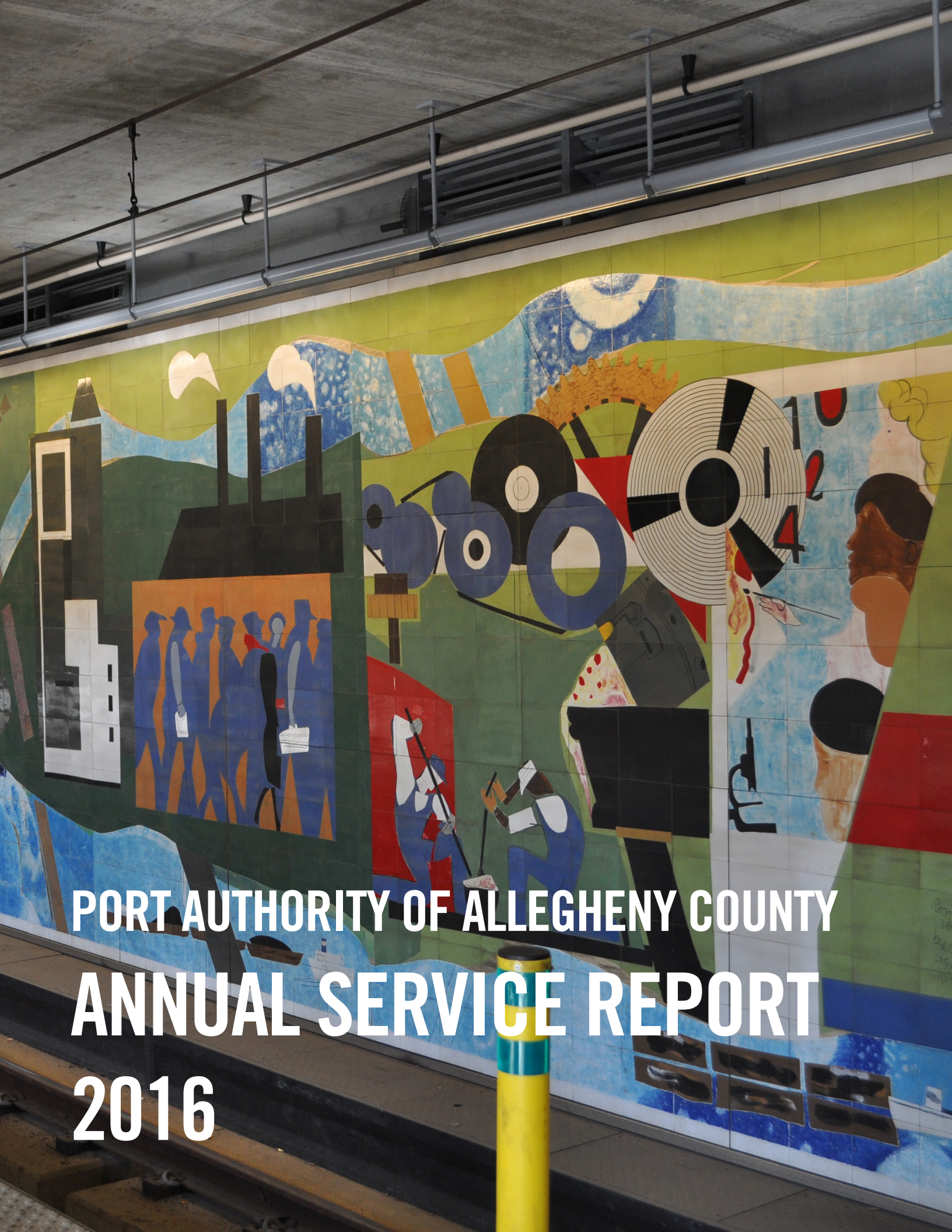


PORT AUTHORITY OF ALLEGHENY COUNTY

ANNUAL SERVICE REPORT 2016

CONTENTS

EXECUTIVE SUMMARY

The bright future of transit in Allegheny County continued in 2016. Port Authority maintains its solid financial position thanks to the state funding secured in 2013 through Act 89, which permitted a long-term look at fare policy, improving on-time performance, reducing overcrowding, rolling out the first phase of new wayfinding, and proposing upgraded service in the form of a joint Allegheny County-City of Pittsburgh-Port Authority Bus Rapid Transit project.

The Port Authority of Allegheny County strives to provide a range of safe, quality transit services in a manner that satisfies three primary goals: efficiency, effectiveness and equity.

Efficiency is achieved through providing the highest amount of value to riders by using resources optimally to achieve the greatest output (passenger trips) with the least inputs (time, vehicles, staff, etc.). Effectiveness is achieved through maximizing our resident's access to and options for transit in order to grow ridership and promote long term viability within the region by reducing congestion, encouraging transit-oriented development, and curbing environmental impacts. Finally, equity is achieved through improving mobility for those with the greatest need by providing targeted and representative service to specific populations within Allegheny County, such as those without access to vehicles or with limited incomes. Balancing these three, often competing goals, requires Port Authority to review its current and proposed services to continually improve and evolve.

Calendar year 2015 was the first year that Port Authority publicly released its metrics and route performance with respect to its service guidelines. These Transit Service Guidelines, which have existed at Port Authority since 2009 with the Transit Development Plan (and existed prior to that as Service Standards), were updated and approved by the Port Authority Board in June 2015 to reflect realistic metrics for providing efficient, effective and equitable transit service in Allegheny County.

Port Authority collects, on an ongoing basis, any request for a major change to its transit system. All requests are put through an evaluation process which includes multiple measures for determining the efficiency, effectiveness, and equity of each proposal. All proposals, regardless of who made them, are then ranked against one another to determine which proposals best balance these three goals. Ranked proposals have been identified in this document and, if budget is available after bringing current service into compliance with guidelines, may be carried out in the upcoming service year in order of their rank.

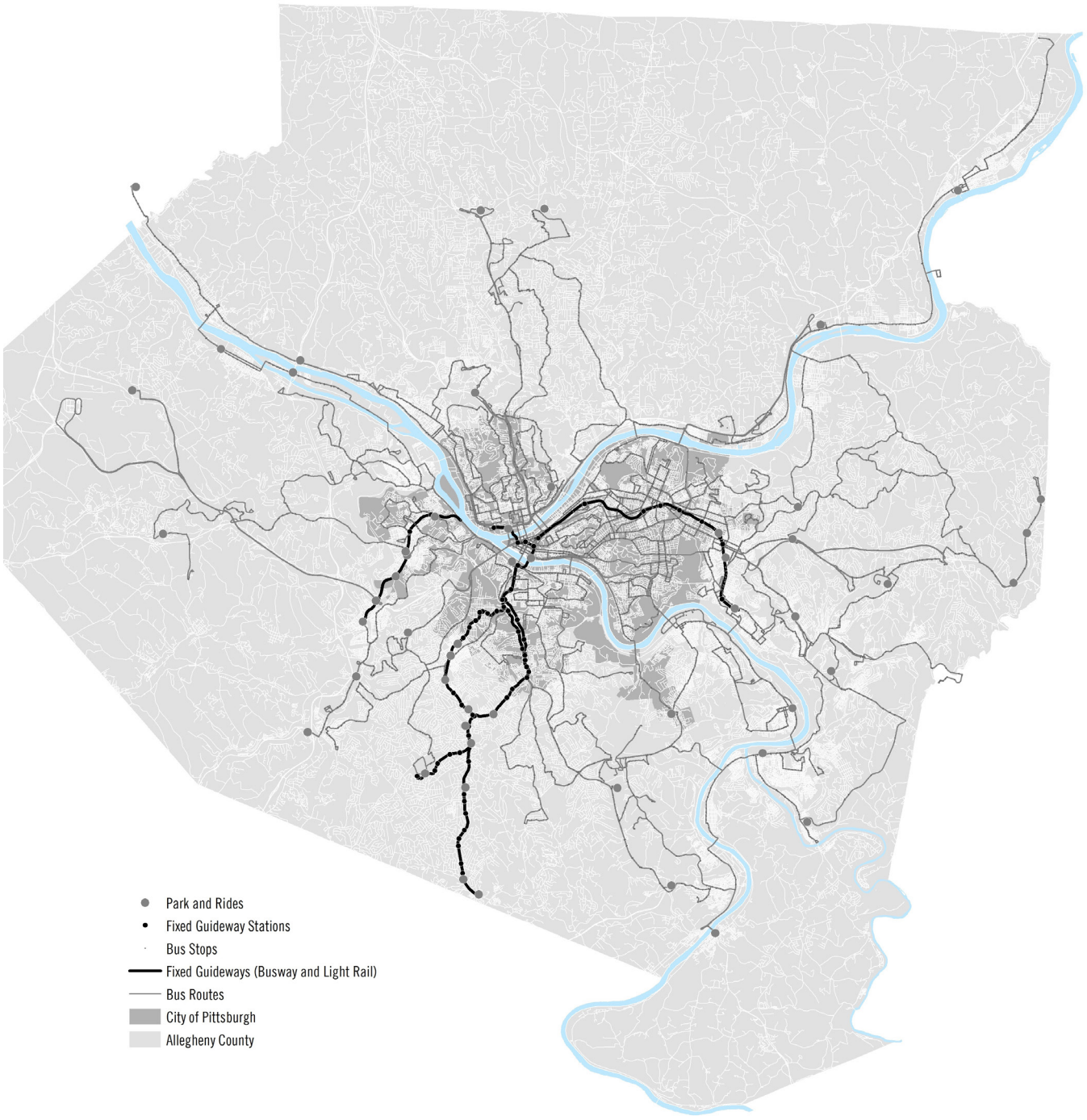
Port Authority hopes that this era of transparency and data-driven decision-making assures riders that the organization is constantly striving to better itself, and evolve with new technologies and data, while maintaining its emphasis on local knowledge and a deep understanding of the communities it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

Note: This report summarizes system level data using fiscal year (July 1 2015 - June 30 2016) data and route level data using calendar year 2016 data.

SYSTEM OVERVIEW

Overview of Port Authority's Transit Services

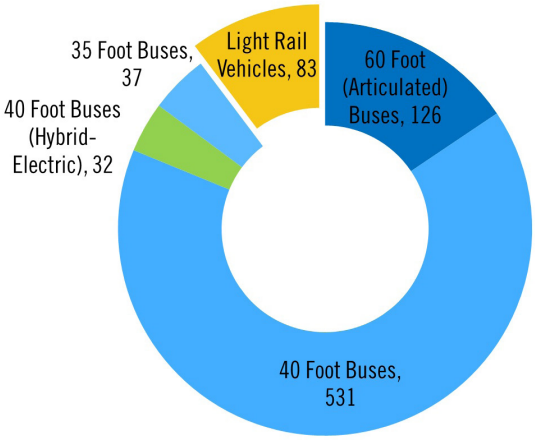
Port Authority of Allegheny County provides public transportation services within Allegheny County, including the City of Pittsburgh, in Southwest Pennsylvania. These services include 98 bus routes (three of which are rapid fixed guideways, or busways which run below grade along designated, bus-only streets), three light rail lines, and 2 inclined planes (steep railway powered by cables), one of which is operated by an outside entity. 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 more than 7,000 transit stops and stations, 700 shelters, 54 Park and Ride lots, 129 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 75 new buses in the fall of 2016 and was able to retire buses that had reached the end of their useful life. The current fleet size is 726 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 had 7,001 transit stations and stops at the end of 2016, of which 6,893 were for buses, 104 for light rail, and four for the inclines.

Shelters

Port Authority has 103 shelters at fixed guideway (light rail and busway) stations and 182 shelters at bus stops throughout the county. Additionally, 298 bus stops have shelters owned by another entity (these are mostly advertising shelters). Overall, 583, or eight percent, of Port Authority's transit stops/stations are sheltered. Of Port Authority's 63,823,513 rides in 2016, approximately 26,800,000 of riders were sheltered while waiting for transit vehicles. This comprises about 42 percent of the ridership.

Park and Ride Lots

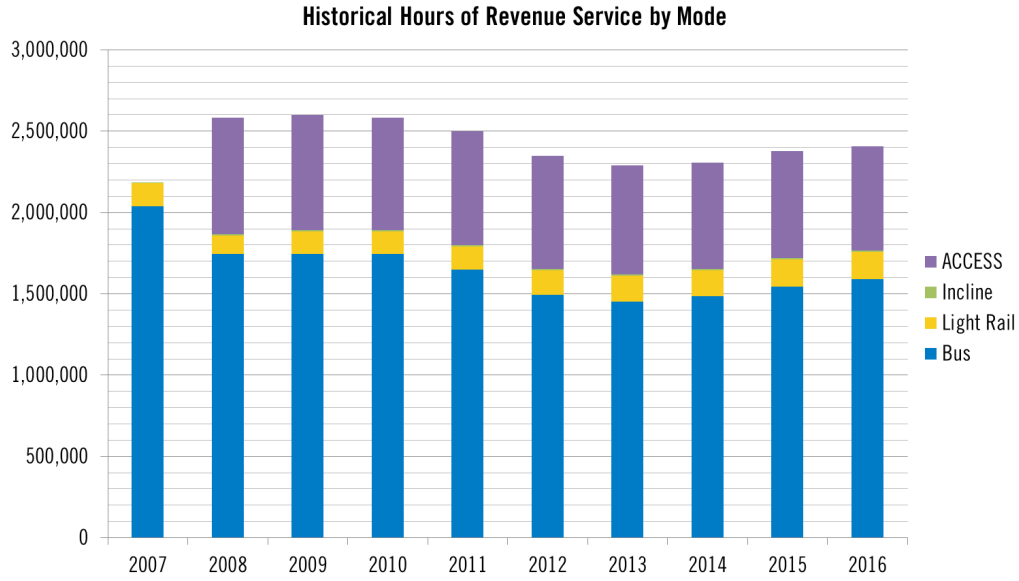
Port Authority riders can use 53 park and ride lots with 14,106 parking spaces. Port Authority owns 24 of these lots (totaling 7,252 spaces). The remaining lots (29 lots with 6,854 spaces) are either leased by the Port Authority or are owned by another entity but advertised in Port Authority's system due to their proximity to transit service. These parking spaces were filled with approximately 10,226 vehicles (72 percent full), on average in 2016, providing access to at least 20,452 trips per day, or about ten percent of Port Authority's riders.

*Note: In the following sections, unless otherwise noted system level data is measured by fiscal year [July 1 2015 to June 30 2016] and route level data is measured by calendar year [January 1 to December 31 2016]). When Peer transit agency data is used for comparison, those comparisons use fiscal year 2015 data due to the delayed release of publicly available data from the National Transit Database.

HISTORICAL SERVICE

Service Levels

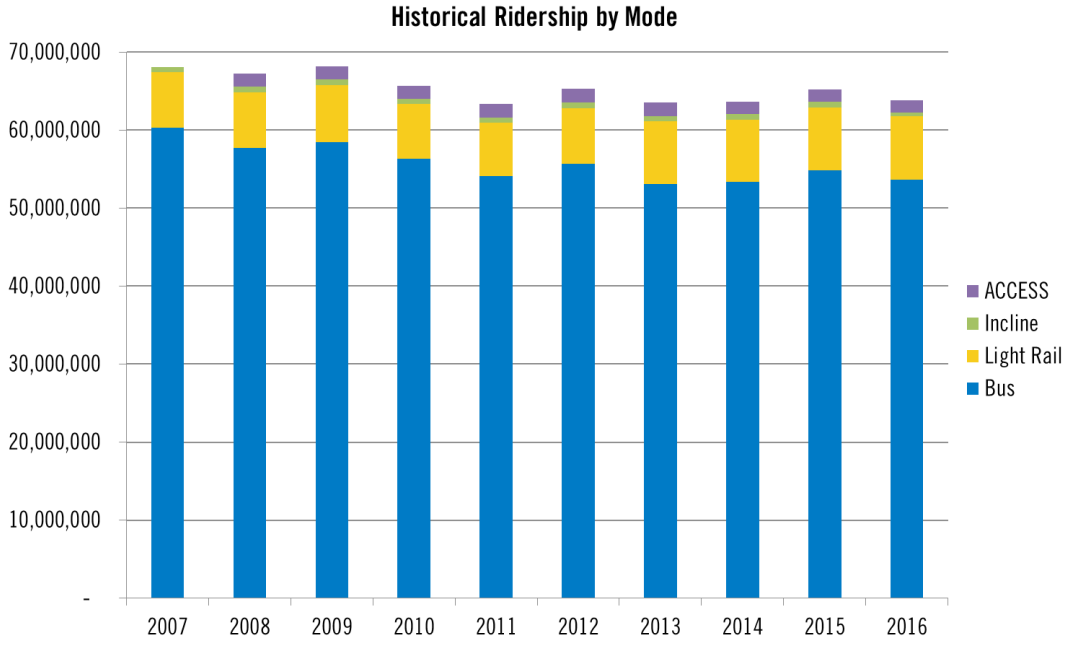
Port Authority has undergone three major service reductions in the last decade; a 15 percent service cut in 2007, service changes in 2009 with the Transit Development Plan (TDP) and another service cut in 2011, reducing service by another 13 percent. Altogether, fixed route (non-paratransit) service decreased by 27 percent between 2006 and 2013. ACCESS paratransit service was added to the range of services Port Authority provides in 2008, increasing overall service levels. Since 2013, the point at which service provided was the lowest; service has increased slowly to its current level of 2,404,917 revenue vehicle hours per fiscal year, five percent higher than in 2013.



Ridership

Over the last ten years, Port Authority has seen a slow ridership decrease, mostly in response to the service cuts between 2007 and 2011. However, the ridership loss between 2006 and 2011 (when ridership was at its lowest) was much less significant at only ten percent than the overall reduction in fixed route service of 27 percent. Ridership has been fairly steady since 2013.

In FY2016, ridership was down 2.1 percent from FY2015 ridership. Bus ridership declined about two percent, both light rail and paratransit ridership increased about one percent, and the incline saw a significant ridership decline due to a several-month closure for repairs in the fall of 2015. This decline follows a national trend seen in 2016 of ridership loss on transit due to lower gasoline prices and increased use of ride-sharing services. The nine peer agencies which Port Authority compares itself against saw, on average, a 2.2% drop in ridership in FY2016.

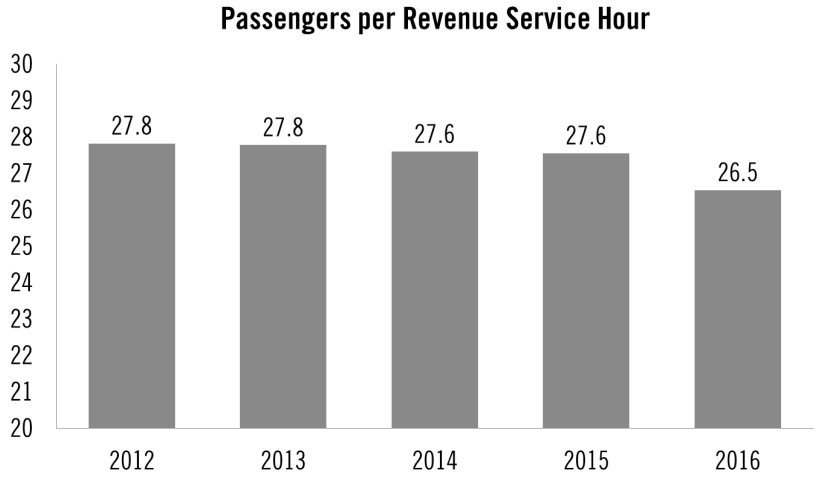


SYSTEM EFFICIENCY

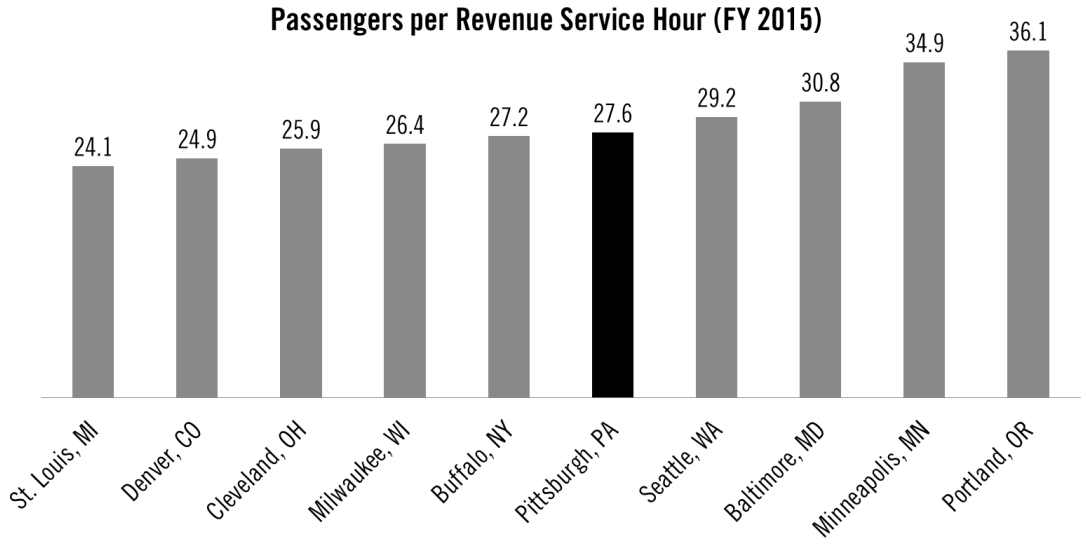
Port Authority strives to provide the highest amount of value to customers by using resources optimally. This is achieved by maximizing the number of passenger trips provided with available resources, such as time, vehicles, and staff. Two metrics are used to evaluate Port Authority's efficiency: passengers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

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 2016, Port Authority carried, on average, 26.5 passengers per hour of revenue service provided. This is approximately four percent less efficient than the 2015 efficiency of 27.6 passengers per hour. A slight reduction in ridership in FY2016 is the reason for this reduction, coupled with service expansions in the fall of 2015 that were put in place before the Service Request process was established to ensure that added service met efficiency guidelines.



Port Authority ranks moderately in efficiency of passengers carried per revenue vehicle hour compared to its peers. The latest data available is Fiscal Year 2015 data, shown in the chart below alongside several of Port Authority's peer (similarly sized) transit agencies and their performance. Port Authority has geographical challenges that do not enable it to be as efficient as some of its peers that have more grid-like street layouts, but operates in traffic conditions that promote more peak-period transit users than its peers.

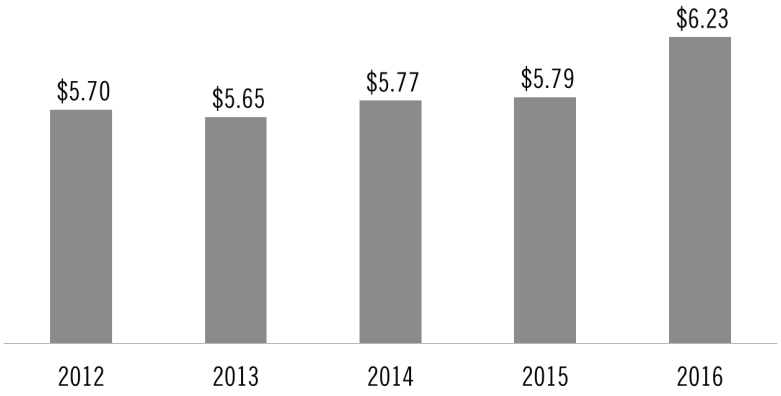


SYSTEM EFFICIENCY

Cost per Passenger Served

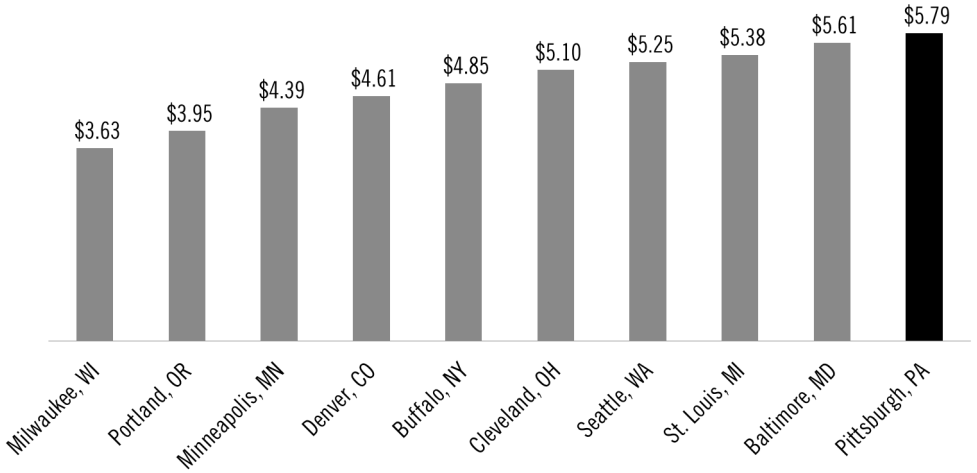
In addition to passengers served per revenue vehicle hour and vehicle in-service time, cost per passenger served is another important measure of efficiency. In 2016, it cost Port Authority an average of $6.23 to transport each passenger it carried, up 7% from 2015. That increase can be traced largely to increases in pension liability and healthcare costs. With an average fare revenue of $1.60 (26% of the cost) per passenger trip provided, this leaves a $4.63 gap per ride that is filled through federal, state, and local funding sources. Until 2016, cost per passenger served had been fairly consistent as a result of significant service and manpower cuts reducing overall operating expenses. The result, however, was overcrowding on buses and reduced on-time performance. As Port Authority increases its investment on existing routes to meet service guidelines and returns service to lower-ridership areas, cost per passenger served will go up. A reduction in cost should be evident in the coming years as the recently negotiated savings in healthcare costs for employees are realized.

Cost per Passenger Served



Port Authority's cost per passenger served is the highest among its peers. These costs can be attributed to an older system with significant legacy costs, a strong labor union, and the region's unique topography, which affects both in-service efficiency as well as out-of-service efficiency and vehicle maintenance costs.

Peer Agencies: Cost per Passenger Served (FY 2015)



SYSTEM EFFECTIVENESS

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). The 15 percent service cut in 2007, the Transit Development Plan system redesign in 2009, and another round of service cuts in 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 within walking distance nearly half of all residents and more than half of all jobs in the county in 2016.

The walkable service area is also dependent upon service availability. Though slightly more than than 11 percent of the county is walkable to transit service on any day of the week, this walkable area serves more than 35 percent of residents and more than 51 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 38 percent of residents and about 53 percent of jobs, and again slightly larger for areas that have service on weekdays - about 45 percent of residents and about 58 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.

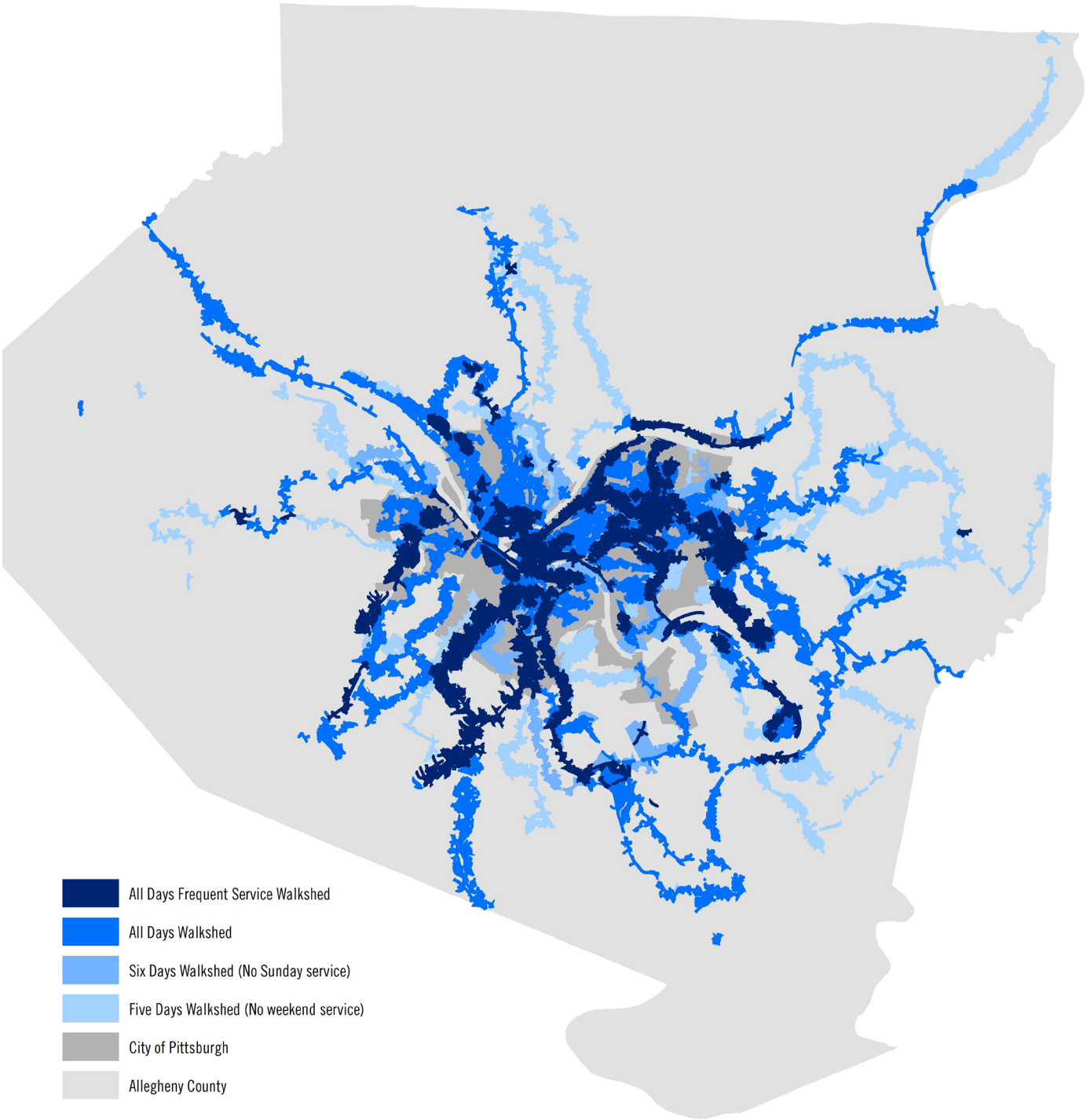
Port Authority defines a "frequent service area" as the 1/4 mile area around a transit stop or the 1/2 mile area around a transit station where transit vehicles come, on average, every fifteen minutes for fifteen hours of the day and every thirty minutes for an additional five hours of the day, every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

In 2016, Port Authority's frequent service area covered just 4.5 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 (miles²)	Percent of Total	Total	Percent of Total	Total	Percent of Total
Five Day Service Walkshed (No weekends)	121.8	16.4%	546,751	44.7%	412,054	57.9%
Six Day Service Walkshed (No Sundays)	91.4	12.3%	463,178	37.9%	377,278	53.0%
All Days Service	83.4	11.2%	433,027	35.4%	368,373	51.8%
Frequent Service	33.0	4.4%	225,790	18.5%	267,188	37.5%
All of Allegheny County	745.0	-	1,223,348	-	711,598	-

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

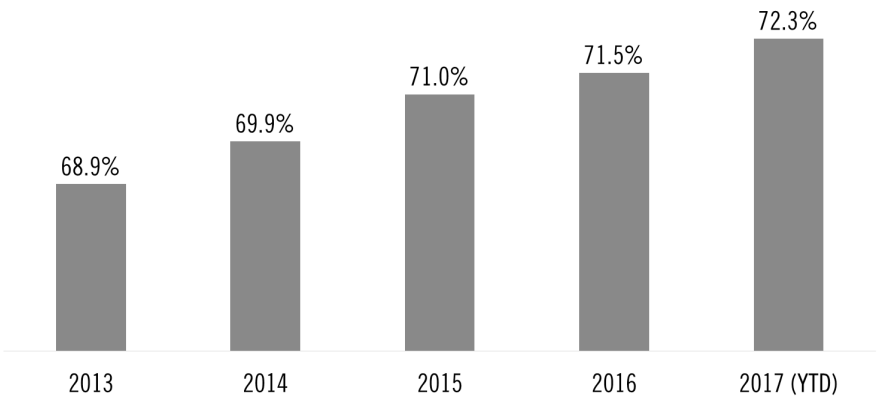
System On-Time Performance

Port Authority measures on-time performance monthly; bus and light rail schedules are updated quarterly to adjust for changes in running times between two points on a given route (within budgetary constraints). 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 1 minute ahead of schedule and six minutes behind schedule. A bus arriving at a stop at 6:58am when the schedule says 7 am would be considered early, and conversely, a bus arriving at 7:07am when the schedule says 7 am would be considered late. On-time performance is collected at every timepoint on every trip on every bus route through automatic vehicle location (AVL) systems linked to GPS aboard buses. Light rail on-time performance is measured by manual checks, as AVL data is not yet available on these vehicles. Due to limited samples, light rail on-time performance is not included in this report but is well over 80 percent on-time.

Bus on-time performance continues to improve, and has increased from 68.9 to 72.3 percent between 2013 and 2017 year-to-date (February 2017), an improvement of 3.4 percent in just under four years. These changes are largely due to greater ability to analyze appropriate travel times for buses by time of day using historical AVL data and adjusting schedules to match actual conditions in the field.

Bus On-Time Performance



Distance between Transit Stops

During the last two decades, many transit systems across the U.S. have undergone a stop consolidation program after research on optimal spacing between stops became clear in the 1990s. Many systems, including Port Authority, formerly operated under a historic system of electric streetcars that stopped at most intersections, especially in dense, urban areas. With research of how far passengers are willing to walk to a transit stop – including research conducted in the Pittsburgh region with a focus on how slope affects peoples' willingness to walk – agencies improved efficiency, travel time, and passenger comfort by increasing the space between bus stops to optimize walkable access without excess stopping.

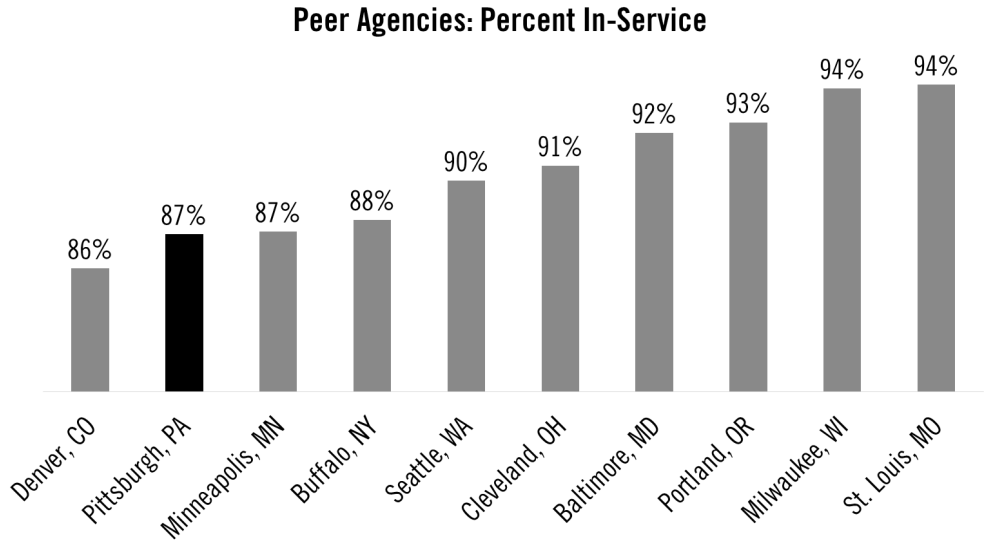
Port Authority has had minimum stop spacing guidelines since the TDP in 2009, but has not yet undertaken a system-wide project to adjust the spacing between its stops. In advance of the broad rollout of a new wayfinding program to better provide signage and stop amenities throughout the system, the Authority will begin to address this issue in the coming years.

In 2016, many of Port Authority's transit routes did not meet average stop spacing guidelines over the course of their route. Port Authority did not begin its stop optimization project in calendar year 2016 due to other planning projects, but has developed a plan for rolling this program out using a data-driven process. Beginning in late 2017, Port Authority will roll-out this program on two bus routes with high ridership and closely spaced stops.

SYSTEM EFFECTIVENESS

Percent of Time Spent In Revenue Service

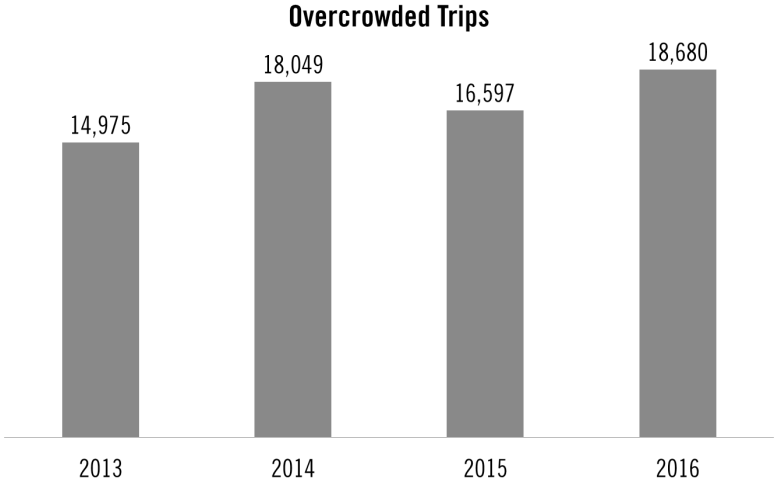
Port Authority continues to seek more efficient ways to provide service, and attempts to maximize the amount of time that buses are in revenue service (as opposed to driving to/from garages to start or end their trips). This allows the Authority to provide the most transit service possible within the available resources. Schedulers have optimized the system steadily over the past five years, leading to a two percent increase in the percentage of time that buses are in service. Compared to its peers, this is on the lower end of efficiency, again due to geographical challenges of Allegheny County's street network. However, the Authority continues to look to ways to increase this efficiency.



Passenger Loads: Overcrowding

Port Authority considers a bus trip to be "overcrowded" when the number of people on board the vehicle (load) at any point along the trip is equal to or greater than 140 percent of 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 is considered 100 percent full. With 56 people on the bus, or 16 people standing and all seats occupied, the bus is considered to be overcrowded (40 x 140% = 56).

In 2016, 18,680 trips hit this overcrowded metric, up thirteen percent from 16,597 trips in 2015. Ridership on routes with overcrowding is increasing, so this overcrowding continues to increase. Overcrowding continues to be a problem on select routes, and Port Authority continues to prioritize reducing overcrowding to manageable levels wherever possible given labor force and vehicle time. More than 75 percent of this overcrowding occurs during rush hour, or 'peak' periods, when resources are already being utilized near maximum capacity. Overcrowding is also isolated to about 11 routes that see more than 90 percent of overcrowding.



SYSTEM EQUITY

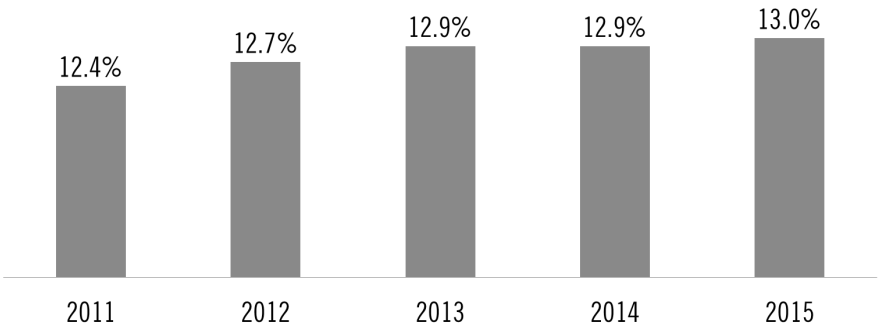
Persons with higher mobility needs are critical to the sustainability of Port Authority; they are the riders who ride most often because they do not have as many options to get from place to place by other means. Port Authority conducted a customer survey in 2015 to get a better glimpse of who these riders are. Almost 2,000 surveys were conducted via the web and phone. Data below includes information regarding both findings from the survey as well as the population of Allegheny County as a whole to give a broader view of riders and trends. Port Authority considers the following groups when looking at higher mobility need populations: low-income persons, persons of a minority race or ethnicity, senior citizens, persons with disabilities, and people without access to personal vehicles.

Low-Income Persons

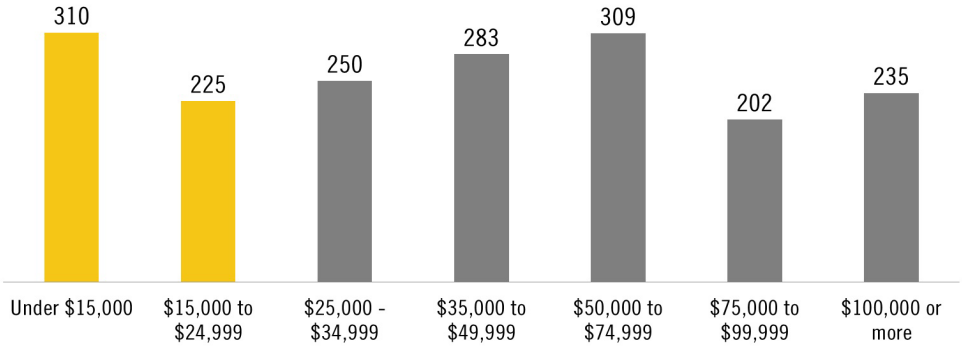
Port Authority follows the Federal Transportation Administration's guidance to define persons of low income: Anyone living in a household making less than the federal poverty level (for 2016, this was $24,600 for a family of four or $16,240 for a family of two) per year on the US Census. As seen in the top chart below, the percentage of low-income persons in Allegheny County has been slowly but steadily increasing over the last five years.

Riders surveyed had a broad range of income levels, which is indicative of a robust transit network (weaker transit networks often have fewer moderate and high income riders). Though household size was not asked, it can be safely assumed that most individuals reporting an income below $24,999 (see yellow bars on bottom chart below) on the survey would fall below the Federal Poverty Line. Using this assumption, approximately 25 percent of Port Authority's riders are considered 'Low-Income;' or twice the percentage of the entire county.

Historical Low Income Population: Allegheny County



Survey Respondents' Annual Household Income



SYSTEM EQUITY

Minority Race/Ethnicity

Port Authority follows the Federal Transportation Administration's guidance on defining a minority as a person reporting being a race other than white, non-Hispanic on the US Census. As can be seen in the top chart below, the percentage of minorities in Allegheny County has remained fairly consistent over the last few years, with a slight decline in 2015.

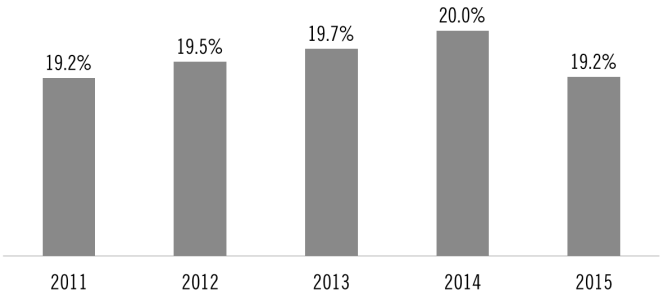
Percentage of minorities in Port Authority's survey closely match that of the County as a whole, with about 19 percent of riders. This indicates that Port Authority has a ridership that racially reflects the county as a whole.

Seniors

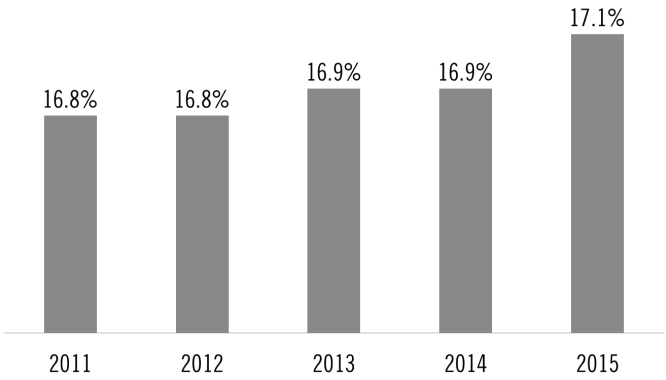
Port Authority defines seniors as persons reporting to be over age 65 on the US Census. As seen in the top chart below, the percentage of seniors in Allegheny County has remained relatively consistent over the last five years at about 17 percent.

Only two percent of survey respondents reported being over 65, much less than expected given the population of seniors in Allegheny County. However, taking an online or text-based survey likely skewed the sample of people taking the survey in the direction of younger riders, so this sample is probably not representative of Port Authority's senior ridership.

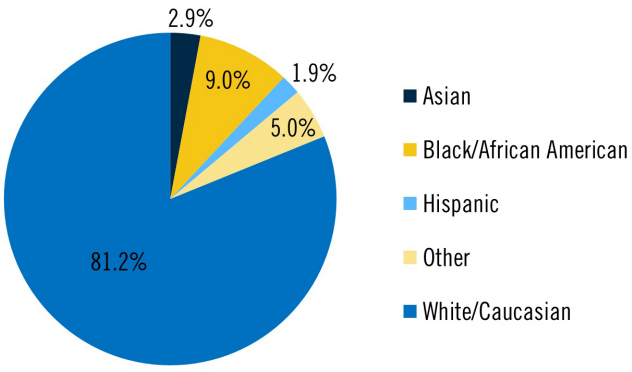
Minority Race/Ethnicity Population



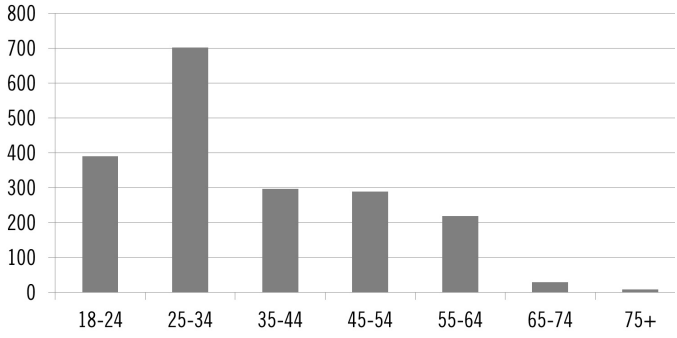
Percent Population Over Age 65: Allegheny County



Survey Respondents' Race/Ethnicity



Number of Survey Respondents by Age



SYSTEM EQUITY

Persons with Disabilities

Port Authority defines persons with disabilities as persons reporting to have one or more disabilities on the US Census. In 2015, 13.1 percent of the county population reported as having one or more disabilities. Historical data does not exist for this attribute. The top chart below shows a breakdown of the types of disabilities that residents of Allegheny County have.

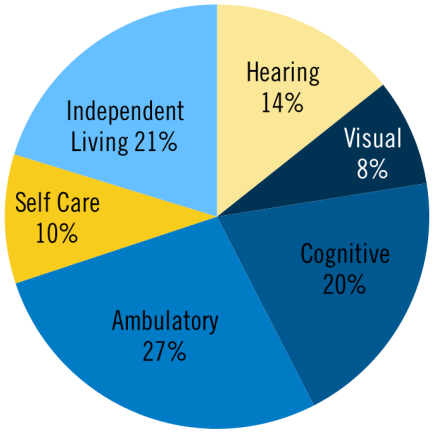
A slightly higher proportion of Port Authority's riders reported having a disability (17 percent) than the county as a whole (13 percent). The bottom chart below shows a breakdown of the types of disabilities riders reported having. As would be expected, the number of riders surveyed with a visual disability is much higher than the proportion for the county as a whole; these individuals likely drive personal automomobiles less than the population as a whole. Cognitive disabilities were a lower proportion of riders surveyed than the county as a whole, but this may be due to survey methods.

Persons without Access to a Personal Vehicle

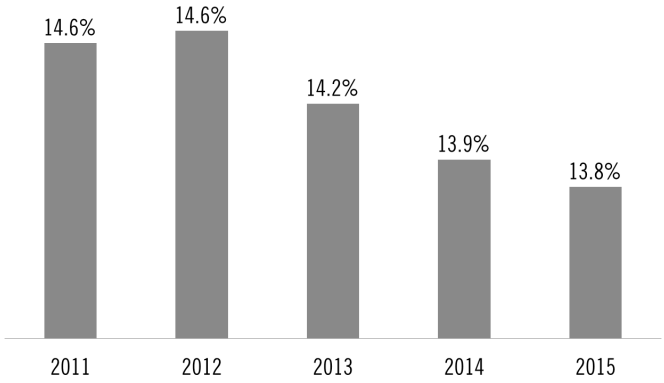
Port Authority defines persons without vehicles as persons who reported not having access to a vehicle in their household on the US Census. As shown in the top right-hand chart, the percentage of persons in Allegheny County without an available vehicle has remained fairly consistent, but seems to be on a slow, downward trend to its 2015 level of 13.8 percent of the population.

As would be expected, the percentage of Port Authority riders surveyed without access to a vehicle was much higher (29 percent) than the County as a whole (14 percent). As these individuals cannot drive personal vehicles due to lack of access, public transportation is critical for mobility.

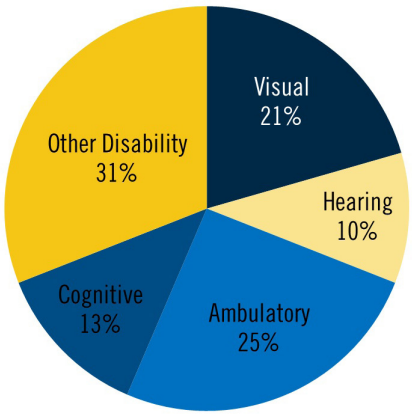
Types of Disabilities: Allegheny County



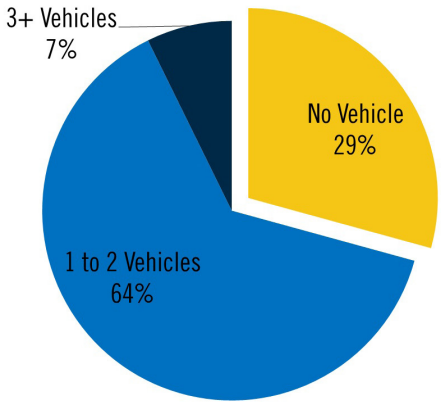
Percent Households with No Vehicle Available



Types of Disabilities: Survey Respondents



Survey Respondents' Available Vehicles



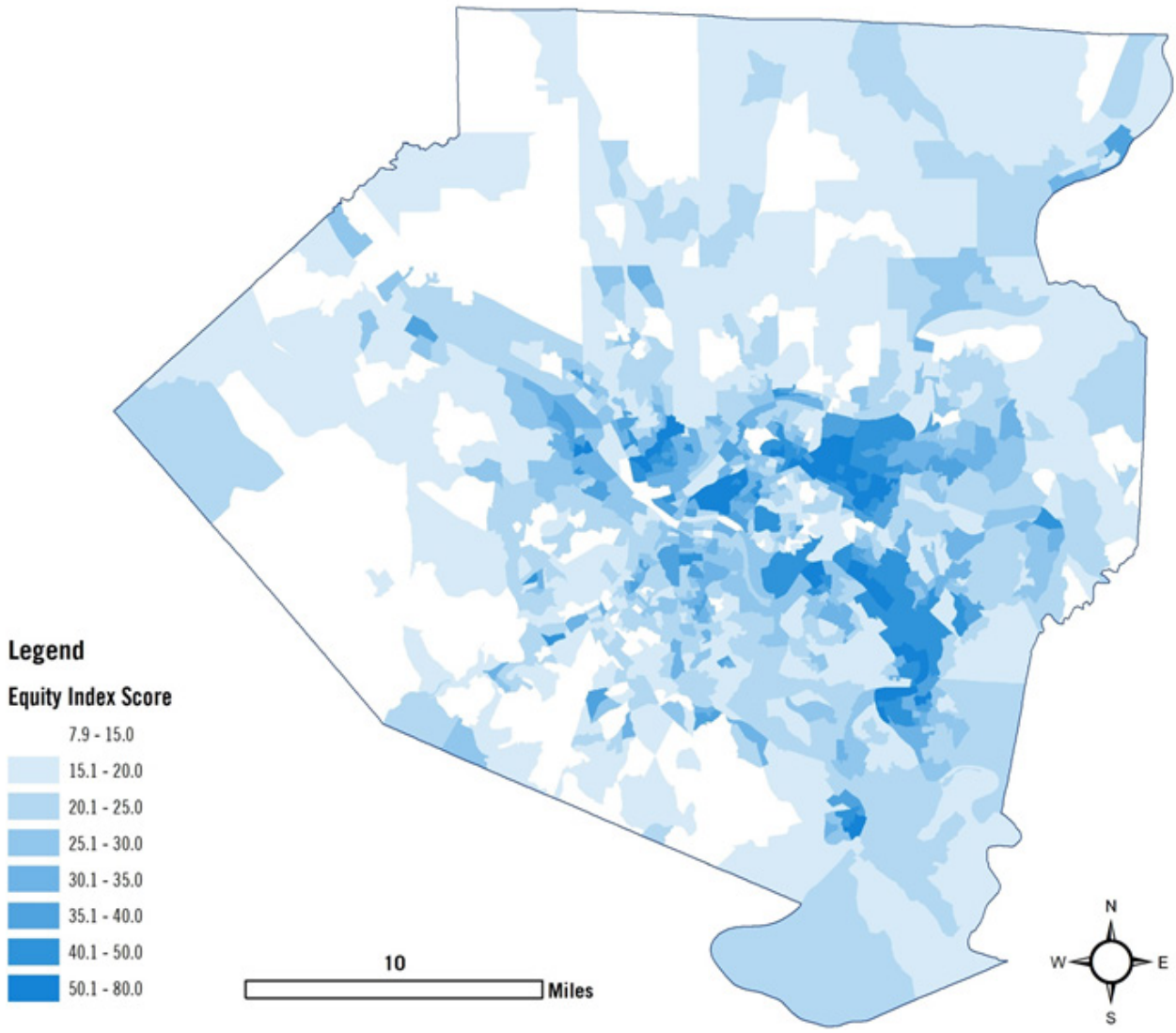
SYSTEM EQUITY

Overall Equity Index Performance

Port Authority uses a combination of the previously stated five demographic indicators (low-income persons, minorities, senior citizens, persons with disabilities, and persons without access to vehicles) to develop an overall location-based equity index within Allegheny County. The percentage of the population in each Census block group falling into these five categories is averaged (all five 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 five demographic categories, and are higher priority areas for Port Authority to serve.

High Equity Areas without Transit

Of the approximately 1,100 Census blocks in Allegheny County, Port Authority has service inside or in close proximity (five minute walk) to 982 of them. Some Census blocks are quite large, so this does not necessarily guarantee that having service in a Census block means that all residents in that block can walk to the transit service. However, being inside or within close proximity to 89 percent of Census blocks indicates broad coverage within Allegheny County. Of the 300 blocks with highest equity scores, all but five have transit service in or next to (within five minute walk of the center of) them.



ADHERENCE TO SERVICE GUIDELINES

Routes not Meeting Current Service Guidelines

The following sections describe current areas where existing service is not meeting the service guidelines established and approved by the Board in 2015. In addition to descriptions, each problem area has a solution presented that outlines the proposed plan for addressing each issue in FY2018. Planned changes set forth in this document are not set in stone – the scheduling of vehicles is conducted in a complex optimization software program, and therefore the cost of proposed changes cannot be fully determined until the entire system is optimized with this software. As such, the Service Planning and Evaluation Department will attempt to address all of the areas where current guidelines are not being met, but due to budgetary, vehicle, and/or labor force constraints, no guarantees can be made.

Summary of Service Guidelines

The following chart gives a summary of the route-specific service guidelines set forth in the 2015 Transit Service Guidelines document. See the Service Guidelines document on Port Authority's website for more detailed guidelines.

Mode	Route Type	Service Day	In-Service Percent	Riders / In-Service Hour	On-Time Performance	Average Stop Spacing (feet)
Bus	Rapid	Weekday	75%	40	70%	2,500
		Saturday		40		
		Sunday		30		
	Express	Weekday	50%	30	70%	1,200
		Saturday		20		
		Sunday		20		
	Key Corridor	Weekday	75%	30	70%	900
		Saturday		20		
		Sunday		20		
	Local	Weekday	70%	18	70%	900
		Saturday		15		
		Sunday		15		
Rail	Rapid	Weekday	75%	80	80%	2,500
		Saturday		50		
		Sunday		45		

While cost does not have a guideline per se, Port Authority aims to keep each route under 200 percent of its average cost per rider (for example, if the average cost per rider was $5.00, each route should aim to stay under $10.00 per rider served).

In-Service Time

In-service time refers to the percentage of time that vehicles are in-service (as opposed to out of service). 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 end of another to begin a trip on a different route.

Route Type	Route(s)	Guideline	Current Level	Planned Changes
Rapid	All Rapid	85%	varies	The guideline set forth in the Service Guidelines was an error – it should be 75%, not 85% (85% is infeasible).
	G2	(75% - see above)	73%	Major service changes occurred in September 2016 - the route is now 73% in service which is as efficient as the current schedule permits.
Express	G3	50%	49%	Major service changes occurred in September 2016 - the route is now 60% in service so no further changes are needed.
Local	18	70%	56%	Major service changes occurred in September 2016 - the route is now 63% in service. Service planning will continue to monitor this change.
	26	70%	67%	Service Planning will continue to attempt to improve this but no simple solution has yet been found.
	39	70%	60%	Attempt to re-group weekday trips for improved efficiency to and from the garage.
	40	70%	67%	Attempt to re-group weekday trips for improved efficiency to and from the garage.
	43	70%	69%	Re-grouped trips - this is as efficient as this route can be within current conditions.
	44	70%	69%	Re-grouped trips - this is as efficient as this route can be within current conditions.

ADHERENCE TO SERVICE GUIDELINES

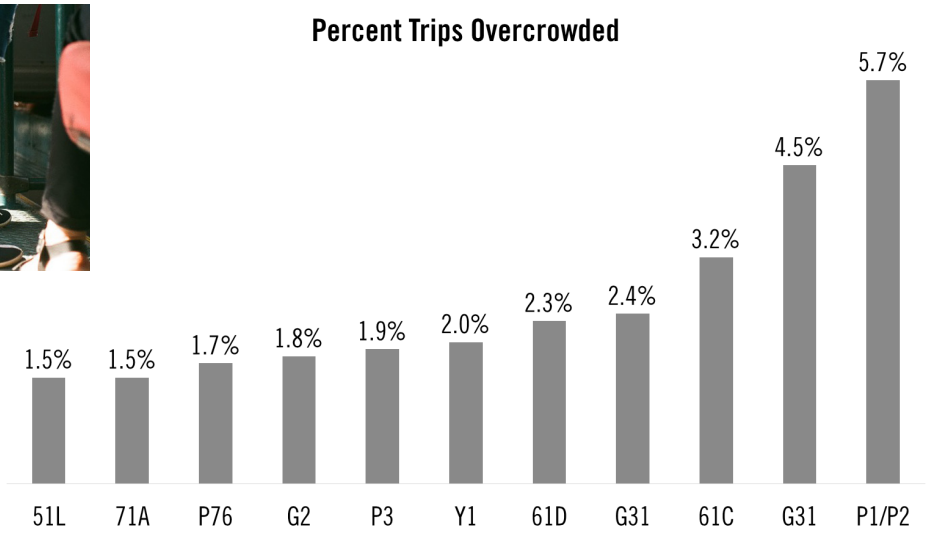
Passengers per Revenue Vehicle Hour

Passengers per service hour refers to the basic efficiency of the bus or light rail route when it is running. 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.

Day of Week	Route Type	Route	Guideline (riders / hour of service)	Current Level (riders / hour of service)	Planned Changes
Weekday	Express	52L	30	26	Service Planning will evaluate trip ridership and potentially eliminate or consolidate low performing trips.
		05	30	20	Marketing campaign/mailers were sent to the area around this route to stimulate ridership - ridership will be monitored to see if the campaign was successful.
		P10	30	29	Monitor route for continued efficiency changes.
		P13	30	26	This route was re-routed in the Fall of 2016 for efficiency. The route needs time to adjust to its new area before determining if this change was successful.
		78/P78	30	27	Convert midday trips to P78 to stimulate ridership.
		Y45	30	23	Service Planning will evaluate trip ridership and potentially eliminate or consolidate low performaning trips.
	Local	71	18	14	No changes to improve efficiency can be made at this time due to closure of the Kenmawr Bridge.
Saturday	Local	17	15	14	Major service changes occurred in the Fall of 2016 that need time to adjust.
Sunday	Local	58	15	14	Greenfield Bridge closure has affected this - no proposed changes due to planned reopening of the bridge in late 2017.
		89	15	13	Major service changes occurred in the Fall of 2016 that need time to adjust.
		17	15	13	Major service changes occurred in the Fall of 2016 that need time to adjust.
		18	15	13	Major service changes occurred in the Fall of 2016 that need time to adjust.
		40	15	14	Monitor route for continued efficiency changes.
		55	15	13	Extend the route to increase efficiency is planned for FY2018. See page 29.
		58	15	12	Greenfield Bridge closure has affected this - no proposed changes due to planned reopening of the bridge in 2017.

Passenger Loads: Crowding

Based on the service guideline set that a bus route cannot be more than 125 percent/140 percent (off-peak and peak, respectively) full, on average, all routes currently are in adherence with the guidelines for overcrowding. In 2016, eleven routes had overcrowding that affected more than 1.5 percent of trips. The P1/P2 route needs additional resources to address its crowding - in FY2018, Port Authority will evaluate adding trips during pm peak where resources are available to alleviate these issues. The following chart shows overcrowded trips as a percentage of overall trips for routes with frequent overcrowding.



ADHERENCE TO SERVICE GUIDELINES

On-Time Performance

Port Authority increased its on-time performance goal in 2016 from 70% to 73% in an effort to continually improve timeliness of services. Thirty-three of Port Authority's 102 routes did not meet the on-time performance goal of 73 percent in 2016 (only fifteen routes still fall below the 2015 goal of 70 percent on-time, a significant improvement over last year, when thirty-seven routes fell below that goal). Of these 33 routes, ten had schedule adjustments at some point in 2016 to improve on-time performance as budget allowed. Schedules that were adjusted are highlighted in the table below. The Authority will continue to adjust schedules in FY2017 to continue improving on-time peformance.

Route	On Time Performance
7	71%
29	68%
36	67%
38	69%
43	72%
54	72%
69	70%
74	70%
77	67%
82	72%
86	70%

Route	On Time Performance
89	71%
19L	72%
28X	71%
52L	68%
53L	71%
61A	72%
61C	71%
61D	72%
71A	68%
71B	71%
71C	65%

Route	On Time Performance
71D	72%
O5	65%
P10	65%
P12	67%
P13	58%
P67	70%
P68	65%
P69	67%
P71	72%
P76	67%
P78	65%

Stop Spacing

At the end of 2016, 63 routes did not meet stop spacing standards. Port Authority did not begin its stop optimization project in calendar year 2016 due to other planning projects, but has developed a plan for rolling this program out using a data-driven process. Beginning in late 2017, Port Authority will roll-out this program on two bus routes with high ridership and closely spaced stops.

Frequency of Service

The following routes did not meet the Authority's Frequency of Service guidelines set in 2015, and will be adjusted permitting available resource in fiscal year 2018.

Day of Week	Route Type	Route	Guideline (frequency in minutes)	Current Level (frequency in minutes)	Planned Changes
Saturday	Rapid	G2	30	35	Weekend service on the G2 was increased from every 45 minutes to every 35 minutes in 2016 which is the optimum frequency for the schedule at this time.
Sunday	Rapid	G2	30	35	

ROUTE PERFORMANCE

Summary of Route Performance

A summary of existing transit route metrics can be seen below. Highlighted metrics fall below the service guidelines for that route.

Route	Mode	Route Type	Days of Service	Weekday Riders	Saturday Riders	Sunday Riders	In-Service Percent	Riders / In-Service Hour	Cost / Rider Served	On-Time Performance	Average Stop Spacing (feet)
1	Bus	Local	All Days	1,722	1,334	897	72.9%	26.7	$9.73	75%	1,019
2	Bus	Local	Weekday Only	1,110	-	-	82.3%	18.9	$12.20	76%	985
4	Bus	Local	No Sundays	723	294	-	84.0%	30.0	$7.53	81%	585
6	Bus	Local	All Days	1,229	566	464	73.7%	36.8	$6.99	84%	572
7	Bus	Local	Weekday Only	132	-	-	82.8%	25.3	$9.05	71%	797
8	Bus	Key Corridor	All Days	3,388	1,844	1,086	81.7%	36.9	$6.30	79%	642
11	Bus	Local	All Days	598	271	143	72.6%	31.0	$8.42	79%	583
12	Bus	Local	All Days	1,042	1,194	760	77.7%	22.7	$10.77	74%	1,149
13	Bus	Local	All Days	2,252	1,608	810	82.7%	35.3	$6.50	77%	672
14	Bus	Local	All Days	1,234	623	350	68.0%	19.6	$14.25	76%	1,234
15	Bus	Local	All Days	1,092	824	461	77.1%	32.7	$7.53	83%	581
16	Bus	Key Corridor	All Days	4,141	2,491	1,697	74.2%	50.6	$5.05	81%	581
17	Bus	Local	All Days	876	419	324	91.2%	25.0	$8.34	78%	842
18	Bus	Local	Weekday Only	369	119	83	53.8%	22.4	$15.75	76%	626
19L	Bus	Express	Weekday Only	639	-	-	58.1%	41.6	$7.85	72%	1,152
20	Bus	Local	Weekday Only	641	-	-	75.5%	18.6	$13.54	79%	901
21	Bus	Local	All Days	1,227	614	282	69.9%	21.6	$12.56	75%	1,291
22	Bus	Local	No Sundays	742	455	-	70.2%	27.2	$9.94	78%	1,079
24	Bus	Local	All Days	1,508	1,204	922	73.2%	31.0	$8.35	74%	1,381
26	Bus	Local	All Days	1,079	633	334	67.0%	32.8	$8.63	78%	651
27	Bus	Local	All Days	1,187	695	473	71.1%	35.4	$7.54	80%	776
28X	Bus	Local	All Days	1,838	1,568	1,315	79.4%	22.9	$10.44	71%	4,490
29	Bus	Local	Weekday Only	817	-	-	75.7%	22.0	$11.41	68%	1,187
31	Bus	Local	All Days	1,634	853	582	85.8%	26.4	$8.37	78%	896
36	Bus	Local	Weekday Only	587	-	-	70.4%	20.7	$13.03	67%	1,054
38	Bus	Local	All Days	2,446	334	191	78.6%	29.2	$8.28	69%	1,167
39	Bus	Local	No Sundays	1,434	269	-	59.5%	31.1	$10.26	81%	811
40	Bus	Local	All Days	633	249	188	67.3%	23.0	$12.27	82%	650
41	Bus	Local	All Days	1,949	676	330	83.9%	29.7	$7.61	75%	823
42	Bus	Temporary	Weekday Only	480	-	-	62.3%	48.8	$6.25	#N/A	#N/A
43	Bus	Local	All Days	756	401	269	68.8%	34.5	$8.00	72%	684
44	Bus	Local	All Days	1,014	311	232	68.6%	18.4	$15.04	81%	715
48	Bus	Local	All Days	3,140	2,167	1,123	71.4%	54.7	$4.86	78%	523
51	Bus	Key Corridor	All Days	8,024	5,074	3,167	85.3%	49.3	$4.51	76%	787
51L	Bus	Express	Weekday Only	681	-	-	50.5%	56.7	$6.62	75%	1,101
52L	Bus	Express	Weekday Only	406	-	-	70.3%	26.4	$10.22	68%	1,028
53/53L	Bus	Local	No Sundays	1,349	353	-	90.0%	21.0	$9.10	73%	1,153
54	Bus	Key Corridor	All Days	3,720	2,311	1,078	73.1%	29.5	$8.81	72%	821
55	Bus	Local	All Days	876	709	503	85.9%	19.2	$11.49	86%	629
56	Bus	Local	All Days	1,650	743	525	77.7%	29.8	$8.19	78%	1,108
57	Bus	Local	All Days	1,238	945	648	74.7%	33.3	$7.62	79%	1,005
58	Bus	Local	All Days	1,060	262	159	82.7%	22.1	$10.37	75%	745
59	Bus	Local	All Days	2,137	2,027	1,229	84.5%	24.6	$9.14	78%	884
60	Bus	Local	Weekday Only	491	-	-	81.1%	35.5	$6.58	78%	528
61A	Bus	Key Corridor	All Days	3,955	2,601	1,817	71.8%	40.8	$6.47	72%	678
61B	Bus	Key Corridor	All Days	4,687	2,964	1,939	76.1%	43.0	$5.80	74%	735
61C	Bus	Key Corridor	All Days	6,228	4,513	3,172	80.1%	49.6	$4.78	71%	934
61D	Bus	Key Corridor	All Days	5,099	3,278	2,158	75.7%	48.5	$5.16	72%	802

ROUTE PERFORMANCE

Route	Mode	Route Type	Days of Service	Weekday Riders	Saturday Riders	Sunday Riders	In-Service Percent	Riders / In-Service Hour	Cost / Rider Served	On-Time Performance	Average Stop Spacing (feet)
64	Bus	Local	All Days	1,562	1,591	801	71.5%	26.8	$9.88	75%	740
65	Bus	Express	Weekday Only	392	-	-	63.6%	41.5	$7.19	75%	712
67	Bus	Local	All Days	1,976	872	421	82.7%	28.8	$7.97	73%	940
68	Bus	Local	All Days	329	413	198	77.7%	25.1	$9.72	81%	791
69	Bus	Local	All Days	1,527	389	245	82.4%	26.7	$8.61	70%	978
71	Bus	Local	Weekday Only	104	-	-	81.8%	14.1	$16.42	85%	482
71A	Bus	Key Corridor	All Days	5,708	2,683	1,710	81.6%	57.7	$4.03	68%	587
71B	Bus	Key Corridor	All Days	4,686	2,055	1,190	81.0%	51.0	$4.59	71%	616
71C	Bus	Key Corridor	All Days	5,477	2,853	1,784	88.9%	49.6	$4.30	65%	661
71D	Bus	Key Corridor	All Days	4,361	1,955	1,304	86.5%	44.0	$4.98	72%	643
74	Bus	Local	No Sundays	923	546	-	86.7%	21.8	$10.02	70%	541
75	Bus	Local	All Days	2,843	1,682	1,158	79.6%	37.4	$6.38	76%	749
77	Bus	Local	All Days	2,267	1,073	646	82.0%	28.7	$8.05	67%	816
78/P78	Bus	Express	Weekday Only	1,021	-	-	72.5%	27.0	$9.66	70%	878
79	Bus	Local	All Days	939	748	371	74.4%	34.5	$7.39	73%	548
81	Bus	Local	All Days	1,607	892	522	71.2%	38.8	$6.87	76%	628
82	Bus	Key Corridor	All Days	3,776	2,502	1,901	82.1%	49.8	$4.64	72%	550
83	Bus	Local	All Days	2,329	1,381	807	76.9%	47.8	$5.16	76%	665
86	Bus	Local	All Days	2,852	2,547	1,506	86.9%	40.4	$5.40	70%	573
87	Bus	Local	All Days	2,743	742	235	76.1%	43.2	$5.77	76%	629
88	Bus	Local	All Days	3,172	1,766	1,196	82.5%	48.0	$4.79	73%	592
89	Bus	Local	Weekday Only	395	212	176	76.8%	27.5	$8.97	71%	564
91	Bus	Key Corridor	All Days	4,319	2,216	1,219	70.3%	39.5	$6.82	75%	698
93	Bus	Local	Weekday Only	1,440	-	-	70.5%	27.5	$9.80	75%	699
BLLB	Rail	Rapid	All Days	7,104	2,133	1,841	76.4%	97.1	$4.77	#N/A	2,427
BLSV	Rail	Rapid	All Days	10,580	1,914	1,805	85.2%	87.3	$4.75	#N/A	2,315
G2	Bus	Rapid	All Days	3,909	950	640	73.2%	48.2	$5.38	82%	2,549
G3	Bus	Express	Weekday Only	890	-	-	48.6%	39.2	$9.97	76%	8,966
G31	Bus	Express	Weekday Only	638	-	-	64.6%	33.6	$8.74	78%	1,754
MI	Incline	Rapid	All Days	1,422	2,486	1,309	100.0%	94.7	$2.00	#N/A	#N/A
O1	Bus	Express	Weekday Only	1,240	-	-	49.7%	82.9	$4.61	83%	2,746
O5	Bus	Express	Weekday Only	103	-	-	63.8%	20.5	$14.52	65%	944
O12	Bus	Express	Weekday Only	1,341	-	-	62.5%	41.9	$7.24	76%	1,989
P1/P2	Bus	Rapid	All Days	12,758	5,560	3,363	77%	110.0	$2.24	87%	3,797
P3	Bus	Express	Weekday Only	2,712	-	-	61.6%	52.5	$5.87	88%	1,195
P7	Bus	Express	Weekday Only	751	-	-	74.6%	30.3	$8.41	73%	1,564
P10	Bus	Express	Weekday Only	651	-	-	58.1%	29.0	$11.25	65%	1,524
P12	Bus	Express	Weekday Only	1,143	-	-	62.8%	31.5	$9.58	67%	2,129
P13	Bus	Express	Weekday Only	252	-	-	64.7%	25.9	$11.33	58%	1,564
P16	Bus	Express	Weekday Only	936	-	-	61.9%	31.3	$9.78	73%	1,334
P17	Bus	Express	Weekday Only	392	-	-	65.9%	34.3	$8.39	78%	694
P67	Bus	Express	Weekday Only	447	-	-	59.6%	35.0	$9.10	70%	2,398
P68	Bus	Express	Weekday Only	779	-	-	76.4%	35.7	$6.96	65%	1,133
P69	Bus	Express	Weekday Only	262	-	-	61.9%	31.0	$9.90	67%	1,224
P71	Bus	Express	Weekday Only	624	-	-	71.3%	42.1	$6.32	72%	811
P76	Bus	Express	Weekday Only	1,006	-	-	58.0%	38.8	$8.42	67%	1,835
RED	Rail	Rapid	All Days	8,720	5,716	3,844	80.1%	127.9	$3.69	#N/A	1,872
RED2	Bus	Temporary	All Days	804	370	209	45.4%	83.2	$5.03	#N/A	#N/A
Y1	Bus	Express	Weekday Only	671	-	-	53.3%	39.0	$9.13	80%	2,494
Y45	Bus	Express	Weekday Only	269	-	-	56.9%	23.0	$14.48	83%	1,005
Y46	Bus	Local	All Days	1,802	889	696	76.3%	25.5	$9.75	78%	1,069
Y47	Bus	Local	No Sundays	1,045	480	-	81.7%	25.9	$8.98	78%	988
Y49	Bus	Local	All Days	1,355	644	365	83.5%	29.2	$7.78	80%	678

UPDATES ON RECENT SERVICE

Minor Service Updates

The following table provides a summary of minor service changes made in calendar year 2016 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 (running times adjusted to improve)	1, 13, 28X, 48, 51, 51L, 55, 60, 64, 67, 68, 69, 71A, 71C, 77, 78, 83, 86, 88, 89, 91, P10, P12, P16, P17, P78, Y1, Y45, Y46, Y47, Y49
Off Service Running Time (Time to/from garage changed to improve efficiency or in-time performance.)	2, 39, 40, 44, 51, 54, 56, 57, 61C, 61D, 64, 67, 69, 74, 77, 89, 91, G3, P7, P16, P68, P69
Coordinating Routes with Service in Common	2-P13, 20-21-22-24, 48-51, P69-P76
Better Connections & Transfers	68, 69
Extending Span of Service or Frequency of Service	14, 21, 26, 27, 28X, 41, 57, 64, 67, 68, 83, 86, 88, 91, G2, P12, P67, P68, Y49
Reducing Overcrowding by Adding Trips or adjusting trip times	51, P12, P16, P68
Minor Extensions	55, 61D, P10

Major Service Updates

The following table provides a summary of major service changes made in calendar years 2015 and 2016 to maintain service guidelines and to expand service using the Service Evaluation process where budget allowed. Highlighted efficiencies (riders/hour) for the route extensions are those that are less than 1/2 of the service guidelines (areas near the end of a transit route are not usually high performing unless there is a destination at the terminus.). Route extensions are often inefficient on their own due to the nature of ridership near the end of a route. Highlighted costs for the entire route represent routes where the change has placed the efficiency of the route as a whole more than twice Port Authority's average cost per rider. Changes which do not perform well over time may be adjusted to improve efficiency.

Year	Route(s)	Major Change	Projected gain in riders (per day)	Actual gain in riders (per day)		Efficiency of Change (riders/hour on altered segment only)	Cost per Rider (entire route)
				2015	2016		
2015	20	Extension from terminus in Kennedy Township to new terminus in Groveton.	25	20	20	3	$13.54
	44	Extension on weekdays from terminus in Mount Oliver to new terminus in Baldwin Borough.	240	191	208	8	$15.04
	56	Extension from terminus in McKeesport to new terminus at Penn State Greater Allegheny Campus.	33	84	141	44	$8.19
	91	Extension on select trips from terminus in Waterworks to new terminus in RIDC Industrial Park in O'Hara Township.	62	95	129	8	$6.82
2016	17/18	Reduced frequency on Route 18 replaced by expanded frequency (incl. weekends) on Route 17.	75 / 336 / 269		-20 / 307 / 253	40 added riders per hour of service reduced	$8.34/$15.75
	21	Increase Sunday frequency to 90 minutes.	0		38	5	$12.55
	41	Increase Sunday frequency to 90 minutes.	0		(52)	-2	$7.61
	79	Extend to Mt. Carmel Road (incl. weekends)	93 / 110 / 90		93 / 66/ 21	7 / 10 / 2	$7.39
	89	Add Saturday / Sunday service	130 / 70		212 / 176	12 / 13	$8.97
	G2	Increase weekend frequency to every 35 minutes.	0		69 / 52	14	$5.38
	G3	Make some reverse-direction trips in-service.	7		40	13	$9.97
	P13	Change route from East Busway to S.R. 28	120		(39)	-10	$11.33

SERVICE REQUESTS FOR FY2018

Service Request Process

Port Authority's Service Guidelines include a process for the public to submit a request for a major service change. A major service change is defined as any service change which affects more than 30 percent of a route's miles. Minor service changes are made four times each year and do not require a ranking process, but are put in as resources are available or changes are needed due to road closures or other events.

Port Authority received 704 requests for service changes in 2016. Though the call for ideas was targeted toward major changes to existing service, many other requests were received. Minor requests included 488 minor requests (such as adding trips to alleviate overcrowding, adding a new bus stop, or rerouting a bus only a short distance), six requests for changes which had already been put in place or were being put in place in the fall of 2016, and two requests which were deemed to be infeasible because they required large up front capital (such as a new light rail line). The minor requests will be taken into consideration by Department of Service Planning and Evaluation, and if they are deamed 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.

As this is the second year of the Annual Service Report, Port Authority decided that it would include the 2015 requests in addition to the 2016 requests in case individuals did not make requests again during the second year of the process. As such, the evaluations from last year were included alongside those from this year for a total of 2,262 requests. These 2,262 requests generated 136 unique major service requests that were evaluated in the winter of 2016-2017.

Ranking Requests for Major Service Change

Of the 2,262 requests received between 2015 and 2016, 136 unique ideas were represented and ranked. 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 and manageable ways it could be carried out. Rankings were based on the three overarching goals of efficiency, effectivness, and equity. Each request received a score for these three categories based on a number of metrics. The scores were averaged to create a final score (sorted on the following pages in order of highest Final Score to lowest Final Score).

Limitations to Adding Service in Fiscal Year 2018

Though many requests were received asking that Port Authority add service in fiscal year 2018, there are limitations to the services Port Authority can provide. Garage space for buses is currently limited, and as such, increasing bus fleet much beyond its current size without building or expanding a bus garage is infeasible.

Currently, peak vehicles are being used at or above recommended capacity, meaning that the ability to add service between 6am and 9am and 3pm and 6pm is extremely limited and should be prioritized for alleviating crowding on existing service. There is potential for adding midday, evening, and weekend service, however. Port Authority is evaluating options for building a new bus garage, but limited land availability and capital costs for building such a facility mean that this will be a long-term endeavor.

The right-most column 'Recommendation' on the following pages therefore includes four basic categories; "Requires Peak Vehicles", "Reduces Service", "Does not meet Service Guidelines", and "Put in if budget allows". The first three are not able to be carried out in FY2018 due to constraints that the Port Authority has. "Put in if budget allows" means that the request is deemed feasible given existing constraints and if additional budget is made available, requests should be input in order of highest to lowest ranked request.

For a more detailed writeup of the methodology used to develop these rankings, please see the Appendix to Annual Service Report document on Port Authority's website (www.portauthority.org).

SERVICE REQUEST EVALUATIONS

Year(s) Requested	Service Requests	Annual Operating Cost	Projected Weekday Riders	Projected Saturday Riders	Projected Sunday Riders	Cost (Savings) per Rider Gained	Efficiency Score	Equity Score	Effectiveness Score	Final Score	Recommendation
Both	Extend 12 out Perry Highway to Wexford (Market District)	$239,320	283	-	-	$4.74	80.5	63.3	77.6	99.6	Requires Peak Vehicles
Both	Reroute 21: Serve Mooncrest on every other trip	$100,440	169	85	51	$2.85	98.8	72.5	33.8	92.3	Reduces Service
2016	Extend 78 to downtown - Convert 78 to P78 on weekdays	$0	10	-	-	$(0.56)	100.0	70.0	22.0	86.4	Put in if Budget Allows
2015	Extend 88 to Wilk Station & shorten all 71Cs to East Liberty garage	$(589,000)	(74)	(37)	(22)	$(38.11)	100.0	76.4	6.6	82.3	Reduces Service
2016	Add service day: Saturday service 60	$131,000	-	250	-	$14.40	28.2	83.3	69.6	81.5	Put in if Budget Allows
Both	New Route: Restore 25 Bus throughout Moon Twp (25A) (last year CW)	$324,880	214	-	-	$8.49	47.9	43.3	80.7	77.3	Requires Peak Vehicles
Both	New Route: Restore 33F	$330,000	297	-	-	$6.22	65.3	48.4	56.9	76.8	Requires Peak Vehicles
Both	Reroute 28X directly to the Airport every 25 mins, double service on 29 to Robinson to replace	$1,581,000	388	640	449	$14.27	28.5	51.8	88.0	75.7	Requires Peak Vehicles
Both	Reroute:39 to McNeilly Rd every other trip (weekday only)	$14,880	165	-	-	$0.51	99.0	42.8	25.7	75.4	Reduces Service
2015	New Route: Bellevue to McCandless	$1,165,600	198	200	84	$25.32	16.0	47.8	99.9	73.7	Requires Peak Vehicles
2015	Extend G2 to Oakland	$1,905,880	1,210	-	-	$8.82	46.0	57.5	53.3	70.6	Requires Peak Vehicles
2016	Reroute: Remove 58 from Oakland	$(345,000)	(344)	(85)	(52)	$5.18	73.6	62.5	18.2	69.5	Reduces Service
2016	Add service day: Weekend service 78	$424,000	-	520	331	$13.10	31.0	68.9	52.7	68.7	Put in if Budget Allows
2016	New Route: Squirrel Hill to Bakery Square direct route.	$585,280	428	218	139	$6.50	62.5	59.8	29.4	68.3	Requires Peak Vehicles
2016	Add service day: Weekend service P78	$605,000	-	520	331	$18.69	21.7	73.2	56.4	68.1	Put in if Budget Allows
2015	Reroute 61D to Beechwood Blvd via Forward Ave, return to Murray Ave	$394,320	124	63	40	$15.14	26.8	65.2	58.7	67.9	Reduces Service
Both	Add service day: Weekend service 2	$605,000	-	373	160	$30.14	13.5	46.0	89.9	67.2	Put in if Budget Allows
Both	New Route: Middle Rd Flyer	$619,000	229	-	-	$15.14	26.8	60.4	61.2	66.8	Requires Peak Vehicles
Both	New Route: Restore 11K/13K to Cranberry and Warrendale	$797,000	322	-	-	$13.87	29.3	59.0	59.1	66.3	Requires Peak Vehicles
Both	Add service day: Sunday service 39	$160,000	-	-	443	$8.90	45.7	56.7	42.7	65.3	Put in if Budget Allows
2015	New Route: linking Robinson and Bellevue via McKees Rocks	$2,654,840	343	346	145	$33.31	12.2	53.8	77.1	64.4	Requires Peak Vehicles
Both	Reroute Y47 to Mifflin Estates on the way to CCAC along with Sunday service	$785,000	170	86	55	$21.98	18.5	47.8	76.5	64.2	Requires Peak Vehicles
2016	Add service day: Weekend service Route 2 to Millvale only	$233,000	-	373	160	$11.61	35.0	42.8	64.8	64.2	Put in if Budget Allows
2016	Extend 78 to Pittsburgh Mills Mall on weekdays (middle of the day only)	$174,000	37	-	-	$26.52	15.3	66.7	60.4	64.1	Put in if Budget Allows
Both	Add service day: Sunday service 53	$177,000	-	-	359	$12.14	33.5	60.0	48.6	64.0	Put in if Budget Allows
Both	Extend 89 to Oakland via Shadyside	$1,112,280	10	5	3	$532.50	0.8	81.6	58.4	63.3	Requires Peak Vehicles
2016	Extend 55 to Monroeville via East McKeesport and Wilmerding	$650,000	184	92	55	$16.91	24.0	58.2	58.3	63.3	Requires Peak Vehicles

SERVICE REQUEST EVALUATIONS

Year(s) Requested	Service Requests	Annual Operating Cost	Projected Weekday Riders	Projected Saturday Riders	Projected Sunday Riders	Cost (Savings) per Rider Gained	Efficiency Score	Equity Score	Effectiveness Score	Final Score	Recommendation
2016	New Route: Restore 84C Wylie Ave	$1,775,000	103	52	31	$82.50	4.9	99.4	36.1	63.2	Requires Peak Vehicles
Both	Add service day: Sunday service 74	$297,000	-	-	353	$20.72	19.6	75.1	45.1	62.9	Put in if Budget Allows
2015	Extend RED to South Hills Village service to all day	$737,800	530	260	140	$6.73	47.4	51.1	41.3	62.9	Put in if Budget Allows
2015	Extend 78 to Pittsburgh Mills Mall on weekdays (all day)	$739,040	147	-	-	$28.17	14.4	68.9	55.1	62.3	Requires Peak Vehicles
2015	New Route: Restore 60B Jenny Lind	$951,080	156	-	-	$34.15	11.9	79.7	45.7	61.8	Requires Peak Vehicles
2016	New Route: Restore 11A Gibsonia (goes to St Barnabas)	$547,000	142	-	-	$21.58	18.8	39.8	78.2	61.5	Requires Peak Vehicles
2016	Add service day: Weekend service P3	$621,000	-	1,161	739	$8.59	47.3	74.5	14.0	61.1	Put in if Budget Allows
Both	Add service day: Weekend service 67 to CCAC	$220,000	-	172	206	$15.04	27.0	63.8	44.6	60.9	Put in if Budget Allows
2016	Reroute Y49 to Mifflin Estates on the way to CCAC	$702,000	170	86	55	$19.66	20.7	47.8	66.8	60.9	Requires Peak Vehicles
2015	Extend 14 back into Downtown	$1,116,000	604	296	159	$8.92	45.5	53.4	34.1	59.9	Requires Peak Vehicles
2015	Add service day: Weekend service 78 including Pittsburgh Mills Mall	$267,840	-	148	62	$33.88	12.0	68.9	51.8	59.7	Put in if Budget Allows
2016	Put on/off roads in service to provide West Homestead service - flexible route - choose headways	$42,000	15	-	-	$15.69	25.9	88.0	18.7	59.7	Put in if Budget Allows
2015	New Route: P79 East Hills Flyer	$301,320	10	-	-	$168.81	1.7	89.8	40.0	59.2	Requires Peak Vehicles
2015	New Route: Restore 13J Franklin Park	$415,400	213	-	-	$10.93	37.2	42.2	51.7	59.0	Requires Peak Vehicles
Both	New Route: Perry Highway	$2,282,840	1,042	-	-	$12.27	33.1	47.2	49.9	58.6	Requires Peak Vehicles
2016	Extend 16 out Perry Hwy on at least some trips via Emsworth, Camp Horne (See T17)	$1,258,000	283	-	-	$24.90	16.3	63.3	49.7	58.2	Requires Peak Vehicles
Both	Extend every 3rd trip on 8 out Perry Hwy to Wexford	$1,165,600	347	-	-	$18.82	21.6	64.8	42.9	58.2	Requires Peak Vehicles
2015	New Route: Restore 11B and 13B to Evergreen and Babcock Blvd to Downtown	$338,520	227	-	-	$8.35	48.6	44.7	36.0	58.2	Requires Peak Vehicles
Both	Extend 64 to Millvale	$1,135,000	98	69	29	$53.58	7.6	51.1	70.1	58.0	Requires Peak Vehicles
Both	Add service day: Weekend service P16	$247,000	-	127	71	$32.91	12.3	60.2	55.6	57.7	Put in if Budget Allows
2015	Extend 8 out Perry Hwy peak only	$648,520	187	-	-	$19.39	21.0	64.8	42.4	57.7	Requires Peak Vehicles
2016	New Route: G1 Robinson - CBD - Oakland Restore	$5,265,000	1,210	-	-	$24.38	16.7	57.5	53.3	57.4	Requires Peak Vehicles
Both	New Route: Monroeville Shopper - 75D Monroeville Mall	$2,455,200	220	108	58	$53.81	7.6	54.0	63.5	56.3	Requires Peak Vehicles
2015	Extend 60 to Boston	$120,280	2	-	-	$336.92	1.2	78.2	45.2	56.1	Put in if Budget Allows
2015	Add service day: Weekend service 36	$285,200	-	232	148	$19.73	20.6	44.1	59.7	56.0	Put in if Budget Allows
2016	New Route: Restore 5 Natrona via Pittsburgh Mills Mall	$1,693,000	301	-	-	$31.48	12.9	54.4	56.1	55.6	Requires Peak Vehicles

SERVICE REQUEST EVALUATIONS

Year(s) Requested	Service Requests	Annual Operating Cost	Projected Weekday Riders	Projected Saturday Riders	Projected Sunday Riders	Cost (Savings) per Rider Gained	Efficiency Score	Equity Score	Effectiveness Score	Final Score	Recommendation
2016	Extend 13 out Perry Hwy on at least some trips to McCandless or Wexford	$1,258,000	283	-	-	$24.90	16.3	63.3	41.9	54.7	Requires Peak Vehicles
2015	New Route: Churchill to Wilkinsburg Station via Elizabeth Ave/Greensburg Pike	$415,400	117	57	31	$17.11	23.7	58.2	39.6	54.7	Requires Peak Vehicles
Both	New Route: Restore 84B	$956,000	175	137	46	$25.10	16.2	65.0	40.0	54.5	Requires Peak Vehicles
2016	Extend 17 out Perry Hwy to McCandless or Wexford on ALL TRIPS (See T17)	$1,258,000	283	-	-	$24.90	16.3	63.3	39.4	53.6	Requires Peak Vehicles
2016	Add service day: Sunday service Y47	$262,000	-	-	282	$22.88	17.8	47.8	53.3	53.5	Put in if Budget Allows
2016	Extend 58 to South Side via Hot Metal.	$265,000	67	33	20	$19.03	21.3	62.5	34.9	53.4	Requires Peak Vehicles
Both	Extend P3 extend to West Busway via South Side	$6,261,000	517	-	-	$67.84	6.0	69.1	42.9	53.1	Requires Peak Vehicles
2015	New Route: Century III Mall to Oakland	$420,360	205	-	-	$11.49	35.4	58.8	21.4	52.0	Requires Peak Vehicles
2016	Extend O5 Flyer to McCandless PNR & Wexford all trips & reverse commute trips	$1,117,000	28	-	-	$223.49	1.8	38.7	74.0	51.5	Requires Peak Vehicles
2015	New Route: Restore 3/1F Millvale to Downtown	$1,202,800	326	-	-	$20.67	19.7	45.3	49.4	51.5	Requires Peak Vehicles
2015	Reduce P16 by no longer serving Hulton and Milltown Rds	$(215,760)	(9)	-	-	$(134)	100.0	2.1	11.4	51.1	Reduces Service
Both	Reroute: Restore 84B by removing 81 from Southside	$112,000	41	32	11	$12.54	32.4	64.4	15.4	50.5	Requires Peak Vehicles
2016	Reroute 1 to serve Cherry City on weekends	$82,000	-	41	24	$33.32	12.2	46.6	52.3	50.0	Put in if Budget Allows
2016	Add service day: Weekend service 52	$355,000	-	189	120	$30.21	13.4	61.1	36.0	49.7	Put in if Budget Allows
2016	New Route: Restore 68B/P9 Blackridge Express ("P90") (68B pre TDP in Fred's old schedules)	$348,000	161	-	-	$12.11	33.5	60.0	16.2	49.4	Requires Peak Vehicles
2015	Add service day: Saturday service 52L	$296,360	-	373	-	$21.83	18.6	61.1	29.5	49.1	Put in if Budget Allows
2016	Add service day: Weekend service 29	$683,000	-	416	265	$26.37	15.4	40.8	52.8	49.1	Put in if Budget Allows
2016	New Route: Restore 5 Natrona	$1,529,000	241	-	-	$35.54	11.4	54.4	42.4	48.7	Requires Peak Vehicles
2016	Add service day: Weekend service 91 (RIDC Park)	$313,000	-	56	36	$89.43	4.5	47.1	55.7	48.3	Put in if Budget Allows
2015	Extend 91 to Sharps Hill	$274,040	14	-	-	$109.66	3.7	56.1	46.2	47.7	Requires Peak Vehicles
Both	Add service day: Weekend service 93	$985,000	-	734	467	$21.56	18.8	68.3	18.8	47.7	Put in if Budget Allows
Both	Add service day: Sunday service 4	$151,000	-	-	193	$19.27	21.1	49.5	35.3	47.6	Put in if Budget Allows
2016	Add service day: Weekend service P7	$490,000	-	383	244	$20.55	19.8	73.1	12.3	47.3	Put in if Budget Allows
2016	Extend 57 to McKeesport	$1,615,000	53	27	16	$145.88	2.8	77.0	25.3	47.3	Requires Peak Vehicles
Both	Extend 77 to Leechburg Gardens / CCAC Boyce Campus on weekends	$172,000	-	115	57	$26.46	15.4	45.7	43.3	47.0	Put in if Budget Allows
2016	Add service day: Weekend service 20	$480,000	-	327	208	$23.59	17.2	47.9	38.2	46.5	Put in if Budget Allows
2016	Add service day: Saturday service 29	$323,000	-	373	-	$23.79	17.1	40.8	44.9	46.2	Put in if Budget Allows

SERVICE REQUEST EVALUATIONS

Year(s) Requested	Service Requests	Annual Operating Cost	Projected Weekday Riders	Projected Saturday Riders	Projected Sunday Riders	Cost (Savings) per Rider Gained	Efficiency Score	Equity Score	Effectiveness Score	Final Score	Recommendation
2016	Extend 75 to RIDC park + remove a few trips on 91 RIDC variant to offset cost	$281,000	71	-	-	$22.17	18.3	61.8	21.9	45.9	Requires Peak Vehicles
2016	Add service day: Sunday service 52	$187,000	-	-	120	$38.38	10.6	61.1	30.0	45.8	Put in if Budget Allows
2016	Add service day: Weekend service 93 only between Oakland and Lawrenceville	$566,000	-	506	322	$17.96	22.6	64.2	13.4	45.1	Put in if Budget Allows
2016	New Route: Restore 51B to Southside/ Return 44 to original terminus	$1,888,000	98	-	-	$107.93	3.8	54.0	42.2	45.0	Requires Peak Vehicles
2016	Add service day: Saturday service 20	$227,000	-	292	-	$21.36	19.0	47.9	33.0	45.0	Put in if Budget Allows
2015	New Route: Restore JL Flyer from Pleasant Hills to Downtown via Old Clairton Rd	$677,040	205	-	-	$18.50	22.0	55.3	22.6	44.9	Requires Peak Vehicles
2015	Extend 88 to Wilk Station & shorten some of 71Cs to garage (half wkdy, all wknd)	$999,440	1	-	-	$5,599	0.1	76.4	23.1	44.8	Reduces Service
2016	Add service day: Weekend service 93 half of trips go to Hazelwood	$783,000	-	620	395	$20.29	20.0	60.7	18.6	44.7	Put in if Budget Allows
2016	Eliminate Route 54	$(10,122,000)	(3.7K)	(2.3K)	(1.1K)	$12.78	31.8	60.4	6.9	44.6	Reduces Service
2015	Expand: 4 to always serve entire route and to run later on weekday evenings	$197,160	60	30	18	$15.73	25.8	49.5	22.6	44.0	Put in if Budget Allows
Both	Add service day: Weekend service 71	$317,000	-	90	38	$65.78	6.2	71.6	18.5	43.3	Put in if Budget Allows
2015	New Route: Restore 70	$2,968,560	361	177	95	$39.72	10.2	53.2	32.5	43.2	Requires Peak Vehicles
2016	Reroute: 71B every other trip extended to Millvale via Lawrenceville	$1,064,000	98	69	29	$50.23	8.1	67.7	19.6	42.9	Reduces Service
2015	Reroute 75 through Bates/2nd Ave to E Carson St	$1,624,400	100	50	30	$77.77	5.2	65.8	24.3	42.9	Reduces Service
2016	Add service day: Weekend service Route 2 to Millvale only via Strip District	$447,000	-	410	176	$20.24	20.1	45.2	29.5	42.7	Put in if Budget Allows
2015	Extend 89 to Downtown	$1,366,480	10	-	-	$765.54	0.5	80.7	13.5	42.7	Requires Peak Vehicles
2016	Reroute: 71B to Stanton Heights every other trip	$372,000	10	-	-	$208.40	1.9	73.5	19.3	42.7	Reduces Service
2016	Extend 75 to RIDC park	$619,000	86	-	-	$40.32	10.1	61.8	21.9	42.2	Requires Peak Vehicles
2016	Add service day: Saturday service 44 (Baldwin)	$153,000	-	97	-	$43.33	9.4	54.1	29.5	41.8	Put in if Budget Allows
Both	New Route: North Hills to Oakland direct route	$518,000	288	-	-	$10.08	40.3	41.0	11.5	41.8	Requires Peak Vehicles
2016	New Route: Restore Route 501 (Route 16 and 61A combined)	$2,259,000	10	10	10	$884.15	0.5	66.9	25.0	41.5	Requires Peak Vehicles
2015	Reroute 57 to Southside Works then Waterfront	$657,200	24	12	7	$131.10	3.1	68.7	20.0	41.3	Put in if Budget Allows
2016	Add service day: Sunday service 22	$134,000	-	-	186	$17.74	22.9	56.7	12.1	41.3	Put in if Budget Allows
Both	New Route: Restore 44U/42 Mt. Lebanon to Oakland direct	$1,014,000	330	-	-	$17.21	23.6	51.5	16.5	41.3	Requires Peak Vehicles
2015	Extend 58 to Waterfront on weekends instead of Oakland and add weekend service to 93	$644,800	-	521	325	$20.05	20.3	60.7	10.7	41.2	Reduces Service
Both	New Route: Restore Brown Line	$1,308,000	173	-	-	$42.40	9.6	59.6	20.5	40.3	Put in if Budget Allows
2016	Reroute: Remove 83 from Southside, supplement with Point Breeze instead	$678,000	10	5	3	$324.59	1.3	62.1	26.2	40.3	Reduces Service

SERVICE REQUEST EVALUATIONS

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2015	New Route: Morningside to Squirrel Hill via Bakery Square	$585,280	71	-	-	$46.18	8.8	59.8	20.1	39.9	Requires Peak Vehicles
2015	Extend 69 weekend service into Downtown	$252,960	10	10	10	$99.01	3.2	67.1	17.9	39.7	Put in if Budget Allows
2015	Reroute: Restore 3 through Shaler Twp to Millvale then Downtown	$1,976,560	286	140	75	$33.35	12.2	36.4	39.2	39.5	Reduces Service
2016	New Route: North Hills to East Liberty direct route	$871,000	317	-	-	$15.40	26.4	48.2	11.2	38.6	Requires Peak Vehicles
2016	Reroute: Remove 81 from Southside, supplement with Squirrel Hill instead	$846,000	10	5	3	$405.02	1.0	62.3	22.4	38.6	Reduces Service
2016	New Route: Campbells Run Rd	$1,292,000	169	-	-	$42.83	9.5	33.3	42.8	38.5	Requires Peak Vehicles
2016	Extend 91 to Southside Works - interline?	$1,777,000	10	5	3	$850.73	0.5	48.4	36.4	38.4	Put in if Budget Allows
2015	New Route: Restore UV overnight circulator route on Fridays and Saturdays	$579,080	30	150	-	$53.54	7.6	61.3	15.6	38.0	Put in if Budget Allows
2015	New Route: Bakery Square to Squirrel Hill	$589,000	27	-	-	$122.21	3.3	52.2	26.9	37.1	Requires Peak Vehicles
2016	New Route: Highland Park to Squirrel Hill direct route	$2,365,000	10	-	-	$1,325	0.3	51.1	30.5	36.9	Requires Peak Vehicles
2015	Extend 12 weekend service into North Park	$32,240	-	15	10	$33.87	12.0	43.3	26.4	36.7	Reduces Service
2015	Extend 36 to Oakland	$558,000	137	-	-	$22.82	17.8	50.1	12.5	36.2	Requires Peak Vehicles
2016	Extend 71s to downtown - convert to P71s	$252,000	10	-	-	$141.18	2.9	63.6	13.1	35.8	Put in if Budget Allows
2015	Extend 65 Squirrel Hill down Beechwood Blvd to Greenfield	$204,600	58	-	-	$19.90	20.4	44.7	12.8	35.1	Requires Peak Vehicles
2015	Extend 16 to Center and Walliston	$572,880	218	-	-	$14.76	27.5	27.1	21.3	34.2	Requires Peak Vehicles
2016	Add service day: Weekend service 87M	$316,000	-	49	31	$103.87	3.9	60.7	10.5	33.8	Put in if Budget Allows
2015	Reduce 61D to end in Oakland & double frequency on 61C	$5,167,080	1	1	1	$20.2K	0.0	74.3	0.5	33.7	Reduces Service
2016	Extend 53 to CBD on saturdays. (53L)	$177,000	-	154	-	$31.58	12.9	53.7	7.7	33.4	Requires Peak Vehicles
2016	New Route: Glenshaw	$435,000	213	-	-	$11.44	33.3	34.7	6.1	33.4	Requires Peak Vehicles
2016	Reroute: Remove Robinson from 28X Airport Flyer - Direct Airport service (8 added trips)	$63,000	(735)	(620)	(540)	$(0.36)	-	54.5	19.4	33.2	Reduces Service
2015	Add service day: Saturday service 87M	$288,920	-	49	31	$94.97	4.3	52.0	10.8	30.2	Put in if Budget Allows
2015	Extend P67 to Concordia Monroeville	$338,520	30	-	-	$63.22	6.4	37.5	14.3	26.18	Requires Peak Vehicles
2015	Reroute 43 into a single one way loop	NA	NA	NA	NA	NA	NA	NA	NA	0.00	Does not Adhere to Service Guidelines
2016	Reroute: P13 back to East Busway	NA	NA	NA	NA	NA	NA	NA	NA	0.00	Does not Adhere to Service Guidelines
2016	Reroute: Break up Route 59 into several smaller routes	NA	NA	NA	NA	NA	NA	NA	NA	0.00	Does not Adhere to Service Guidelines

PLANNED CHANGES FOR FISCAL YEAR 2018

Planned Changes to Meet Service Guidelines on Existing Routes

Some of the following changes were also major service requests, but because the route is not meeting service guidelines, these changes are made in order to bring the route into adherence with guidelines.

Route	Service Day(s)	Service Guideline Metric	Planned Changes	Annual Cost
39	Weekday	In-Service Time	Create one-way loop near terminus in Brookline to optimize in-service time.	$0
40	Weekday	In-Service Time	Rewrite schedule to optimize in-service time.	$0
52L	Weekday	Passengers per Hour	Consolidate low-performing trips to improve efficiency.	$0
78	Weekday	Passengers per Hour	Convert midday and evening trips to P78 to stimulate ridership and improve efficiency.	$0
P1	Weekday	Crowding	Add trips where resources permit to alleviate overcrowding.	$100,000
Y45	Weekday	Passengers per Hour	Consolidate low-performing trips to improve efficiency.	$0
Various	Various	On TIme Performance & Minor Changes to Service	Adjust running times on low-performing routes to improve on-time performance, add trips to balance passenger loads, extend routes slightly to serve new areas, and expand service spans by adding early or late trips where ridership has grown.	$481,000
Total				**$581,000**

*Planned changes are not set in stone at this point - changes to costs from optimization of schedules can occur, and all changes are subject to a Board approved fiscal year 2018 budget.

Minor Service Changes

The following changes are recommended for FY2018 to expand service. While minor, they were each requested by the public as a major change to service and were found to be possible to recommend for FY2018 as a minor service change instead. All three are expected to increase ridership and efficiency on the affected routes.

Route 55 Extension to Mifflin Estates

Extend Route 55 to serve the Mifflin Estates Apartment complex via Old Elizbeth Rd, Lebanon School Rd, Camp Hollow Road, and Old Lebanon School Road to Mifflin Estates (A Dr, D Dr, and Blackberry St) to stimulate ridership on this route on all days of the week.

Route 56 Extension to Penn State McKeesport Campus

Extend 56 to Penn State McKeesport on weekends. This route was extended on weekdays last year and this has been a very suc cessful extension.

Route 74 Reroute to serve Bakery Square (in conjunction with an extension of Route 89)

Reroute 74 to provide a more direct connection between Squirrel Hill and the Bakery Square area. Shorten the 74 to end at Shuman Detention Center while extending the 89 to replace the lost service on the 74 on Larimer and Paulson Avenues. The 74 will no longer serve Wilkins Ave and Reynolds Street in Squirrel Hill North - it will instead route via Shady Avenue. Trips on the 89 and 74 will be directly linked at Shuman Detention Center. On Sundays, the 89 will be extended to Shuman Detention Center even though the 74 does not run on Sundays. Additional field work is necessary to confirm this change is feasible.

Summary

This was the second 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.

This document was produced by the Planning and Evaluation Department in the Communications Division and the Service Development and Evaluation Department in the Operations Division at the Port Authority of Allegheny County. For additional information on the creation of this report or Port Authority's services, please visit Port Authority's website at www.portauthority.org.