

NEX Transit

Existing Conditions Report



FINAL 9.1.2020

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Background and Purpose

Transit Agency Background

Port Authority of Allegheny County (Port Authority or PAAC) provides public transportation throughout Pittsburgh and Allegheny County. The Pennsylvania General Assembly established Port Authority in 1959 and it is currently the 26th largest transit agency of the greater than 6,800 agencies in the United States. Pittsburgh Railways and 32 other private transportation carriers were consolidated to form Port Authority as it began operations in 1964. Port Authority currently operates multiple modes of transit including bus, bus rapid transit, light rail, inclined plane, and demand response paratransit.

Port Authority plays a major role in the economy of Pittsburgh, and the surrounding counties. Economic revitalization and growth are taking place along Port Authority's busways and light rail lines. The 2018 American Community Survey reported 17.9% of commutes in Pittsburgh and 9.5% of commutes in Allegheny county are taken on transit.

Report Purpose

Port Authority is developing a Long- Range Transportation Plan which will provide an action-oriented strategy for making investments and changes to its current system. This existing conditions report will provide a summary of Port Authority's current system and its environment relevant to the transit industry and its service area in Southwest Pennsylvania. It will provide the foundation for further analysis by the project team and its Steering Committee, and will serve as a reference for other project stakeholders. Although this report was prepared during the COVID-19 pandemic, all references to ridership and funding mechanisms pre-date the pandemic: ridership trends continue to evolve and funding policy continues to respond to current economic conditions.

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Quick Facts and Figures



Service Area Stats

Operational Stats

FTA National Transit Database Measures

Service Area Stats

(2018 ACS Data)

Going to work...



70.6%

Drive Alone
(76.3% nationally)



9.48%

Public Transportation
(4.9% nationally)



8.69%

Carpool
(9.0% nationally)

Port Authority's Service Area: 745-sq miles

Population base of 1.2 million people

Mean Travel Time to Work of 27 min

Median Household Income of \$58,383

Persons in Poverty: 11.7%

Households without a car: 13.7%

27th Ranked Metro area by number of transit trips (APTA 2018 Fact Book)

16th Ranked Metro area by ridership per capita (APTA 2018 Fact Book)



PAAC provides transportation services across **nearly 100 bus routes, three light rail routes, two inclined planes (funiculars) as well as contracted paratransit service.** To provide convenient service to the largest number of residents, PAAC has strategically planned its bus routes, light rail lines, and busways in order to connect residents to employment hubs. Throughout Allegheny County, the most population dense areas are supported by various transportation options.

— The Economic Impact of The Port Authority of Allegheny County, November 2018

Operational Stats

(PAAC 2020 Budget)



The Port Authority of Allegheny County increased ridership by nearly 2% in 2018, bucking the national trend which saw a decrease of 1.8% nationally, according to the American Public Transportation Association. A total of 81 bus lines, 84% of all buses in the system, converge in the Golden Triangle. The increase in bus ridership system-wide is evidenced by the 3% increase in alightings (offs) at Golden Triangle bus stops in 2018 compared to 2017.

Total Passenger Miles Traveled

- 267,132,134 Passenger Miles
- 26,349,298 Revenue Vehicle Miles

Unlinked Trips

- 62,414,729 Total Passengers

Vehicles by Mode

- Bus: 730
- Light Rail: 83
- Incline: 2
- Demand Response: 335 (contracted)

Vehicles Operated in Max Service

- Bus: 603
- Light Rail: 58
- Incline: 2
- Demand Response: 270 (contracted)

Vehicles by Mode

(2020 Budget) 61,999,594

- Bus: 87% (53,733,622)
- Light Rail: 12% (7,655,539)
- Incline: 1% (610,433)

Stations

- Bus: 17 Stations; 6840 Stops
- Light Rail: 27 Stations
- Incline: 2 Stations

Duquesne Incline is owned by Port Authority but operated by The Society for the Preservation of the Duquesne Heights Incline. Its ridership data is excluded from this report.

FTA National Transit Database Measures



2018 Cost per Unlinked Passenger Trip

Mode	PAAC	National
Light Rail	\$8.72	\$4.78
Bus	\$5.74	\$4.90
Demand Response	\$25.51	\$39.51



2018 Cost per Vehicle Revenue Hour

Mode	PAAC	National
Light Rail	\$392.06	\$312.09
Bus	\$188.43	\$136.40
Demand Response	\$61.23	\$72.88



2018 Cost per Passenger Mile

Mode	PAAC	National
Light Rail	\$2.21	\$0.92
Bus	\$1.37	\$1.31
Demand Response	\$3.20	\$4.37



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Industry Profile

Transit Industry Overview

Transit, commonly referred to as public transportation, is provided by over 6,800 organizations in the United States. The Federal Transit Administration (FTA) is an agency within the U.S. Department of Transportation (USDOT) which provides oversight, financial and technical assistance, and technology research for the industry. The American Public Transportation Association (APTA) is the major industry association.



APTA reported public transportation agencies **provided more than 10.46 billion unlinked passenger trips in 2016.** Those trips accounted for more than 58.4 billion passenger miles. Public transportation agencies which receive funding from the Urbanized Area Formula Grant Program (such as Port Authority) or the Rural Formula Grant Program are required to submit performance data to the National Transit Database (NTD). NTD records operating, financial, and asset conditions. **More than 650 agencies report data to NTD which facilitates statistical comparison.**

NEXTransit

Today, public transit in America is...

Total Number of BRT systems

63 SYSTEMS

across 28 transit agencies

Source: 2020 National BRT Institute

TOTAL PASSENGER MILES TRAVELED

41.4 billion · 1996

52.2 billion · 2006

58.4 billion · 2016

...more popular.

TOTAL NUMBER OF RAIL SYSTEMS

52 · 1995

87 · 2016

Rail ridership has increased by more than **77% SINCE 1996.**

...more convenient.

...more accessible.



Share of Handicap-Accessible Public Transit Vehicles

Fixed-Route Bus



51% → 99%
1993 2017

Demand-Response



85% → 90%
1993 2017

Light Rail



41% → 90%
1993 2017

Commuter Rail



32% → 87%
1993 2017

...still growing.



Since 1996

Population growth is ↑ 20%

Public transit ridership is ↑ 30%

NEXTransit

PUBLIC TRANSIT FACTS

Cities with more than 40 annual public transit trips per person have **HALF THE TRAFFIC FATALITY RATE** of those with fewer than 20 trips per person.

According to APTA's The Hidden Traffic Safety Report: Public Transportation

Saving Lives



Public transportation conserves **4.16 billion gallons of gas per year**

Reducing Gasoline Consumption



Each \$1B investment in public transit supports:

50,000 jobs | **\$642 million in tax revenue**

According to APTA's Economic Impact of Public Transportation Investment

Creating Jobs



Promoting Electrified Vehicles



Share of Electric/Hybrid Buses

4.9% | **15.8%**
2009 | 2017

According to APTA's 2017 Vehicle Database

Lowering Carbon Emissions



Commuting to work by subway emits

73% LESS CO2 than by car.

According to the FTA's Public Transportation's Role in Responding to Climate Change

Driving the Economy



ONE-HALF of transit trips are to or from work.

38% result in consumer spending in local economies.

According to APTA's Who Rides Public Transportation

FTA annually invests more than \$12 billion in support of public transit across the nation. The funds are administered through a number of discretionary and formula grants. Formula grants provide funding to designated recipients (usually state departments of transportation) and programs such as Urbanized Area Formula Grants (49 U.S.C. 5307), Formula Grants for Rural Areas (49 U.S.C. 5311), State of Good Repair Grants (49 U.S.C. 5337), and Enhanced Mobility of Seniors & Individuals with Disabilities (49 U.S.C. 5310). Discretionary grant programs are not guaranteed. FTA states that demand for these programs significantly exceeds available funding. The programs are FTA's primary mechanisms for funding capital projects and include New Starts, Small Starts, and Core Capacity Improvements. FTA has an emergency relief program which assists public transportation agencies following emergencies and natural disasters. FTA's grant programs provide up to 80% of capital costs and 50% of operating costs. A complete list of the grants can be found in Appendix A - Federal Funding Program Descriptions.

The Pittsburgh metro area comprises the 27th largest metro service area, as well as the 27th largest agency in terms of unlinked passenger trips. An unlinked passenger trip includes every trip on a transit vehicle regardless of the fare paid or transfer presented. Several top transit agencies (#15-29) ranked by unlinked passenger trips are displayed in the table on the following page.



Largest Transit Agencies Ranked by Unlinked Passenger Trips 2018 *

Transit Agency	Urbanized Area	Unlinked Passenger Trips		Rank
		Thousands (2017)	Thousands (2018)	
MTA Long Island Rail Road (MTA LIRR)	New York, NY	103,630,405	105,538,101	15
Denver Regional Transportation District (RTD)	Denver, CO	98,077,504	104,708,480	16
Tri-County Metro. Transp. District of Oregon (TriMet)	Portland, OR	99,045,313	97,033,281	17
Metro-North Commuter Railroad Comp. (MTA-MNCR)	New York, NY	86,949,250	92,437,511	18
Port Authority Trans-Hudson Corp. (PATH)	Jersey City, NJ	94,198,861	91,036,214	19
Metro. Transit Auth. of Harris County (Metro)	Houston, TX	88,129,126	90,300,547	20
San Diego Metro. Transit System (MTS)	San Diego, CA	88,194,806	85,429,212	21
Metro Transit	Minneapolis, MN	81,927,425	80,653,405	22
Northeast Illinois Reg. Commuter Rail Corp. (Metra)	Chicago, IL	70,592,215	68,446,239	23
Reg. Transp. Comm. of Southern Nevada (RTC)	Las Vegas, NV	65,534,978	65,765,918	24
City and County of Honolulu DOT Services (DTS)	Honolulu, HI	66,559,963	65,520,762	25
Port Authority of Allegheny County (THE AUTHORITY)	Pittsburgh, PA	63,230,618	63,463,854	26
Dallas Area Rapid Transit (DART)	Dallas, TX	65,583,009	62,438,784	27
Alameda-Contra Costa Transit District (AC Transit)	Oakland, CA	53,416,004	52,789,850	28
Orange County Transportation Auth. (OCTA)	Orange, CA	42,863,498	42,201,857	29

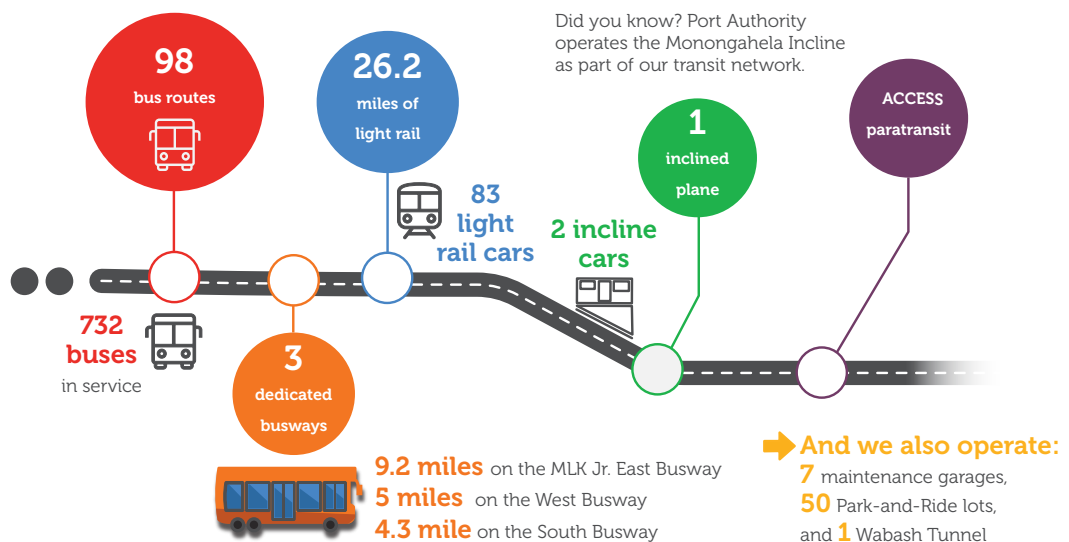
* Compiled by MBI from available National Transit Database Agency Profiles

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Agency Profile

Overview

Port Authority currently operates 96 bus routes, three busways (bus-only highways), one inclined plane (the Monongahela Incline), a 26.2-mile light rail system, and the ACCESS shared-ride paratransit system. The three busways consist of the 9.2-mile Martin Luther King Jr. East Busway, the 5-mile West Busway, and the 4.3-mile South Busway. In addition to operating over 800 vehicles across multiple modes of transportation, Port Authority also operates seven maintenance and storage garages, 50 park-and-ride lots, and a high-occupancy vehicle tunnel (Wabash Tunnel).



Organization

Board of Directors

Port Authority has an 11-member Board of Directors who are appointed in part by the Governor, the County Executive and Council of Allegheny County, and two caucuses of the Pennsylvania General Assembly. The board members are unpaid volunteers and the structure provides representation from the funding stakeholders.

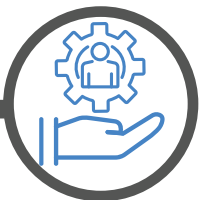
Workforce

Port Authority's 2020 budget has a total authorized headcount of 2,681 employees. Staff are organized into eight divisions including the Office of the CEO, Finance, Marketing & Communications, Human Resources, Legal and Corporate Services, Planning & Development, Information Technologies, and Transit Operations.

* Duquesne incline is owned by PAAC and operated by The Society for the Preservation of the Duquesne Heights Incline. Its ridership data is excluded from this report.

Transit Operations is the largest division with over 2,300 positions. In addition to operating and maintaining transit vehicles, the division also includes transit police and security.

Labor costs account for approximately 75% of Port Authority’s total operating expenses —wages and salaries represent 38% of the operating expenses, and pensions and benefits account for 37%. There are three separate collective bargaining units. Of these, Amalgamated Transit Union (ATU) represents over 86% of employees, the International Brotherhood of Electrical Workers (IBEW) represents a small percentage of employees, and the Transit Police has its own separate bargaining unit.



Port Authority’s Services

Demand for transit in Allegheny County has placed consistent pressure on Port Authority to expand its transit system. As an exception to the recent national trend of declining transit ridership in most major cities, ridership the Pittsburgh area remains steady. Despite this, Port Authority has faced years of increasing costs and funding challenges which resulted in the reduction of services. It is essential to the continued economic viability of the region that Port Authority work to restore those services.

Port Authority reported annual unlinked trips of 63.5 million in its 2018 NTD report, an increase of 0.37% over ridership in 2017. Total ridership reached a peak in 2015 at 65.2 million unlinked passenger trips. While there was a slight decline in unlinked trips from 2015 to 2016, there has been an overall positive trend from 2013 to 2016, during which unlinked trips increased by 0.42%. Vehicle revenue miles increased by 5.38% during that same period. Meanwhile at the national level, total national ridership declined 1.02% from 2014 to 2015, and 2.08% from 2015 to 2016.

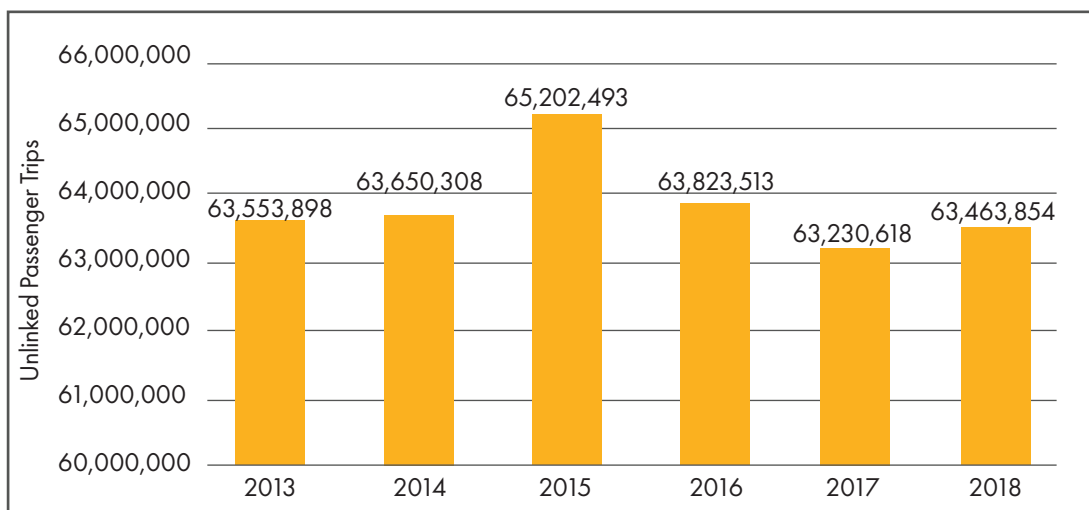


Figure 2: NTD Reported Unlinked Passenger Trips

While Port Authority has tended to outperform the national average in terms of ridership, it compared unfavorably to national trends in several measures of service efficiency and effectiveness. Costs per unlinked trip is one measure of service effectiveness and considers both short and long trips equally. Port Authority had a higher cost per unlinked passenger trip than the national average for both light rail and bus, and a higher cost per vehicle revenue hour for incline, light rail, and bus than the national average. However, Port Authority’s costs per unlinked passenger trip and costs per revenue hour for its ACCESS service are slightly better than the national average for demand-response service.



Bus

Bus includes a variety of rubber-tired passenger vehicles operating on fixed routes and schedules over roadways. Port Authority is the 20th largest bus agency in terms of unlinked passenger trips and it owned approximately 730 buses in 2020. Port Authority’s fleet is comprised of a mix of 35-foot, 40-foot, and 60-foot articulated buses. These include 27 hybrid diesel electric buses and two battery electric buses, with another six battery electric buses scheduled for delivery in 2021. At maximum service, 603 buses of those 730 were required, which equates to a spare ratio of 17.4%.

The fleet average age is 6.2 years, compared to the national average bus fleet age of approximately 7.3 years, according to APTA. The FTA useful life benchmark (ULB) for buses and articulated buses is 12 years.



Light Rail

Light Rail Transit (LRT) includes a variety of electric railway vehicles with a light volume traffic capacity compared to heavy rail. Port Authority was the 17th largest light rail and streetcar agency in the nation in terms of unlinked passenger trips and it owned approximately 83 light rail vehicles in 2018. At maximum service, 58 vehicles of the total 83 were required to fulfill all scheduled trips, which equated to a spare ratio of 30.1%.

The average fleet age is 26.6 years, compared to the national average light rail car age of approximately 18.1 years according to APTA. The FTA ULB for light rail cars is 31 years.



Incline

Inclined Plane (IP) includes special passenger vehicles which operate up and down slopes on rails via a cable mechanism. Also known as a funicular, there are fewer than 20 inclined planes operating in the United States and there are only three agencies which report IP data to the NTD. Port Authority operates two inclined plane cars. The Monongahela Incline is 150 years old, although both infrastructure and vehicle improvements have been made over the years. The car bodies were most recently replaced in the 1990s. The FTA ULB for an inclined plane vehicle is 56 years.

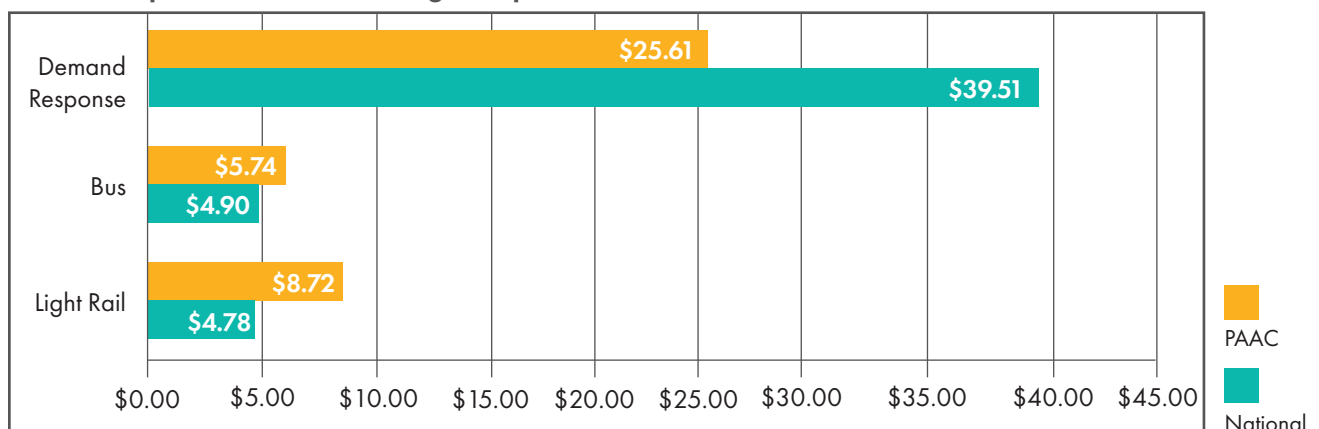


Demand Response

Demand Response (DR) includes automobiles, vans, or small buses dispatched by request to pick up passengers and transport them to their destinations. Port Authority is the 12th ranked demand-response agency in terms of unlinked passenger trips. ACCESS, Port Authority’s demand response service, contracted approximately 362 demand response vehicles in 2018; at maximum service, 271 of these were required at one time, which equated to a spare ratio of 25.1%.

The average fleet age in 2016 was 5.8 years, whereas APTA reported the national average demand response fleet age in 2016 was 4.2 years. Demand response fleets tend to vary in terms of the vehicle types utilized —The FTA ULBs for automobiles, minivans, vans, and sport utility vehicles are all 8 years. The FTA ULB for cutaway buses is 10 years.

2018 Cost per Unlinked Passenger Trip





Southwest PA Service Area: Allegheny County

Port Authority's service area is comprised of 775 square miles with an estimated population of over 1.2 million people; the Pittsburgh urbanized area is the 27th largest in terms of population in the United States. The area is home to multiple Fortune 500 companies including Alcoa, Heinz, PNC Corporation, PPG, and Bank of New York Mellon.

Port Authority has four operational bus divisions including the Ross, Collier, East Liberty, and West Mifflin divisions. The Ross Division opened in March of 1968 and services areas to the North and East of Allegheny County. The Collier Division opened in June of 1969 and services areas to the South and West of the County. The West Mifflin Division opened in November of 1969 and is the second largest division at the Port Authority. The East Liberty Division opened in July of 1972 along the Martin Luther King Jr. East Busway, and is the largest of the Port Authority divisions.

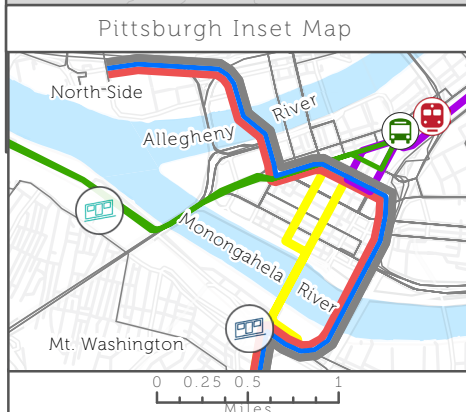
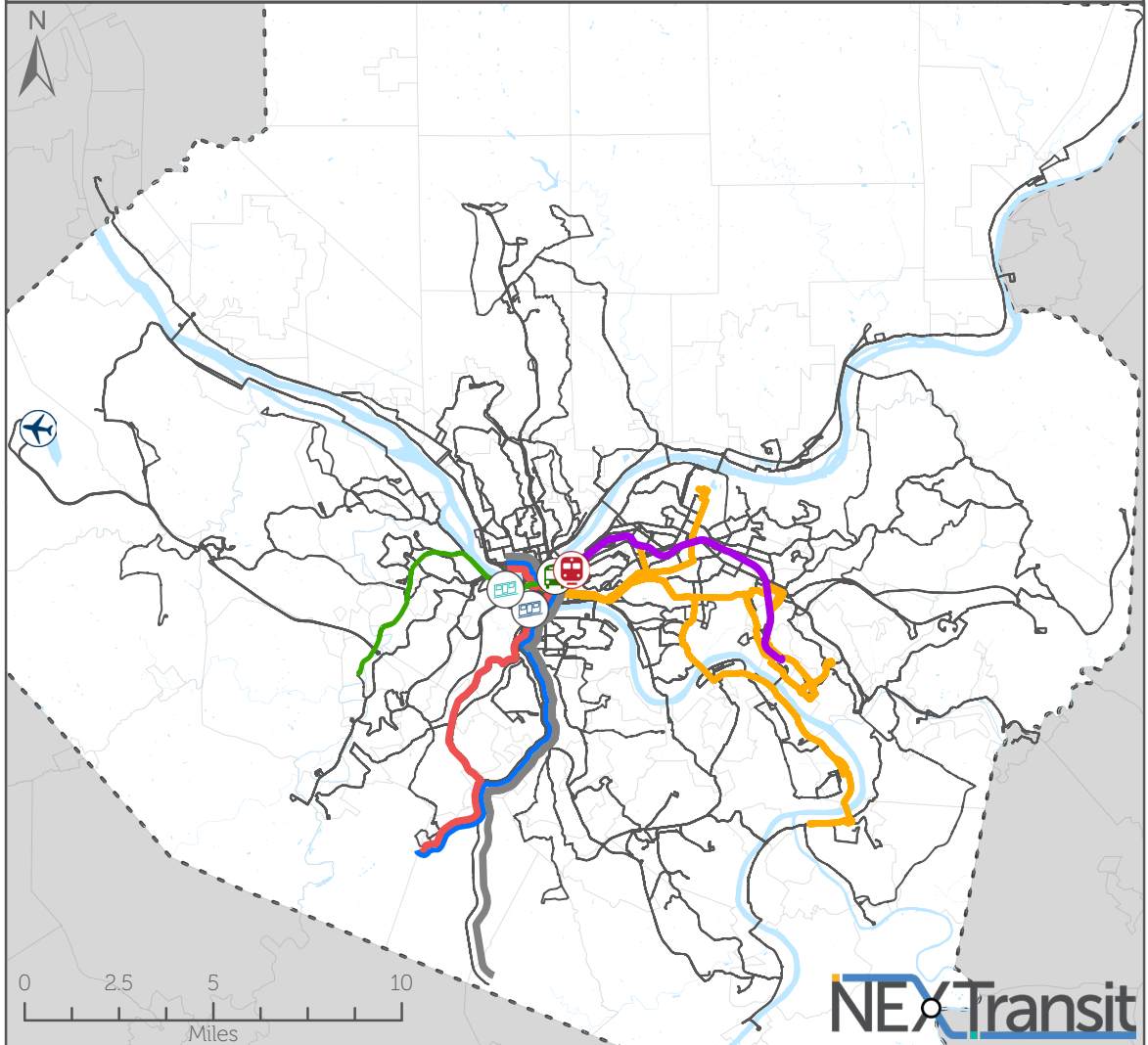
The Main Shop is located at Manchester and is comprised of eight shop sections where heavy bus maintenance work and signage work is performed for the system. Shop Sections include: Engine Overhaul, Electrical Units, Sign Shop, Transmission Overhaul, Body and Paint, Miscellaneous Units, and Vehicle Overhaul.

The South Hills Village Rail Center opened in 1984 and houses all rail transportation as well and heavy and running repair maintenance services for the Light Rail vehicles. The South Hills Junction facility is comprised of five buildings which house the Non-Revenue Vehicles, Facilities, LRT Systems and Power, and the Way Departments. These departments are responsible for maintaining the fixed assets of Port Authority: fixed guideways (rail, incline, and busways), power and signaling operation, and non-revenue vehicle maintenance.





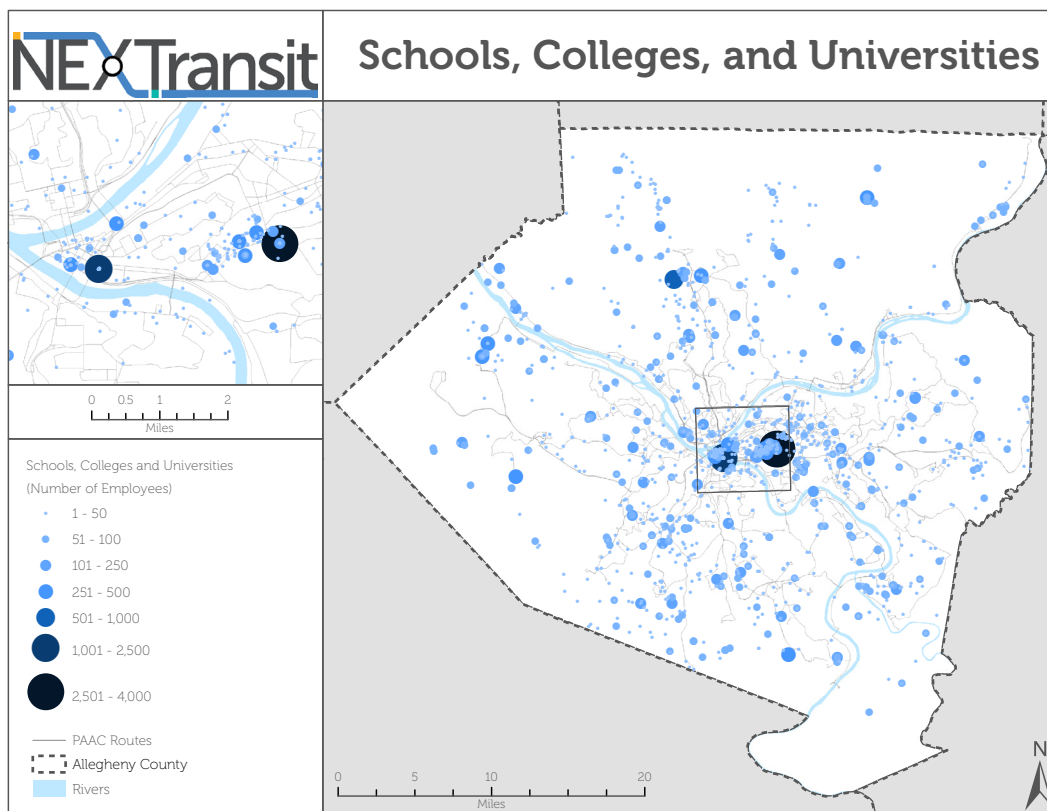
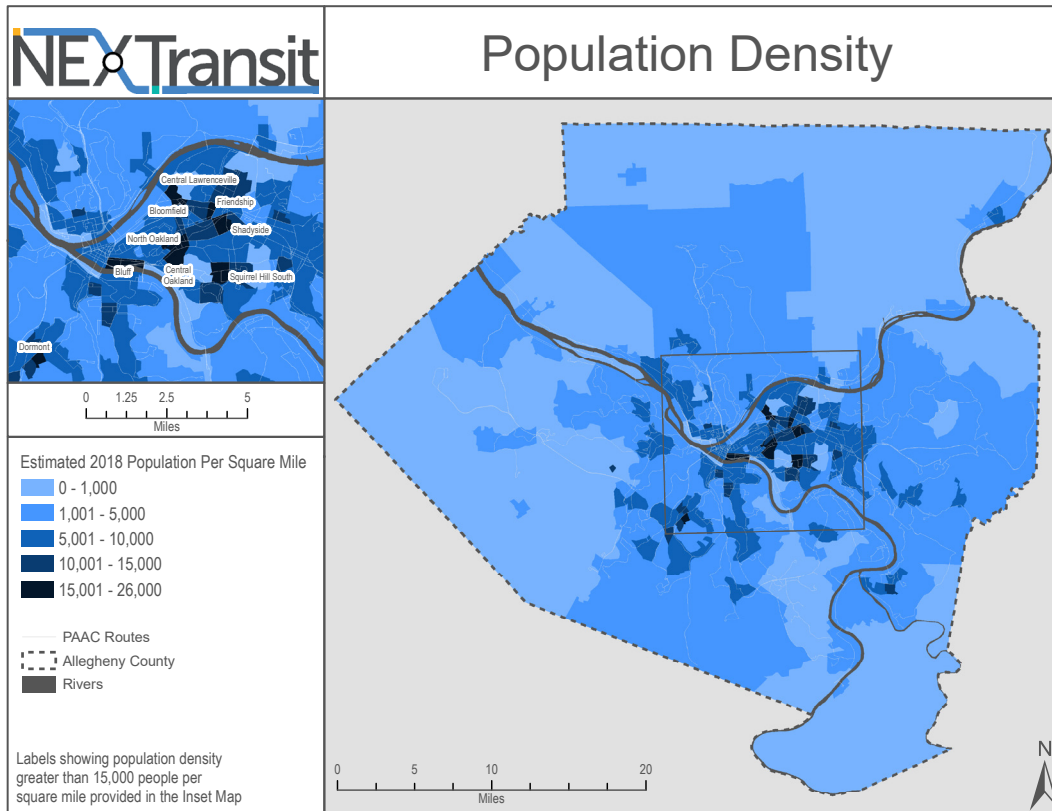
Port Authority of Allegheny County Transit

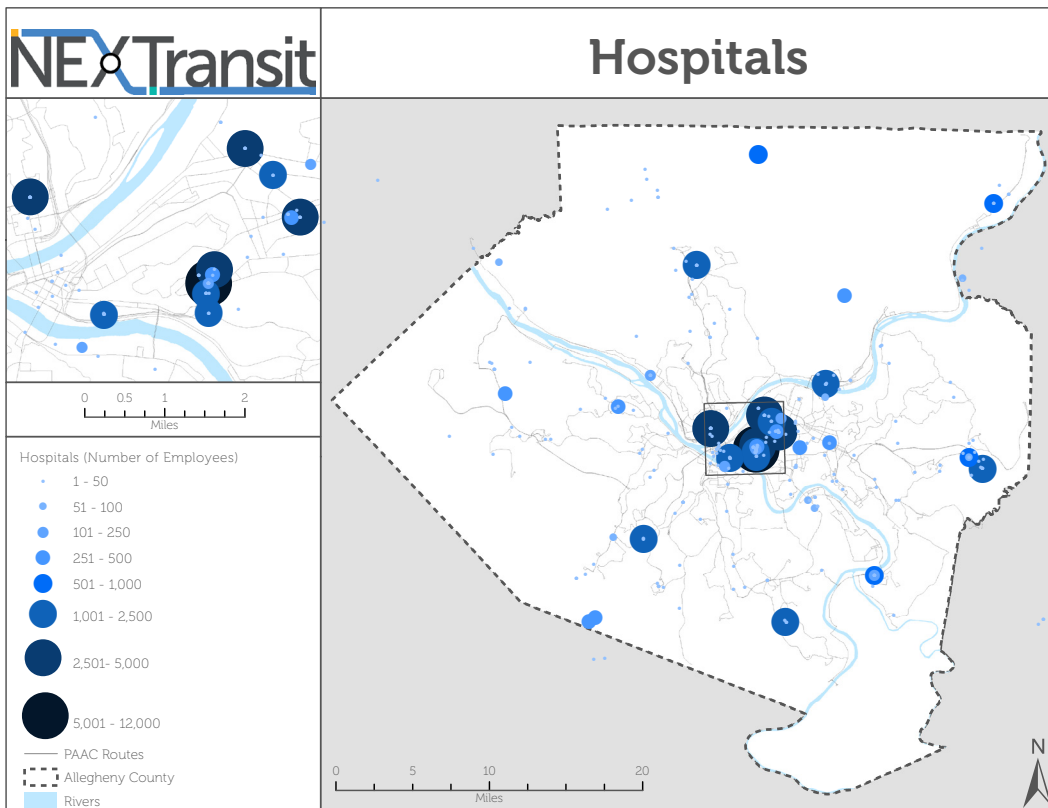
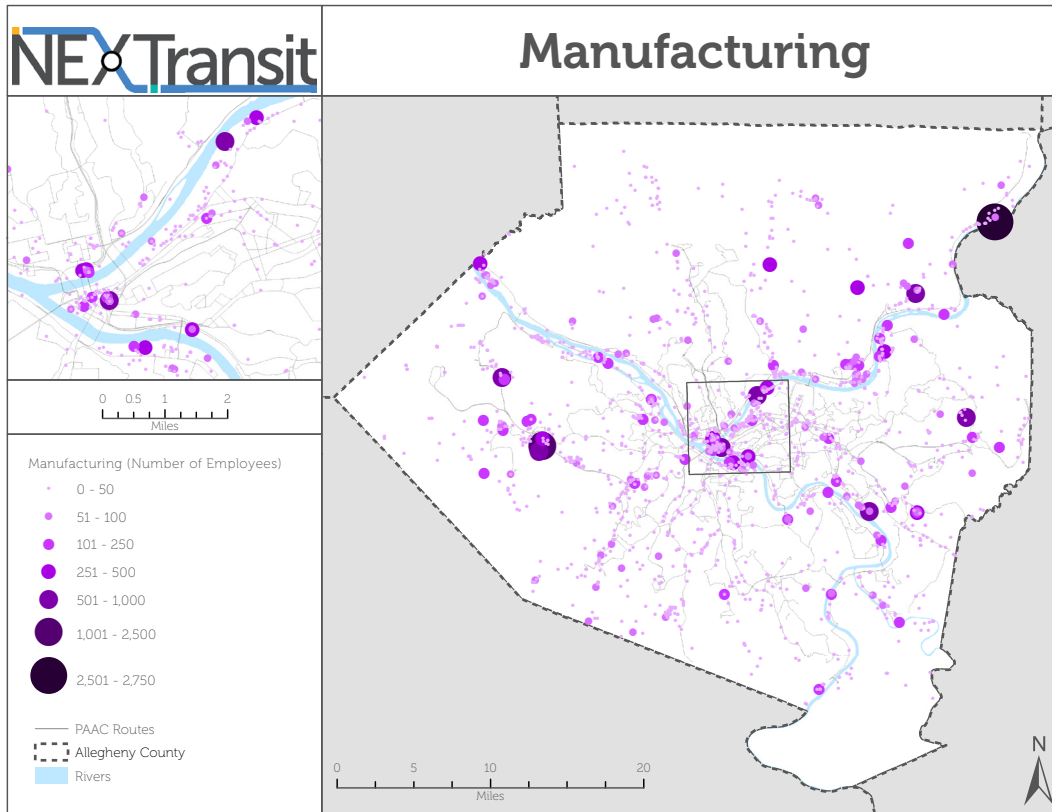


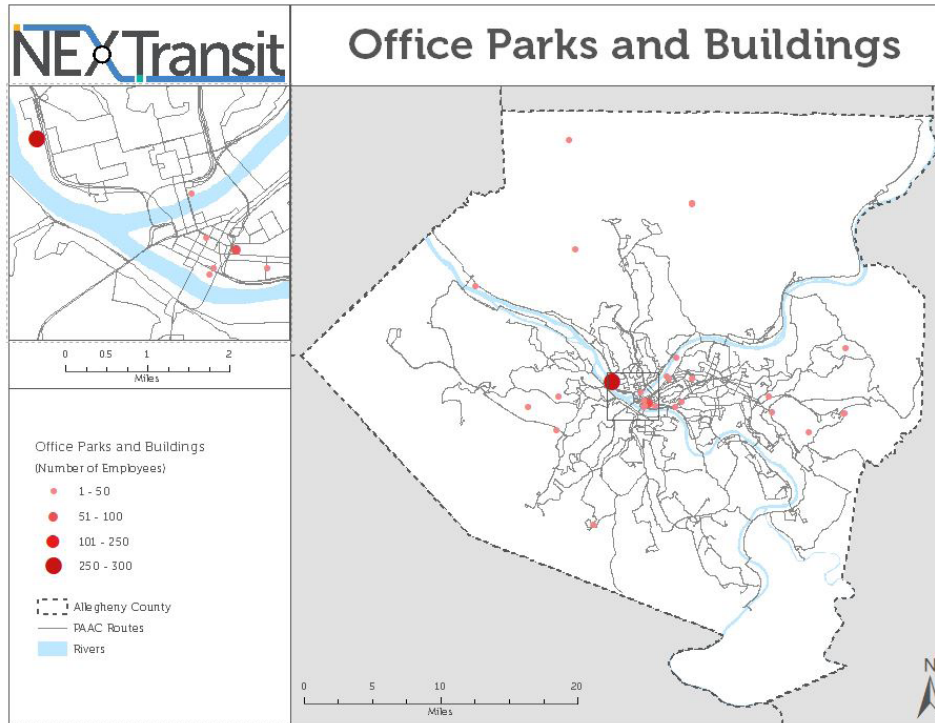
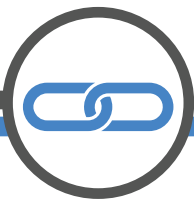
<p>PAAC Transit Routes</p> <ul style="list-style-type: none"> — Local & Express Routes 	<p>Fixed Guideway Network</p> <ul style="list-style-type: none"> — Silver Line (LRT) — Blue Line (LRT) — Red Line (LRT) — Green Line (West Busway) — Purple Line (East Busway) — Planned Oakland East End Routes
<p>Transit Facilities</p> <ul style="list-style-type: none"> Monongahela Incline Duquesne Incline Greyhound Bus Station Airport Amtrak Station 	<p>Map Features</p> <ul style="list-style-type: none"> Rivers Municipalities County Borders Allegheny County

Origins and Destinations

Passenger movements throughout the service area will be examined in detail during the market analysis portion of this long-range plan. The following maps display several of the key factors that influence travel demand including where passengers originate and their ultimate destinations.







First and Last Mile Connections

Bicycles

Transit users connect with their transportation options through a variety of means: some people walk to transit stops, others bike, and still others drive and park at park and rides or get dropped off at stations by a family member. It is important to understand the context for these types of connections in Allegheny County.

Port Authority of Allegheny County supports the integration of cycling as 'first and last mile' connection option to enable more people to reach transit who may live or be destined somewhere too far to be able to easily walk the first or last piece of their trip. Each bus has a front-mounted bike rack that holds two bicycles. Bikes are also permitted onboard light rail cars as well as on the Monongahela and Duquesne Inclines. According to Port Authority's Transit-Oriented Development Guidelines, bicycles are rated second highest for maximizing the limited space near and around transit station, since bikes can be stored at the station or transported on them (PAAC, 2019).

Pittsburgh currently has many bike lanes and trails, such as the 24-mile-long Three Rivers Trail that connects neighborhoods and historical sights (Bike PGH, 2020). North Shore Trail, Lawrenceville Trail, Millvale Trail, Eliza Furnace Trail, and South Side Trail are all components of this trail. The Great Allegheny Passage is another major regional and interstate connector, accessible via Port Authority service in several locations. Moving forward, however, it is important for bike connections to become less fragmented. There are six proposed key corridors to help bring more continuity and establish bikeways (dedicated, protected bike lanes) in Pittsburgh (BikePGH, 2019). These include the Allegheny Green Boulevard, East End Bikeway, River to River Bikeway, Fifth & Forbes Bikeway, Golden Triangle Bikeway, and Airport to City Bikeway (BikePGH, 2019).



Bike Shares and Electronic Scooters

One method of addressing first- and last-mile connections that is gaining popularity globally is bike sharing. These bikes can be unlocked and accessed with a mobile app, and both subscriptions and pay-as-you-go prices are available. Docking stations are frequently placed near transit hubs, which encourages users to pair bike sharing with transit for their longer-distance trips.

The City of Pittsburgh partnered with the non-profit Healthy Ride in 2015 to operate a bike-sharing network, with bicycles provided by NextBike. The Healthy Ride network currently has a fleet of 650 bikes accessible from 110 docking stations. Pricing ranges from \$12 to \$20 for a monthly subscription (depending on length of ride needed) or \$2 for each half hour without a subscription. For University of Pittsburgh first-year and resident students, the cost for all half-hour rides is covered by the University.

An alternative last-mile option that some cities in the US have implemented is the use of dockless motorized scooters. Companies including Lime and Bird provide electric scooters for rental via mobile apps, and riders can locate an available scooter via the app then drop it off anywhere in the city.

Scooter-sharing businesses currently do not operate in Pennsylvania, but have expressed an interest. State laws effectively outlaw their use. As motorized vehicles, they are prohibited from operating on sidewalks; but with an average speed of 15mph they are not powerful enough to keep up with other motorized vehicles and therefore they are not permitted to drive on roadways either.

Transportation Network Companies (TNCs)

Transportation Network Companies (TNC) provide transportation for customers who prearrange their trips, usually through an on-line application. The two most recognizable TNCs, Uber and Lyft, began providing services in 2012. PA SB 984 of 2015 was finally adopted in late 2016 which amended Titles 53 (Municipalities Generally), 66 (Public Utilities), and 75 (Vehicles) to legalize the use of Transportation Network Companies throughout the State.

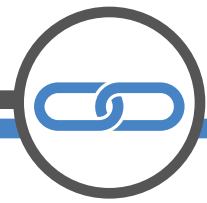
Lyft has Lyft, Lyft XL, and LUX option in Pittsburgh. Lyft offers 4 seats per ride and Lyft XL offers 6 seats per ride. Uber has Uber X, Comfort, and UberXL options. UberX offers 4 seats per ride and UberXL offers 6 seats per ride. Uber has been in Pittsburgh for 6 years. In 2018, Uber controlled 69% of the market share in the United States, compared to Lyft at 29%. Uber states that they have 2 million drivers per day in the US. 15 million rides occur each day. Pittsburgh has 4000 drivers. Assuming half drive each day there should be at least 150,000 rides per day. Assuming Lyft is controls 29% of the market share in Pittsburgh Lyft should have 63,043.47 rides each day.

As an industry, TNCs have existed for just over a decade. Their services and governments responses to their existence continue to change. It is unclear if transit and TNCs complement each other or compete directly against one another. There is research that support both positions. Some analysts have argued that TNCs induce demand for transit by providing first and last mile connections, while other authors have argued that TNCs reduce demand for transit by providing an alternative service. A recent study by Carnegie Mellon University² found evidence that support TNCs are provided first and last mile connections in Pittsburgh and not providing much competition for fixed-route service.

In the midst of this uncertainty, transit agencies around the nation are establishing partnerships with TNCs. Recent examples include Miami-Dade



² Grahn, R., Qian, S., & Matthews, H.S. (2020). Are travelers substituting between transportation network companies (TNC) and public buses? A case study in Pittsburgh. *Transportation*, 2020. doi: 10.1007/s11116-020-10081-4



Transit suspending its overnight fixed-route service and partnering with TNCs to provide an on-demand ride option during that period; Metrolink in Ontario has partnered with Lyft to provide trips to the Ontario International Airport from four of its transit centers; and MetroLink St. Louis has partnered with Lyft to provide \$1 trips from eight neighborhoods that have limited fixed-route service to nearby transit centers.

A 2020 study by DePaul University focused on 12 such partnerships and identified two potential types of partnerships: Transportation-as-a-Service (TaaS) and Software-as-a-Service (SaaS). The researchers identified nine Transportation-as-a-Service programs which focused on first- and last-mile connections, which provide service where fixed-route service is missing or has low frequency, or provide service to seniors and people with disabilities. The three Software-as-a-Service programs utilized the TNCs software for their own operations to provide service in low-frequency areas, or to provide services to seniors and people with disabilities. Further research is needed in the area of TNC impact on transit. This topic will be explored further in the market analysis stage of this long-term plan.

Pedestrians

Many riders walk to and from transit stations. Transit users are most commonly willing to walk 5 minutes to fixed route transit stops and willing to walk approximately 10 minutes to high-capacity services such as the busway or light rail stops. Walkable access is a priority for Port Authority, as well as station amenities that make the wait safe and comfortable.

Walking in Port Authority's service area varies significantly by neighborhood. The geography of the region, which is hilly and segmented by rivers, presents challenges. Flatter areas such as downtown and Oakland (94/100 and 89 respectively from walkscore.com) receive high walkability scores. Areas such as the North Hills and Monroeville receive very low walkability scores (35/100 and 19/100 respectively from walkscore.com).

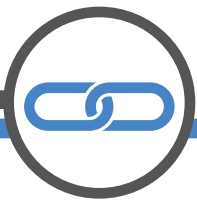
The Port Authority published a 2019 First and Last Mile Program Plan which used half-mile walksheds. Walksheds represent the possible walking range within a half-mile radius of each station. Safe sidewalks, clearly demarcated crosswalks across busy streets, accessible curb cuts and ramps in heavily sloped areas, signage, lighting, and clear wayfinding are all important to maintain. Identifying stops with insufficient access or unsafe conditions is an ongoing task and calls for continued investment.

The First and Last Mile Program Plan provides resources for the various stakeholders who own portions of the walkshed. The guidelines detail how to maximize pedestrian comfort by providing street furniture to offer pedestrians places to rest, trees to cast shade, and trash cans to mitigate littering. Guidelines for wayfinding include directional signs to clarify where to go, and estimated travel times or distances to nearby amenities.

Park and Rides

Port Authority operates 50 Park and Ride lots throughout the County. These are well utilized and allow commuters who do not live or work near their stop to complete the first or last leg of their journey by car. Several new Park and Ride locations have been opened in recent years, and continued population growth may support further Park and Ride sites to serve more riders across the County.

Not all riders who complete their journey by car require parking: some also rely upon being dropped off near their stop. Park and Rides allow a safe area for drivers to drop off passengers as well. At stops or stations without Park and Rides adjacent, considering where a car could pause to drop off is beneficial in planning improvements to transit stops.



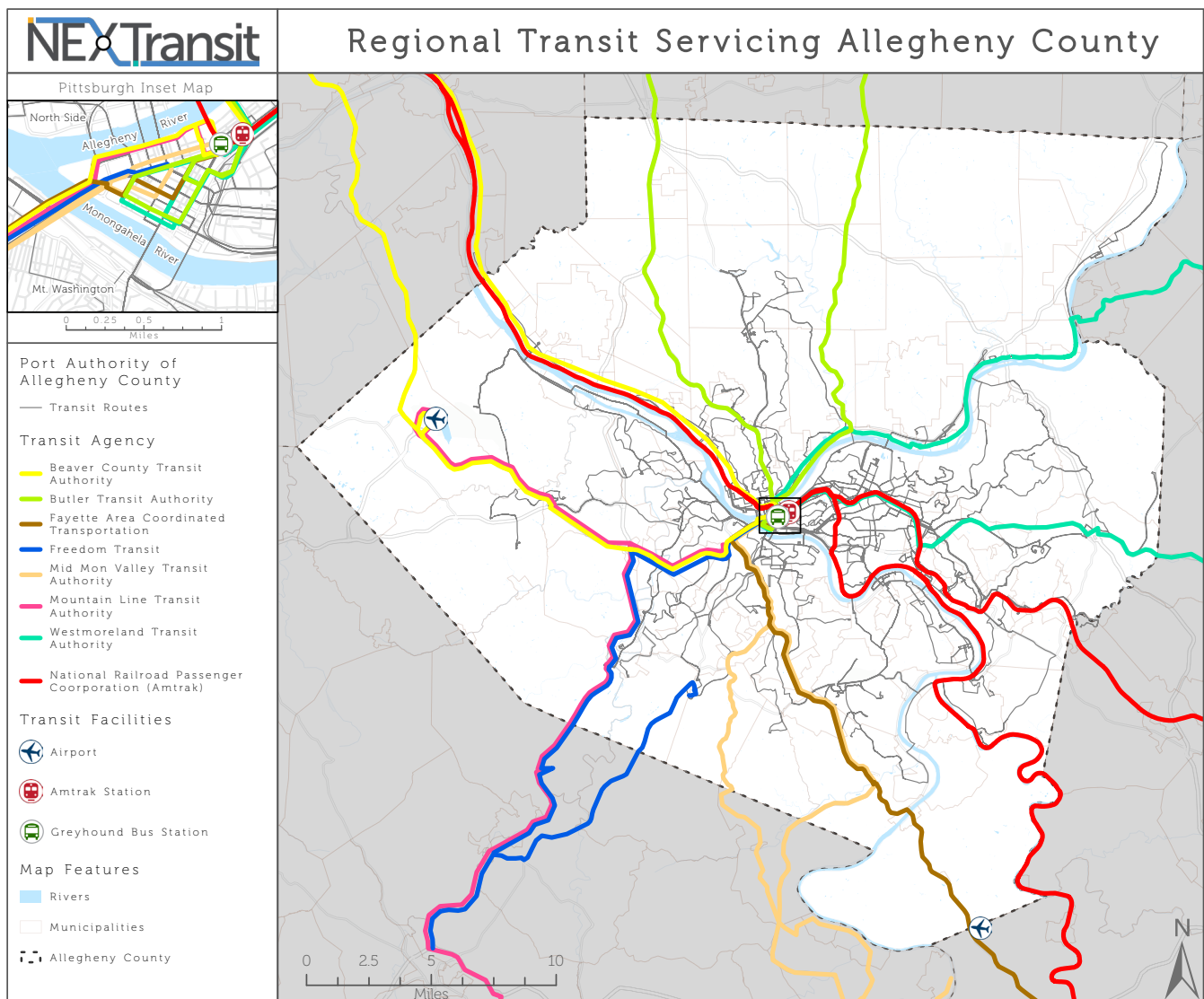
Microtransit

Microtransit services are systems that offer first and last mile connections, typically within a compact, defined service area. A local example of this is the Airport Corridor Transportation Association (ACTA). ACTA provides its members and their employees with transportation options such as the RideACTA flex route shuttle service, vanpools, and carpools. The Airport Corridor Transportation Association (ACTA) also offers seven routes that connect major employment centers with Port Authority’s service from the Carnegie Station of the West Busway.

Another example of microtransit in Allegheny County is Heritage Community Transportation. This system operates using small vehicles and a defined service area similar to ACTA, but focuses instead on connecting low-income residents in the upper Mon Valley to Port Authority transit resources, and to jobs, childcare, and shopping in the area, as well as harder to access suburbs such as Monroeville.

Connections to Other Transit Systems

Southwest PA is home to multiple transit agencies which make connections to Port Authority’s services.



Beaver County Transit Authority

The Beaver County Transit Authority (BCTA) provide three routes from Beaver County to Pittsburgh. Route 1 stops in Pittsburgh at Liberty Avenue & Gateway Center, Liberty Avenue & Market Street, Liberty Avenue & Smithfield, and East Busway Penn Station. Route 3 stops in Pittsburgh at Liberty Avenue & Gateway Center, Liberty Avenue & Market Street, Liberty Avenue & Smithfield, Grant Street & Liberty Avenue, Grant Street & Fourth Avenue, and "T" Station. Route 4 stops in Pittsburgh at Liberty Avenue & Gateway Center, Liberty Avenue & Market Street, and Grant Street & Fourth Avenue.

Butler Transit Authority

Butler Transit Authority (The Bus) provides four commuter bus routes from Butler County to Pittsburgh. The two stops in Pittsburgh are located at Strawberry Way and Penn Station.

Fayette Area Coordinated Transportation

Fayette Area Coordinated Transportation (FACT) has commuter route 1 that stops in Pittsburgh at Penn Station, Liberty Avenue, Smithfield & Oliver, and Smithfield & Forbes Avenue. It also stops in Pleasant Hills.

Mid Mon Valley Transit Authority

The Mid Mon Valley Transit Authority (MMVTA) provides bus service near the intersection of Washington, Westmoreland, and Fayette Counties. Within Allegheny County, MMVTA's commuter service makes stops in Bethel Park, Castle Shannon, and Pittsburgh.

Rural Demand-Response

Greene County, Indiana County, and Armstrong County (Town & County Transit) each offer demand response trips to Pittsburgh for medical appointment on a limited basis. These connections likely induce demand for Port Authority by bringing additional transit riders into their service area.

Washington County Transit Authority/Freedom Transit

Washington County Transit Authority (Freedom Transit) provides the Metro Commuter bus route to Pittsburgh which stops in Pittsburgh in Liberty & Stanwix, Boulevard of the Allies, Smithfield & Fifth, and East Busway Penn Station.

Westmoreland County Transit Authority

Westmoreland County Transit Authority (WCTA) offers five routes from Westmoreland County to Pittsburgh. The 1F route in Pittsburgh stops at the Federal Reserve building. The 2F route stops at Pittsburgh Federal Reserve Building and the Arnold Palmer Airport Park and Ride. The 3F route stops at the Pittsburgh Federal Reserve Building. The 14F route also stops at the Federal Reserve building. Route 4 leaves Pittsburgh from Forbes Avenue and Grant Street.

Intercity Surface Transportation

Downtown Pittsburgh is served by Amtrak interstate rail with a stop at Union Station. Greyhound, Mountain Line Transit Service, and Fullington Trailways offer interstate bus service with stops in Downtown Pittsburgh and Pittsburgh International Airport. Port Authority operates multiple bus routes that serve these locations.



5

Port Authority Funding



Current Situation

As is the case for delivery of any organization's capital program, Port Authority depends on funding streams that are both adequate and reliable, allowing Port Authority to budget for and perform work necessary to keep its transportation system in a state of good repair.

Unfortunately, several factors, including a historic trend of underfunding, have caused the Port Authority's backlog of "state of good repair" (SGR) projects to balloon to billions of dollars' worth of need. The Southwestern Pennsylvania Commission's (SPC) 2015-2040 long-range plan, Mapping the Future, identifies \$4.6 billion dollars of capital maintenance needs—vehicle and equipment purchases, fixed guideway improvements, stations and facilities, capital leases, and technology—over the next two-plus decades.

The Port Authority's financial situation is further complicated by legacy costs impacting its operating budget, as well as by debt service. Port Authority is currently experiencing a wave of fringe benefit payouts for its current and former employees, causing its total expense per revenue hour to be 80% higher than the average of five comparable peer agencies—Milwaukee, San Antonio, St. Louis, Columbus and Charlotte. Mapping the Future anticipates \$346 million in debt service payouts between 2015 and 2040.

Funding History

State funding and Act 44



Providing healthy state funding to support transit operations has been of interest in Pennsylvania for a long time, but there have been significant obstacles along the way. Legislation in the 1990s created the Public Transportation Assistance Fund (PTAF), intended to make public transportation sustainable, fell well short of expectations—by 2006, major service cuts and fare increases for the Port Authority seemed inevitable.

However, then-Governor Ed Rendell orchestrated the transfer of significant amounts of federal flex funding from highway projects to public transportation—the transfer of over \$100 million in FY 2006 and 2007 helped Port Authority continue operations. At the same time, Rendell formed the Transportation Funding and Reform Commission (TFRC) to develop a more sustainable funding model.

In July 2007, the Pennsylvania General Assembly enacted Act 44, which expanded the Pennsylvania Turnpike Commission (PTC) mandate from one focused entirely on constructing, operating and improving the PTC to one that also provides annual funding contributions for broader Commonwealth transportation needs. Port Authority's state operating assistance increased by 40%, and Allegheny County was able to impose a tax on poured drinks and rental cars to alleviate the burden on Allegheny County's general fund. To assist with the effort, Act 44 authorized PennDOT and the PTC to seek FHWA approval to convert I-80 to a toll facility. Act 44 also established the Public Transportation Trust Fund, which restructured state funding for public transit and replaced previous General Fund sources with dedicated sources.

In April 2010 FHWA ultimately denied the approval to toll I-80, citing legal concerns. Because of the loss of anticipated I-80 tolling revenue, Act 44 funds delivered to Port Authority and other Pennsylvania transit authorities were significantly reduced. Again facing significant service reductions and layoffs made necessary by a \$65 million budget shortfall on a \$300 million operating budget in 2012, Port Authority and its labor union negotiated a restructured collective bargaining agreement, while negotiations for a long-term funding solution continued at the state level.

The passage of Act 89 on November 25, 2013 produced watershed changes for both Port Authority and the PTC. Act 89 produced dedicated state funding for public transit. The funding is indexed to inflation and have no legislative sunset, however the source of those funds is scheduled to change. The PTC will continue to pay \$450M annually to PennDOT through Fiscal Year 2022, at which time the source of the funds transitions to an existing vehicle sales tax.

Federal funding: MAP-21 and FAST Act

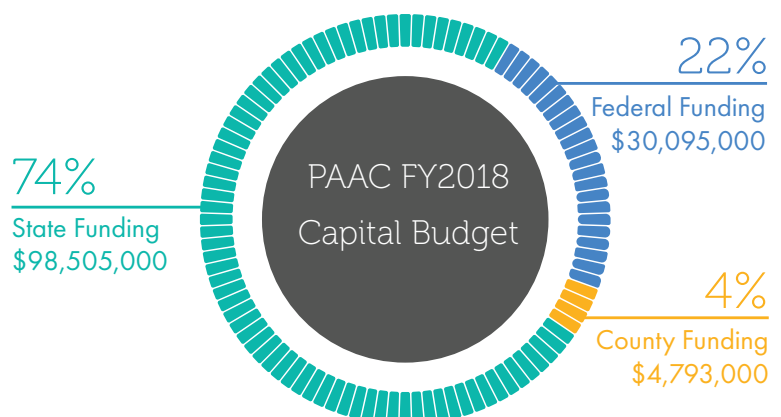
At the Federal level, there have been significant legislative efforts related to transportation funding over the past six years. In July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law and provided funding for FY 2013-2014. MAP-21 created a performance-based, multi-modal funding program designed to improve safety, reduce congestion, protect the environment, improve system efficiency, and maintain infrastructure condition.

In December 2015, MAP-21 was replaced by the Fixing America’s Surface Transportation Act (FAST Act), which was signed into law in December 2015 and provides funding for FY 2016-2020. The FAST Act maintained the performance-based, multi-modal direction of MAP-21 but added a few enhancements, including provisions to expand tolling of highways and modifications to high-occupancy vehicle lanes.

A total of \$30.09 million, or 22% of Port Authority’s fiscal year FY2018 capital budget was provided by federal funding. Port Authority receives its federal funding through numerous formula-based and competitive grant programs. Although federal funding stability is assured for the immediate future, uncertainty remains beyond expiry of the FAST Act in 2020.

In the even shorter term, federal funding levels for fiscal year 2018 appeared to be in jeopardy before the \$1.3 trillion federal omnibus spending bill was developed and signed into law on March 23, 2018. The 2018 budget not only preserves the \$1 billion annual increase in FTA funding previously recommended by the FAST Act, but could provide additional grant opportunities for transit organizations such as SEPTA. For example, the BUILD Transportation Discretionary Grant Program (previously TIGER) tripled in size, though only 3.8% of BUILD funds awarded in 2018 supported transit projects.

FTA’s Capital Investment Grants (CIG) Program funds new starts, small starts, and core capacity improvements. It is a discretionary grant program primarily focused on high-capacity modes such as bus rapid transit, rail, and streetcar projects. New Starts and Core Capacity projects require project development and engineering phases to be completed prior to receipt of a grant agreement. Small Starts projects require project development prior to receipt of the grant agreement. The CIG program had \$835.7M in existing new starts grant agreements, and \$200M in core capacity grant agreements as of 2018. The CIG program is an important potential source of funds for PAAC’s future system growth.



Despite stability of funding in recent years, the looming bubble of debt service and pension payments over the next decade remains a major concern. The Port Authority is already aware of the problem and recognizes that cost containment will be necessary in the years to come. Though the Port Authority’s FY2015 strategic plan forecasted that Port Authority would require a PennDOT waiver beginning in 2018 to use Act 89 capital funding to support operations, increased fare revenue and advertising support have pushed off the need for a waiver until at least FY2021.

Future Funding Strategies

Southwest Partnership for Mobility Study



In 2018, Port Authority partnered with the PTC to discuss key transportation issues, including the lack of adequate funding in Southwest Pennsylvania. The Southwest Partnership for Mobility formed an advisory council of transportation agencies, major employers, elected officials, and other key stakeholders to identify sustainable solutions to address transportation funding challenges. In 2019, the advisory council identified the following two actions necessary to address the region's funding challenges:

- Fund projects of significance to the region's competitiveness. The advisory council identified the need for State-level elected officials to pass enabling legislation to allow for locally enacted revenue sources to support transportation.
- Stabilizing the Commonwealth's public transportation funding without relying on funding from the PTC. Pennsylvania's Act 44 and Act 89 provide significant funding for public transportation across the Commonwealth, but both rely on payments from the PTC. Those payments have added to the PTC's debt and have resulted in annual toll increases for its customers.

The Mobility Study also highlighted that the fragmentation of transportation management limits Port Authority's access to funding. Port Authority is one of 10 regional transit providers in southwest Pennsylvania, each with their own planning efforts, projects, payment systems, and transfer points. Regional funding must be dispersed between Counties and providers. By contrast, southeastern Pennsylvania has a single transit authority with the same geographic boundary as their regional planning organization; the resulting consistency between each allows funding to be allocated more directly and efficiently.

Projected transportation funding in the Commonwealth is inadequate to meet statewide needs, as reported in a February 2019 study by the Pennsylvania Transportation Advisory Committee (TAC), *Risks to Transportation Funding in Pennsylvania*. The report identified the need of an increase of \$1.2 billion in annual funding for public transportation capital, operations, and maintenance costs. Local governments in the Commonwealth are currently limited in their ability to generate funding for transit. Most new local funding sources, including transportation specific taxes and fees, would require statewide enabling legislation. Finally, the 2018 mobility studies identified that local governments throughout the Commonwealth are underfunded compared to peer regions around the nation. This puts Pennsylvania's regions at a major competitive disadvantage in the battle for new economic opportunities.



Pursuing Partnerships

As currently designed, Act 89 ensures that Port Authority will be made whole regarding its currently expected state funding levels, even after the Turnpike's \$450 million annual contribution to transit is reduced to \$50 million in 2022. However, the sales and use tax revenues used to fill that \$400 million gap come at a cost to other state-funded programs—they are not new revenues. Further, while the influx of state funding provided by Act 89 is an improvement, it still falls short of the overall need.

Any new funding strategy pursued by the Port Authority is more than simply self-serving. It relieves pressure on existing local, state and federal funding sources that are currently earmarked for Port Authority's use; likewise, improving Port Authority's ability to provide service will also relieve pressure on the surrounding transportation networks. The region is poised for inclusive economic growth, but this growth is highly dependent on the Port Authority's success.



Finances

Operating Budget

Port Authority’s fiscal year 2020 budget was developed to support the following five high-level goals as defined in Port Authority’s Tactical Plan:

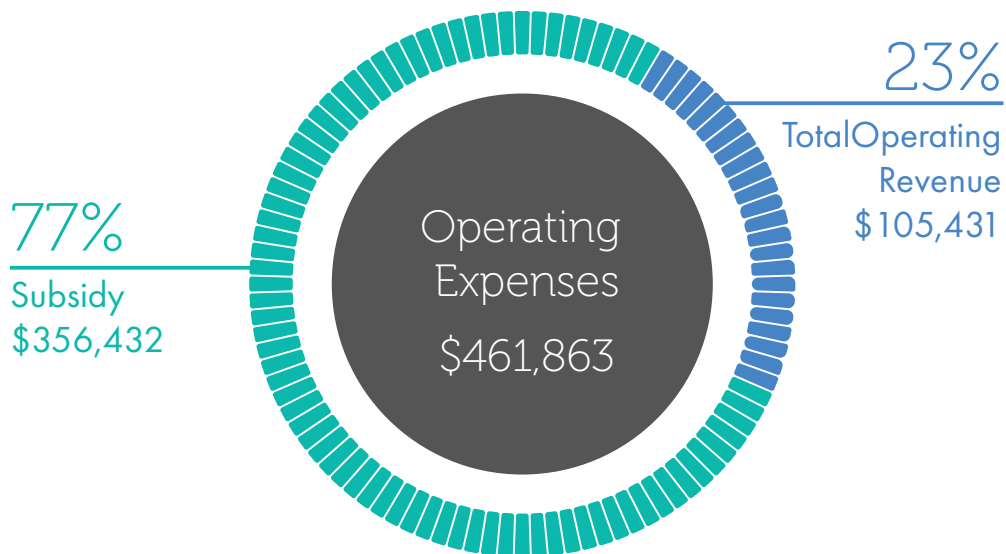
1. Deliver an Excellent Customer Experience
2. Develop a Financial Sustainability Plan
3. Develop an Agency-Wide Safety Program
4. Develop an Employee Engagement Program
5. Improve Customer and Public Communications and Better Engage Communities

The 2020 operating budget proposal includes \$461.9 million in operating expenses. It is funded by \$105.4 million in operating revenue, \$274.7 million from state subsidies, \$39.5 million in local subsidies (matching fund requirements), and \$39.2 million in federal subsidies.

Passenger revenues had a negative trend from FY 2016 to FY 2018. While ridership levels have remained relatively constant, Port Authority projected passenger revenues to decrease by approximately 3% or \$3.6 million vs. FY 2017 budget. This is due to the Port Authority removing the Zone 2 fare of \$3.75 from the system in FY 2017. Total operating revenue is forecast to decrease by 4.9% over the FY 2016 actual. From 2018 to 2020, this trend begins to stabilize. The 2020 budget projects a 1.4% increase in passenger revenue in 2020; no substantial increase in overall revenue is anticipated.

The proposed 2018 budget reflected an operating expense increase of approximately 5.4% over the 2016 actual. While passenger revenues have decreased, expenses have continued to increase. Wages and salaries, and pensions and employee benefits both increased 8% from 2016 to 2018. The 2020 outlook continues to anticipate this trend of rising costs without sufficiently raising revenue to support it: the 2020 budget includes an expected 8.9% increase in operating expenses over the costs recorded in 2019.

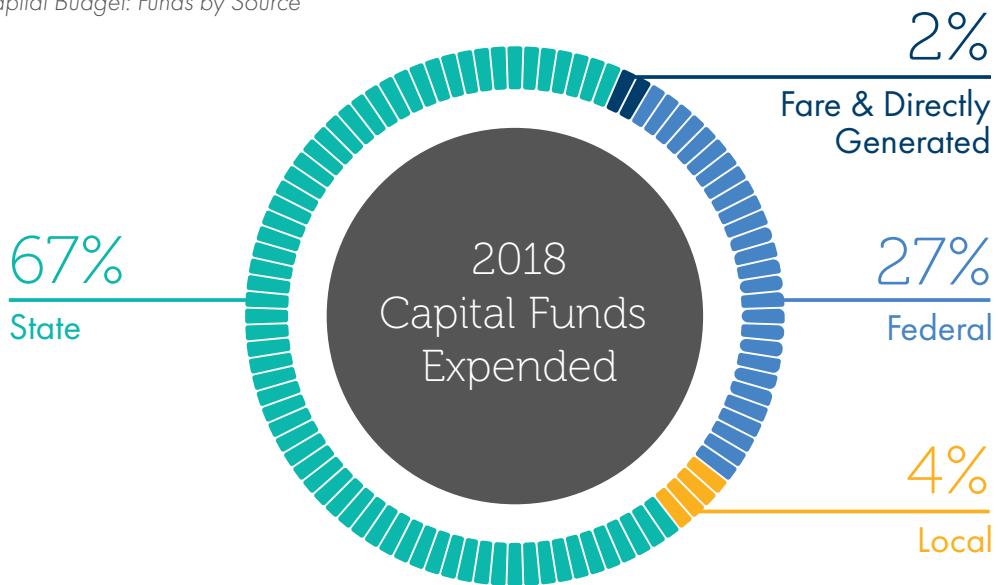
FY2020 Anticipated Budget



Capital Budget

The 2018 capital funds expended totaled \$123.5 million. These funds were sourced primarily from over \$83 million in state funds and nearly \$33 million in federal funds.

Figure 4 Capital Budget: Funds by Source



Capital Budget Funding Sources

State funding has been crucial to the capital budget. Port Authority, as an agency or instrumentality of the Commonwealth (PA Code Title 74, Section 1711), is authorized to receive Commonwealth funding (PA Code Title 74, Section 1514, the Asset Improvement Program). Sources of funding for Section 1514 are generated by: proceeds of capital bonds; tire, vehicle lease and vehicle rental fees; traffic violation fines; motor license fund fees; and Act 44 funds. The County government currently contributes 4% of Port Authority’s budget. This amounts to the required local match for federal and state grant funds used on capital projects.

The Fixing America’s Surface Transportation (FAST) Act provides Port Authority with another predictable funding stream and offers a modest increase to public transportation allocations over previous transportation funding authorizations. Most of Port Authority’s federal funding is allocated by the Federal Transit Administration (FTA) via non-competitive formula-based distributions. Among them, the State of Good Repair Program (49 U.S.C. 5337) and Urbanized Area Formula Grants (49 U.S.C. 5307) represent the largest formula-based distributions. Smaller amounts of federal funding are obtained through competitive grant applications, as well as a Highway Flex program allocated by PennDOT.

State of Good Repair (SGR)

FTA states that the nation’s capital transit assets are deteriorating, and current levels of reinvestment are insufficient to stop the decline. FTA reports on the condition and performance of the nation’s capital assets bi-annually to the U.S. Congress. This report is based on the output from the Transit Economic Requirements Model (TERM).

At the local level, TERM-lite is provided for free to assist transit agencies in assessing their capital assets. TERM and TERM-lite utilize empirically derived asset decay curves to estimate the condition of the transit assets. FTA requires agencies to assess guideway elements, maintenance facilities, stations, systems (train control, revenue collection, signals, etc), and vehicles. The model utilizes a 1 to 5 numerical scale with 1 representing an asset in poor condition and 5 representing an asset in excellent condition. An asset is considered to be in a state of good repair if its condition is rated 2.5 or higher. The SGR backlog includes all assets rated below 2.5 which are not programmed for replacement. In 2017, FTA estimated that 25% of the U.S. rail transit assets and 40% of buses were in marginal or poor condition. Maintaining transit assets in a state of good repair is an FTA priority. FTA estimated the national SGR backlog to be \$85.8 billion.

FTA has SGR formula program grants for urbanized areas whose systems which are older than seven years. All transit agencies which receive formula grants are required to report SGR data in the form of a transit asset management (TAM) plan to FTA beginning in 2018. TAM plans include an inventory of capital assets, condition assessments of those assets, a description of decision support tools used by the agency, and the agency investment prioritization. Larger transit agencies (Tier I) must also include SGR policies, implementation strategies, list of key annual activities, identification of necessary resources, and their evaluation plan.

Nationwide, the category with the largest backlog is “guideway elements” followed by “systems.” The lack of funding for these assets has led to crises which have made national news. In March 2015, the D.C. Metro, operated by WMATA, experienced a tunnel fire which caused the death of a passenger and shut down its system for 16 days. An NTSB investigation found damage in power system components to be the probable cause. In February 2018, the Baltimore Metro, operated by the Maryland Transit Administration, was unexpectedly shut down for 30 days due to the condition of its rails. In June 2019, the Boston Subway, operated by MBTA, experienced a train derailment resulting from electrical arcs fracturing the axle of a 27-year-old train. The derailment destroyed significant signaling components and negatively impacted commuters with slowed trains for months following the incident.

In 2017, Port Authority outlined \$550 million of unfunded state of good repair requirements. Funding from Acts 44 and 89 provides Port Authority with the opportunity to address some of its deferred capital investments in aging infrastructure. These efforts are reflected in the most recent capital budget. However, similar to the national trend, Port Authority’s current capital funding levels are insufficient to eliminate its current SGR backlog in the next 20 years.

New Revenue Streams

Port Authority has been pursuing new avenues for generating revenue, including through advertising, technological advancement, and real estate investment. Transit-Oriented Development (TOD), for example, focuses on maximizing development near stations. The collaborative relationship between development and transit in TOD reinforces the importance of transit, creates new demand around existing networks, and encourages transit stations to serve multiple purposes. The Authority has yet to lease any of its property to Developers, but is working towards doing so in the near future.

6

Economic Impact

Economic Generator

Per the 2019 Southwest Partnership for Mobility Final Report,



An improved transportation network also has measurable economic benefits. According to a 2018 economic impact analysis performed by Econsult Solutions Inc., the annual combined economic impact from Port Authority's capital investments and ongoing operations **generate \$929 million in Pennsylvania, supporting 6,240 full-time equivalent (FTE) jobs and \$484 million in earnings, while Port Authority service adds \$3.2 billion in residential property value across Allegheny County.**

Connecting all corners of Pennsylvania, the PA Turnpike serves as an economic driver for the Commonwealth well beyond the areas immediately adjacent to it.

Public transit supports enhanced economic activity, job growth, and higher real estate values that in turn generate tax revenue. As of 2019, 11.2% of General Fund revenues statewide come from Allegheny County. Per APTA statistics,



EVERY...

\$1 invested in public transportation **generates \$4 in economic returns.**

\$10 million in capital investment in public transportation **yields \$30 million in increased business sales.**

\$1 billion invested in public transportation **supports and creates more than 50,000 jobs.**

\$10 million in operating investment **yields \$32 million in increased business sales.**

A total of 87% of trips on public transit have a DIRECT IMPACT ON THE LOCAL ECONOMY.

Employment Support

According to census data collected from 2014-2018, 9.5% of commuters in Allegheny County commuted to work using public transit.

However, major employment centers in Downtown Pittsburgh, Oakland, and the Airport Corridor dominate the job market, and all three are served by public transit. A survey of commuters into and out of Downtown in 2018 revealed that 40% use public transit as their primary means of transportation. Port Authority service connects users to job centers across the County.

TAX REVENUE BENEFITS

PAAC and the PTC directly and indirectly contribute to the state's General Fund and local tax rolls.

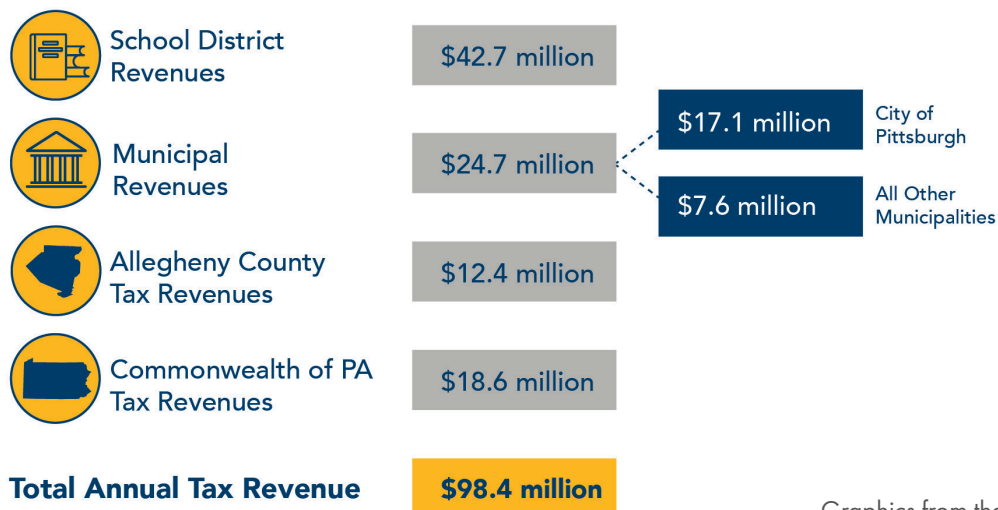
Aggregate tax impacts from PAAC expenditures are estimated at \$98.4 million annually (\$42.7 million for school districts, \$24.7 million for municipalities, \$12.4 million for Allegheny County and \$18.6 million for the Commonwealth).

11.2 percent of ALL General Fund revenues for Pennsylvania originate in Allegheny County (11.1 percent sales, 10.3 percent income, 13.3 percent corporation, 11.3 percent estate & realty transfer).

Enhanced economic activity and property values from the projects of significance will generate additional annual tax revenues for the Commonwealth, City of Pittsburgh and suburban jurisdictions throughout the region. By facilitating additional economic growth and increasing developable area by reducing the need for parking, potential for additional General Fund and local tax revenue increases.

The property value premium from proximity to PAAC service increases real estate tax collections, which serve as the primary revenue source for most municipalities and school districts throughout the region.

Annual Local and State Tax Revenue from PAAC Expenditures and Residential Property Value Premiums



7

Current Initiatives

Priority Investment Needs

Several investment priorities have been identified in advance of commencing this long-range transportation plan, either in previous planning processes or through state funding conversations. These identified projects (except for SGR projects) will be noted here but not treated specially through the current long-range planning process. Public support for these identified projects is still needed.

Downtown - Uptown - Oakland - East End Bus Rapid Transit (BRT) Project

Allegheny County, the City of Pittsburgh, Port Authority of Allegheny County, and the Urban Redevelopment Authority of Pittsburgh are advancing a Bus Rapid Transit (BRT) system that connects Downtown Pittsburgh with Uptown, Oakland, and several other communities east of downtown, extending all the way down the Monongahela River Valley to the City of McKeesport. BRT is a high-quality bus-based transit system that delivers fast, comfortable, and cost-effective services via dedicated lanes and fast, frequent operations.

The route is projected to link more than 37,000 weekday riders across 24 neighborhoods, unlocking development and providing access to job centers, educational opportunities, medical services and cultural events. 170,000 jobs—24% of all jobs in Allegheny County or 60% of all jobs in the City of Pittsburgh—will be within walking distance of BRT service. Further, it is expected to reduce the Port Authority's annual operating costs by \$8 million. Among all prospective infrastructure improvement projects within the Port Authority's reach, BRT is its top priority for the near-term.

The \$225 million BRT project has identified and secured nearly all of its funding sources at the state and local levels, but proceeding with construction is awaiting securement of all local funding sources and finalization of project readiness in order to receive the allocated \$99.5million Small Starts grant from the Federal government. The design being finalized now, and construction is anticipated to occur through 2022-2023.

New Bus Maintenance Garage

Despite ridership growth of 1.7 million on Port Authority's bus system in 2018, the agency is unable to carry more riders because it doesn't have enough garage space for storage and maintenance of vehicles. A new garage will not only increase capacity, but also offer flexibility in terms of fleet and fuel source. A new garage should be located close to Port Authority services or highways to prioritize efficient use of vehicle and staff time serving the community.



Light Rail Vehicle (LRV) Replacement

Port Authority’s current light rail vehicle fleet has 55 vehicles dating to 1985 and an additional 28 dating to 2003. The original vehicles are already beyond their designed useful life, but were rehabbed by the builder in 2007-2008. A recent study estimated the time needed to replace the 55 original vehicles as 7.4 years at a cost of \$4.5-\$5.5M per vehicle; the project would also require infrastructure improvements to accommodate the vehicles, including signals and interlockings.

Better Connections to Pittsburgh International Airport

With long-standing interest in improved airport corridor service, and specifically the potential for rapid transit, Port Authority plans to pursue the potential for short-term and long-range multimodal enhancements. Studied and discussed in various regional plans for well over a decade, expanding the West Busway corridor to connect Carnegie to the PIA could provide Carnegie to the Pittsburgh International Airport will offer a fast, reliable connection to downtown, serve additional local communities, relieve congestion on I-79 and I-376, and connect riders with major employment and retail activity in Robinson. This project should also include finalizing the connection between the inner terminus of the West Busway and Downtown Pittsburgh to create a fully rapid transit corridor linking the airport with the Central Business District.



Rapid Transit Extension to Pittsburgh’s Eastern Suburbs

According to the INRIX 2019 Traffic Scorecard, the I-376 East corridor is the fifth most congested corridor in the U.S. As such, providing a transit connection to Pittsburgh’s eastern suburbs should be prioritized by Port Authority as an expansion project. Previous studies have explored extending the Martin Luther King, Jr. East Busway to serve locations further east including Braddock, East Pittsburgh, Turtle Creek and Monroeville. Additional study is needed to determine if a cost-effective solution in this corridor is feasible. The initial study proved costly in its estimations, but additional options such as on-street BRT, bus-on-shoulder operation on I-376, or other future mode choices could be studied.

A first section along the Norfolk Southern Railway

A second section through the Thompson Run Valley

Rapid transit eastern extensions toward Westmoreland County have been of interest for several decades. Previous studies explored a wide range of routes and transit modes, including:

Allegheny Valley Commuter Rail

East Busway Corridor Extension to Monroeville

Spine Line Corridor Light Rail to Homestead

Monongahela Valley Corridor Light Rail to Etna/McKeesport

NS Corridor Commuter Rail

Regional Priorities

The Southwestern Pennsylvania Commission's (SPC) Smart Moves for a Changing Region plan for 2045 focuses on increasing transit connectivity and collaboration across the region's 10 counties. This plan guides federal and state funding and lays out several priorities that can impact Port Authority. Priorities for mobility are increasing rider equity, using new technological advancements, and establishing sustainable funding sources. Decreasing emissions to reduce pollution and growing the workforce with better correlation between employment centers and housing availability are also priorities which Port Authority can respond to. The Port Authority will include relevant recommendations from SPC's plan into this current long-range transportation plan project. The 2070 Pittsburgh Mobility Vision Plan is a current initiative underway to further transit and multimodal planning within the City of Pittsburgh.

Regional Connections with Other Counties

A regional transportation authority has been recommended by the SPC (in 2002 and 2018) to organize service connectivity and fare integration across the various authorities. Regional fare integration and intelligent transportation systems were previously proposed in Allegheny County's 2006 Transit Vision, and continue to be goals in 2020.

Intercity bus and rail travel is also an area with future potential growth. The transit system connects to Greyhound, other intercity bus providers and Amtrak. The possibility of expanding intercity transit across the Commonwealth is important to consider as Port Authority plans how to best focus its services while expanding its coverage.

Active Transportation

SPC's Active Transportation Plan lays out regional funding priorities for active transportation. These include safe walkable routes to school, reducing auto dependence to improve air quality, Complete Streets accessible street design, promoting mode share, and increasing safe and walkable access to transit. This report acknowledges that collaboration with public transit is important to develop a multimodal transportation network: crosswalks, co-located bike routes and bike racks, accessible paths and stations, and transit stations in compact walkable neighborhoods are just a few examples of how mass transit and active transportation support each other. x

Other modes that are present or have generated interest in the region include:

- **Bicycle:** The Pittsburgh Bike+Ped Plan draft was recently released, and lays out bike network expansion in the City of Pittsburgh as well as identifying some regional connections.
- **Trails:** The Cleveland to Pittsburgh Corridor trail, Great Allegheny Passage, Panhandle Trail, and Montour Trail together cross the width of Allegheny County and connect to many local towns and cities across Pennsylvania, Ohio, Maryland, and West Virginia. Increasing trail connectivity between towns and to other travel routes is one of the priorities in the Regional Active Transportation Plan.

Improving Service Connections within Allegheny County

Although Port Authority's service coverage touches most of the County, service is limited in many smaller municipalities and some gaps exist. A number of studies in past years have explored ideas to increase service. Although many of these are conceptual and existing conditions may be outdated, it's relevant to consider where gaps have been identified and what solutions have been discussed.

While some of these plans contain ideas that have been reflected in the priority investments, various other ideas for improving access to communities and corridors include:

- The Strip District mobility study (2019) proposed consolidated service, station upgrades, and a new East Busway station to serve the Strip District
- Allegheny Riverfront connectivity goals developed in 2010 include improved bus routes, local cable car service, and light rail through the Strip District, Lawrenceville, and potentially reaching further east.
- Pittsburghers for Public Transit (PPT) is an advocacy group of passengers, workers, and residents that advocates for equitable and affordable public transit. The group was founded in 2010 and over its life has advocated to restore service to several areas throughout the County and for the Port Authority to adopt service guidelines. PPT has begun to play a more active role in transit planning within the County. PPT has identified eastern expansion of rapid bus services past the East Busway as a priority, listed in The Rider's Vision for Public Transit (2018) report. A public mapping tool launched in 2019, called "Beyond the East Busway," let users propose their own routes and stops and gathered input on resident wants and needs. As the NEXTransit planning efforts continue, these planning efforts will be referenced where appropriate.
- Pittsburgh Community Reinvestment Group (PCRG) is an advocacy group of community-based organizations, community development corporations, and community service groups in the Pittsburgh region which advocates for a number of community development issues including transit and transit-supportive land use. PCRG has sponsored its own transit-related planning efforts and also provides a transit research repository on its website. "Reinvesting in Pittsburgh's Neighborhoods: the Case for Transit Oriented Development" (2011) and the "Busway Futures Study" (2016) offer valuable perspectives that the 2045 Long-Range Plan will take into account.
- Various transit solutions have been considered in recent years to connect Oakland to Hazelwood. Current plans for multimodal trails which can accommodate future autonomous shuttle service through Schenley Park address this connection, although bus service expansion to Hazelwood continues to be highly desired. There has recently been a lot of planning in the area of Hazelwood and its connections to points in the CBD and Oakland. The Mon-Oakland Connector plan and the SPC Second Ave Multimodal Corridor study each explored mobility options through this corridor. An analysis prepared by PPT, titled The people's Audit of the Mon-Oakland Connector, offered a cost benefit analysis and proposed alternate transit expansion options. Each of these these planning efforts will be taken into account in the Port Authority's 2045 Long-Range Plan.

Transit Oriented Development (TOD)

The "Allegheny Places" County Comprehensive Plan and 2006 Transit Vision report laid out a regional plan for growth over a 25-year period, emphasizing the need to grow together as one region. Locating new development and density around transit centers to reduce automobile reliance and encourage a full

transit network across the counties was recommended. It explored a trend versus focused growth scenario and found that focused growth would gain more jobs and increase transit ridership substantially. Additional studies in 2006 and 2010 prepared guidelines for TOD and continued to advance the regional goal of pursuing focused growth.

A 2010 study of the West Busway rated several boroughs on the West Busway highly for TOD, and connected this potential to further goals of expanding bus transit into the airport corridor. In 2018, Port Authority prepared in conjunction with CONNECT a Transit-Oriented study of municipalities outside the City of Pittsburgh. This study rated 10 municipalities along bus routes as areas to target for TOD.

In 2016, Port Authority published TOD Guidelines to provide an overview of best practices that it strives to follow. In this document, Port Authority recognized that TOD corresponds to higher ridership, and that transit plays a key role in establishing walkable and mixed-income communities. The TOD Guidelines document defines a three-pronged approach.

Port Authority supports TOD by being:

A sponsor for joint TOD development (projects built on PAAC property or connected physically or functionally to a busway or light rail PAAC station)

A stakeholder for any TOD development occurring within the "zone of influence" (1/2-mile walk shed) of current or future stations

An advocate for sustainable TOD land use decisions along all of the region's transit corridors

Along with increasing transit ridership, TOD supports healthy communities by reducing automobile travel, reducing air pollution, and encouraging healthy living through walkability. Economic benefits include stable property values and increased foot traffic to spur economic development. Consolidated development around transit centers increases transit efficiency and allows cost sharing between transit agencies and the private sector. The TOD Guidelines state:

- "Development and the policies that influence it significantly impact where transit riders live, work, go to school, and purchase goods and services. Likewise, transportation investments can draw development to new areas. When development is spread out, uses are far apart and the automobile is the predominant mode of transportation out of necessity. When development is compact, uses are proximate, people can access all of their needs in a small area, and walking and taking public transit become easy."

In summary, the benefits of TOD as a source of revenue are threefold:

REVENUE

Increased ridership means more fares

COST SHARING

Partnership with the private sector encourages shared investment

NEW FUNDING SOURCES

The numerous benefits of TOD and regional support for TOD opens new funding avenues that are not specific to transit, but that can indirectly support transit projects.

Park and Ride Development

Park and Ride development facilitates transit access for outlying suburban and exurban communities not directly served by transit. The Port Authority is in the process of designing park and ride expansion projects in Ross Township along I-279, as well as in Carnegie Borough on the West Busway. A park and ride lot at the McKeesport Transportation Center, which is in the process of being modernized, is also undergoing an expansion. A 2010 study researched sites for park and rides that would support increased service along the route: Hampton Township, Bridgeville, Etna, McKees Rocks, Penn Hills, Pitcairn, Pittsburgh/62nd Street, Trafford, and Marshall Township were all determined to have a favorable market for park and ride expansion.

A 2019 study evaluated 26 park and rides across multiple counties, further providing valuable data about origins, destinations, and usage which help locate areas with unmet demand.



8

What Comes Next?

COVID-19

On January 7, 2020 the World Health Organization identified an outbreak of a new coronavirus which causes the disease identified as COVID-19 (Coronavirus Disease 2019). While the initial cases were identified in China in late December 2019, cases were quickly identified around the world by January 20th. On January 21, 2020, the first confirmed COVID-19 case was identified in the United States. Ten days later, the World Health Organization declared COVID-19 a global public health emergency as the number of cases quickly rose to greater than 9,000 in at least 19 countries. The United States experienced its first recorded death related to COVID-19 on February 29, 2020. The World Health Organization officially declared COVID-19 a pandemic on March 11th.

COVID-19 has significantly impacted American society and its economy. The United States began imposing international travel restrictions in mid-February to help contain the spread. On March 6, Pennsylvania's governor reported the first case in the commonwealth, and on March 21 a statewide shutdown began for all "non-life-sustaining" businesses. These restrictions continued widely throughout March, April, and part of May, and while business and social restrictions began to be eased in Allegheny County by May 15, statewide revenues from tolls and tax revenue were already significantly impacted by the pandemic.

Transit agencies across the United States experienced significant reductions in ridership and the associated fare revenue. Potentially even more devastating are the unknown impacts of lost revenue from typical transit funding mechanisms such as taxes and fees. Revenues from sales taxes, the Allegheny County drink tax, motor fuel taxes, tolls, fees on TNCs, and the lottery have all declined. The majority of sources which comprise the state and local sources of transit funding all declined, and the future impacts of those reductions are difficult to conceptualize or quantify at the time of this report.

Impact to Port Authority

Port Authority's ridership has been severely impacted by the COVID-19 outbreaks. In March, daily ridership began to plummet. By April, ridership was down roughly 75% (daily rates compared to last year vary from -63% to -82% per Port Authority's count). Port Authority has offered reimbursement for prepaid cards, proportionate to the time unused. In addition to this lost revenue, operational costs are up as buses are cleaned more frequently, sanitation products have been installed at numerous stations, and Port Authority has lowered occupancy rates (thus earning less revenue per the same number of vehicle miles) – measures which are likely to remain in place for potentially months to come.

Recovery Funding

In late March, the U.S. Congress passed the Coronavirus Aid, Relief, and Economic Security Act (CARES Act). The CARES Act provided \$2 trillion to stimulate the economy through funding for individuals, businesses, and state and local governments. The Act included \$25 billion for transit agencies. The \$25 billion is being distributed through existing FTA formula grant programs. Those grant programs were approximately \$15.1B in 2018 and \$15.4B in 2019. Assuming a similar level of grant investment in 2020, the CARES Act should provide almost three times the federal grant funding expected for the year. Further, FTA relaxed restrictions on the percentage of the funds which could be utilized for operational expenses.

Major stimulus bills continue to be considered, and Port Authority must prepare to be flexible and nimble in adapting to available resources and pursuing support from new avenues that arise.



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Appendix



Figure 3 Port Authority Operating Budget

	FY2018	FY2019	FY2020
Amount in thousands ('000)	Audited	Actual	Budget
REVENUE			
Passenger Revenue	\$79,120	\$77,300	\$78,350
Access (Shared Ride) Service	\$11,602	\$10,652	\$10,586
Contract Services	\$11,190	\$11,489	\$11,251
Advertising	\$2,823	\$2,839	\$2,500
Interest Income	\$1,067	\$2,167	\$1,950
Other Income	\$843	\$814	\$794
Total Operating Revenue	\$106,645	\$105,262	\$105,431
EXPENSES			
Wages and Salaries	\$158,754	\$162,231	\$171,699
Pensions and Employee Benefits	\$149,572	\$159,199	\$166,979
Materials and Services	\$41,627	\$44,556	\$49,680
Provisions for Injuries and Damages	\$2,977	\$2,853	\$4,412
Purchased Services	\$10,515	\$13,151	\$17,885
Utilities	\$8,023	\$7,681	\$8,556
Other Expense	\$7,734	\$8,223	\$13,900
Access (Shared Ride) Service	\$27,071	\$26,158	\$28,752
Operating Expense	\$405,712	\$424,052	\$461,863
Deficit Before Subsidy	(\$299,067)	(\$318,791)	(\$356,432)
OPERATING SUBSIDY			
Federal	\$33,145	\$44,004	\$39,229
State	\$244,092	\$242,027	\$274,706
Local	\$37,528	\$40,654	\$39,450
Regional Asset District	\$3,000	\$3,000	\$3,000
Total Subsidy	\$318,092	\$329,987	\$356,432
Surplus/(Deficit)	\$19,026	\$11,196	\$ -

Year	Document	Outcome or Relevant Plans
1993	Spine Line Corridor Study	Looked at an eight-mile corridor that extends from the North Side to the east End in the City of Pittsburgh
2001	Cranberry Charrette	Considered LRT along I-279, a park and ride, Maglev, bikeways, and transit center in Cranberry
2001	Pittsburgh to Homestead Commuter Ferry Study	Analyzed the feasibility of passenger-only ferry service from West Homestead to downtown Pittsburgh
2002	Clairton Charrette	Considered a Park and Ride, multimodal station, and bus super stops. Busway or LRT are proposed from the MonFayette expressway to Clairton, along Peter's Creek.
2002	Regional Waterways Study	Analyzed the feasibility of intermodal connections (Downtown) and ferry landings (regional)
2002	2020 Southwestern Pennsylvania Regional Transit Vision: Overcoming Statutory, Regulatory and Institutional Barriers to More Effective Transit Service	Recommended that the Southwestern Pennsylvania region encourage and facilitate regional transit cooperation through empowering the Transit Operators Committee
2002	Railroad Corridor Assessment: Strategic Regional Transit Visioning Study	Railroad corridor assessment of the freight railroads in and around Pittsburgh to explore consolidation
2003	Airport Multimodal Major Investment Study	Evaluated 3 main alignments to expand service: The West Busway/Parkway Corridor BRT or LRT, Robinson LRT, Ohio Valley/Neville Island LRT and preferred the first 2 options
2003	Eastern Corridor Transit Study: Final Report	Allegheny Valley Commuter Rail (#1), East Busway Corridor Extension to Monroeville (#4), Spine Line Corridor Light Rail to Homestead (#6), Monongahela Valley Corridor Light Rail to Etna/McKeesport (#7), and NS Corridor Commuter Rail (#8)
2006	Eastern Corridor Transit Study: Transitional Analysis to Locally Preferred Alternatives	Allegheny Valley Commuter Rail (#1), either BRT service to Oakland (#2) or Spine Line (#4), NS Commuter Rail (#6), and the East Busway Extension. Updates previous study with specific alignments, boardings, and costs.
2006	20/20 Transit Vision Full Report	Trend vs. Focused Scenario. Proposed a study of numerous future LRT, BRT, and commuter rail connections regionally
2006	Transit Vision Toolkit	A toolbox of design techniques, investment sources, and transit-friendly zoning strategies and codes
2009	Oakland Transit Connector and Downtown Pittsburgh To Oakland Connector	Oakland Transit Connector including autonomous/gondola components, Downtown to Oakland Corridor LRT
2010	Southwestern Pennsylvania Commission Regional Transit Studies - Future Investment in TOD (FIT)	TOD checklist and development guide
2010	The Transportation Solution from ALMONO to Oakland	Compared Maglev and Light Rail Transit (LRT), showing the benefits of a Maglev system between Oakland and the Almono site (Hazelwood Green).
2010	West Busway TOD Assessment and Plan	Studied TOD potential along West Busway. Some overview also of additional route extensions.
2010	Pittsburgh Transit Development Plan (TDP): Park and Ride Development Program	Proposed 10 new or expanded park and ride lots.
2010	Allegheny Riverfront Vision plan	Studied commuter rail, urban circulator trolley network, and multimodal trails options to connect the Strip District to Highland Park

Year	Document	Outcome or Relevant Plans
2013	Downtown Circulator Review	Proposes a Balanced Circulator with simplified downtown routes around a bus-free core.
2013	Allegheny River Green Boulevard Transportation Appendix	Transit Station design criteria Multimodal corridor with mobility improvements looked at commuter rail, street design, and multi-use path
2014	(Commuter rail and Intercity Rail) On Track to Accessibility: Increasing Service of the Pennsylvanian: Benefits and Costs	Detailed, quantitative analysis of the costs and benefits associated with increasing Amtrak's passenger rail service in Pennsylvania to three times a day.
2014	Keystone West High- Speed West Feasibility Report	An analysis of a conceptual high- speed rail line along the Keystone West Corridor, and importance of bus connections.
2015	Southwestern Pennsylvania Public Transit-Human Services Coordinated Transportation Plan	This plan provides a comprehensive inventor of all existing transportation services, providers, and partners in the region. It also provides high-level analysis of transportation needs, issues, and barriers, and proposes several objectives, strategies, and best practices to consider to enhance future transportation coordination.
2015	Review of Regional Transit Corridor Studies (PAAC)	Recaps major corridor initiatives and updates: <ul style="list-style-type: none"> • Downtown – North Shore – Pittsburgh International Airport (BRT, Busway and LRT) • North Shore Connector to North Side and Strip District (LRT) • Allegheny Valley Railroad, Pittsburgh – Arnold/New Kensington (Commuter Rail) • Norfolk Southern, Downtown Pittsburgh – Greensburg/Latrobe (Commuter Rail) • East Busway Extension, Swissvale – Monroeville/East Pittsburgh (Busway) • Spine Line, Downtown – Oakland – Wilkinsburg/Homestead via Hill District (LRT) • Downtown – Oakland via Panther Hollow/Carrie Furnace site (unspecified rail mode) – Lawrenceville – Oakland – Hazelwood (Commuter rail/diesel multiple units)
2016	Transit- Oriented Development Guidelines	PAAC-prepared guidelines for TOD
2016	Downtown Circulation Proposal	Condenses current bus routes through the Central Business District from 26 to 19
2017	Public Transportation Performance Report	An annual performance report for every agency in the Commonwealth with standardized performance measures and statistics
2017	Regional Transportation Alliance Imagine Transportation	"50 Ideas to Explore" including both policies and projects
2019	PA Transportation Advisory Committee Intercity Rail Study	Lists challenges and success factors for intercity rail in PA. Outlined potential city pairs and intercity bus alternative.
2019	SPC Regional Park and Rides Facility Origin- Destination Study	Maps passenger origins and destinations for a sample of customers that utilize 26 Park and Ride facilities throughout multiple Counties.
2019	SW Mobility Final report	Current status and priority projects
2019	TOD for Allegheny County	PAAC-CONNECT study of stations with TOD potential with demographic data and analysis, and details for 10 communities near BRT stations
2019-	SPC Smart Moves for a Changing Region (in progress)	Vision focused planning goals and strategies for mobility, communities, and economy