67%	2,082
P78	Bus	Commuter	Weekday Only	1,335	-	-	33	90%	\$7.80	5%	59%	1,208
RED	Light	Rapid	All Days	10,466	5,774	4,322	86	99%	\$5.74	No data	88%	1,925
Y1	Bus	Commuter	Weekday Only	633	-	-	44	65%	\$8.35	5%	72%	2,555
Y45	Bus	Commuter	Weekday Only	274	-	-	28	60%	\$13.38	0%	76%	1,200
Y46	Bus	Local	All Days	1,873	827	623	28	84%	\$9.33	2%	73%	1,387
Y47	Bus	Local	No Sundays	1,140	536	-	29	89%	\$8.44	1%	72%	1,304
Y49	Bus	Local	All Days	1,295	668	413	31	87%	\$7.85	1%	69%	1,350

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, 12.7% of the population is low-income and 21.4% of the population is minority. Any area with a low-income or minority population composition exceeding the 12.7% and 21.4% thresholds respectively are identified as “Low-income” and “Minority” areas.

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

Data for all metrics encompasses the entire FY20 period, with the exception of service spans and frequencies. These two metrics are scored using schedules from the November 2019 to March 2020 period as this was the most recent schedule period before COVID-related service reductions and changes. Finally, crowding statistics are presented as “pre-pandemic” and “during pandemic” due to the new vehicle capacity limits introduced in late March 2020 to prevent crowding on vehicles during the COVID-19 pandemic.

Low-income and non low-income routes: Summary table

Metric	Low Income Route	Non Low Income Route	Raw Difference / Pct. Difference	Direction of Difference
Number of Routes	83	17	NA	NA
Average On Time %	72%	70%	2% / 3%	Favorable
Average Out of Service %	0.56%	0.65%	0.09% / 14%	Favorable
Average Crowding % - Pre-Pandemic	3%	3%	-	Neutral
Average Crowding % - During Pandemic	9%	3%	6% / 200%	Adverse, Major
Average Service Span - Weekday (Hours)	16	12	4 / 33%	Favorable
Average Service Span - Sat (Hours)	18	16	2 / 13%	Favorable
Average Service Span - Sun (Hours)	16	15	1 / 7%	Favorable
Average Trips per Service Hour - Weekday	4.5	4.0	0.5 / 13%	Favorable
Average Trips per Service Hour - Saturday	3.2	2.0	1.2 / 60%	Favorable
Average Trips per Service Hour - Sunday	2.8	2.0	0.8 / 40%	Favorable

Low-income routes: Service reliability and quality

About 80% of PAAC routes serve low-income communities. In general low-income routes scored more favorably on all service quality and reliability metrics compared to non low-income routes. For FY20, these routes scored slightly higher on OTP, with an average of 72% compared with 70% for non low-income routes. Low-income routes were also slightly less likely to go out of service.

Pre-pandemic, low-income and non low-income routes scored equally for crowding at 3% of all trips. Once the pandemic started, though, overcrowding driven by COVID-19 related employee absences shifted towards low-income routes. The ten low-income routes with the worst crowding are listed below. All these routes are Local or Coverage routes that had service added back in May 2020 or August 2020, if not sooner. Additionally the 59, 51, and 1 received additional frequency in the November 2020 schedule change.

TITLE VI EVALUATION

Route	Percent of Trips Crowded During Pandemic
59	35%
51	33%
1	29%
60	28%
77	28%

Route	Percent of Trips Crowded During Pandemic
82	26%
83	26%
61C	26%
56	21%
6	19%

Low-income routes: Service span and frequency

Service spans for low-income routes are generally higher than non low-income routes; this is true for weekdays, Saturdays, and Sundays. Low-income routes also have higher frequencies, averaging 0.5 to 1.2 more trips per hour depending on the service day. Overall low-income routes perform better on every metric than non low-income routes, which speaks to PAAC's commitment to providing reliable and frequent service to areas that most rely on transit.

Minority and non-minority routes: Summary table

Metric	Minority Route	Non Minority Route	Raw Difference / Pct. Difference	Direction of Difference
Number of Routes	66	34	NA	NA
Average On Time %	71%	73%	2% / 3%	Adverse, Minor
Average Out of Service %	0.63%	0.47%	0.16% / 34%	Adverse, Major
Average Crowding % - Pre-Pandemic	3%	3%	-	Neutral
Average Crowding % - During Pandemic	9%	6%	3% / 50%	Adverse, Major
Average Service Span - Weekday (Hours)	16	14	2 / 14%	Favorable
Average Service Span - Sat (Hours)	17	17	-	Neutral
Average Service Span - Sun (Hours)	16	16	-	Neutral
Average Trips per Service Hour - Weekday	4.4	4.5	0.1 / 2%	Adverse, Minor
Average Trips per Service Hour - Saturday	3.1	3.0	0.1 / 3%	Favorable
Average Trips per Service Hour - Sunday	2.7	2.9	0.2 / 7%	Adverse, Minor

Minority routes: Service reliability and quality

Out of service showed a major adverse difference between minority and non-minority routes. In FY20 0.63% of total service hours on minority routes were cancelled compared to 0.47% for non-minority routes. Available staffing at the garages is the biggest factor contributing to out of service; due to collective bargaining agreement and route qualification limitations, operators cannot be readily moved from locations to address these absences. Rather, any significant modifications to try and address these pandemic-related out of service hours challenges must be implemented through an operator run pick.

The ten minority routes with the highest out of service percent are listed here to target for service preservation in the event of manpower shortages. Eight of those routes operate out of the East Liberty garage. Recognizing this disparity, starting November 2020 Port Authority began moving additional operators to this garage to help reduce out of service consistent with its collectively bargained picking process..

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 headways.

TITLE VI EVALUATION

Route	Garage	Out Of Service Percent
P2	East Liberty	5.49%
P17	East Liberty	3.63%
86	East Liberty	1.65%
82	East Liberty	1.58%
15	Ross	1.39%

Route	Garage	Out Of Service Percent
P71	East Liberty	1.06%
71A	East Liberty	1.05%
13	Ross	0.97%
P69	East Liberty	0.91%
88	East Liberty	0.90%

While minority and non-minority routes scored equally for crowding before the pandemic, crowding worsened significantly on minority routes during the pandemic. The ten minority routes with the worst crowding are listed below. Of these, only the 59 received additional frequency with the November 2020 service change. The rest will be prioritized for larger vehicles where possible and additional service in the March 2021 service change depending on the pandemic's further impacts in the coming months and to the extent Port Authority's resources otherwise enable it to continue to address these crowding concerns.

Route	Percent of Trips Crowded During Pandemic
59	35%
24	28%
60	28%
77	28%
82	26%

Route	Percent of Trips Crowded During Pandemic
83	26%
61C	26%
56	21%
6	19%
16	19%

Minority routes: Service span and frequency

Service spans on minority route average the same or better than non-minority routes. Similarly, frequencies were roughly the same for weekdays and Saturdays. On Sundays, minority routes average 2.7 trips per hour versus 2.9 trips per hour for non-minority routes. This disparity stems from route types: four of the 34 non-minority routes are designated rapid routes (G2, RED, BLUE, and SLVR), which have high minimum frequencies under PAAC's service standards. A greater proportion of minority routes are designated Locals which have lower minimum frequencies.

SERVICE REQUESTS FY2020

Service Request Process and Limitations

Port Authority's Service Guidelines include a process for the public to submit a request for a major service change. Requests are first evaluated to see if they are major or minor. A major service change is defined as any service change which affects more than 30 percent of a route's miles or operating hours, and receives a thorough analysis of the request's impacts on efficiency, equity, and effectiveness. Port Authority receives service requests throughout each fiscal year; similar requests are aggregated, and some requests may be deemed infeasible at this stage. The resulting list of grouped requests are then mapped, costed, analyzed and ranked against each other to determine the most efficient, equitable, and effective requests for implementation.

Minor service changes are made four times each year. These requests do not require a ranking process and are implemented as resources are available or changes are needed due to road closures or other events.

Requests from Fiscal Year 2020

Port Authority received 227 unique major requests for service changes in FY20. Requests that did not meet service guidelines, have been evaluated in the past or were already scheduled to be implemented were removed; from the remaining list, 48 unique ideas were represented and ranked. The full list is available online at [<https://www.portauthority.org/inside-Port-Authority/Transparency/surveys-and-reports/>]. The requests were aggregated when similar, and may be slightly different than the original request if two or more very similar requests were made. Efforts were made to adjust requests if necessary to ensure rankings reflected the most feasible way service could be implemented.

Port Authority re-ranked and included requests submitted in previous years since the inception of the Annual Service Report Program. The evaluation thus includes all major requests between 2015 and June 30th of 2020. The top 40 of all the requests have been listed in the next page.

Port Authority also received minor requests, which may include adding trips to alleviate overcrowding, adding a new bus stop, or rerouting a bus a short distance. The minor requests will be taken into consideration by Department of Service Development, and if they are deemed feasible and beneficial to riders, adjustments may be made throughout the year as schedules and budget allows. No rankings or reporting on minor service changes will be developed at this time.

Ranking Requests for Major Service Change

Rankings are based on the three overarching goals of efficiency, effectiveness, and equity.

Efficiency is calculated by dividing the expected annual total riders gained or lost by the annual cost or savings. Expected ridership is calculated using census data for new service areas, and current ridership by route and/or stop for existing service areas. Cost is calculated using a cost-per-mile formula.

Effectiveness measures the expected travel time savings, new service area, and added trips of the request. Travel time calculation methodology varies by request type: a request that would eliminate a transfer would use the average wait time, while a request to serve a new area would use walking distance to the nearest stop.

Equity measures how well the request would serve Allegheny County's residents with higher mobility needs. Port Authority assigns an equity score to each census block group based on its equity index, which can be found at <https://tinyurl.com/PAAC-EquityIndex>. The score is an indexed combination of high transit need population groups, including low income populations and low wage jobs, racial and ethnic minorities, people with disabilities, limited English proficiency populations, older adults, people under age 18, households without access to vehicles and single female householders (with children). To calculate the equity score of a request, a route is developed with tentative stops and a walkshed is created for each stop. The request's equity score is calculated by averaging the equity scores of all block groups the requested service walkshed overlaps significantly.

Each request received a 0-100 score for these three categories. The scores were averaged to create a final score (sorted on the following pages in order of highest Final Score to lowest Final Score).

Recommendations

The ranking process culminates in two general recommendations:

Prioritize for implementation: These requests met guidelines and score at least 60 on two or more categories. These requests should get first priority for implementation.

Put in if budget allows: These requests met guidelines. Requests at the top of the ranking list on the next page that propose to do more than simply add service to a current route will be prioritized in order to go through a public engagement process.

Does not adhere to Service Guidelines: These requests failed to meet the Authority's service standards. This could be due to a variety of reasons, such as too few projected passengers per hour, or because the request would cut service to a key destination.

SERVICE REQUESTS FY2020

Request Year	Service Request Description	Cost Annual	Estimated Annual Ridership	Cost (Savings) per Rider Gained	Efficiency Score	Equity Score	Effectiveness Score	Final Score	Recommendation
2020	Shorten routes 61D, 71A, 71C, 71D instead of going in CBD	-\$8,072,104	1,247,988	-\$6.47	99	74	98	90	Planned for Oakland BRT Project in 2023
2016	Reroute 21: Serve Mooncrest on every other trip	\$106,316	35,301	\$3.01	94	90	64	83	No longer feasible due to prior service change
2016	Extend 12 out Perry Highway to Wexford (Market District)	\$253,320	50,516	\$5.01	90	76	74	80	Requires peak vehicles
2019	Add midday service to 7	\$116,435	32,686	\$3.56	93	82	61	79	Prioritize for implementation
2020	Restore reverse commute trips P17	\$396,836	32,409	\$12.24	76	85	60	74	Prioritize for implementation
2019	Alternate 28X trips to serve the airport directly w/o serving Robinson	-\$1	(2,529)	\$0.00	97	63	58	73	Service reduction; not recommended
2017	Interline P1 and G2 if City projects in Downtown alter bus routings	\$1,059	2,555	\$0.41	96	82	37	72	Requires changes to Downtown network
2017	New Route: Squirrel Hill to Bakery Square direct route.	\$619,519	89,977	\$6.89	86	65	62	71	Requires peak vehicles
2017	Add service day: Weekend service P3	\$657,329	72,264	\$9.10	83	93	35	70	Planned for Oakland BRT Project in 2023
2020	Extend 93 to Waterfront and the PGH ZOO	\$723,443	188,550	\$3.84	92	59	60	70	Prioritize for implementation
2018	Eliminate 29	-\$2,503,353	(153,510)	\$16.31	67	86	56	70	Major service reduction; not recommended
2017	Put on/off roads in service to provide West Homestead service - flexible route - choose headways	\$44,457	2,678	\$16.60	67	99	43	70	Prioritize for implementation
2019	Extend on/off roads to Mifflin garage through W. Homestead via Mifflin Rd and Lebanon Rd	\$143,029	17,648	\$8.10	85	73	49	69	Prioritize for implementation
2020	Extend 77 Saturday service via Leechburg to CCAC Boyce	\$68,000	5,980	\$11.37	78	79	49	69	Prioritize for implementation
2020	Leland Point (Wolfe Dr) to Waterfront	\$767,865	113,094	\$6.79	86	43	77	69	Prioritize for implementation
2016	Reroute 61D to Beechwood Blvd via Forward Ave, return to Murray Ave	\$417,388	26,051	\$16.02	69	81	56	69	Service reduction; not recommended
2019	Discontinue 59 service to Century III Mall	-\$350,033	23,384		99	46	59	68	Minor service reduction
2017	Extend 58 to South Side via Hot Metal.	\$280,503	13,925	\$20.14	60	74	70	68	Requires peak vehicles
2016	Extend every 3rd trip on 8 out Perry Hwy to Wexford	\$1,233,788	61,940	\$19.92	61	80	62	68	Requires peak vehicles
2016	Reroute 28X directly to the Airport every 25 mins, double service on 29 to Robinson to replace it	\$1,673,489	110,823	\$15.10	71	44	88	68	Requires peak vehicles

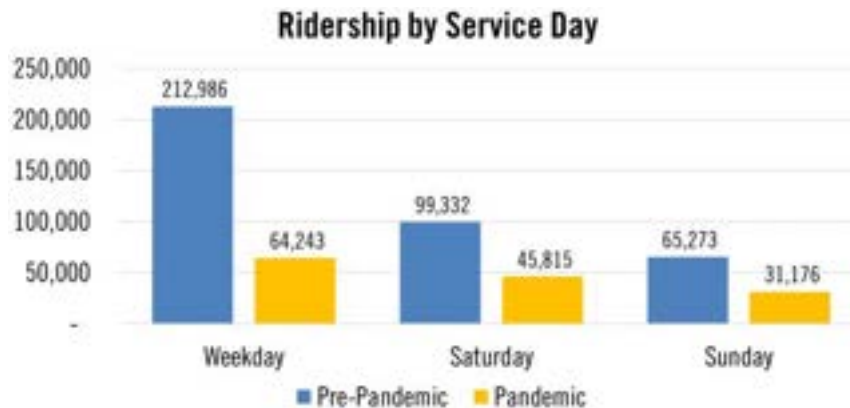
SERVICE REQUESTS FY2020

Request Year	Service Request Description	Cost Annual	Estimated Annual Ridership	Cost (Savings) per Rider Gained	Efficiency Score	Equity Score	Effectiveness Score	Final Score	Recommendation
2017	Add service day: Weekend service 78	\$448,804	32,367	\$13.87	72	87	42	67	Prioritize for implementation
2017	Reroute: Remove 58 from Oakland	-\$365,183		\$5.48	89	75	35	66	Minor service reduction
2016	New Route: Middle Rd Flyer	\$655,212	40,877	\$16.03	69	68	61	66	Requires peak vehicles
2019	Rt 16 to serve on Union Street and New Brighton Road	\$206,599	75,807	\$2.73	94	67	36	66	Put in if budget allows
2018	Express service in New Kensington (outside Allegheny)	\$304,848	11,781	\$25.88	46	94	56	65	Put in if budget allows
2019	Saturday service Route P7	\$256,860	11,689	\$21.98	55	95	44	65	Evaluate for potential weekday midday service additions first
2016	New Route: Restore 60B Jenny Lind	\$1,006,718	27,846	\$36.15	33	97	63	64	Requires peak vehicles
2020	Weekend service P17	\$207,744	22,627	\$9.18	82	89	22	64	Restore reverse commute trips first
2018	Create 69 shorts to Wilkinsburg station in between hourly longs	\$1,038,389	65,867	\$15.77	70	86	36	64	Put in if budget allows
2016	Extend 8 out Perry Hwy peak only	\$686,458	33,447	\$20.52	59	80	53	64	Requires peak vehicles
2017	Add service day: Weekend service P78	\$640,393	32,367	\$19.79	61	91	38	63	Put in if budget allows
2017	Extend 17 out Perry Hwy to McCandless or Wexford on ALL TRIPS	\$1,331,593	50,516	\$26.36	44	76	70	63	Requires peak vehicles
2020	Weekend service P76 between Wilkinsburg and Olympia PNR	\$373,000	22,646	\$16.47	67	66	56	63	Evaluate for potential weekday midday service additions first
2017	Extend 16 out Perry Hwy on at least some trips via Emsworth, Camp Horne	\$1,331,593	50,516	\$26.36	44	76	69	63	Requires peak vehicles
2020	New route that serves Giant Eagle and Home Depot in Ben Avon and Target in Mt Nebo as well as Brighton Rd.	\$940,617	451,970	\$2.08	95	17	76	63	Put in if budget allows
2020	New route/better transfer between Southside and Waterfront	\$767,865	192,567	\$3.99	91	35	61	62	Put in if budget allows
2018	Reroute service on the 55 in two places the way the 50B operated	\$335,545	9,972	\$33.65	38	97	52	62	Put in if budget allows
2016	New Route: Restore 33F	\$349,305	53,015	\$6.59	87	39	60	62	Requires peak vehicles
2017	Extend 13 out Perry Hwy on at least some trips to McCandless or Wexford	\$1,331,593	50,516	\$26.36	44	76	66	62	Requires peak vehicles
2019	Service restored (55D) on Long fellow drive, Munhall	\$174,653	19,278	\$9.06	83	53	50	62	Requires peak vehicles

SERVICE IMPACTS OF COVID-19

Ridership

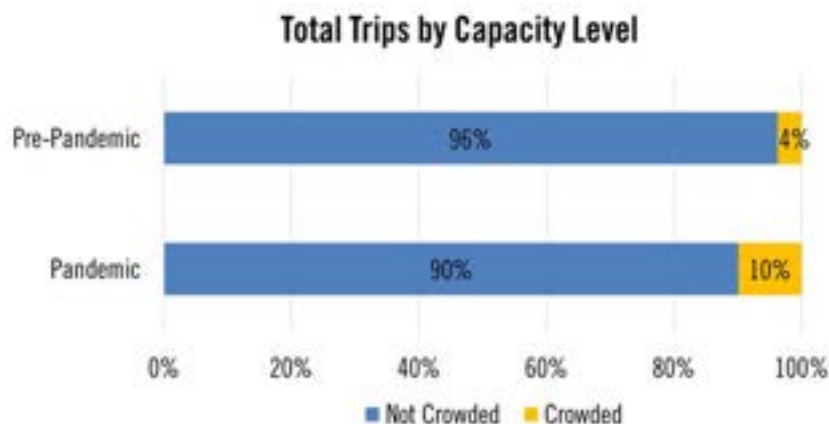
Like every transit agency worldwide, Port Authority of Allegheny County saw a massive drop in ridership in March 2020 as Allegheny County instituted a COVID-19 lockdown. Systemwide ridership dropped to a low of about 45,000 weekday riders, down 75% from normal. By the end of the fiscal year, ridership had increased to about 62,000 weekday riders.



Crowding

To enable some level of social distancing on vehicles, Port Authority imposed capacity limits for each vehicle type. The Authority also imposed a blanket frequency cut to account for the 75% drop in ridership. While many routes were running basically empty, others had issues with overcrowding and pass-ups. Service was subsequently added back on higher ridership routes to reduce crowding.

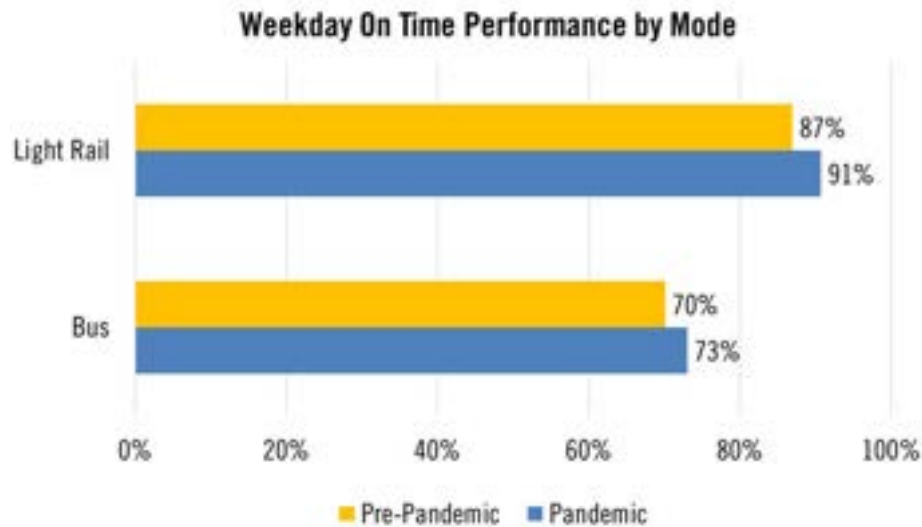
The Authority is actively working to rebalance service to account for different levels of demand in different communities. The November 2020 schedule change incorporated cuts and increases on over 50 routes, as well as added weekend service, which is performing better than weekday ridership. The COVID-19 pandemic has created an unprecedented staffing challenge and drastic shift in ridership numbers and patterns that Port Authority is working as diligently as possible to respond and adapt to.



SERVICE IMPACTS OF COVID-19

On Time Performance

In addition to reduced transit ridership, Allegheny County has seen an overall reduction in vehicle traffic and congestion. This led to an increase in on time performance.



UPDATES ON RECENT SERVICE CHANGES

Minor Service Updates

The following table provides a summary of minor service changes made in fiscal year 2020 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/removing individual trips to better serve riders and increasing/decreasing the scheduled time for buses to get from one point to another to improve on-time performance.

Issue Addressed	Route(s)
On Time Performance	19L, 36, 39, 40, 44, 48, 51, 51L, 67, 69, 77, 87, 91, 93, P10, Y1, Y46, Y47, Y49
Span of Service or Frequency	68, 71
Added Trips or Adjusted Trip Times	29, 52L, P71, P10
Minor Extensions	2, 12
Reroutes	21, 81, 82, 83, P10

Major Service Updates

The following table provides a summary of service changes made since 2018 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 FY20 changes were all implemented in March 2020, just before Allegheny County went into lockdown, so they are not yet being evaluated for ridership..

Year	Route	Major Change	Change in riders (per Weekday / Saturday / Sunday)			Efficiency of Change (riders/hour on altered segments)	Annual Cost	Cost per Rider Gained (Lost)
			Projected Gain	Actual Gain 2018	FY20			
2018	21	Reroute the 21 on every other trip via University Blvd to University Blvd PNR in Moon Township instead of Sewickley	169 / 85 / 51	36 / 2 / 29	56 / 40 / 30	11.9	\$272,391	\$15.00
	28X	Extend 28X to East Liberty Garage via Fifth Avenue	10 / 5 / 3	154 / 122 / 109	72 / 84 / 82	7.5	\$204,453	\$7.42
2020	2	Addition of weekend service	- / 150 / 90	-	-	-	\$248,551	-
	53	Addition of Sunday service	- / - / 213	-	-	-	\$413,204	-
	60	Addition of Saturday service	- / 293 / -	-	-	-	\$293,883	-
	67	Extension of weekend route	- / 212 / 127	-	-	-	\$220,412	-
	68	Extension of weekend route (conversion to P68)	- / 462 / 277	-	-	-	\$268,929	-

CHANGES COMING IN FY2021

Service Additions and Changes

The coronavirus pandemic has wrought massive changes in transit ridership across the nation. In response, Port Authority implemented its biggest service change in a decade in November 2020 for fiscal year 2021. Change include increased service on the 51, 59, 12, 1, and 44, as well as reduced service on commuter routes where ridership has declined as much as 80%. Permanent changes include an extension of the P68 to serve Forbes Hospital in Monroeville, a weekend extension of the 2 to North Hills Village shopping center, and extending every trip on the Red Line to South Hills Village. In all, 55 routes have new schedules.

Port Authority has launched new weekend service on the 20, 29, 36, and 93 as well as new Sunday service on the 22, 39, 60, and 74. Weekend ridership has remained strong throughout the pandemic.

Summary

This was the fifth 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.

