Final Report

December 27, 2022

Transit Performance Review

Port Authority of Allegheny County (PAAC, PRT)

pennsylvania
DEPARTMENT OF TRANSPORTATION

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LIST OF EXHIBITS

PREFACE

Pennsylvania law requires transit agency performance reviews and five-year performance targets to improve efficiency and effectiveness of service

Act 44 of 2007 and Act 89 of 2013 increased funding for public transportation in Pennsylvania. The laws also required transit agencies to improve the efficiency and effectiveness of service delivery through increased ridership, revenue, and cost containment. PennDOT evaluates every fixed-route transit agency in the Commonwealth through a performance review at least once every five years to determine how well the agency satisfies these requirements. Act 44 also requires PennDOT to develop five-year performance targets for each agency as part of the performance review process.

COVID-19: Transit-dependent populations are bearing a heavy burden

Beginning in February 2020, COVID-19 caused significant social and economic disruptions as people sharply curtailed travel to limit the spread of the disease. The adverse impacts throughout the Commonwealth of Pennsylvania were profound. The health and unemployment effects of COVID-19 disproportionately impacted senior, disabled, and low-income populations. These individuals also rely heavily on public transportation to meet their essential travel needs.

Transit agencies are navigating new demands, lower ridership, and higher costs

The impacts of COVID-19 on the public transportation industry were also severe. Ridership decreased by more than 90 percent at some agencies during April 2020. Revenues dropped as agencies opted to waive fares to limit bus driver interactions and possible disease transmission from the handling of tickets and currency. Agencies increased the frequency and extent of bus cleaning, which increased operating costs. Some agencies furloughed drivers as they reduced service in response to plummeting passenger demand.

PennDOT will reevaluate performance targets when long-term impacts of the pandemic are known

By late Summer 2020, transit agencies had begun to stabilize from the initial impacts of COVID-19, only to have statewide infection rates soar in the fall and winter. As of December 2022, COVID-19 and other respiratory illnesses remain a concern. The pandemic's long-term effects on transit are not yet fully known. Much of the ridership, revenue, and operating cost trends used to develop this transit performance review report, including five-year performance targets, rely on information that predates the pandemic. PennDOT will continue to monitor the impacts of COVID-19 and reassess the transit agency's five-year performance targets when the long-term effects of the pandemic become known. If the performance targets are revised, they will be published as an addendum to this report.

EXECUTIVE SUMMARY

Act 44 of 2007 addressed the dire financial needs of local public transportation organizations across the Commonwealth by increasing state funding for public transportation operations by about 50 percent, from $535 million per year to $800 million in the first year of the legislation. Public transportation organizations that had been on the verge of major service cuts and/or significant fare increases could maintain existing service and fares and, with a predictable and growing source of operating assistance, plan service changes.

Act 44 also ushered in requirements for accountability, performance improvement, and maximizing return on investment. It established a framework for PennDOT to work with local public transportation organizations to:

- Assess efficiency and effectiveness of service, financial stability, and general management/business practices;
- Agree to five-year targets for Act 44-mandated performance criteria;
- Develop an Action Plan for improvement and to achieve performance targets;
- Provide technical assistance to implement the plan at the request of the transportation organization; and
- Reassess each organization on a five-year cycle.

The reassessment at the end of each five-year cycle is to evaluate:

- Whether the organization met the agreed-upon performance targets; and
- The sufficiency and effectiveness of the organization's actions to improve performance and management practices to meet performance targets.

Act 44 regulations address PennDOT actions regarding performance reviews and the financial penalties for public transportation organizations that fail to meet performance targets. Section 427.12, Performance Reviews, states:

> (E) The application of funding adjustment will be as follows:
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> 1. Operating fund reductions in Section 1513(G) of the Act (relating to operating program) may be implemented for grantees subject to this section that are not satisfying the minimum performance standards, considering all other provisions of Section 1513. A funding reduction may be assessed in cases when a local transportation organization fails to report progress of, or fails to implement, the agreed upon strategic Action Plan, or both.

PennDOT conducted the initial transit performance review for the Port Authority of Allegheny County (PAAC) in 2015 and 2016. In 2019, PennDOT conducted an interim assessment of PAAC's performance and updated performance targets based on the most current information at the time, and agreed to PAAC's Action Plan to meet those targets. In November 2021, PennDOT reassessed PAAC to determine whether PAAC met its targets and what actions it took to improve the agency's performance and management practices to maximize the return on investment of Commonwealth funding. This report summarizes PennDOT's findings.

Important Changes Since the Prior Performance Review

PennDOT conducted the initial review of PAAC in 2015–2016. Since finalizing the original PAAC performance report in November 2016, the following changes and other factors impacted operations, finance, and statistical reporting at PAAC and the updated performance targets established in 2019.

- PAAC changed from a zone-based fare structure to a systemwide flat fare.
- The continued growth and expansion of ride-hailing services and other mobility options adversely impacted ridership.
- The additional state 1513 subsidies to PAAC, resulting from Act 89 of 2013, enabled the reintroduction of some fixed-route service that had been eliminated before 2013.
- PAAC incurred $4.7 million in emergency expenses related to rail flooding, freight train derailment, and a flooding incident at the inclined plane.
- In 2016, PAAC developed a set of transit-oriented development (TOD) guidelines with goals to increase ridership, produce direct income, and generate passenger revenue from joint development.
- The Downtown-Uptown-Oakland-East-End Bus Rapid Transit (BRT) project ($291 million) received a High project rating by the Federal Transit Administration's (FTA's) Small Starts Capital Investment Grant (CIG) program.
- Beginning in March 2020, the COVID-19 pandemic caused significant reductions in ridership and passenger revenue.
- PAAC published its first 25-year Long-Range Plan in September 2021.
- In June 2022, PAAC rebranded itself as Pittsburgh Regional Transit (PRT).
- PRT published its 2023-2028 Strategic Plan in July 2022.

Prior Performance Review Determinations and Findings

The 2015–2016 PAAC performance review compared each of PAAC's modes of service to that of a group of peer agencies, based on the performance criteria required by Act 44. PAAC was found to be "In Compliance" for six performance criteria for fixed-route bus and seven for light rail. PAAC was "At Risk" for operating cost per revenue-hour for bus—both for the single-year and five-year trend metrics—and also "At Risk" for operating cost per passenger for light rail, for the single-year metric. PAAC consistently ranked among the best in revenue metrics.

PAAC developed an action plan to address the 13 opportunities for improvement identified in its prior performance review report:

1. Refine service guidelines to include on-time performance (OTP) goals that vary depending on the headway of bus service offered along different routes (e.g., local, busway, commuter).
2. Assess the feasibility of generating advertising revenues from the paratransit vehicle fleet.
3. Develop a target total number of maintenance employees per unit of service delivered (e.g., vehicles, miles, etc.).
4. Establish and monitor targets for unscheduled overtime.
5. Evaluate the potential benefits and costs of strategically locating driver break facilities at various locations throughout its service area.
6. Perform a benefit–cost analysis to assess the feasibility of outsourcing additional information technology (IT) functions.

7. Develop a strategic IT plan.
8. Develop a target for annual parts turnover.
9. Build front-line management skills so supervisors/managers can leverage the workforce more effectively, eliminate recurring operational issues, and drive process improvements to reduce operating costs and enhance performance.
10. Identify long-term (e.g., 10-year) strategies, that, when taken together, could work to achieve a "fiscally sustainable" business model to foster discourse.
11. Continue to monitor debt / bond market for possible refinancing savings.
12. Incorporate unmarked vehicles as one element of its road supervision strategy.
13. Encourage ACCESS to conduct service delivery solicitations at least every five years and participate in a collaborative process with PAAC to determine the performance requirements of selected subcontractors.

In 2019 PennDOT, in consultation with PAAC management, established the following performance targets that the agency was to attain before its next performance review:

- Increase passengers per revenue vehicle-hour annually by 2.0 percent;
- Contain yearly increases in operating costs per revenue vehicle-hour to 5.4 percent;
- Increase annual operating revenue per revenue vehicle-hour by 2.0 percent; and
- Contain yearly increases in operating costs per passenger vehicle-hour to 3.4 percent.

The following performance targets were established using the most accurate data available at the time.

Performance Criteria	2020 Target	2020 Actual	Met Target
Passengers / Revenue Vehicle-Hour	35.76	29.82	No
Operating Cost / Revenue Vehicle-Hour	$235.57	$241.04	No
Operating Revenue / Revenue Vehicle-Hour	$54.02	$47.02	No
Operating Cost / Passenger	$6.59	$8.08	No

Before the adverse impacts of the COVID-19 pandemic, PAAC was on track to meet its 2020 targets. The pandemic adversely impacted every Act 44 metric. Systemwide ridership and farebox revenue plummeted for the last 3.5 months of the fiscal year (i.e., March 15–June 30, 2020). Operating costs increased due to COVID-19 mitigation efforts while operating cost per revenue-hour increased due to service reductions.

2021 Performance Review Determinations and Findings

In the current performance review, PAAC was found to be "In Compliance" with all (i.e., single-year and five-year trend) Act 44 fixed-route bus performance criteria except single-year operating cost per revenue-hour, where it was 36 percent more expensive than the peer group average. PAAC performed better than the peer group average on all other metrics. Bus operating revenue per revenue hour was 57 percent higher than the peer group average.

Of the eight single-year and five-year trend metrics for light rail, PAAC was found to be "At Risk" only for the operating revenue per revenue-hour trend. However, it performed worse than the peer group for all metrics except for the five-year trends for passengers per revenue-hour and operating cost per passenger trip. Operating cost per revenue-hour was 19 percent higher than the 2019 peer group average and operating revenue per revenue hour was 25 percent lower.

The current performance review also examined additional steps beyond those specified in the prior Action Plan that PAAC took to improve performance. The most important action was the refinancing of its capital debt in 2020 which resulted in a $30 million overall cost savings. The 2021 performance review also identified steps that PAAC could take to improve overall agency performance, including:

1. Address the revenue lost from route guarantees by finding alternative sources of income to cover North Shore Connector operating losses.
2. Reassess parking supply, demand, and optimal pricing to create a systemwide parking master plan that considers the cost of providing parking, cost recovery, and the social equity implications of subsidizing the parking costs of commuter travel.
3. Develop a Board-approved debt issuance and management policy to guide when and how the Authority should incur new debt.
4. Reduce annual operating costs and improve safety by accelerating PAAC's capital project delivery to reduce its state-of-good-repair (SOGR) backlog as quickly as possible.
5. Update the recent Strategic Plan to identify and implement a range of strategies, that, when taken together, result in a financially stable business model that aligns expected revenues with costs and adds an objective to maintain a sufficient "rainy day" fund (i.e., cash reserves).

PennDOT also identified additional opportunities for improvement during the 2021 performance review. The complete list of opportunities for improvement will serve as the basis for PAAC's Board-approved Action Plan.

2026 Performance Targets

As required by Act 44, PennDOT and PAAC management developed new five-year performance targets. Performance targets are designed to be aggressive yet achievable. Over the next five years, PAAC must achieve the targets shown in the following table to ensure continued eligibility for full Section 1513 funding.

Performance Criteria	Fiscal Year			Target Annual Increase
	2020 Actual	2021 Actual	2026 Target*	
Passengers / Revenue Vehicle-Hour	29.82	12.90	14.96	3.0%
Operating Cost / Revenue Vehicle-Hour	$236.41	$247.85	$301.55	4.0%
Operating Revenue / Revenue Vehicle-Hour	$47.48	$20.61	$23.89	3.0%
Operating Cost / Passenger	$7.93	$19.21	$20.19	1.0%

*Note: FYE 2026 performance targets are based on FYE 2021 audited information.

Many of the ridership, revenue, and operating cost trends used to develop this transit performance review report rely on information that predates the pandemic. The performance targets are based on FYE 2021, the first full fiscal year of the pandemic. PennDOT will continue to monitor the impacts of COVID-19 and reassess the transit agency's five-year performance targets when the long-term effects of the pandemic become known. If the performance targets are revised, they will be published as an addendum to this report.

FINANCIAL REVIEW

PAAC maintains a balanced operating budget and typically retains 20 to 25 percent of its operating budget in cash reserves. Management does not use operating lines of credit for short-term financing needs. Key observations from PAAC's financial review include:

- Annual debt service equals about 5 percent of annual operating costs for FYE 2020.
- PAAC has a negative net current position, mainly attributable to capital debt payments being accrued for the coming year while grant income is not recorded in advance.
- More than 92 percent of PAAC's operating costs are for fixed-route service.
- Post-employment benefits (i.e., pensions, life insurance, retiree healthcare, etc.) represent between 15 and 16 percent of annual operating costs and have remained relatively flat in recent years.
- Capital debt service is projected to be approximately $18.5 million annually between 2022 and 2029, or about 8 to 10 percent of the average annual capital budget.
- Capital debt service may extend beyond 2030 due to the need to finance large capital state-of-good-repair expenditures (e.g., rail car replacements, bridge repairs, track upgrades, etc.).
- Impacts of the COVID-19 pandemic include significant decreases in overall ridership and revenues.

PAAC's total carryover subsidies are expected to increase substantially in the short run due to the federal COVID-relief funding. These funds and other management cost savings initiatives should help offset some of the operating losses resulting from the decreased revenues and higher costs incurred in response to the COVID-19 pandemic. However, sustainable budgeting will require maintaining or building reserves in the coming years due to the uncertainty of when, or if, operating revenues will return to pre-pandemic levels. Management should continue taking appropriate actions to manage costs, achieve farebox recovery goals, and maintain cash reserves to preserve PAAC's overall financial health.

NEXT STEPS

PAAC's management and Board will develop an Action Plan in response to the "Opportunities for Improvement" list identified in this performance review report. Some actions will be quickly implementable, while others may take several discrete steps to achieve over a more extended period. PAAC's management must report to the Board and PennDOT quarterly on progress toward accomplishing the Action Plan and meeting its performance targets.

INTRODUCTION

PURPOSE

Act 44 of 2007 addressed the dire financial needs of local public transportation organizations across Pennsylvania by increasing state funding for public transportation operations by about 50 percent, from $535 million annually to $800 million in the first year of the legislation. Public transportation organizations that had been on the verge of major service cuts and/or significant fare increases could maintain existing service and fares and, with a predictable and growing source of operating assistance, plan service changes.

Act 44 also ushered in critical requirements for accountability, performance improvement, and maximizing return on investment. It established a framework for PennDOT to work with local public transportation organizations to:

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The reassessment at the end of each five-year cycle is to evaluate:

- Whether the organization met the agreed-upon performance targets; and
- The sufficiency and effectiveness of actions taken by the organization to improve performance and management practices in its efforts to meet performance targets.

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AGENCY DESCRIPTION

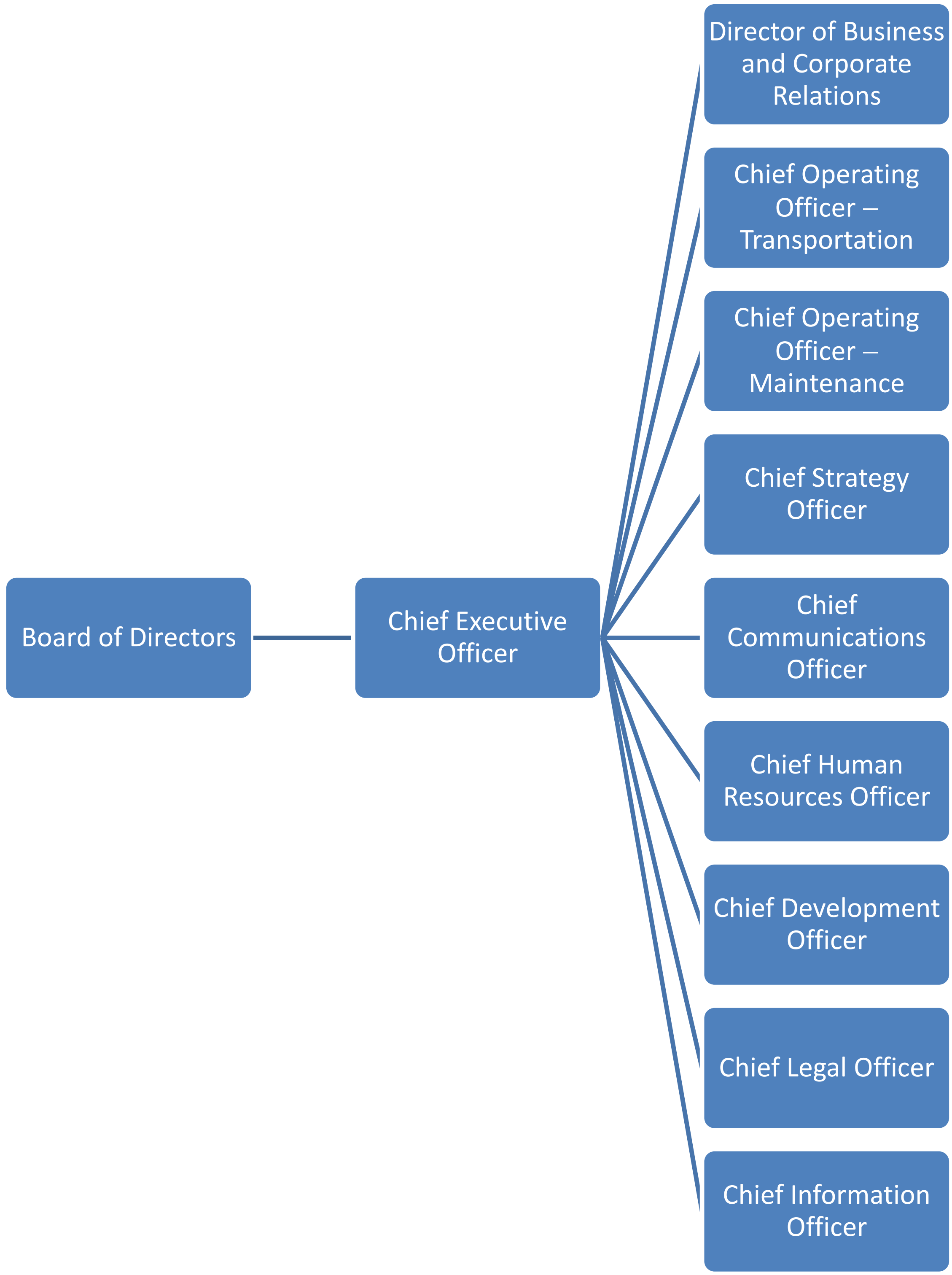
The Pennsylvania General Assembly established the Port Authority of Allegheny County (PAAC) in 1958. In the early 1960s, PAAC acquired services, rolling stock, buses, and capital infrastructure of the Pittsburgh Railways Company along with 32 independent bus and inclined plane companies, all of which were bankrupt. PAAC consolidated the fare structures, centralized operations, established the first unified transit system in Allegheny County, and began operations in March 1964.

An 11-member Board of Directors governs PAAC. Certain Board positions are appointed by the Allegheny County Executive, majority and minority leaders of the Pennsylvania State Legislature's Senate and House of Representatives, and by the Governor. The Board of Directors, as of September 2022, was comprised of the following individuals:

- Allegheny County Executive's Appointees
    - Jeffrey Letwin
    - Michelle Zmijanac
    - Ann M. Ogoreuc
    - John Tague
    - Jennifer M. Liptak
    - Stephanie Turman
- Governor's Appointee
    - Ali Doyle
- Senate Majority Leader Appointee
    - Gerald Delon
- Senate Minority Leader Appointee
    - Sen. Jim Brewster
- House Majority Leader Appointee
    - Rep. Lori Mizgorski
- House Minority Leader Appointee
    - Rep. Austin Davis

PAAC's Chief Executive Officer (CEO), Katharine Eagan Kelleman, appointed and hired by the Board of Directors, manages PAAC's daily operations. As shown in **Exhibit 1**, the CEO has nine direct reports. The Port Authority has more than 70 departments at 14 locations.

Exhibit 1. PAAC Organizational Chart



Source: Port Authority of Allegheny County FY 2022 Operating and Capital Improvement Budget

PAAC is organized into five operating divisions:

- Ross – Services north and east Allegheny County (bus)
- Collier – Services south and west Allegheny County (bus)
- East Liberty – the largest division, located on the MLK East Busway (bus)
- West Mifflin – the second-largest division (bus)
- South Hills Village – the rail operating division

PAAC has approximately 2,500 employees organized by collective bargaining unit:

- Amalgamated Transit Union (ATU Local 85)
- International Brotherhood of Electrical Workers (IBEW Local 29, AFL-CIO)
- Transit Police (Port Authority Transit Police Association)
- Non-Represented

As shown in **Exhibit 2**, PAAC operates approximately 100 fixed routes using more than 800 revenue vehicles. It also operates, via Access, 258 demand-response paratransit vehicles that provide ADA complementary, shared-ride, and another Department-approved services (DAS).

Exhibit 2. PAAC Service Statistics

Mode	Fixed Routes	Revenue Vehicles	Stations	Stops
Bus	96	725	15	6,722
Light Rail	3	81	27	102
Incline Plane*	2	2	2	2
Subtotal – Fixed Route	*101*	*810*	*44*	*6,826*
Paratransit	N/A	258	N/A	N/A
Total	**101**	**1,068**	**44**	**6,826**

Source: PAAC Fiscal Year 2022 Budget Book
Note: The Duquesne Incline is operated by the Society for the Preservation of the Duquesne Heights Incline

PAAC's total ridership typically hovered between 60 million and 70 million passenger trips per year between 2003 and 2019 (**Exhibit 3**). The fixed-route bus system accounted for 86 to 92 percent of total system ridership in any given year. Systemwide ridership peaked in FY 2006-07 when PAAC provided more than 68 million passenger trips. Between 2012 and 2019 (i.e., the last full fiscal year before COVID-19), ridership decreased by about six million passenger trips per year, a 9 percent loss. Management attributes this ridership decline to the changes in commuting patterns, the growth of ridesharing services (e.g., Uber, Lyft), service cuts, and declining fuel prices during that period which made travel by personal vehicle more competitive. However, that decline was modest compared to ridership lost during the COVID-19 pandemic.

The COVID-19 pandemic, and associated impacts on travel, adversely impacted public transit ridership nationwide. In FYE 2021, the first full fiscal year of COVID-19 impacts, PAAC ridership was down more than 40 million passenger trips from FYE 2019 (**Exhibit 4**). While systemwide ridership was down 65 percent from FYE 2019 numbers, light rail ridership was down by 80 percent. At the height of the pandemic travel restrictions, PAAC management reported operating revenue losses of more than $1 million per week. Though the various federal COVID relief packages made these losses manageable in the short run, the long-term impacts of the ongoing pandemic on ridership may threaten PAAC's long-term fiscal sustainability and any planned service expansions.

Exhibit 3. Annual Ridership by Mode, FYE 2003–2021

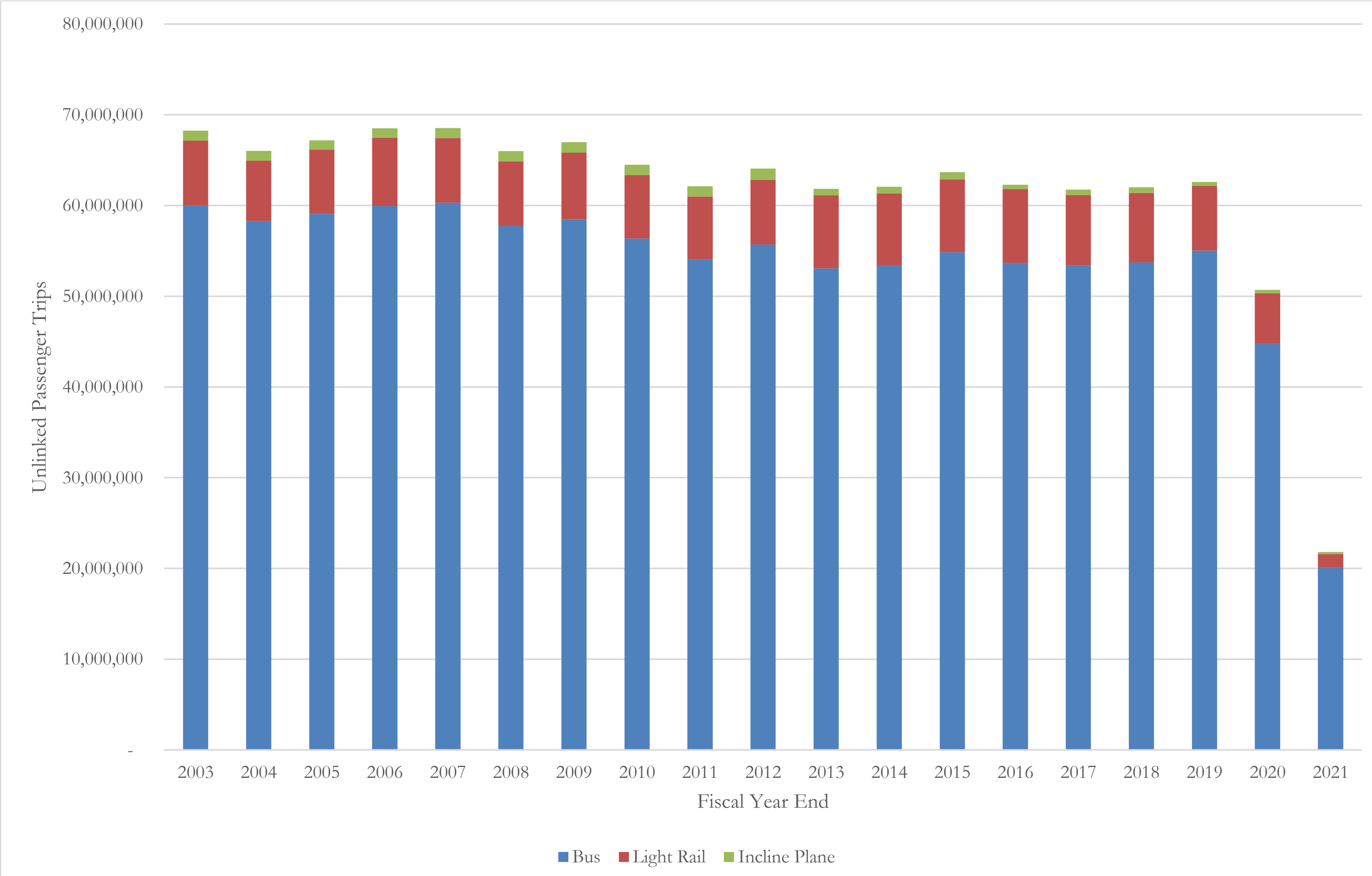
Fiscal Year[1]	Bus	Light Rail	Incline Plane	Total	Occurrences Affecting Ridership
2003	59,988,122	7,157,772	1,096,538	68,242,432	
2004	58,297,773	6,654,554	1,068,772	66,021,099	
2005	59,106,947	7,047,118	1,024,981	67,179,046	
2006	59,955,660	7,510,637	1,032,491	68,498,788	
2007	**60,310,700**	7,115,400	1,099,100	**68,525,200**	
2008	57,733,000	7,141,800	1,116,100	65,990,900	
2009	58,485,434	7,326,957	1,165,287	66,977,678	
2010	56,367,910	7,006,477	1,119,808	64,494,195	
2011	54,078,553	6,918,141	1,118,117	62,114,811	Budget shortfalls and service cuts
2012	55,704,706	7,130,433	**1,249,327**	64,084,466	Budget shortfalls and service cuts
2013	53,088,096	8,032,051	717,641	61,837,788	Act 89 restored some funding
2014	53,401,947	7,937,544	716,903	62,056,394	
2015	54,843,567	8,047,976	793,419	63,684,962	
2016	53,671,684	**8,132,130**	492,009	62,295,823	Mon Incline renovation and improvements
2017	53,389,294	7,759,217	595,336	61,743,847	
2018	53,733,622	7,655,539	610,433	61,999,594	Station Square NS derailment
2019	55,016,645	7,162,790	430,979	62,610,414	Stop consolidation and ontime performance improvement
2020	44,772,584	5,572,417	351,056	50,696,057	COVID-19 pandemic disruptions began (4th quarter)
2021	**20,136,048**	**1,460,121**	**204,830**	**21,800,999**	Continued COVID-19 pandemic disruptions

Source: NTD and PAAC Fiscal Year 2022 Budget Book
Legend:

Bold = Highest value
Blue = Lowest value

[1] PAAC's fiscal year begins July 1.

Exhibit 4. Ridership Trends by NTD Reporting Mode, FYE 2003–2021



Source: NTD and Fiscal Year 2022 Budget Book

PERFORMANCE REVIEW PROCESS

In Fall 2021, PennDOT initiated an Act 44-mandated performance review for PAAC. The following outlines the review process:

1. Notify PAAC of performance review schedule and transmit a document request.
2. Review available data and request additional information.
3. Agree upon a set of peer agencies for comparison (PAAC and PennDOT).
4. Review the most recent customer satisfaction survey (CSS).
5. Assess Act 44 variables, including current performance, targets from the previous review, and Action Plan implementation.
6. Perform Act 44 performance criteria analysis.
7. Interview the management, staff, and Board.
8. Perform supplementary data collection and reconciliation.
9. Evaluate performance, financial management, and operations.
10. Report results and determine agency compliance with performance requirements.
11. Finalize the performance review report.
12. Develop, implement, and monitor a five-year Action Plan (PAAC).
13. Provide technical assistance, if required, to help meet five-year performance targets.

These steps in the performance review process assess PAAC's unique challenges, changes since the previous performance review, the accuracy and reliability of reported data (see **Appendix A: Data Adjustments**), implemented practices, additional opportunities for improvement, and realistic goals to attain before the next review.

CUSTOMER SATISFACTION SURVEY

PAAC engaged TransPro, Inc., to conduct bus and light rail/incline plane customer satisfaction surveys (CSS) in 2018. Riders completed the surveys on board transit vehicles. PAAC collected 506 bus rider surveys and 512 light rail/incline plane rider surveys. PAAC incentivized participation by offering a free one-day pass for completing the survey.

Riders rated PAAC on a scale of "very dissatisfied" to "very satisfied" on a variety of measures. The percentage of customers satisfied or very satisfied on bus and light rail were:

- Overall performance – 90% bus, 88% light rail
- On-time performance – 80% bus, 79% light rail
- Fare prices – 61% bus, 62% light rail

Approximately 41 percent of riders identify as African American or Black, 52 percent are under age 35, and 67 percent report an annual income of $35,000 or less. Light rail rider demographics largely mirror bus rider demographics.

Bus and rail riders were equally likely (i.e., about 6 out of 10) to recommend PAAC. Though bus riders and rail riders considered on-time performance and fare cost to be the most important elements of their service, rail riders were more sensitive to on-time performance. Bus riders equally weighed fares and on-time performance.

PRIOR ACT 44 PERFORMANCE ASSESSMENTS

PRIOR REVIEW DETERMINATIONS AND FINDINGS

The 2015–2016 PAAC performance review compared each mode of service offered to a group of peer agencies based on the performance criteria required by Act 44. PAAC was found to be "In Compliance" for six of the eight performance criteria for fixed-route bus and for seven of the eight performance criteria for light rail (**Exhibit 5**). All three of the "At Risk" findings relate to operating cost; operating cost per revenue-hour single-year and five-year trend for bus, and operating cost per passenger single-year for light rail. There were insufficient peer transit systems in the US to conduct an Act 44 analysis for the incline plane.

ACTION PLAN AND PERFORMANCE TARGETS

PAAC developed an action plan to address the 13 opportunities for improvement identified in the prior performance review report:

1. Refine service guidelines to include on-time performance (OTP) goals that vary depending on the headway of bus service offered along different routes.
2. Assess feasibility of generating advertising revenues from the paratransit vehicle fleet.
3. Develop a target total number of maintenance employees per unit of service delivered (e.g., vehicles, miles, etc.).
4. Establish and monitor targets for unscheduled overtime.
5. Evaluate the potential benefits and costs of strategically locating driver break facilities at various locations throughout its service area.
6. Perform a benefit–cost analysis to assess the feasibility of outsourcing additional IT functions.
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8. Develop a target for annual parts turnover.
9. Build front-line management skills so supervisors/managers can leverage the workforce more effectively, eliminate recurring operational issues, and drive process improvements to reduce operating costs and enhance performance.
10. Identify long-term (e.g., 10-year) strategies that, when taken together, could work to achieve a "fiscally sustainable" business model to foster discourse.
11. Continue to monitor the debt / bond market for possible refinancing savings.
12. Incorporate unmarked vehicles as one element of its road supervision strategy.
13. Encourage ACCESS to conduct service delivery solicitations at least every five years and participate in a collaborative process with PAAC to determine the performance requirements of selected subcontractors.

The list of previous Action Plan items from the 2016 performance report, as well as PAAC's progress in addressing previously identified opportunities for improvement, are provided in **Appendix B: 2016 Performance Review Action Plan Assessment**.

Exhibit 5. Prior Performance Review Act 44 Comparison Summary

Performance Measure	Fiscal Year and Trend[2]	Determination	Value[3]	Peer Average
Fixed-Route Bus				
Passengers / Revenue Vehicle-Hour	FYE 2014	In Compliance	36.00	31.16
	Five-year trend	In Compliance	1.46%	-0.55%
Operating Cost / Revenue Vehicle-Hour	FYE 2014	**At Risk**	$186.60	$136.56
	Five-year trend	**At Risk**	4.63%	2.90%
Operating Revenue / Revenue Vehicle-Hour	FYE 2014	In Compliance	$51.64	$33.23
	Five-year trend	In Compliance	4.80%	-0.05%
Operating Cost / Passenger	FYE 2014	In Compliance	$5.18	$4.45
	Five-year trend	In Compliance	3.13%	3.50%
Light Rail				
Passengers / Revenue Vehicle-Hour	FYE 2014	In Compliance	49.22	52.70
	Five-year trend	In Compliance	-1.41%	-0.90%
Operating Cost / Revenue Vehicle-Hour	FYE 2014	In Compliance	$329.39	$266.92
	Five-year trend	In Compliance	-2.46%	0.38%
Operating Revenue / Revenue Vehicle-Hour	FYE 2014	In Compliance	$70.60	$55.44
	Five-year trend	In Compliance	3.83%	-1.23%
Operating Cost / Passenger	FYE 2014	**At Risk**	$6.69	$5.11
	Five-year trend	In Compliance	-1.07%	1.61%
Incline Plane				
There is an insufficient number of peer transit systems in the US to conduct an Act 44 analysis for incline plane.				

[2] The five-year trend represents FYE 2007 through FYE 2012.
[3] NTD information most current at the time of the peer review.

Several significant events occurred between 2016 and 2019 that impacted PAAC's ability to meet its targets developed in 2015:

- PAAC changed from a zone-based fare structure to a systemwide flat fare. With this change came anticipated short-term losses in revenue and ridership. Over the long term, PAAC expects ridership and revenues to rebound and operations to be simplified.
- As numerous nationwide studies and reports have indicated, the continued growth and expansion of ride-hailing services and other mobility options have adversely impacted transit ridership across the US, making it more challenging for public transit agencies such as PAAC to increase ridership.
- The additional state 1513 subsidies to PAAC resulting from Act 89 of 2013 enabled the reintroduction of some fixed-route service eliminated before 2013. PAAC added back fixed-route service on a limited basis under PAAC's transit service guidelines. Though productive, this expanded service lowers average productivity because it is not as productive as the systemwide average. Additionally, increases in congestion increased PAAC's revenue service hours for some routes without any increase in passenger trips for those routes.
- The Downtown to North Shore portion of PAAC's light rail system is still fare-free despite the loss of a portion of funding from sponsors.
- PAAC incurred $4.7 million in emergency expenses related to rail flooding, freight train derailment, and a flooding incident at the Monongahela Incline.

These events and other trends that adversely impacted ridership, cost, and revenues led PennDOT and PAAC management to concur that revised Act 44 performance targets should be developed for 2020. Based on estimates of FYE 2019 performance, PAAC's systemwide fixed-route performance targets were revised to the values shown in **Exhibit 6.**

Exhibit 6. PAAC 2020 Systemwide Fixed-Route Performance Targets

Act 44 Metrics	Passengers / RVH	Revenue / RVH	Operating Cost / RVH	Operating Cost / Passenger
FYE 2020 Performance Target	35.76	$54.02	$235.57	$6.59
Actual FYE 2020 Performance*	29.82	$47.48	$236.41	$7.93

*Actual FYE 2020 Performance includes 3.5 months of COVID-19 pandemic-related disruptions.

Assessment

Since the initial performance report was finalized in 2016, PAAC worked to address its performance targets and implement actions listed in the 2016 Action Plan as described above. During that time, PAAC undertook the following efforts to address the Action Plan recommendations:

- Installed on-time performance tracking technology on the light rail system in late 2018.
- Developed separate on-time performance goals for rapid service (85% busway, 90% light rail), commuter (80%) and local/coverage (75%) routes.
- Developed separate inventory turnover targets for bus and rail modes.
- Refinanced long-term bonds to reduce the overall cost of financing.
- Assessed the feasibility of generating revenues from the paratransit fleet and concluded that the cost of implementation exceeded the likely revenues.

Although PAAC did not meet its 2020 performance targets, it largely completed its 2016 Action Plan and took additional steps to improve performance. For example, PAAC conducted a customer satisfaction survey in 2018 and initiated processes to examine IT needs and scheduled vs. budgeted overtime.

The COVID-19 pandemic and resulting changes in travel behavior adversely impacted PAAC's ability to achieve its 2020 performance targets. Ridership and revenues plummeted from March 2020 through June 30, 2020, and beyond, while costs increased due to COVID mitigation measures (e.g., additional cleaning of rolling stock, stations, equipment, etc.).

In summary, the actions taken by PAAC demonstrate a good faith effort to achieve its 2020 performance targets.

2021 ACT 44 PERFORMANCE ASSESSMENT

The 2021 performance review compared PAAC to groups of peer agencies based on the four performance criteria required by Act 44. A separate group of peer agencies was identified for each mode. The peer agency comparisons are required by Act 44 and are used as a tool to identify areas of interest in the performance review, then to identify PAAC best practices and opportunities for improvement.

PEER AGENCY COMPARISONS

Peer agencies were identified through a collaborative process between PennDOT and PAAC management using criteria defined in Act 44 and data from the most recently available NTD (FYE 2019). The detailed data used to develop the peer comparison summaries are presented in **Appendix C: Peer Comparisons.**

The transit systems identified for peer comparisons are shown in **Exhibit 7**. Results of the current PAAC analyses and peer comparisons are presented in **Exhibit 8**.

ASSESSMENT

In the current performance review, PAAC was found to be "In Compliance" with all (i.e., single-year and five-year trend) Act 44 fixed-route bus performance criteria except single-year operating cost per revenue-hour, where it was 36 percent more expensive than the peer group average. PAAC performed better than the peer group average on all other metrics. Bus operating revenue per revenue-hour was 57 percent higher than the peer group average.

Of the eight single-year and five-year trend metrics for light rail, PAAC was found to be "At Risk" only for the operating revenue per revenue-hour trend. However, it performed worse than the peer group for all metrics except for the five-year trends for passengers per revenue-hour and operating cost per passenger trip. Operating cost per revenue-hour was 19 percent higher than the 2019 peer group average and operating revenue per revenue-hour was 25 percent lower.

Exhibit 7. PAAC Peer Transit Systems

Agency*	Acronym	City, State
Fixed-Route Bus		
Alameda-Contra Costa Transit District	AC Transit	Oakland, CA
Tri-County Metropolitan Transportation District of Oregon	TriMet	Portland, OR
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	METRO	St. Louis, MO
VIA Metropolitan Transit	VIA	San Antonio, TX
Metropolitan Atlanta Rapid Transit Authority	MARTA	Atlanta, GA
San Diego Metropolitan Transit System	MTS	San Diego, CA
Metro Transit		Minneapolis, MN
Milwaukee County	MCTS	Milwaukee, WI
Santa Clara Valley Transportation Authority	VTA	San Jose, CA
The Greater Cleveland Regional Transit Authority	GCRTA	Cleveland, OH
Southwest Ohio Regional Transit Authority	SORTA / Metro / Access	Cincinnati, OH
Maryland Transit Administration	MTA	Baltimore, MD
Niagara Frontier Transportation Authority	NFT Metro	Buffalo, NY
Light Rail		
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	METRO	St. Louis, MO
Metro Transit		Minneapolis, MN
Santa Clara Valley Transportation Authority	VTA	San Jose, CA
The Greater Cleveland Regional Transit Authority	GCRTA	Cleveland, OH
Maryland Transit Administration	MTA	Baltimore, MD
Incline Plane		
There is an insufficient number of peer transit systems in the US to conduct an Act 44 analysis for this mode.		

*Note: PAAC's peer agencies will be revisited to confirm they are still appropriate agencies to utilize for comparison purposes if an interim review is done or at the next full peer review.

Exhibit 8. Act 44 Metric Peer Transit System Comparisons Summary

Performance Criteria	FYE*	Determination	PAAC Rank	Relation to Peer Average	Value**	Peer Average
Fixed-Route Bus (Rank of 14)						
Passengers / Revenue-Hour	2019	In Compliance	1	Better	33.77	24.28
	Trend	In Compliance	1	Better	-1.27%	-4.92%
Operating Cost / Revenue-Hour	2019	**At Risk**	13	Worse	$199.09	$146.55
	Trend	In Compliance	8	Better	1.30%	1.31%
Operating Revenue / Revenue-Hour	2019	In Compliance	1	Better	$53.38	$34.04
	Trend	In Compliance	3	Better	0.04%	-1.72%
Operating Cost / Passenger	2019	In Compliance	8	Better	$5.90	$6.17
	Trend	In Compliance	1	Better	2.61%	6.57%
Streetcar / Light Rail (Rank of 6)						
Passengers / Revenue-Hour	2019	In Compliance	4	Worse	42.59	44.40
	Trend	In Compliance	3	Better	-2.85%	-3.59%
Operating Cost / Revenue-Hour	2019	In Compliance	5	Worse	$422.80	$354.02
	Trend	In Compliance	4	Better	5.12%	5.31%
Operating Revenue / Revenue-Hour	2019	In Compliance	5	Worse	$50.14	$66.82
	Trend	**At Risk**	6	Worse	-7.20%	1.63%
Operating Cost / Passenger	2019	In Compliance	4	Worse	$9.93	$8.59
	Trend	In Compliance	3	Better	8.21%	9.47%
Incline Plane (No Peer Transit Systems)						
There is an insufficient number of peer transit systems in the US to conduct an Act 44 analysis for this mode.						

* The five-year trend represents FYE 2014 through FYE 2019.

**NTD information most current at the time of the peer review.

2026 PERFORMANCE TARGETS

Act 44 requires that PennDOT and transit agencies establish five-year performance targets for each of the four Act 44 metrics for fixed-route service. Setting performance targets for these metrics and regularly reevaluating performance is intended to improve both the effectiveness and efficiency of service delivery. Act 89 requires agencies to maintain a policy to adjust fares for inflation to keep pace with increases in operating costs.

PennDOT uses the most recent audited and agency-verified values for passengers, operating costs, and operating revenues as the baseline for developing the targets. Five-year targets are then set based on realistic and achievable expectations of improvement.

The 2021 performance review noted that PAAC outperformed most of its peers in ridership metrics for the single-year FYE 2019 determination and five-year trend periods for bus and light rail modes. PAAC began to experience the adverse COVID-19 impacts on its fixed-route ridership in March 2020, resulting in declines in total passenger trips and passenger fares. PAAC ridership had only rebounded to 35 percent of 2019 levels as of FYE 2021. PennDOT based PAAC's future-year performance targets on the last full audited financial year (i.e., FYE 2021).

PennDOT established the following performance targets in cooperation with PAAC:

- Increase passengers per revenue vehicle-hour by an average of at least 3.0 percent per year.
- Contain operating cost per revenue vehicle-hour increases to no more than an average of 4.0 percent per year.
- Increase revenue per revenue vehicle-hour by at least 3.0 percent per year on average.
- Contain operating cost per passenger trip increases to 1.0 percent per year, or less.

Over the next five years, PAAC must work to achieve the targets shown in **Exhibit 9** to ensure continued eligibility for full Section 1513 funding.

Exhibit 9. FYE 2026 Act 44 Performance Targets

Performance Criteria	Fiscal Year			Target Annual Increase
	2020 Actual	2021 Actual	2026 Target*	
Passengers / Revenue Vehicle-Hour	29.82	12.90	14.96	3.0%
Operating Cost / Revenue Vehicle-Hour	$236.41	$247.85	$301.55	4.0%
Operating Revenue / Revenue Vehicle-Hour	$47.48	$20.61	$23.89	3.0%
Operating Cost / Passenger	$7.93	$19.21	$20.19	1.0%

*Note: FYE 2026 performance targets are based on FYE 2021 audited information.

PennDOT will continue to monitor the impacts of COVID-19 and reassess the transit agency's five-year performance targets after the long-term effects of the pandemic become known. If the performance targets are revised, they will be published as an addendum to this report.

FUNCTIONAL REVIEW

PennDOT uses functional reviews to determine the reasons behind performance results found in the Act 44 comparisons. The reviews catalog best practices to share with other transit agencies and identify opportunities for improvement that should be addressed in the Action Plan (see **Appendix D: Action Plan Template**). Functional review findings are organized by a brief description of the Act 44 variables guiding the performance review: passengers, revenues, and operating costs.

The following sections summarize ways in which PAAC could deliver service more efficiently and effectively. The observations recorded during the review process are categorized as Best Practices or Elements to Address in the Action Plan. Best Practices are those exceptional current practices that are beneficial and should be continued or expanded. Elements to Address in the Action Plan are recommendations that maximize productivity, control operating costs, and achieve optimum revenue levels, enhancing the system's future performance for one or more Act 44 fixed-route performance factors.

For PAAC's convenience, Action Plan templates are included in **Appendix D: Action Plan Template** (see pg. 63). Some actions will be quickly implementable, while others may take several discrete steps to achieve over a more extended period. The template provides a simple-to-follow order of key findings of this report that the Action Plan should address.

OPPORTUNITIES TO INCREASE FIXED-ROUTE RIDERSHIP

BEST PRACTICES

1. The Port Authority takes an active role in the communities it serves by supporting transit-oriented development (TOD). These developments are often mixed-use with parking supply limited, thereby encouraging transit use. PAAC's TOD guidelines provide local communities and developers a framework of best practices to integrate transit-supportive design and ordinances into the land development process.

ELEMENTS TO ADDRESS IN PART 1 OF THE ACTION PLAN

1. PAAC planned to launch a branding and marketing campaign in 2020, just before the COVID-19 pandemic. Management put those plans on hold as the Authority dealt with the day-to-day impacts of the pandemic. As PAAC service and ridership stabilize, management should **reevaluate and implement marketing plans** that address long-term changes in regional travel patterns.
2. PAAC has an overall on-time performance goal of 73 percent for its bus routes. On-time performance is defined as no more than one minute early or five minutes late from scheduled time points. System reliability is fundamental to attracting and maintaining ridership. Though the performance goal is low for a transit system with dedicated busways, PAAC only achieved it for a few months during the pandemic's peak. Management should **reassess PAAC's on-time goals and system performance to better align service delivery with customer expectations**.
3. COVID-19 changed many aspects of transit service delivery, including customer travel patterns. However, the change in travel patterns and ridership recovery has not been uniform for all modes and travel markets. Now, more than two years into the pandemic,

PAAC should **create a transit development plan that explicitly recognizes long-term pandemic impacts** that could fundamentally change the need for transit service investments throughout the region.

OPPORTUNITIES TO INCREASE FIXED-ROUTE REVENUES

BEST PRACTICES

1. None.

ELEMENTS TO ADDRESS IN PART 2 OF THE ACTION PLAN

1. Allegheny County subsidizes PAAC's local match with a local-option alcoholic beverage surtax (Allegheny County Code of Ordinances, Division 1, Article 808.A, "Alcoholic Beverage Taxation"). As state and federal funding for public transportation increases, local matching funds must increase as well. Management should **continue to work with local elected officials to ensure that local funding keeps pace with operating and capital matching fund requirements** (e.g., Oakland BRT).
2. PAAC continues to provide North Shore Connector service fare-free, despite the loss of route guarantee arrangements with venues it services. Given the high cost of light rail service, PAAC should **address the revenue lost from the route guarantees by finding alternative sources of revenue to cover North Shore Connector operating losses**.
3. Transit agencies have found that non-farebox revenue sources, such as advertising, can offset operating costs and reduce the need to raise fares. PAAC should continue to **identify opportunities to increase non-farebox revenue**.
4. The Port Authority offers many park-and-ride locations throughout Allegheny County, and most are free. However, many of these have a cost to maintain. As ridership rebounds from the pandemic, PAAC should **reassess parking supply, demand, and optimal pricing to create a systemwide parking master plan** that considers the cost of providing parking, cost recovery, and the social equity implications of subsidizing the additional costs of commuter travel.
5. With electric vehicles becoming more common, the demand for vehicle charging stations in parking facilities will grow. New federal legislation promotes the installation of electric vehicle (EV) charging stations with competitive grants. PAAC should **explore the potential for adding EV charging stations to its parking facilities.** The charging stations could provide a new source of revenue from property leases and/or concessionaires and possibly encourage ridership.

OPPORTUNITIES TO CONTROL OPERATING COSTS

BEST PRACTICES

1. Under current regulations as stipulated by Act 44, PAAC cannot issue additional bonds secured by pledged revenues (PTAF). However, with PennDOT approval, PAAC may issue refunding bonds if market conditions would result in reduced interest expense. PAAC continued to monitor the debt and bond market since the last performance review for possible refinancing savings. The Authority refinanced its bonds in 2020, resulting in a $30 million savings in interest costs over the loan's remaining life (i.e., 2021-2029).

Elements to Address in Part 3 of the Action Plan

1. PAAC has a multi-million-dollar state-of-good-repair (SOGR) backlog, including the need to replace light rail cars. Before assuming additional debt, PAAC's management team should **develop a Board-approved debt issuance and management policy to guide when and how the Authority should incur new debt.** The Board should reassess the debt policy periodically to balance long-term financing costs and near-term capital needs.
2. While PAAC's fixed-route operating expenses increased by 4.4 percent between FYE 2019 and 2021, not all line items changed uniformly. While fuels and lubricant costs decreased by 28.9 percent, non-operator salaries increased by 13.9 percent (**Exhibit 10**), or $14.3 million. Measured per revenue-hour, other salaries increased 21.4 percent. Management should take steps to **contain operating costs attributable to non-operator wages**.

Exhibit 10. Components of Fixed-Route Operating Expense, FYE 2019 and 2021

Fixed-Route Operating Expense	Fiscal Year End		Change	
	2019	2021	Absolute	Percent
Operator Salaries	$81,251,633	$84,875,313	$3,623,680	4.5%
Other Salaries	$103,833,878	$118,216,092	$14,382,214	13.9%
Fringe Benefits	$136,343,904	$142,561,285	$6,217,381	4.6%
Fuels, Lubricants, and Tires	$19,019,985	$13,516,259	-$5,503,726	-28.9%
Other Materials and Supplies	$25,545,027	$25,874,906	$329,879	1.3%
Services	$14,939,692	$15,652,494	$712,802	4.8%
Utilities and Insurance	$11,801,654	$11,037,362	-$764,292	-6.5%
Miscellaneous	$8,488,411	$7,066,284	-$1,422,127	-16.8%
Total Operating Expense	**$401,224,184**	**$418,799,995**	**$17,575,811**	**4.4%**
Revenue Vehicle-Hours (RVH)	**1,801,896**	**1,689,724**	**(112,172)**	**-6.2%**
Operating Expense / RVH	**2019**	**2021**	**Absolute**	**Percent**
Operator Salaries	$45.09	$50.23	$5.14	11.4%
Other Salaries	$57.62	$69.96	$12.34	21.4%
Fringe Benefits	$75.67	$84.37	$8.70	11.5%
Fuels, Lubricants, and Tires	$10.56	$8.00	-$2.56	-24.2%
Other Materials and Supplies	$14.18	$15.31	$1.14	8.0%
Services	$8.29	$9.26	$0.97	11.7%
Utilities and Insurance	$6.55	$6.53	-$0.02	-0.3%
Miscellaneous	$4.71	$4.18	-$0.53	-11.2%
Total Operating Expense / Revenue-Hour	**$222.67**	**$247.85**	**$25.18**	**11.3%**

3. As shown in **Exhibit 11**, PAAC reports that 22.8 percent of its annual bus miles are "non-revenue," or deadhead. Under the current collective bargaining agreement (CBA) terms, PAAC must provide "suitable accommodations" for operators to eat their meals. PAAC sends operators back to their division garages for meal breaks to meet this provision. This practice significantly increases the deadhead miles and hours on fixed-route bus routes because operating division garages are the only PAAC facilities that meet the "suitable accommodations" requisite. PAAC could reduce operating costs related to deadhead miles and hours by developing strategically located break facilities that include:
   a. Access to commercial food service
   b. Non-commercial eating place
   c. Toilets and hand-washing facilities

Exhibit 11: Fixed-Route Bus Deadhead Service Statistics, FYE 2015–2020

Fixed-Route Bus Operating Statistic	Fiscal Year End					
	2015	2016	2017	2018	2019	2020
Total Miles (1,000s)	**25,915**	**26,718**	**26,909**	**26,812**	**27,111**	**25,864**
Revenue Miles (1,000s)	20,187	20,848	21,169	21,183	20,927	19,969
Deadhead Miles (1,000s)	5,728	5,870	5,739	5,629	6,184	5,895
Deadhead Miles (Percent)	*22.1%*	*22.0%*	*21.3%*	*21.0%*	*22.8%*	*22.8%*

Management should **evaluate the potential benefits and costs of strategically locating driver break facilities at various locations throughout its service area** to minimize the number of deadhead miles and hours. This action was also a recommendation from the 2016 performance review that remains unaddressed. PAAC did have a "meals away" plan; however, it appears ineffective, as the percentage of deadhead miles increased between 2015 and 2020.

4. Port Authority had a substantial balance of PennDOT capital grants outstanding as of June 7, 2022, but has been slow to advance its capital program. For example, there are significant SOGR issues on PAAC's rail system, and more than 50 railcars need replacement at an expected cost between $400 million and $500 million. The 2022 BIL will further increase the capital funding available to PAAC.

   Management should **develop a long-term capital plan that focuses on phasing improvements and creating a pipeline of projects for current and future funding opportunities** to reduce PAAC's annual operating costs and improve safety**.** The plan's goal should be to implement strategies that accelerate PAAC's capital project delivery and reduce the SOGR backlog as quickly as possible. The plan should address items such as:

   a. Identifying and eliminating organizational barriers to timely capital project delivery.
   b. Prioritizing SOGR and safety improvements over system expansion.
   c. Quantifying the short- and long-term impacts of capital projects on operations staffing, operating expenses, and revenues.
   d. Optimizing current service to minimize construction impacts on customers and the time required to complete a project.
   e. Developing a menu of innovative procurement mechanisms that can reduce costs while concurrently expediting project delivery (e.g., design-build, long-term leases).
   f. Minimizing or eliminating the need for debt service interest payments to maximize the amount of capital funding available for asset improvements.

Other Opportunities to Improve Performance

Best Practices

1. The PAAC Board establishes annual performance goals for the CEO that are written into the employment contract. These goals serve as the basis of the annual performance evaluation and potential performance bonuses. The Board reports that the current CEO has achieved approximately 95 percent of the goals.
2. Like many other transit systems nationwide, PAAC has experienced a shortage of bus drivers. To address this problem, the Authority developed a recruitment campaign targeted

toward truck drivers. These drivers already have commercial drivers' licenses (thus would only require a passenger endorsement) and may be interested in working closer to home in a position with good benefits. The campaign is published on Facebook, billboards, and at job fairs.

3. PAAC operates its own transit police department. In recent years some members of the public have lost trust in police, including transit police. PAAC police undertake several proactive efforts to build community trust, including:
    a. Interacting with the public through ride-alongs on the buses and trolleys.
    b. Having a presence on social media.
    c. Holding events such as Coffee with a Cop.
4. PAAC provides a total compensation snapshot to employees. The intention is to improve employee retention by conveying the total value of wages and benefits the employee is receiving.

ELEMENT TO ADDRESS IN PART 4 OF THE ACTION PLAN

1. The Port Authority of Allegheny County (PAAC) recently rebranded itself as Pittsburgh Regional Transit (PRT). As part of this initiative, the Southwest Pennsylvania Commission (SPC) is leading an initiative to evaluate a new regional fare collection and technology plan. Given the number of suburban transit agencies that also provide service to Pittsburgh, SPC and PAAC should **communicate regularly with neighboring agencies to ensure that any new regional fare or technology concepts are understood and embraced by transit service providers throughout the region**.

2. Emerging propulsion technologies provide opportunities to deliver transit services efficiently. However, new technologies are sometimes unreliable in their early years. PAAC should **develop a formal program to assess the risks of new rolling stock technologies and factor those findings into capital purchase decisions.** For example, the Altoona Bus Testing program documents the structural integrity of new bus chassis and the reliability of other subcomponents. This will become more important as new fuel types (e.g., electric, hydrogen fuel cell) and vendors emerge that provide alternatives to diesels and hybrids.

3. The PRT 2023-2028 Strategic Plan identifies financial stability as Objective 1 of the organizational resilience goal. The strategies outlined to attain the objective focus on generating additional revenue. Recent progress on funding and management's effective containment of legacy costs makes the vision of a fiscally sustainable PAAC more achievable now than any time in the recent past. "Fiscally sustainable" in this context is defined as a strategy where capital and operating expenditures are in line with reasonably expected funding levels and assets are maintained in a state of good repair.

   While PAAC continues to pursue additional funding, it should also have additional objectives to promote financial stability such as maintaining adequate cash reserves and containing cost increases. Organizational resilience is founded on balanced funding, spending, and a healthy "rainy day" reserve fund. To ensure its long-term financial health, PAAC should **identify and implement a range of strategies, that, when taken together, yield a financially stable business model.**

4. The Silver Line Library (named the Library Branch of the Blue Line until 2020) is part of PAAC's light rail system. It was constructed in 1903 and has been operated by PAAC since 1987. The tracks parallel nearby roadways within a few feet, cross many local streets without

crossing gates (**Exhibit 12** and **Exhibit 13**), are prone to flooding, and are in such poor condition that operating speeds are five miles per hour along some segments (**Exhibit 14**).

PAAC must address these issues if it plans to continue operating the line. **Any plans to reconstruct the line, estimated at $450 million, should address the safety hazards and conditions that require the trains to travel slowly daily and disrupt service periodically. In the interim, PAAC should assess cross-traffic conflicts and identify opportunities to reduce potential rail and roadway conflicts.**

Exhibit 12: Silver Line Library Ungated Traffic Crossing with Truck Crossing

Exhibit 13: Silver Line Library Ungated Crossing with School Bus Crossing

Exhibit 14: Silver Line Library 5 MPH Speed Limit Section

FINANCIAL REVIEW

The following financial analysis presents PAAC's high-level operating trends to identify potential areas needing further inquiry. It covers the following topics:

- High-Level Indicators of Financial Health
- Total Public Transportation Operating Budget
- Operating Budget Projections
- Capital Budget Projections
- Long-Term Debt
- Post-Employment Benefit Programs

PAAC began to experience ridership decreases due to the COVID-19 pandemic in March 2020, resulting in declining passenger fare revenue. By March 25, 2020, PAAC reduced service systemwide by 25 percent. Fixed-route fare revenue fell 21.9 percent between FYE 2019 and FYE 2020, from $88.5 million to $69.1 million. Demand-response passenger fares declined by 27.6 percent during the same period. Systemwide operating costs increased slightly—by 1 percent—during that period, from $437.6 million to $442.0 million. Operating subsidies increased 13.3 percent, from $319.4 million to $361.9 million. Much of the increase in subsidy was attributable to federal COVID relief funding. PAAC maintains a balanced operating budget.

HIGH-LEVEL INDICATORS OF FINANCIAL HEALTH

As shown in **Exhibit 15**, PAAC had carryover subsidies equal to 34.1 percent of total annual operating costs at FYE 2020. PAAC had $150.7 million in 1513 state subsidies and $0 in local carryover subsidies. This amount is the highest carryover PAAC has reported since the passage of Act 44 (2007).

Allegheny County provides local matching funds from the Alcoholic Beverage Tax and sales tax revenue from the Regional Asset District (RAD). Allegheny County provided $9.45 million in Coronavirus Aid, Relief, and Economic Security (CARES) Act funding for PAAC local matching funds to offset the loss in tax revenues stemming from the COVID-19 pandemic.

PAAC was awarded $502.5 million in federal aid through CARES, CRRSSA, and ARPA recovery packages to offset operating revenue losses and operating cost increases associated with the COVID-19 pandemic. This funding should maintain PAAC's financial health for several years.

PAAC does not have an operating line of credit. The agency had $145.1 million in outstanding long-term capital debt from the 2011 Special Revenue Transportation Bonds (FYE 2020). PTAF and local matching funds subsidize annual debt service payments ($22 million). The 2011 bonds were refinanced in 2021, resulting in about a $30 million savings over the life of the loan, reducing annual debt service payments to $18.5 million. PAAC cannot incur additional long-term debt without approval from the Pennsylvania Treasury Department and PennDOT.

Exhibit 15. High-Level Financial Indicators

FYE 2020 Indicator	Value	Assessment Criteria / Rationale	Source
Total Carryover Subsidies / Annual Operating Cost	38.3%	A target of ≥ 25% provides liquidity to cover unexpected cost increases or service changes without incurring interest fees from loans.	FYE 2020 Audit
Available Credit/ Annual Payroll	0.0%	Only necessary if combined carryover subsidies are less than 25% of annual operating costs. If necessary, a line of credit ensures that the agency maintains sufficient cash flow and liquidity to pay all current bills.	FYE 2020 Audit and PennDOT dotGrants
Actual Local Match / Required Match	100.0%	Target ≥ 100%. Local match that exceeds required minimums gives a transit agency flexibility to change service, accommodate unexpected cost changes, and make capital investments.	PennDOT dotGrants 2020
Annual Debt Service* / Annual Operating Cost	5.0%	Low debt amounts reduce interest costs.	FYE 2020 Audit

*Annual debt service is for capital debt only. PAAC does not carry debt for operating expenses.

TOTAL PUBLIC TRANSPORTATION OPERATING BUDGET

PAAC's total operating budget increased from approximately $377.5 million in FYE 2015 to $442.0 million in FYE 2020 (**Exhibit 16**). In FYE 2020, 92.7 percent of PAAC's operating expenses were for fixed-route service. The remaining operating costs (7.3 percent) were for paratransit service (**Exhibit 17**). Fixed-route operating expenses increased from $342.5 million in FYE 2015 to $409.8 million in FYE 2020. The cost of paratransit service decreased from $35.0 million in FYE 2015 to $32.2 million in FYE 2020.

Agency-wide operating funds come from various sources, including state, federal, and local subsidies; passenger fares; and advertising. Federal and state grants make up the largest share of income for PAAC, accounting for 72.1 percent of total operating income. Local funds and revenues (e.g., passenger fares, organization-paid fares, advertising, etc.) make up the remaining share, accounting for 27.9 percent of total operating income, as shown in **Exhibit 18** and **Exhibit 19**. PAAC received its required local match for its Section 1513 state operating subsidy.

Exhibit 16. Public Transportation Operating Expenses by Service Type, FYE 2015–2020

Service Type* (Millions)	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Fixed-Route	$342.5	$364.2	$368.4	$381.0	$401.2	$409.8
Paratransit	$35.0	$35.9	$36.1	$37.3	$36.4	$32.2
Total	$377.5	$400.1	$404.5	$418.2	$437.6	$442.0

*May not sum due to rounding

Exhibit 17. Public Transportation Operating Expense by Service Type, FYE 2015–2020

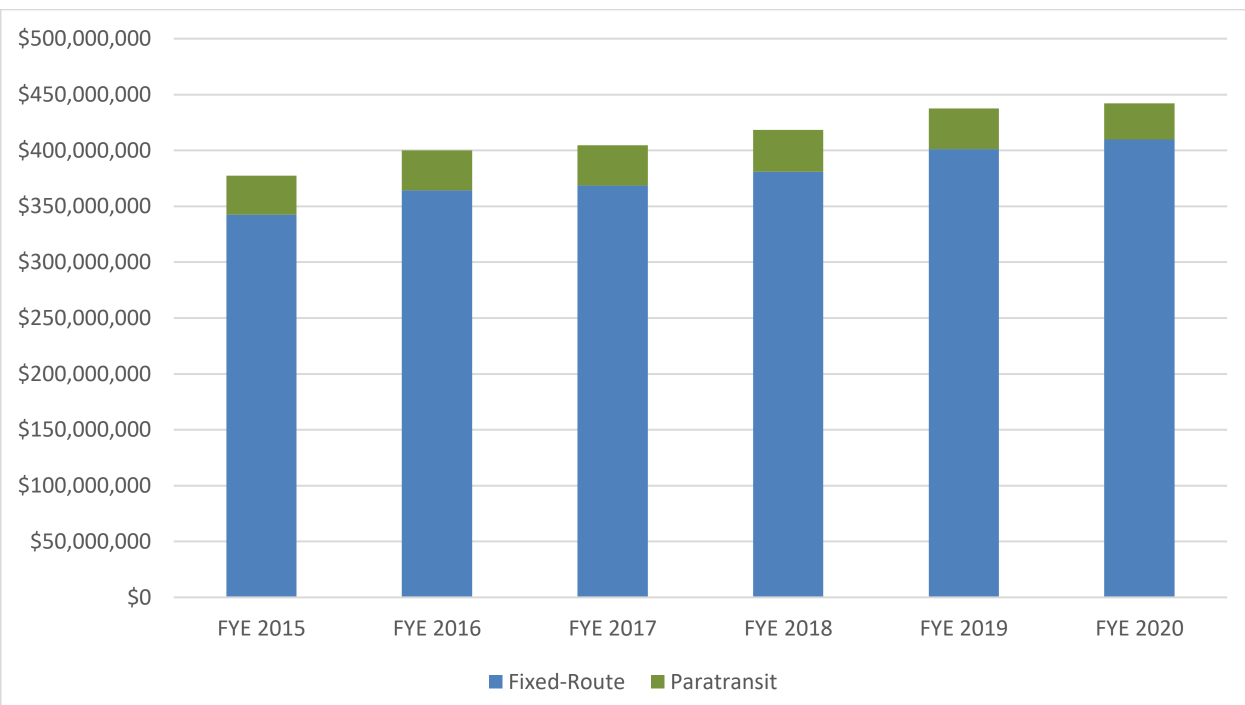
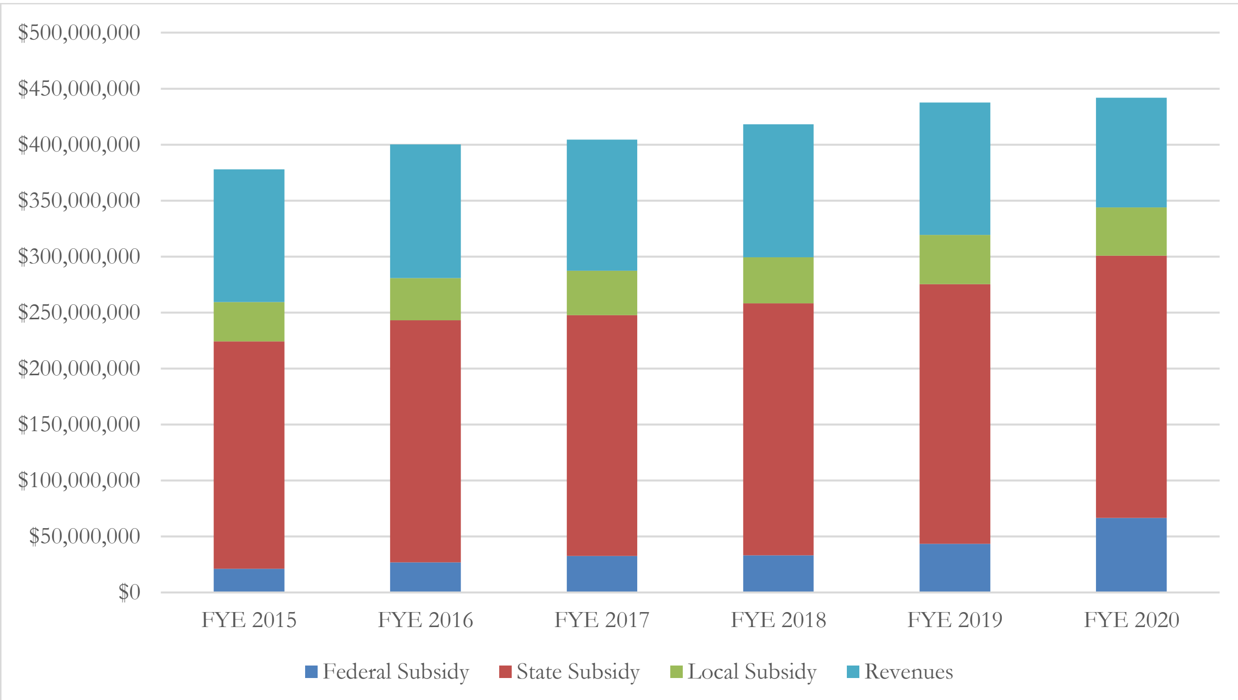


Exhibit 18. Percentage of Total Public Transportation Operating Funding, FYE 2015–2020

Funding Source	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Federal Subsidy	5.62%	6.75%	8.07%	7.96%	9.92%	15.05%
State Subsidy	53.74%	53.97%	53.13%	53.76%	52.98%	53.01%
Local Subsidy	9.24%	9.48%	9.85%	9.85%	10.09%	9.75%
Revenues	31.40%	29.79%	28.95%	28.43%	27.01%	22.20%

Exhibit 19. Total Public Transportation Funding Sources, FYE 2015–2020



FIXED-ROUTE OPERATING BUDGET

Fixed-route service, funded by general revenues and government subsidies, accounts for 92.7 percent of PAAC's public transportation operating expenses. Between 2015 and 2019, PAAC had a farebox recovery ratio between 26.8 percent and 22.1 percent (**Exhibit 20**). In 2020, PAAC's farebox recovery ratio dropped to 16.8 percent due to the impacts of COVID-19. Based on FYE 2015 to FYE 2020 dotGrants reporting, PAAC operated using current-year funding, with $132,761,892 in state funds and $18,539,284 in local funds carried over into the next fiscal year (FYE 2021).

PAAC increased its share of federal funding during FYE 2020 to offset the loss in farebox revenue from the COVID-19 pandemic. In FYE 2020, Allegheny County provided PAAC with $9.4 million in CARES funding to offset pandemic-related losses in beverage and other sales tax revenue, the normal source of required local matching funds.

Exhibit 20. Fixed-Route Funding by Source, FYE 2015–2020

Funding Source (Millions)	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Revenues						
Passenger-Paid Fares	$81.9	$81.9	$79.0	$68.7	$67.1	$51.4
Organization-Paid Fares (Charter & Route Guarantees)	$9.8	$10.0	$10.3	$21.2	$21.4	$17.6
Advertising	$2.1	$2.3	$2.5	$2.8	$2.8	$3.1
Total Recoveries	$0.0	$0.0	$0.0	$0.3	$1.3	$4.6
Other – Interest/Investment Income	$0.0	$0.0	$0.5	$1.1	$2.2	$2.0
Other – Real Estate Income	$0.2	$0.4	$0.3	$0.6	$0.5	$0.5
Other – Misc. Revenue	$0.3	$0.5	$0.3	$0.3	$0.2	$0.3
Other – Parking Revenue	$0.3	$0.0	$0.0	$0.4	$0.3	$0.3
Other – Comm, Concessions, Cash Disc.	$0.0	$0.0	$0.0	$0.0	$0.1	$0.0
Subtotal	**$94.7**	**$95.0**	**$93.0**	**$95.4**	**$95.9**	**$79.9**
Subsidies						
Federal Capital Grant for Preventative Maint.	$8.2	$11.9	$20.6	$21.6	$32.4	$24.0
Federal Capital Grant for Operating Costs	$4.4	$6.9	$2.6	$1.2	$0.4	$31.8
Act 44 Section 1513 – State Share (Current Year)	$195.4	$205.9	$205.8	$210.4	$223.6	$219.6
Act 44 Section 1513 – Local Grant (Current Year) – Municipal	$31.9	$33.2	$33.7	$34.7	$35.3	$35.9
Special Operating Grants – State Share	$5.0	$6.6	$6.7	$11.3	$4.9	$11.5
Special Operating Grants – Local Share	$3.0	$4.6	$6.0	$6.4	$8.8	$7.1
Subtotal	**$247.8**	**$269.1**	**$275.4**	**$285.6**	**$305.3**	**$329.9**
Total Funding	**$342.5**	**$364.2**	**$368.4**	**$381.0**	**$401.2**	**$409.8**
Farebox Recovery	**26.8%**	**25.2%**	**24.3%**	**23.6%**	**22.1%**	**16.8%**

Source: PennDOT dotGrants Reporting System

PARATRANSIT OPERATING BUDGET

Paratransit (e.g., shared-ride and ADA complementary service), funded by state subsidies and passenger fares, accounts for 7.3 percent of PAAC's public transportation operating expenses (**Exhibit 21**). The Port Authority contracts demand-response service to ACCESS Transportation Services that brokers most demand-response trips, including shared-ride, ADA, and Persons with Disabilities (PwD) trips in Allegheny County. The service is provided by private operators.

PAAC's paratransit program funding generally increases each year but decreased from $36.4 million in FYE 2019 to $32.2 million in FYE 2020. Total paratransit trips decreased from 1,455,701 in FYE 2015 to 983,088 in FYE 2020 (**Exhibit 22**). The decrease in paratransit revenues and ridership in FYE 2020 is attributable, in large part, to COVID-19 impacts.

Exhibit 21. Paratransit Funding by Source, FYE 2015–2020

Funding Source (Millions)	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Revenues						
Passenger Fares	$3.9	$3.9	$3.9	$3.6	$3.8	$2.8
Shared-Ride Lottery Trip Reimbursement	$12.8	$12.6	$12.1	$11.6	$10.7	$8.6
PwD Reimbursement	$1.2	$1.2	$1.2	$1.1	$0.6	$0.5
PwD Passenger Fares	$0.3	$0.3	$0.3	$0.3	$0.1	$0.1
AAA	$0.9	$0.8	$0.8	$0.8	$0.7	$0.6
MATP	$3.8	$4.2	$4.7	$5.1	$5.3	$0.0
Other – Various Agencies	$0.4	$0.4	$0.4	$0.3	$0.3	$0.2
Other – Federal JARC/New Freedom/5310	$0.7	$0.7	$0.8	$0.6	$0.8	$0.6
Subtotal	**$24.0**	**$24.1**	**$24.2**	**$23.5**	**$22.3**	**$18.2**
Subsidies						
Federal Capital Grant to Fund Capital Costs of Contracting	$8.6	$8.2	$9.5	$10.5	$10.6	$10.7
Act 44 Section 1513 – State Share (Current Year)	$0.7	$1.5	$0.1	$0.6	$0.8	$0.6
Special Operating Grants – State Share	$2.1	$2.0	$2.3	$2.5	$2.6	$2.6
Special Operating Grants – Local Share	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Subtotal	**$11.5**	**$11.8**	**$11.9**	**$13.7**	**$14.1**	**$14.0**
Total Funding	**$35.5**	**$35.9**	**$36.1**	**$37.3**	**$36.4**	**$32.2**

Source: PennDOT dotGrants Reporting System

Exhibit 22. Paratransit Operating Statistics

Operating Category	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Paratransit Operating Statistics						
Total Paratransit Trips	1,455,701	1,455,892	1,408,855	1,344,846	1,259,676	983,088
Total Miles	10,568,899	10,526,939	10,210,961	9,946,488	9,386,034	7,579,540
Total Hours	695,490	636,923	671,344	646,073	605,779	496,181
VOMS	267	271	262	262	254	265

Source: PennDOT dotGrants Reporting System

Balance Sheet and Cash Flow

A review of PAAC balance sheets shows that between FYE 2015 and FYE 2020, PAAC's available cash ranged from a high of $136.5 million to a low of $103.7 million (**Exhibit 23** and **Exhibit 24**). In FYE 2020, PAAC's cash equivalent balance was $103.7 million, and restricted assets of unearned grant revenue were $178.4 million. These amounts equate to 63.8 percent of total operating expenses.

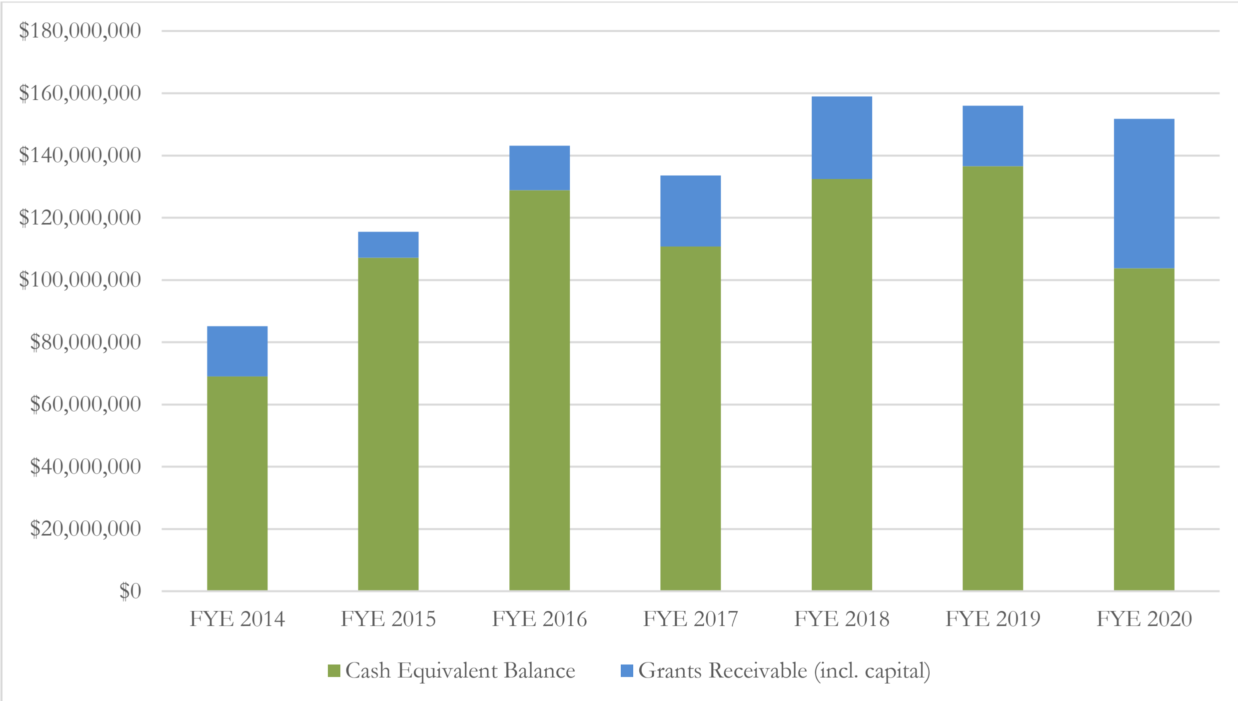
Current liabilities exceed current assets in all years except 2016. As of FYE 2020, PAAC had $13.8 million in current maturities of long-term debt (payments due within the next 12 months) and no operating line of credit.

PennDOT suggests that transit agencies maintain approximately 25 percent, or roughly 90 days, of annual operating costs in liquidity to provide a cash flow buffer in the event of delays in grant receipts. Liquidity is the sum of available cash, restricted cash, investments, and optionally, available credit. As of FYE 2020, PAAC had $103.7 million in cash equivalents and $48.0 million in grants receivable. These liquid assets equate to $154.4 million, or 34.3 percent of PAAC's operating cost, providing 125 days of working capital.

Exhibit 23. Balance Sheet Summary, FYE 2015–2020

Balance Sheet Report (Millions)	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Current Assets	**$146.8**	**$162.6**	**$153.9**	**$183.0**	**$188.3**	**$216.3**
Cash Equivalent Balance	$107.2	$128.8	$110.7	$132.5	$136.5	$103.7
Investments	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Grants Receivable (incl. capital)	$8.3	$14.3	$22.8	$26.5	$19.4	$48.0
Other Accounts Receivable	$18.1	$5.9	$6.8	$8.6	$16.3	$45.5
Restricted Assets: Unearned Grant Revenue	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Inventory Value	$12.2	$13.1	$13.0	$14.9	$15.4	$18.2
Pre-paid Expenses	$1.0	$0.5	$0.5	$0.5	$0.6	$0.9
Current Liabilities	**$147.2**	**$159.1**	**$179.4**	**$209.5**	**$218.9**	**$243.0**
Accounts Payable	$20.5	$14.9	$17.8	$18.2	$15.5	$13.5
Accrued Expenses	$17.5	$19.2	$20.3	$21.2	$24.6	$26.6
Unearned Revenue	$82.9	$100.4	$119.1	$146.5	$154.9	$178.4
Reserves for Claims and Settlements	$7.2	$7.5	$6.9	$7.9	$7.8	$7.9
Other Current Liabilities	$3.9	$3.6	$3.4	$3.2	$3.0	$2.8
Line of Credit	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Current Maturities of Long-Term Debt	$15.2	$13.5	$11.9	$12.5	$13.1	$13.8
Total Operating Expenses	**$377.5**	**$400.1**	**$404.5**	**$418.2**	**$437.6**	**$442.0**
Cash + Grants Receivable / Total Operating Expenses	30.6%	35.8%	33.0%	38.0%	35.6%	34.3%
Line of Credit/Annual Payroll	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Current Assets	$146.8	$162.6	$153.9	$183.0	$188.3	$216.3
Current Liabilities	$147.2	$159.1	$179.4	$209.5	$218.9	$243.0
Net Current Assets	**($0.4)**	**$3.5**	**($25.5)**	**($26.5)**	**($30.6)**	**($26.6)**

Exhibit 24. End-of-Year Cash Balance, FYE 2015–2020



OPERATING BUDGET PROJECTIONS

In June 2021, PAAC released its proposed $493.7 million operating budget for FY 2022, a 1.7 percent increase from its $485.7 million FY 2021 budget. The budget included funding to restore service to pre-pandemic levels and a fixed-route fare increase (implemented January 1, 2022). Capitalized vehicle overhaul expenses are included in the operating budget projections. Wages and salaries increased by 5.5 percent, from $181.4 million to $191.3 million, and are partially attributable to a 2.75 percent wage increase negotiated in the December 2020 two-year collective bargaining agreement with ATU Local 85 and administrative hiring. Increases in federal subsidies offset passenger revenue lost due to the COVID pandemic-related ridership declines (**Exhibit 25**).

Exhibit 25. Operating Budget Projections, FYE 2021–2022

Operating Budget Projections (Millions)*	Adopted FY 2021 Budget	Proposed FY 2022 Budget
Revenue		
Passenger Revenue	$77.1	$76.1
ACCESS (Shared-Ride) Service	$10.4	$10.0
Contract Services	$11.5	$11.5
Advertising	$2.8	$2.8
Interest Income	$1.6	$0.4
Other Income	$0.8	$0.8
Total Revenue**	**$104.2**	**$101.6**
Expenses		
Wages and Salaries	$181.4	$191.3
Pensions and Employee Benefits	$182.3	$171.2
Materials and Supplies	$47.5	$51.6
Provision for Injuries and Damages	$5.7	$5.9
Purchased Services	$20.3	$23.2
Utilities	$8.2	$8.6
Other Expense	$11.1	$13.0
ACCESS (Shared Ride) Service	$29.2	$28.8
Total Expenses**	**$485.7**	**$493.7**
Operating Deficit**	($381.5)	($392.1)
Operating Subsidies		
Federal Subsidy	$37.5	$85.3
State Subsidy	$300.9	$263.7
Local	$42.8	$42.7
Other Misc.	$0.3	$0.4
Total Subsidy	$381.5	$392.1
Surplus/(Deficit)**	**$0.0**	**$0.0**

*Source: PAAC Capital and Operating Budget 2021 and 2022

**Note: Values may not sum due to rounding

Capital Budget Projections

PAAC's capital budget allocates funding to five capital programs:

- Debt Service
- Revenue Vehicle Replacement
- Fixed Guideway Improvements
- Facility Improvements
- Support Programs

PAAC's capital program is a one-year budget that proposes next-fiscal-year funding for core infrastructure improvements. These projects will bring assets into a state of good repair, enhance system safety, and fund various improvements to transit service. The FY 2020 Capital Budget proposed $230.9 million in funding to the five capital programs (**Exhibit 26**). The Fixed Guideway Improvements Program is the largest share of PAAC's capital budget. PAAC proposed its $227.9 million FYE 2022 Capital Budget in June 2021.

PAAC proposes funding the Capital Budget with federal, state, and local funds. State 1514 funds represent the largest share of PAAC's capital budget, accounting for 46 percent of the total (**Exhibit 27**). PAAC's capital funding comes from several Federal Transit Administration (FTA) formula funding programs, state funding programs, and local matching funds (**Exhibit 28**). All capital budgets presented in this report are summarized from PAAC's *Annual Budget Book*.

Exhibit 26. PAAC Fiscal Year 2020 Capital Budget by Program

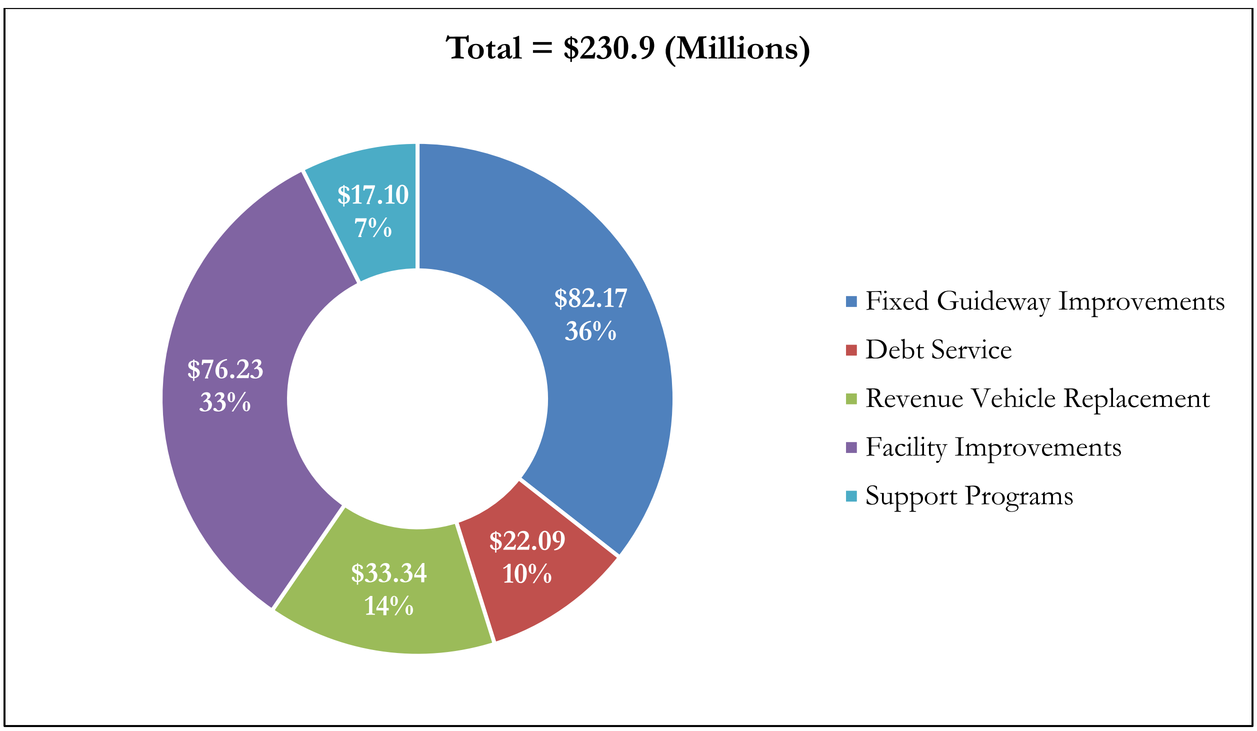


Exhibit 27. FY 2022 Capital Budget Projections by Funding Source

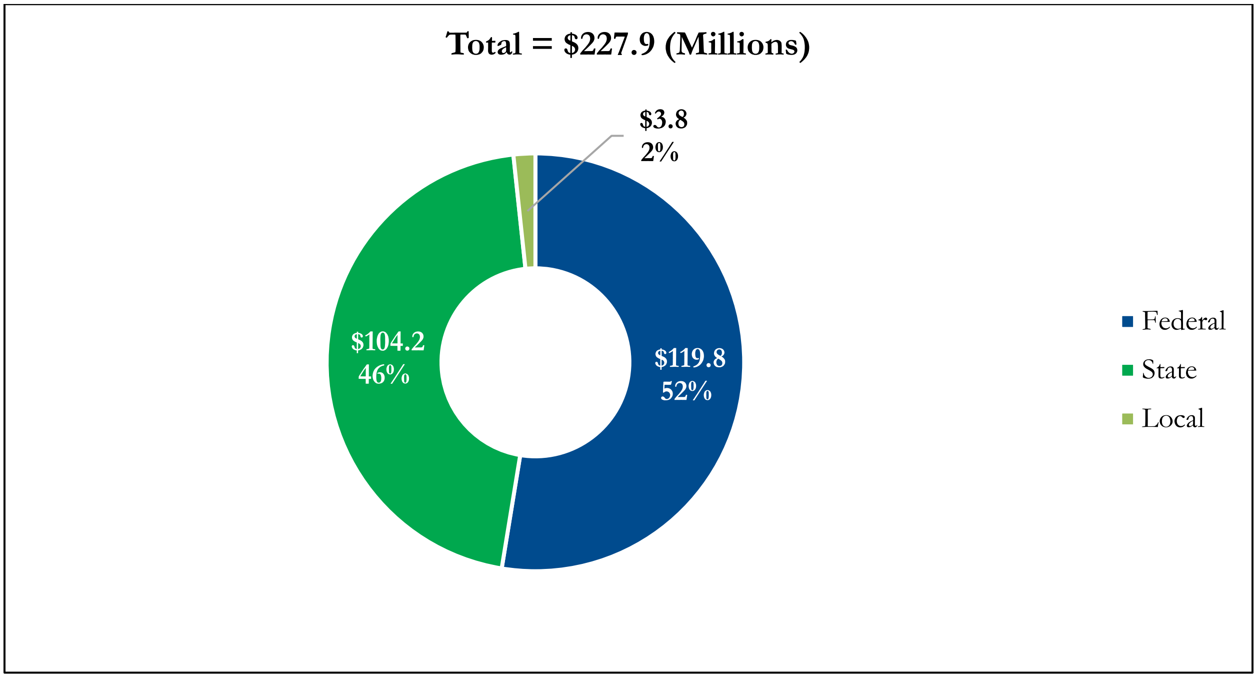


Exhibit 28. FY 2022 Capital Budget Funding Estimates

Funding Programs		Amount
Federal	FTA Section 5307 Flex	$19,875,660
	FTA Section 5309 BRT CIG	$99,950,000
State	Act 89 1514 Discretionary	$104,050,568
	Previously Appropriated Act 89 Section 1514 Discretionary	$145,162
Allegheny County	County Capital Net – State of Good Repair	$3,840,444
	Previously Appropriated County Capital – State of Good Repair	$4,838
Total Funding		**$227,866,672**

LONG-TERM DEBT

For agencies that incur long-term debt to help acquire fixed assets, sound debt management is critical. It demonstrates an agency's ability to meet its long-term obligations without jeopardizing its current operations. Lenders and investors consider debt management practices when agencies propose additional debt or seek to refinance existing debt.

Historically, PAAC has incurred debt to finance capital construction projects, refinance bonds, and acquire vehicles (i.e., buses and light rail cars). The Port Authority refinanced its earlier bond (2001) and terminated a swaption (2004) in 2011. In 2020, PAAC refinanced the 2011 bonds. **Exhibit 29** details the last 20 years of PAAC debt management.

Exhibit 29. Recent PAAC Debt History

Series	Amount	Interest Rate	Description
1999 Sub Bonds	$71.9 million	4.5% – 5.5%	Financed the purchase of 200 buses.
1999 Bonds	$225 million	Not available	Financed capital additions and improvements.
2001 Bonds	$250.6 million	3.75% – 5.75%	Refunded the 1999 bonds and yielded $7.5 million to finance capital projects.
2003 MFA	$131.6 million	5.25%	Financed the purchase of fixed assets, primarily buses.
2004 Swaption	$10.1 million	4%	Provided PAAC with a $10.1 million upfront payment for the 2001 bond debt service.[4]
2004 Note	Up to $38.75 million	Not available	Issued to secure the uninsured payment obligations related to the 2004 swap.
2007 Note	$20.4 million	4.5%	Issued in anticipation of grants.
2011 Bonds	$252.8 million	2% – 5.25%	Refunded the 2001 bonds and terminated the 2004 swap agreement.
2020 Bonds	$143 million	5.00%	Refunded the 2011 bonds ($120.2 million) + $22.8 million in unamortized net bond premium to reduce $30 million in interest costs over the remaining life of the loan.

ANNUAL DEBT SERVICE

PAAC's outstanding debt and debt management review showed $158 million in outstanding debt from bonds reissued in 2011 as of FYE 2020. PAAC funds annual debt service with capital funding under PTAF and local matching funds. In FYE 2020, PAAC used $21.1 million in PTAF funds and $735,413 in a local match for the annual debt service payment. With these bonds reaching final maturity in 2029, PAAC had $198 million remaining in long-term debt service principal and interest payments, costing $22.1 million annually (**Exhibit 30**). In 2021, PAAC refinanced the 2011 bonds to reduce long-term interest costs and annual payment requirements. After refinancing, annual debt

[4] Per the swap agreement, PAAC would receive interest at a variable rate of 67 percent of the one-month LIBOR index while paying a fixed rate of 4.53 percent. The interest payments were calculated based on a notional amount of $234,470,000 which would have reduced beginning on March 1, 2021. The swap had an expiration date of March 1, 2029. If called by the counterparty, then PAAC would have to post cash collateral and short-term securities up to the fair market value of the swap. In conjunction with the issuance of the 2011 Series bonds, PAAC paid a settlement of $39.4 million to terminate the 2004 swaption.

service payments dropped to $18.5 million annually and total interest paid over the remaining life of the loan decreased by approximately $30 million (**Exhibit 31**).

Exhibit 30. Debt Service Payments Previously Remaining on 2011 Bonds, FYE 2022–2029

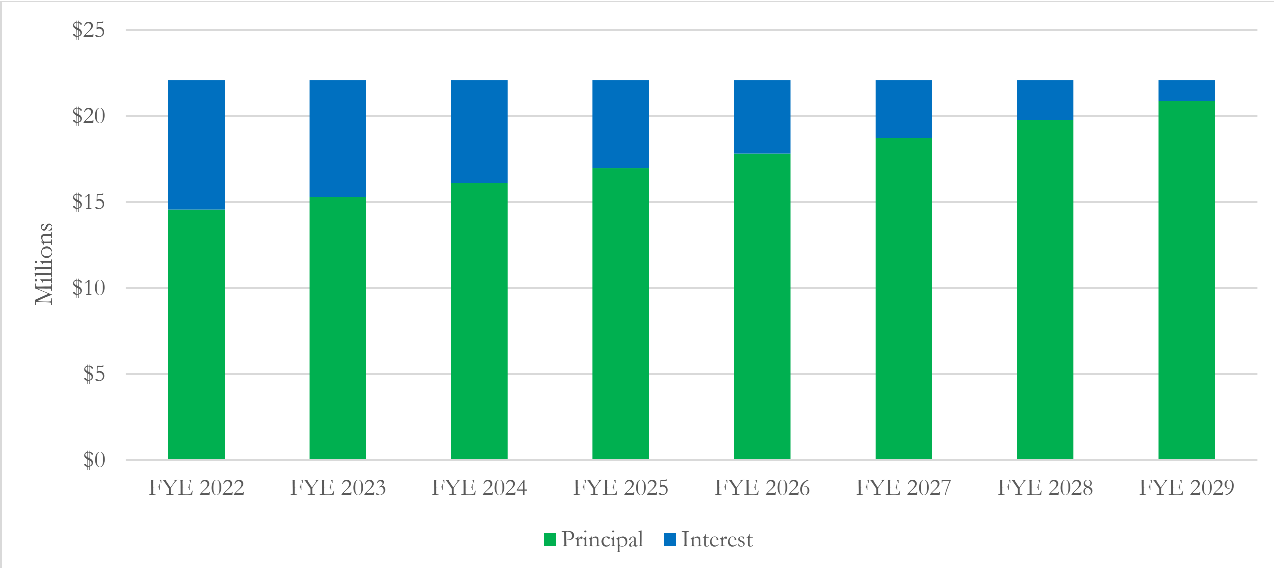
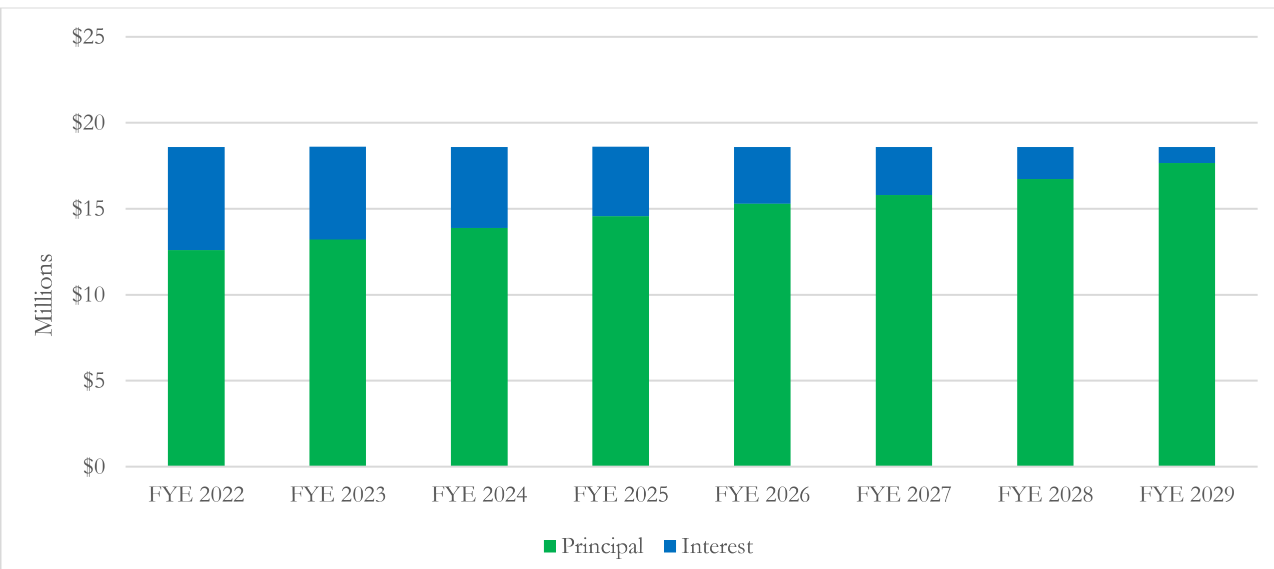


Exhibit 31. Debt Service Payments Currently Remaining on 2020 Bonds, FYE 2022–2029



High-level debt affordability indicators provide transit authorities with a statistical means to determine their high-level debt capacity and relative debt position. PAAC's capital debt service payment of $18.5 million is less than 10 percent of its FYE 2020 capital budget ($230.9 million) and 16.8 percent of its FYE 2021 capital budget ($131.2 million). It is the second-largest budget item, and PAAC budgeted nearly as much in debt service payments as it budgeted for revenue vehicle replacement ($21.2 million) in the 2021 budget. PAAC's current debt service payments should be affordable until the PTAF-secured debt is retired in 2029.

Per Pennsylvania Statute 74 Pa. Code § 1514(f) (Bonding by award recipients), PAAC may only incur debt secured by state capital bond funds with PennDOT approval and "… may do so for the purpose of financing a multiyear capital project. The department shall enter into an agreement with the award recipient providing that payments of the awarded funds sufficient to satisfy requirements of the bonds issued be made directly to the trustee of the bondholders until such time as the bonds are retired."

POST-EMPLOYMENT BENEFIT PROGRAMS

Post-employment fringe benefits represent additional long-term debt, though the amounts presented in this report are best estimates based on actuarial assessments and assumptions. PAAC and its employees contribute to defined post-employment benefit programs, including pensions and other post-employment benefits (OPEB), such as health insurance, disability insurance, and prescription drug coverage. The long-term liability incurred by these benefit programs is the result of collective bargaining agreements (CBAs). Their terms are negotiated every few years with the various unions representing PAAC's employees or plan options for non-union employees. Employees who retire from PAAC receive pensions and OPEBs.

Between FYE 2015 and FYE 2020, total post-employment benefit costs ranged between $68.3 million and $74.2 million per year (**Exhibit 32**). Pension contributions increased to $42 million, and OPEB decreased to $28 million, respectively, as of FYE 2020. The total cost of post-employment benefit programs represents 15.8 percent of PAAC's annual operating budget.

Exhibit 32. Employee Post-Employment Benefit Plan Costs, FYE 2015–FYE 2020

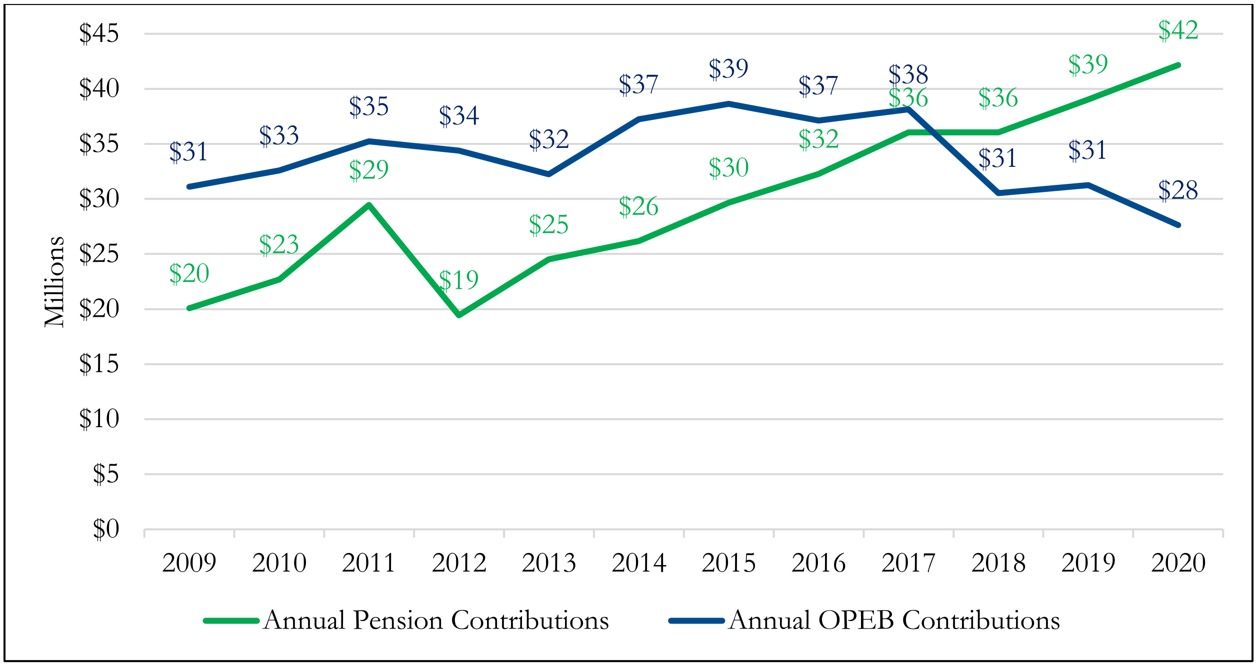
Benefit Program Costs (Millions)	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Total Operating Cost	$377.5	$400.1	$404.5	$418.2	$437.6	$442.0
Pension Contributions	$29.7	$32.3	$36.0	$36.0	$39.0	$42.2
OPEB Expense	$38.6	$37.1	$38.1	$30.5	$31.3	$27.6
Total Post-Employment Benefit Costs	$68.3	$69.4	$74.2	$66.6	$70.3	$69.8
Derived Statistics						
Pension / Operating Cost	7.9%	8.1%	8.9%	8.6%	8.9%	9.5%
OPEB / Operating Cost	10.2%	9.3%	9.4%	7.3%	7.1%	6.3%
Total Post-Employment Benefit Cost / Operating Cost	18.1%	17.3%	18.3%	15.9%	16.1%	15.8%

PAAC experienced a 110.1 percent increase in annual pension contributions between 2009 and 2020. Annual OPEB costs[5] decreased 11.2 percent during that same time (**Exhibit 33**). These amounts equate to an average yearly cost increase of 7.0 percent for pensions and an annual decrease of 1.1

[5] Prior to GASB No. 75, annual OPEB costs were based on annual required contributions that were determined based on paying off the unfunded actuarial liability over several years. Under GASB No. 75, which took effect in FYE 2017, annual OPEB expenses are based on the change in net OPEB liability and adjusted for current-period amortization of deferred outflows and inflows of resources and are no longer based on employer contributions.

percent for OPEB. Pension contributions have steadily increased since 2012, whereas PAAC reduced OPEB contributions since 2017.

Exhibit 33. Annual OPEB and Pension Contributions, FYE 2009–FYE 2020



Pension Liability

Historically, PAAC offered generous benefits through its pension plans (ATU Plan, IBEW Plan, and Non-Represented Plan), contributing to unsustainable growth in unfunded liabilities. For example, PAAC had an early retirement clause that made it possible for an employee who started with PAAC at age 18 to retire by 43 and realistically receive pension benefits up to 30 years or more (based on a life expectancy of about 76 years). PAAC has since addressed some of its legacy benefits by revising the early retirement option to 25 years of service by age 55 and closing membership to the IBEW and Non-Represented plans in 2011 and 2012. It also transitioned to a Section 457 Deferred Compensation Plan for all new, non-ATU employees. Although PAAC has taken steps to control fringe benefit costs, PAAC will continue to have unfunded liabilities within its pension plans. In FYE 2020, more inactive members received benefits than active employees contributed to the pension plan (i.e., 3,608 members or beneficiaries received pensions while 2,337 employees were contributors).

Net Pension Liability

As of FYE 2015, PAAC began reporting its net pension liability in its statement of net position.[6] The net pension liability measures the difference between the present value of projected benefit payments

[6] GASB Statement No. 68 revised how governments disclose pension information on their statement of net position. Prior to 2015, PAAC reported the annual required contribution (ARC) to its pension plans as the net pension expense. ARC consisted of the normal cost of pension benefits paid in the current year and the amortization payment for any costs associated with the unfunded liability.

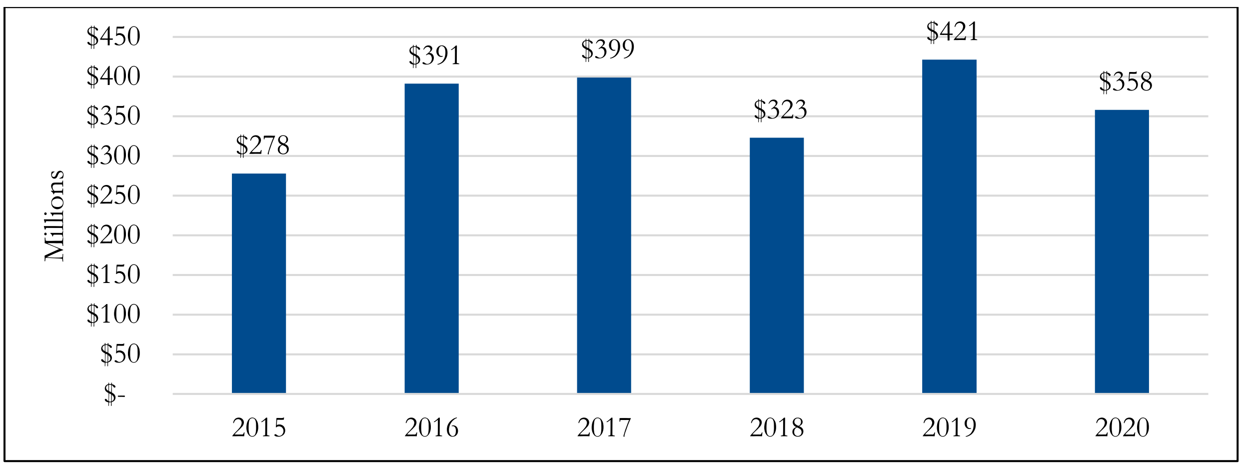
and the present value of investments set aside in a trust restricted to pay current benefits. It is the difference between total pension liability and the plan's fiduciary net position:

- **Total Pension Liability** – accounts for future benefits earned by the worker and promised by the employer
- **Plan Fiduciary Net Position** – equals assets plus deferred outflows of resources, minus liabilities and deferred inflows[7]

Growth in the net pension liability indicates potential risk from the inability of plan assets to cover the amount owed in benefits to retirees. This figure can fluctuate based on several factors such as the number of active employees and those receiving benefits, plan provisions, and actuarial assumptions on the investment rate of return, inflation, salary projections, and mortality rates. Overall, net pension liability indicates long-term financial health and sustainability based on an agency's ability to meet its long-term pension obligations.

Exhibit 34 shows that PAAC's total net pension liability increased 28.8 percent, from $278 million in 2015 to $358 million in 2020. The pension liability consists of the net positions of the ATU, IBEW, and non-represented plans. The initial growth in total net liability between 2015 and 2016 was primarily due to changes in actuarial assumptions resulting in a $51 million increase in total pension liability and a negative plan fiduciary net position of $34 million.

Exhibit 34. Total Net Pension Liability, FYE 2015–2020



PAAC's average cost[8] to administer its pension plans has increased 5.7 percent per year on average, from $15.7 million in 2015 to $20.8 million in 2020. PAAC has an expected investment rate of return of 7.75 percent for ATU and 7.25 percent for IBEW, Police, and Non-Represented. Net investment incomes have fluctuated, with PAAC experiencing market gains of $113.7 million in 2018 and $136.5 million in 2020 that improved the net fiduciary position of plan investments. However, PAAC

[7] Under GASB Statement No. 68, deferred inflow of resources permits PAAC to defer the recognition of the difference between the return expected on plan assets and the actual return. This allows the Authority to gradually incorporate potential changes in the market value of its pension assets that differ from the expected value over time.

[8] Service cost represents the present value of projected retirement benefits covered by employees in the current year.

experienced a $50.7 million market loss in 2019, increasing its total net pension liability to $421 million.

From 2015 to 2020, benefit payments increased 2.2 percent per year on average, from $75.0 million in 2015 to $83.7 million in 2020. Total pension contributions increased from $40.5 million to $58.9 million over that period. The ratio of employer contributions to total contributions increased from 64.6 percent to 71.6 percent. The ratio of employer contributions to total covered-employee payroll increased from 19.2 percent in 2015 ($26.2 million of $136.5 million) to 27.2 percent in 2020 ($42.2 million of $154.9 million).

OPEB LIABILITY

PAAC provides other post-employment benefits (OPEB) to retirees, including medical, dental, and vision health coverage, prescription drug coverage, and Medicare Part B premium reimbursement for ATU, IBEW, and Non-Represented employees.[9] Post-employment benefits to employees vary depending on employee hire and retirement dates. These liabilities represent benefits that current and former employees have earned and PAAC plans to pay in the future. Historically, PAAC had generous healthcare benefits for retirees (e.g., lifetime healthcare for ATU members).

PAAC pays all OPEB expenses owed each year from operating funds (i.e., Pay Go). Therefore, there are no investments set aside in a dedicated OPEB trust. Although PAAC budgets for annual OPEB expenses under fringe benefits, there are projected long-term annual costs associated with OPEB in future years based on the benefit plan provisions and the number of employees.

PAAC's funding policy pays for plan benefits when they become due each year, therefore there is no actuarially determined contribution. In some agencies, long-term OPEB costs are actuarially determined based on a valuation of the plan assets minus the liability of promised benefits, with sensitivity to the expected rate of return on plan assets, employee plan participation, mortality rates, and projected salary increases. As a result of PAAC's funding policy toward OPEB, PAAC reported the actuarial accrued liability (AAL) for OPEB as 100 percent unfunded (UAAL) until FYE 2017, when new accounting standards[10] required governments to report total OPEB liability beginning in FY 2017-18:

- **AAL** – represented the portion of long-term expected OPEB costs not yet funded by current assets contributed and invested by an OPEB plan
- **UAAL** – represented the unfunded portion of long-term obligations for OPEB
- **Total OPEB liability** – projects the total cost of future OPEB payments already earned and stated in current dollars not covered by assets in an OPEB plan

Under the old accounting standards, OPEB liability reported as the UAAL had increased 3.7 percent annually between 2010 and 2015, from $813 million to $975 million (**Exhibit 35**). Unfunded OPEB liabilities began to decrease in 2016 and fell to $828 million in 2016 and $751 million in 2017. Following the change in accounting rules that took effect for FYE 2018 financial statements, PAAC recognized a total OPEB liability of $631 million for 2018 and $624 million for 2019. Total OPEB

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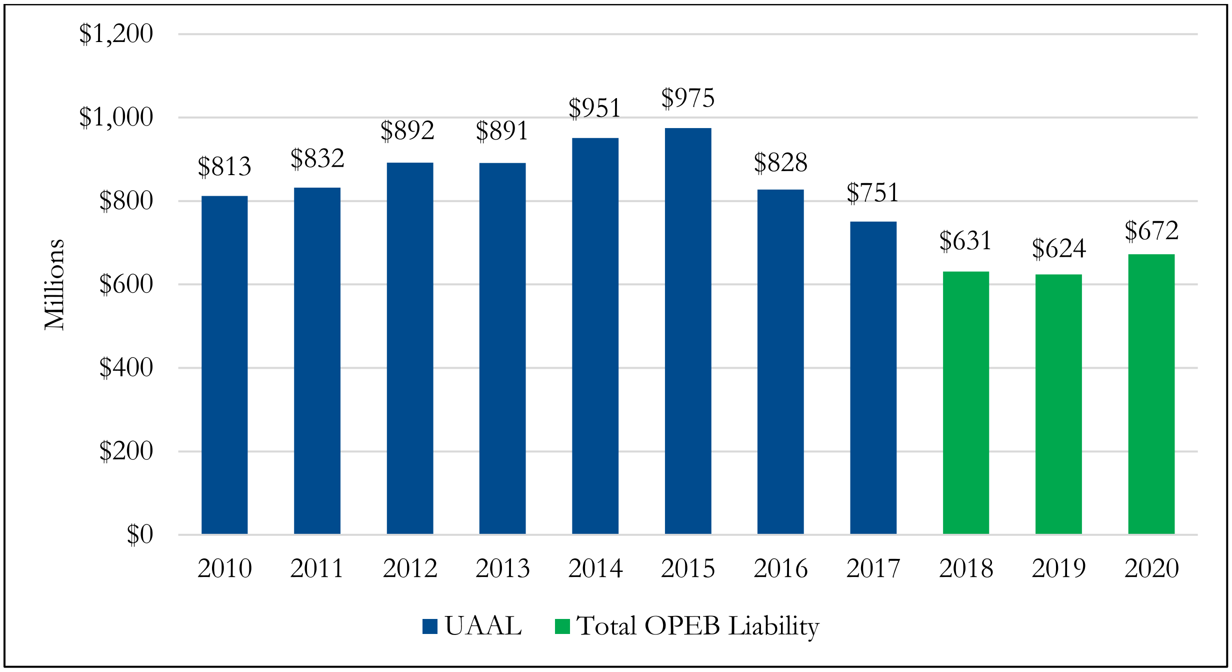
[9] Benefit provisions for ATU and IBEW plans are established through their CBAs and the Non-Represented plan is determined by the PAAC Board of Directors.

[10] GASB Statement No. 75 requires full recognition of the total OPEB liability or net OPEB liability on the statement of net position, where previous accounting standards only required the net OPEB obligation.

liability increased in 2020 by 7.7 percent, to $672 million. The recent increase in total OPEB liability represents additional retirees eligible to receive Medicare Part B premium reimbursement.

Exhibit 35. UAAL and Total OPEB Liability, FYE 2010–2020



PAAC implemented measures to control OPEB costs by renegotiating its ATU and IBEW collective bargaining agreements (CBAs) and enacted changes in the Non-Represented plan such as:

- Eliminated lifetime retiree healthcare for ATU employees in 2012 in favor of three years of OPEB coverage after retirement.
- Eliminated post-retirement healthcare for IBEW employees hired after May 1, 2015.
- Eliminated post-retirement benefits for Non-Represented employees hired after July 1, 2007. Non-Represented employees who retire with an eligible pension benefit may continue healthcare coverage by paying the total amount of the premiums.

The cost of providing post-retirement benefits increased as the number of retirees receiving benefits increased. As of FY 2019-20, PAAC had 6,566 total plan members. Members included 2,673 active participants, 2,175 retired employees with medical coverage, 55 retirees without medical coverage, and 1,445 spouses and other dependents.

PAAC has cost-sharing provisions under OPEB plans, in which retirees pay a percentage of any cost increases after the base year determined in the plan. In FYE 2019 and FYE 2020, PAAC contributed about $25 million toward OPEB plans. Plan members contributed $2.0 million and $2.5 million for coverage during those same years.

LONG-TERM FINANCIAL HEALTH

Non-current liabilities can impact long-term financial health if their growth becomes unsustainable. PAAC uses about $18.5 million in capital funding from PTAF and local matching funds to meet its capital debt service obligations. The Commonwealth prohibits PAAC from incurring additional bondable debt without authorization by the PA Treasury and PennDOT. PAAC has implemented cost control measures through its CBA negotiations to address costly provisions related to pensions and OPEB. Nevertheless, benefit payments continue to increase as the number of retirees grows, despite overall reductions in total net pension liability and total OPEB liability.

Management and the Board must continue to consider the Authority's long-term financial obligations when developing future capital and operating budgets to ensure debt service and benefit obligations remain fully funded in the coming years.

ASSESSMENT

PAAC maintains a balanced operating budget and typically retains 20 to 25 percent of its operating budget in cash reserves. Management does not use operating lines of credit to meet short-term financing needs. Key observations from PAAC's financial review include:

- Annual debt service equals about 5 percent of annual operating costs for FYE 2020.
- PAAC has a negative net current position, mainly attributable to capital debt payments accrued (booked) for the coming year while grants are not recognized in advance.
- More than 92 percent of PAAC's operating costs are for fixed-route service.
- Post-employment benefits (i.e., pensions, life insurance, retiree healthcare, etc.) represent between 15 and 16 percent of annual operating costs and have remained relatively flat in recent years.
- Capital debt service is projected to be approximately $18.5 million annually between 2022 and 2029, or about 8 to 10 percent of the average annual capital budget.
- Capital debt service may extend beyond 2030 due to the need to finance large capital state-of-good-repair expenditures (e.g., rail car replacements, bridge repairs, track upgrades, etc.).
- Impacts of the COVID-19 pandemic include significant decreases in overall ridership and revenues.

PAAC's total carryover subsidies are healthy and should increase in the short run due to the federal COVID-relief funding. These funds and other management cost savings initiatives should help offset some of the operating losses resulting from the decreased revenues and higher costs incurred in response to the COVID-19 pandemic. However, sustainable budgeting will require maintaining or building reserves in the coming years due to the uncertainty of when, or if, operating revenues will return to pre-pandemic levels. Management should continue taking appropriate actions to manage costs, achieve farebox recovery goals, and maintain cash reserves to preserve PAAC's overall financial health.

APPENDIX A: DATA ADJUSTMENTS

There were minor discrepancies in PAAC operating statistics reported between NTD and dotGrants. Adjustments were made to reconcile differences that occurred from NTD reporting requirements. **All values in this report are adjusted to dotGrants values where possible.**

	FYE 2014	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021
Ridership								
NTD	62,056,393	63,684,966	62,295,822	61,743,842	61,999,593	62,610,410	50,696,012	21,800,999
dotGrants	62,056,394	63,684,962	62,295,823	61,743,847	61,999,594	62,610,414	50,696,057	21,800,999
diff between dotGrants and NTD	1	(4)	1	5	1	4	45	-
% Difference	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Operating Costs								
NTD	$330,795,423	$340,925,544	$362,626,709	$365,020,875	$376,224,342	$396,714,511	$401,940,940	$418,799,995
dotGrants	$332,525,630	$342,462,454	$364,153,841	$368,398,742	$380,973,453	$401,224,184	$409,826,336	$418,799,995
diff between dotGrants and NTD	1,730,207	1,536,910	1,527,132	3,377,867	4,749,111	4,509,673	7,885,396	-
% Difference	**0.5%**	**0.5%**	**0.4%**	**0.9%**	**1.3%**	**1.1%**	**2.0%**	**0.0%**
Revenue								
NTD	$91,856,562	$95,112,451	$95,048,548	$93,283,806	$97,586,156	$95,921,475	$80,720,680	$34,825,567
dotGrants	$91,624,503	$94,663,314	$95,048,548	$92,958,411	$95,386,017	$95,877,157	$79,940,472	$34,825,567
diff between dotGrants and NTD	(232,059)	(449,137)	-	(325,395)	(2,200,139)	(44,318)	(780,208)	-
% Difference	**-0.3%**	**-0.5%**	**0.0%**	**-0.3%**	**-2.3%**	**0.0%**	**-1.0%**	**0.0%**
Revenue Hours								
NTD	1,652,941	1,712,823	1,764,295	1,796,432	1,813,146	1,801,896	1,700,221	1,689,724
dotGrants	1,652,941	1,712,823	1,764,292	1,785,432	1,813,147	1,801,896	1,700,221	1,689,724
diff between dotGrants and NTD	-	-	(3)	(11,000)	1	-	-	-
% Difference	**0.0%**	**0.0%**	**0.0%**	**-0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Performance Metrics without Adjustment (NTD)								
Pass/Rev Hr	37.54	37.18	35.31	34.37	34.19	34.75	29.82	12.90
Op Rev/Rev Hr	$55.57	$55.53	$53.87	$51.93	$53.82	$53.23	$47.48	$20.61
Op Cost/Rev Hr	$200.13	$199.04	$205.54	$203.19	$207.50	$220.17	$236.41	$247.85
Op Cost/Pass	$5.33	$5.35	$5.82	$5.91	$6.07	$6.34	$7.93	$19.21
Adjusted Performance Metrics (dotGrants)								
Pass/Rev Hr	37.54	37.18	35.31	34.58	34.19	34.75	29.82	12.90
Op Rev/Rev Hr	$55.43	$55.27	$53.87	$52.06	$52.61	$53.21	$47.02	$20.61
Op Cost/Rev Hr	$201.17	$199.94	$206.40	$206.34	$210.12	$222.67	$241.04	$247.85
Op Cost/Pass	$5.36	$5.38	$5.85	$5.97	$6.14	$6.41	$8.08	$19.21

* NTD operating costs are the sum of modes. Non-mode-specific items were added to NTD modal values to arrive at NTD totals.

APPENDIX B: 2016 PERFORMANCE REVIEW ACTION PLAN ASSESSMENT

Last Updated September 2021

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Refine service guidelines to include on-time performance (OTP) goals that vary depending on the headway of bus service offered along different routes	Service guidelines can be categorized according to type of service, (Busway, Commuter, Local, etc.)	Feb-17	Jun-18	Will the new service guidelines have On-time Performance goals according to the type of service? Will PAAC use this information to make schedule adjustments for service with low OTP?	Results incorporated into Annual Service Plan	Complete.
Assess feasibility of generating advertising revenues from the paratransit vehicle fleet	Items to consider: 1)The Authority does not own vehicles 2) The Third-Party Providers that do own the vehicle might request a portion of the revenues 3) No standard vehicle type so advertisements might be customized for each vehicle type 4) Some vehicles may require detailing in order to accept advertising 5) In the past user groups were concerned about potential sponsors and whether that might confuse ACCESS Customers. 6) Unsure of the revenue potential	Feb-17	Jul-17	The items to consider would all be elements of the assessment. PAAC would have to identify the vehicles which could have advertising--those needing detailing might not be suitable because the cost of detailing would be more than the potential revenue from advertising.	ACCESS Manager, Transdev, along with Port Authority Management has concluded that advertising on ACCESS vehicles is infeasible. Vehicle are not owned by Port Authority or Transdev, but rather leased from third parties. In addition, the ridership community has raised concerns in the past about confusion if vehicles have markings other than the branding of "ACCESS." Written analysis complete.	Complete.

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Develop a target total number of maintenance employees per unit of service delivered (e.g. vehicles, miles, etc.)	The Authority already has a goal of maintenance employees per vehicle. The Authority can survey other agencies acknowledging that differences in employee responsibilities will exist.	Jul-17	Jan-18	What is PAAC's goal for maintenance employees per vehicle and where are they with regard to meeting the goal? I would suggest that PAAC consider this recommendation as part of the work done by the operations consultant, mentioned in a later PAAC Action.	The Authority hired a consultant to review rail operational procedures.	Partially completed. Rail operational procedures updates completed.
Establish and monitor targets for unscheduled overtime	Port Authority already monitors overtime pay through TransitStats	Feb-17	Ongoing	Has PAAC established a target for unscheduled OT? How has PAAC performed against the target? And what changes does PAAC make to get closer to the target?	The Authority will prepare a maintenance overtime report in July-August 2018 timeframe to summarize actual overtime versus budget for FY2018.	Completed.

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Evaluate the potential benefits and costs of strategically locating driver break facilities at various locations throughout its service area.	Giro system software won't occur until February 2018 at the earliest. Software needed to analyze potential deadhead savings. TDP identified various locations for transit centers that could be built to alleviate deadhead. Scott will find TDP site recommendations.	June-18	Dec-20	No comment. Please provide further detail as it becomes available.	The Authority's new leadership team is proposing a new service plan be developed. New driver break facilities could be addressed in this analysis.	Ongoing
Perform a benefit–cost analysis to assess the feasibility of outsourcing additional IT functions.	Most likely would require the expertise of an outside consultant. Many I.T. services are already outsourced through maintenance agreements. Over the next 5 years some platforms will migrate to the "cloud" which might require fewer Port Authority support staff.	Jul-17	Mar-18	The items you addressed should be part of the analysis.	The Authority has hired a new Chief Information Officer. He is in process of developing an I.T. Strategic Plan that can incorporate a review of the pros and cons of outsourcing.	Ongoing.

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Develop a strategic IT Plan	Director Bedenbaugh will assemble a list and description of technology initiatives for the next five years. This will include both new initiatives and the numerous software and hardware upgrades necessary in a given business day.	Feb-17	Aug-17	A list and description of technology initiatives is not a plan. A plan identifies goals for the system and weaknesses which can be addressed through technology and a priority/sequencing plan, identification and rationale for technology and a plan/sequencing of technology implementation.	The CIO has prepared an IT Strategic Management Process Paper.	Ongoing annually
Develop a target for annual parts turnover	Tony will send me the current parts turnover report.	Feb-17	Jul-17	Will PAAC use this develop a target/	The Authority has developed separate inventory turnover targets for Bus and Rail modes	Complete but evolving in response to supply chain issues.

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Build front-line management skills so supervisors/managers can leverage the workforce more effectively, eliminate recurring operational issues, and drive process improvements to reduce operating costs and enhance performance.	The Authority will address this issue on two levels. An educational cooperation agreement with Robert Morris University is being finalized that will begin to develop future managers through a leadership certificate program. This will begin in the fall of 2017. Secondly, the Authority will investigate bringing in an Operations Consultant that will review maintenance operations in the various garages.	Feb-17	September 2017 (1st Initiative)/June 2018 (2nd Initiative)	This proposed action looks good.	The Authority developed an ongoing Management Training program with Robert Morris University; it is developing a Port Authority University Concept to centralize employee training for employees.	Completed initiation, ongoing process.
Identify long-term (e.g., 10-year) strategies that, when taken together, could work to achieve a "fiscally sustainable" business model to foster discourse.	The Authority will continue to update its 10-Year Strategic Financial Plan and will discuss strategies with Board of Directors.	Apr-17	Jun-19	Please continue to identify and adjust goals for the financial plan and strategies to achieve those goals.	The Authority has begun work with multi-agency working group to address issues surrounding Act 89 Financing	The Authority has actively participated in the Southwest Partnership for Mobility Study as well as the Transportation Revenue Options Commission (TROC) both of which have explored future options for public transportation funding.

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Continue to monitor debt/bond market for possible refinancing savings.	Optional Redemption date of 3/1/2021	To be determined	Feb. 2021 if refinancing would result in savings.	Based on your response and the estimated completion date, it does not sound like this is possible until 2021? If this is correct, I would add a little more detail in the proposed action.	Redemption period not reached; Port Authority has met with various investment advisors that monitor potential refinancing options and their yields.	Complete – The Authority successfully completed the Special Revenue Transportation Bonds, Refunding Series of 2020 in the amount of $120,200,000. This refinancing reduced the Authority's annual debt service by approximately $3,000,000.
Incorporate unmarked vehicles as one element of its road supervision strategy.	Road Operations vehicles are now outfitted with laptops that can monitor bus locations. The Authority can evaluate the use of unmarked vehicles, but tracking is greatly improved with the technology enhancements already in place. The Authority is investigating other methods of reviewing driver performance that would be less obvious than marked vehicles, but less costly than purchasing unmarked vehicles.	Feb-17	Jan-18	No comment. This appears to be a suitable strategy.	The Authority is using technology instead of unmarked vehicles to track on-time performance, speeding, etc.	Complete

Recommendation From Narrative	PAAC Action	Estimated Initiation Date	Estimated Completion Date	PennDOT Comments	PAAC Update	September 2021 Update
Encourage ACCESS to conduct service delivery solicitation at least every 5 years and participate in a collaborative process with PAAC to determine the performance requirements of selected subcontractors.	The current contractor sends out RFQs to their third-party vehicle providers. The Authority will investigate the benefits/costs of issuing an RFP every 5 years.	Feb-17	Jun-20	Beyond the potential cost savings associated with competitive procurements every five years, PAAC is encouraged to participate with ACCESS to help determine performance measures to help keep subcontractors accountable.	The Authority will review its contract monitoring process.	Complete – We will be conducting an RFP process in FY22 and will evaluate our specifications and requirements to encourage as much competition as possible, without jeopardizing our industry-leading efficiency and effectiveness.

APPENDIX C: PEER COMPARISONS

Comparison of PAAC with the selected peer systems was completed using NTD-reported data and PennDOT dotGrants legacy statistics. Due to its consistency and availability for comparable systems, the NTD FYE 2019 Reporting Year database was selected as the primary data source used in the calculation of the five-year trend Act 44 metrics for motor bus (MB) and Light Rail (LR):

- Passengers / revenue vehicle-hour
- Operating cost / revenue vehicle-hour
- Operating revenue / revenue vehicle-hour
- Operating cost / passenger

The variables used in the calculations are defined as follows:

- Passengers: Annual unlinked passenger boardings by mode for both directly operated and purchased transportation
- Operating Costs: Annual operating cost of services provided (excluding capital costs) by mode for both directly operated and purchased transportation
- Operating Revenue: Total annual operating revenue generated from farebox and other non-state, non-federal sources by mode for both directly operated and purchased transportation
- Revenue Vehicle-Hours: The total annual number of in-service hours by mode for both directly operated and purchased transportation
- Average: Un-weighted linear average of all values being measured across all peer transit agencies
- Standard Deviation: Standard deviation of all values being measured across all peer transit agencies

Act 44 stipulates that metrics be designated as either "In Compliance" or "At Risk." The following criteria are used to make the determination:

- "At Risk" if costlier than one standard deviation **above** the peer average in:
    - The single-year or five-year trend for Operating Cost / Revenue Vehicle-Hour
    - The single-year or five-year trend for Operating Cost / Passenger
- "At Risk" if performing worse than one standard deviation **below** the peer group average in:
    - The single-year or five-year trend for Passengers / Revenue Vehicle-Hour
    - The single-year or five-year trend for Operating Revenue / Revenue Vehicle-Hour

FIXED-ROUTE BUS (NTD MODE MB)

Passengers / Revenue Vehicle-Hour (Bus)

Passengers / Revenue-Hour (MB)					
	FYE 2019 Single-Year		Five-Year Change Since FYE 2014		
System	Value	Rank of 14	2014 Value	Annual Rate	Rank of 14
Alameda-Contra Costa Transit District	25.84	4	34.12	-5.41%	10
Tri-County Metropolitan Transportation District of Oregon	27.67	3	35.77	-5.00%	6
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	16.66	14	22.11	-5.51%	11
VIA Metropolitan Transit	23.03	8	27.65	-3.59%	3
Metropolitan Atlanta Rapid Transit Authority	22.58	9	32.68	-7.13%	12
San Diego Metropolitan Transit System	25.11	6	32.64	-5.11%	8
Metro Transit	25.83	5	33.12	-4.85%	5
Milwaukee County	22.40	10	32.59	-7.22%	13
Santa Clara Valley Transportation Authority	19.97	12	26.01	-5.15%	9
The Greater Cleveland Regional Transit Authority	20.33	11	29.97	-7.47%	14
Southwest Ohio Regional Transit Authority	18.28	13	22.30	-3.89%	4
Maryland Transit Administration	33.58	2	43.60	-5.09%	7
Niagara Frontier Transportation Authority	24.93	7	27.75	-2.12%	2
Port Authority of Allegheny County	**33.77**	**1**	**36.00**	**-1.27%**	**1**
Average	*24.28*		*31.16*	*-4.92%*	
Standard Deviation	*5.04*		*5.76*	*1.79%*	
Average – 1 Standard Deviation	*19.24*		*25.41*	*-6.70%*	
Average + 1 Standard Deviation	*29.32*		*36.92*	*-3.13%*	
Act 44 Compliance Determination	**In Compliance**		**In Compliance**		
Compared to the Peer Group Average	**Better**		**Better**		

Operating Cost / Revenue Vehicle-Hour (Bus)

Operating Cost / Revenue-Hour (MB)					
	FYE 2019 Single-Year		**Five-Year Change Since FYE 2014**		
System	**Value**	**Rank of 14**	**2014 Value**	**Annual Rate**	**Rank of 14**
Alameda-Contra Costa Transit District	$202.86	14	$178.92	2.54%	11
Tri-County Metropolitan Transportation District of Oregon	$149.57	8	$144.23	0.73%	4
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	$122.72	5	$110.51	2.12%	9
VIA Metropolitan Transit	$99.97	2	$96.07	0.80%	5
Metropolitan Atlanta Rapid Transit Authority	$104.89	4	$123.06	-3.14%	1
San Diego Metropolitan Transit System	$92.24	1	$87.88	0.97%	7
Metro Transit	$165.23	9	$137.15	3.80%	14
Milwaukee County	$102.36	3	$106.76	-0.84%	2
Santa Clara Valley Transportation Authority	$194.04	12	$188.64	0.57%	3
The Greater Cleveland Regional Transit Authority	$171.99	10	$145.12	3.46%	13
Southwest Ohio Regional Transit Authority	$131.25	6	$114.36	2.79%	12
Maryland Transit Administration	$178.36	11	$170.01	0.96%	6
Niagara Frontier Transportation Authority	$137.09	7	$122.58	2.26%	10
Port Authority of Allegheny County	**$199.09**	**13**	**$186.60**	**1.30%**	**8**
Average	*$146.55*		*$136.56*	*1.31%*	
Standard Deviation	*$39.13*		*$33.64*	*1.80%*	
Average – 1 Standard Deviation	*$107.42*		*$102.92*	*-0.49%*	
Average + 1 Standard Deviation	*$185.67*		*$170.20*	*3.10%*	
Act 44 Compliance Determination	**At Risk**		**In Compliance**		
Compared to the Peer Group Average	**Worse**		**Better**		

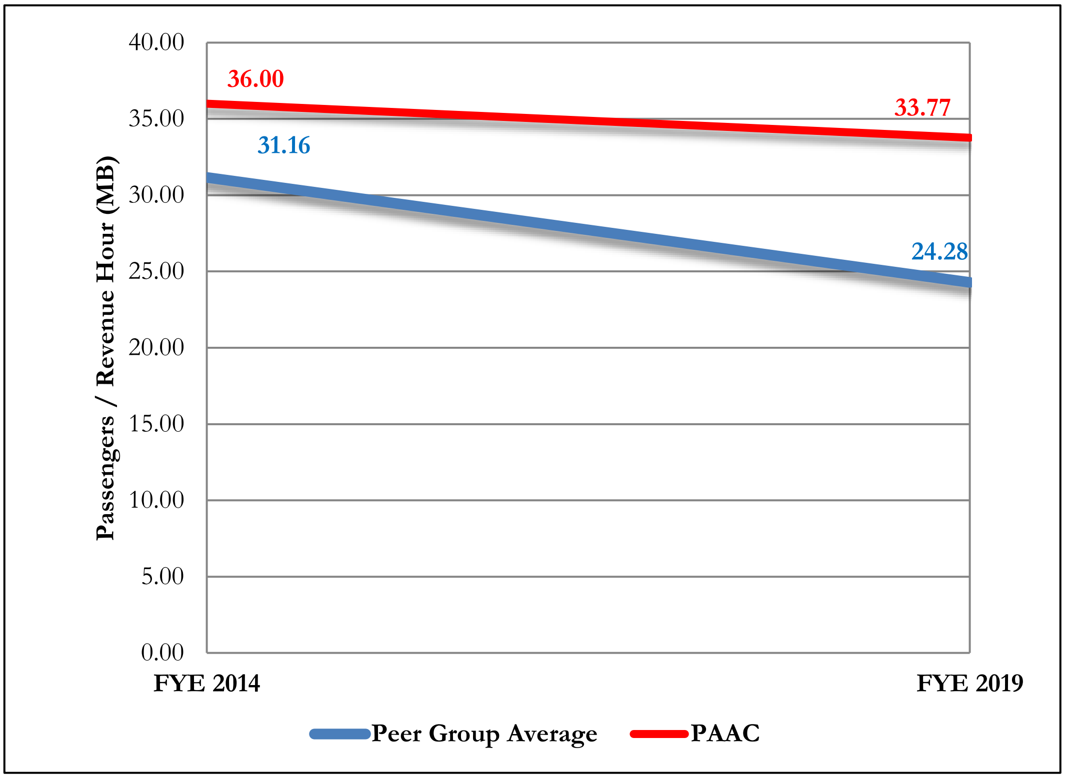
Operating Revenue / Revenue Vehicle-Hour (Bus)

Operating Revenue / Revenue-Hour (MB)					
	FYE 2019 Single-Year		**Five-Year Change Since FYE 2014**		
System	**Value**	**Rank of 14**	**2014 Value**	**Annual Rate**	**Rank of 14**
Alameda-Contra Costa Transit District	$34.83	7	$38.61	-2.04%	7
Tri-County Metropolitan Transportation District of Oregon	$29.24	9	$44.47	-8.05%	14
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	$23.12	13	$25.88	-2.23%	8
VIA Metropolitan Transit	$13.73	14	$16.29	-3.37%	9
Metropolitan Atlanta Rapid Transit Authority	$41.93	3	$51.94	-4.19%	10
San Diego Metropolitan Transit System	$25.59	11	$32.54	-4.69%	12
Metro Transit	$38.13	6	$39.17	-0.54%	5
Milwaukee County	$25.82	10	$32.54	-4.52%	11
Santa Clara Valley Transportation Authority	$51.74	2	$30.23	11.35%	1
The Greater Cleveland Regional Transit Authority	$32.78	8	$31.85	0.58%	2
Southwest Ohio Regional Transit Authority	$40.65	4	$41.76	-0.54%	6
Maryland Transit Administration	$25.49	12	$34.06	-5.63%	13
Niagara Frontier Transportation Authority	$40.19	5	$40.83	-0.31%	4
Port Authority of Allegheny County	**$53.38**	**1**	**$53.28**	**0.04%**	**3**
Average	*$34.04*		*$36.68*	*-1.72%*	
Standard Deviation	*$11.15*		*$9.85*	*4.52%*	
Average – 1 Standard Deviation	*$22.89*		*$26.83*	*-6.24%*	
Average + 1 Standard Deviation	*$45.20*		*$46.52*	*2.79%*	
Act 44 Compliance Determination	**In Compliance**		**In Compliance**		
Compared to the Peer Group Average	**Better**		**Better**		

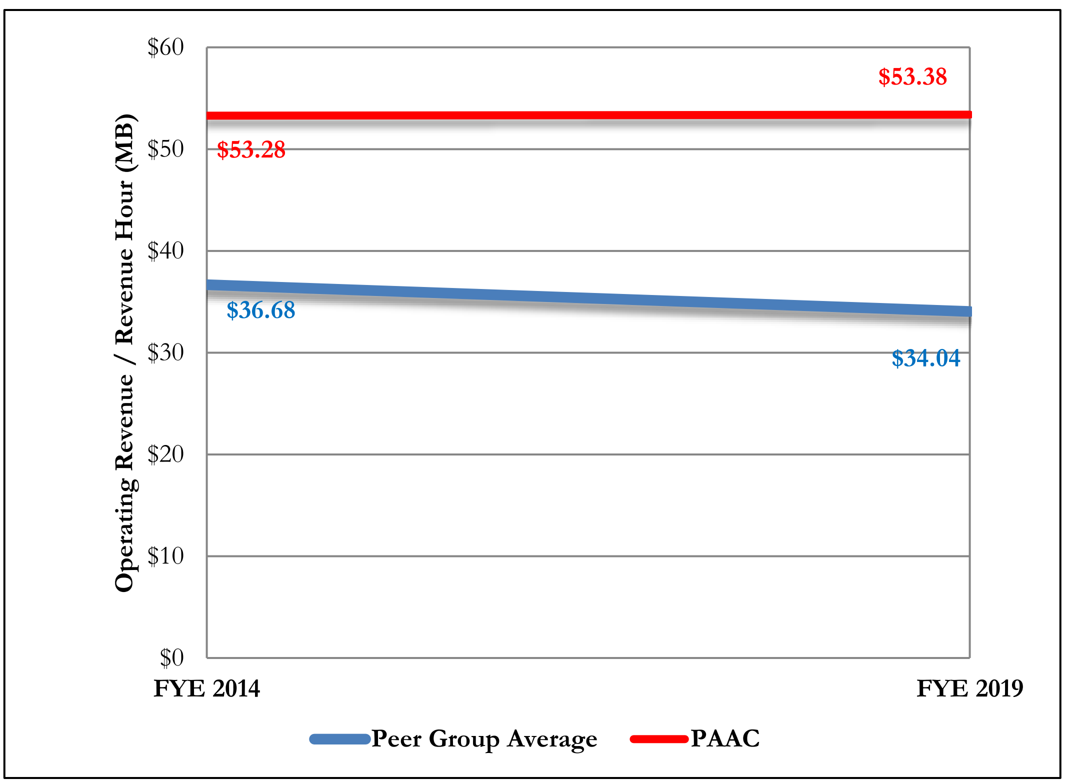
Operating Cost / Passenger (Bus)

Operating Cost / Passenger (MB)					
	FYE 2019 Single-Year		**Five-Year Change Since FYE 2014**		
System	**Value**	**Rank of 14**	**2014 Value**	**Annual Rate**	**Rank of 14**
Alameda-Contra Costa Transit District	$7.85	12	$5.24	8.41%	12
Tri-County Metropolitan Transportation District of Oregon	$5.41	6	$4.03	6.03%	6
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	$7.37	11	$5.00	8.07%	11
VIA Metropolitan Transit	$4.34	2	$3.47	4.55%	4
Metropolitan Atlanta Rapid Transit Authority	$4.65	4	$3.77	4.29%	2
San Diego Metropolitan Transit System	$3.67	1	$2.69	6.41%	8
Metro Transit	$6.40	9	$4.14	9.09%	13
Milwaukee County	$4.57	3	$3.28	6.88%	9
Santa Clara Valley Transportation Authority	$9.72	14	$7.25	6.03%	5
The Greater Cleveland Regional Transit Authority	$8.46	13	$4.84	11.81%	14
Southwest Ohio Regional Transit Authority	$7.18	10	$5.13	6.96%	10
Maryland Transit Administration	$5.31	5	$3.90	6.38%	7
Niagara Frontier Transportation Authority	$5.50	7	$4.42	4.47%	3
Port Authority of Allegheny County	**$5.90**	**8**	**$5.18**	**2.61%**	**1**
Average	*$6.17*		*$4.45*	*6.57%*	
Standard Deviation	*$1.74*		*$1.12*	*2.32%*	
Average – 1 Standard Deviation	*$4.42*		*$3.33*	*4.26%*	
Average + 1 Standard Deviation	*$7.91*		*$5.58*	*8.89%*	
Act 44 Compliance Determination	**In Compliance**		**In Compliance**		
Compared to the Peer Group Average	**Better**		**Better**		

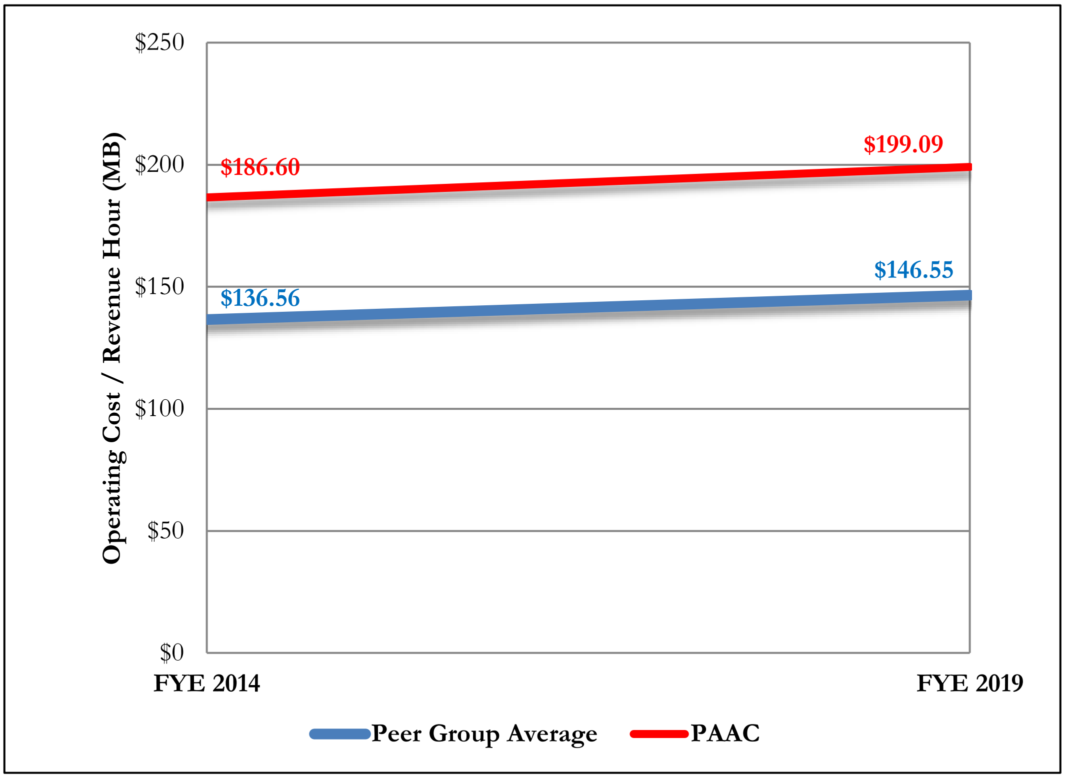
Trend – Passengers / Revenue Vehicle-Hour (Bus, FYE 2014–2019)



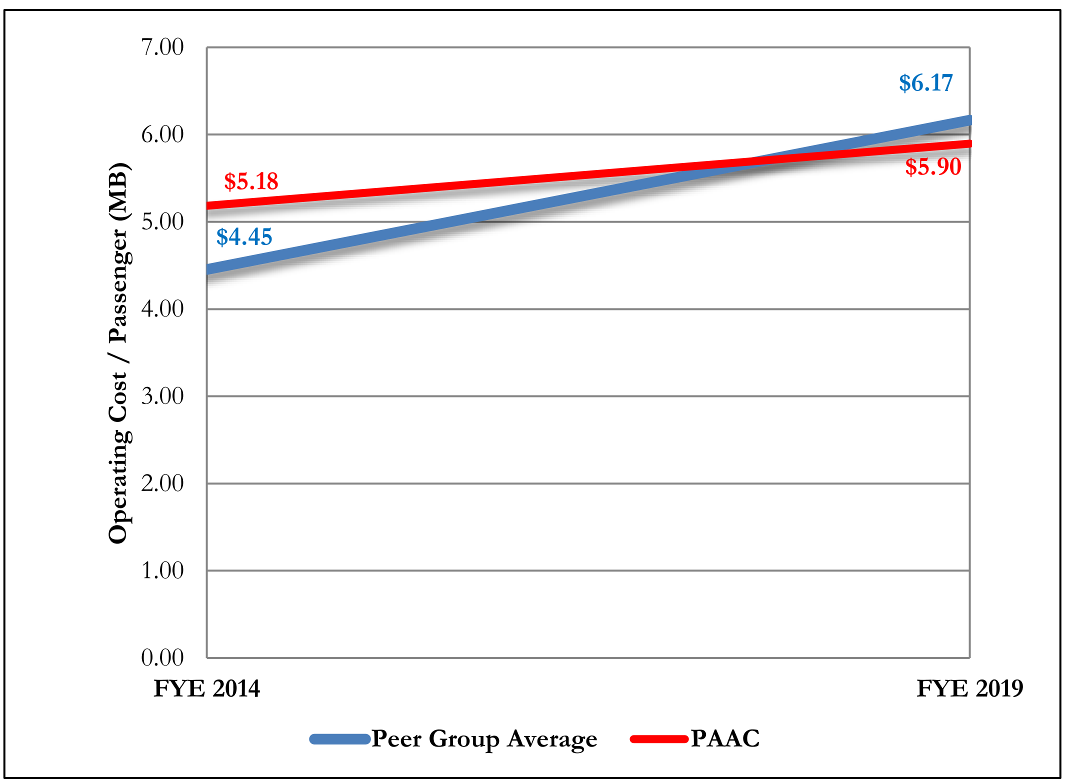
Trend – Operating Revenue / Revenue Vehicle-Hour (Bus, FYE 2014–2019)



Trend – Operating Cost / Revenue Vehicle-Hour (Bus, FYE 2014–2019)



Trend – Operating Cost / Passenger (Bus, FYE 2014–2019)



Fixed-Route Streetcar/Light Rail (NTD Mode LR)

Passengers / Revenue Vehicle-Hour (Light Rail)

Passengers / Revenue-Hour (LR)					
System	FYE 2019 Single-Year		Five-Year Change Since FYE 2014		
	Value	Rank of 6	2014 Value	Annual Rate	Rank of 6
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	50.39	2	65.82	-5.20%	4
Metro Transit	59.84	1	48.62	4.24%	1
Santa Clara Valley Transportation Authority	37.83	5	50.07	-5.45%	5
The Greater Cleveland Regional Transit Authority	30.80	6	51.12	-9.63%	6
Maryland Transit Administration	44.97	3	51.36	-2.62%	2
Port Authority of Allegheny County	**42.59**	**4**	**49.22**	**-2.85%**	**3**
Average	*44.40*		*52.70*	*-3.59%*	
Standard Deviation	*10.06*		*6.51*	*4.59%*	
Average – 1 Standard Deviation	*34.35*		*46.19*	*-8.18%*	
Average + 1 Standard Deviation	*54.46*		*59.22*	*1.00%*	
Act 44 Compliance Determination	**In Compliance**		**In Compliance**		
Compared to the Peer Group Average	**Worse**		**Better**		

Operating Cost / Revenue Vehicle-Hour (Light Rail)

Operating Cost / Revenue-Hour (LR)					
	FYE 2019 Single-Year		**Five-Year Change Since FYE 2014**		
System	**Value**	**Rank of 6**	**2014 Value**	**Annual Rate**	**Rank of 6**
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	$327.83	4	$269.88	3.97%	2
Metro Transit	$181.61	1	$148.65	4.09%	3
Santa Clara Valley Transportation Authority	$573.35	6	$341.47	10.92%	6
The Greater Cleveland Regional Transit Authority	$309.23	2	$240.91	5.12%	5
Maryland Transit Administration	$309.31	3	$271.21	2.66%	1
Port Authority of Allegheny County	**$422.80**	**5**	**$329.39**	**5.12%**	**4**
Average	*$354.02*		*$266.92*	*5.31%*	
Standard Deviation	*$132.10*		*$69.50*	*2.89%*	
Average – 1 Standard Deviation	*$221.92*		*$197.42*	*2.42%*	
Average + 1 Standard Deviation	*$486.12*		*$336.42*	*8.21%*	
Act 44 Compliance Determination	**In Compliance**		**In Compliance**		
Compared to the Peer Group Average	**Worse**		**Better**		

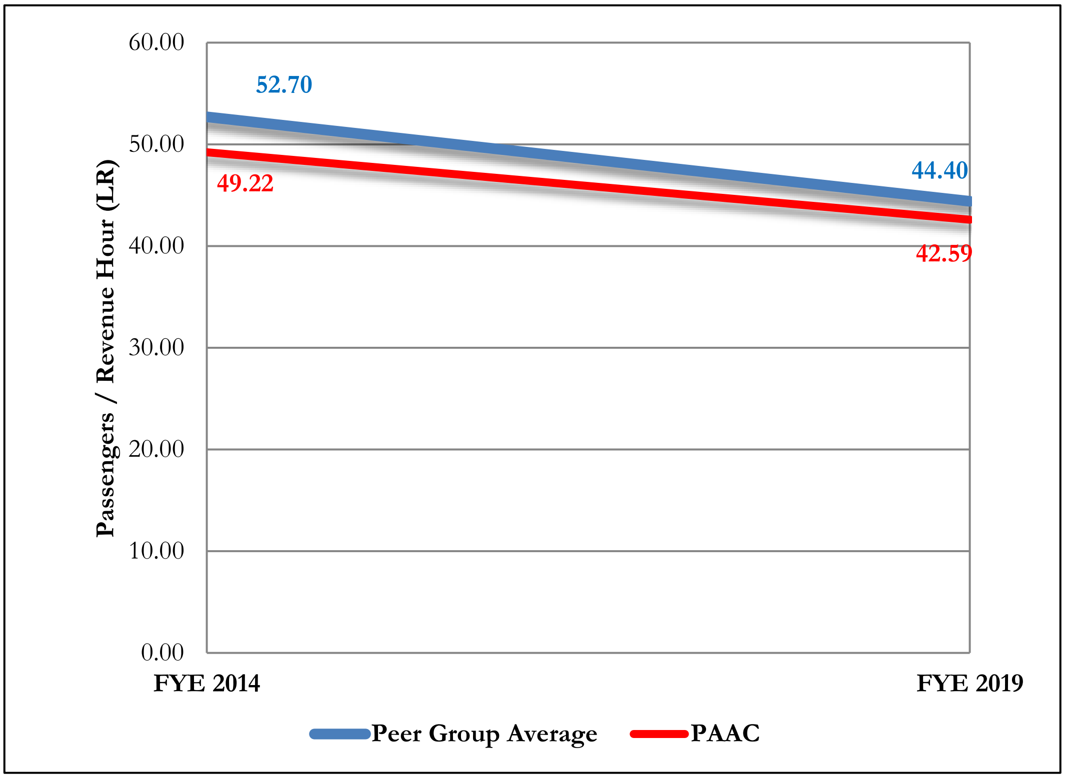
Operating Revenue / Revenue Vehicle-Hour (Light Rail)

Operating Revenue / Revenue-Hour (LR)					
	FYE 2019 Single-Year		**Five-Year Change Since FYE 2014**		
System	**Value**	**Rank of 6**	**2014 Value**	**Annual Rate**	**Rank of 6**
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	$68.89	3	$76.95	-2.19%	4
Metro Transit	$71.49	2	$49.50	7.63%	2
Santa Clara Valley Transportation Authority	$105.00	1	$58.88	12.26%	1
The Greater Cleveland Regional Transit Authority	$62.42	4	$54.31	2.82%	3
Maryland Transit Administration	$42.95	6	$51.37	-3.51%	5
Port Authority of Allegheny County	**$50.14**	**5**	**$72.86**	**-7.20%**	**6**
Average	*$66.82*		*$60.65*	*1.63%*	
Standard Deviation	*$21.68*		*$11.56*	*7.34%*	
Average – 1 Standard Deviation	*$45.13*		*$49.08*	*-5.71%*	
Average + 1 Standard Deviation	*$88.50*		*$72.21*	*8.98%*	
Act 44 Compliance Determination	**In Compliance**		**At Risk**		
Compared to the Peer Group Average	**Worse**		**Worse**		

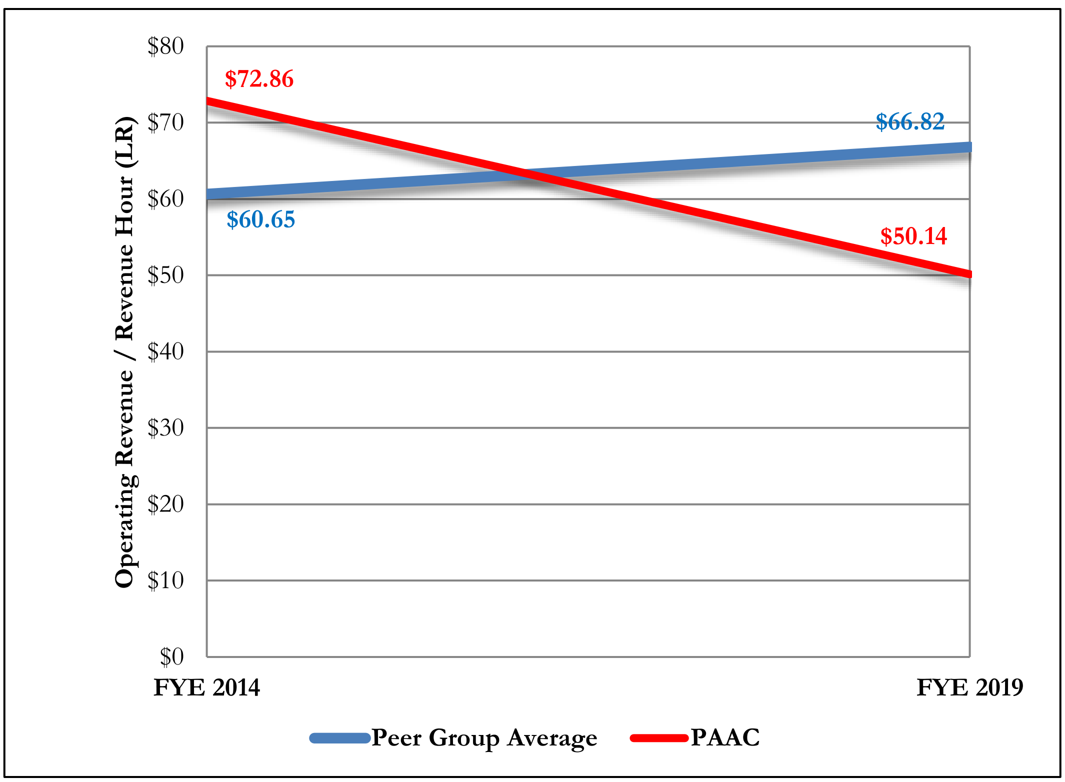
Operating Cost / Passenger (Light Rail)

Operating Cost / Passenger (LR)					
	FYE 2019 Single-Year		**Five-Year Change Since FYE 2014**		
System	**Value**	**Rank of 6**	**2014 Value**	**Annual Rate**	**Rank of 6**
Bi-State Development Agency of the Missouri-Illinois Metropolitan District	$6.51	2	$4.10	9.67%	4
Metro Transit	$3.04	1	$3.06	-0.15%	1
Santa Clara Valley Transportation Authority	$15.16	6	$6.82	17.32%	6
The Greater Cleveland Regional Transit Authority	$10.04	5	$4.71	16.33%	5
Maryland Transit Administration	$6.88	3	$5.28	5.43%	2
Port Authority of Allegheny County	**$9.93**	**4**	**$6.69**	**8.21%**	**3**
Average	*$8.59*		*$5.11*	*9.47%*	
Standard Deviation	*$4.13*		*$1.47*	*6.62%*	
Average – 1 Standard Deviation	*$4.46*		*$3.64*	*2.85%*	
Average + 1 Standard Deviation	*$12.72*		*$6.58*	*16.09%*	
Act 44 Compliance Determination	**In Compliance**		**In Compliance**		
Compared to the Peer Group Average	**Worse**		**Better**		

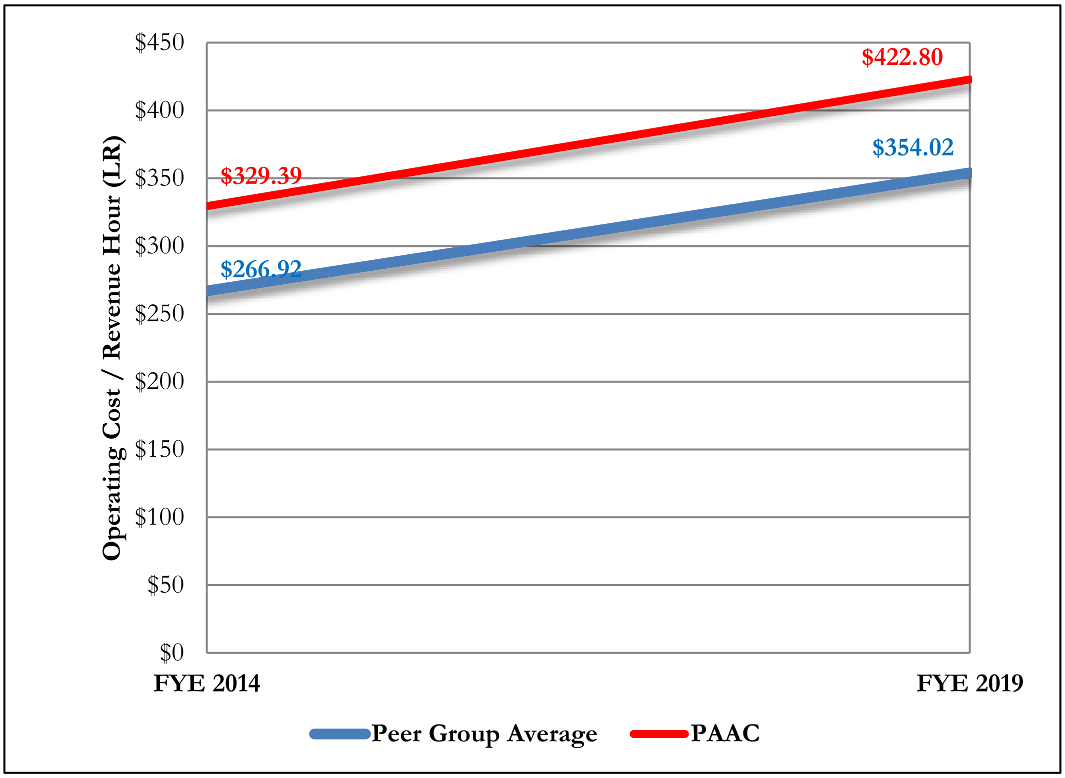
Trend – Passengers / Revenue Vehicle-Hour (Light Rail, FYE 2014–2019)



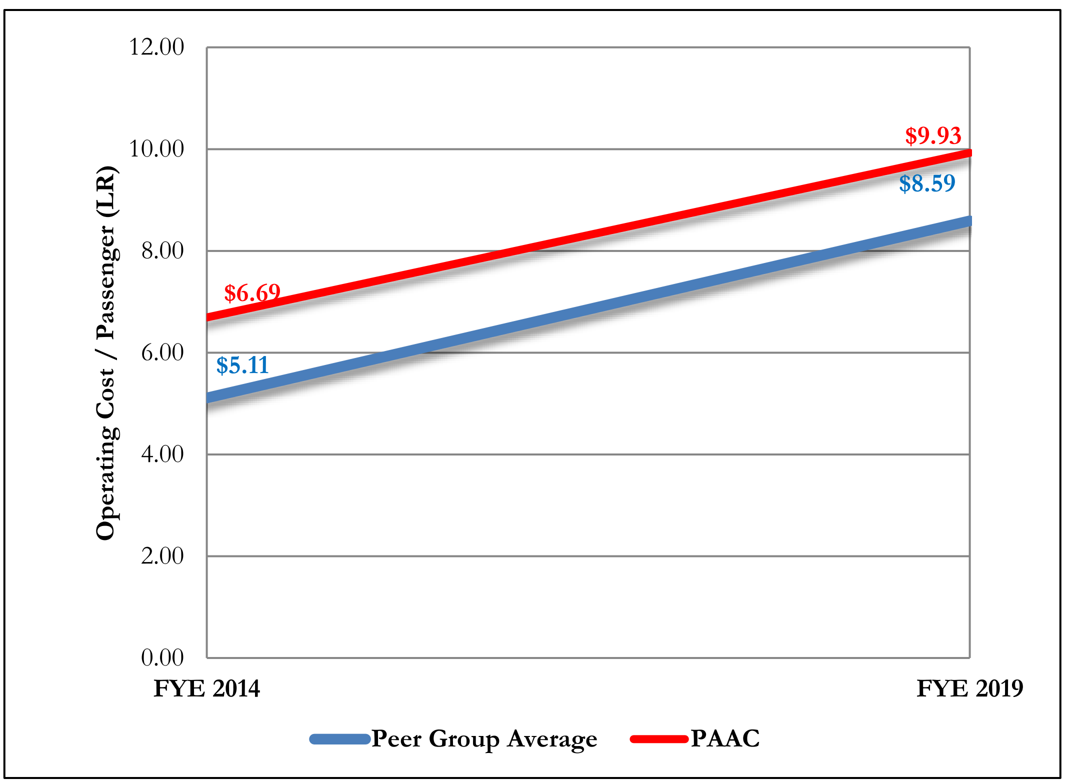
Trend – Operating Revenue / Revenue Vehicle-Hour (Light Rail, FYE 2014–2019)



Trend – Operating Cost / Revenue Vehicle-Hour (Light Rail, FYE 2014–2019)



Trend – Operating Cost / Passenger (Light Rail, FYE 2014–2019)



Appendix D: Action Plan Template

Part 1 – Actions to Increase Passengers / Revenue-Hour

Recommendations from the narrative starting on page 16	Action	Estimated Initiation Date	Estimated Completion Date
1. Reevaluate and implement marketing plans that address long-term changes in regional travel patterns.			
2. Reassess PAAC's on-time goals and system performance to better align service delivery with customer expectations.			
3. Create a transit development plan that specifically addresses long-term pandemic impacts.			

Part 2 – Actions to Increase Operating Revenue / Revenue-Hour

Recommendations from the narrative starting on page 17	Action	Estimated Initiation Date	Estimated Completion Date
1. Continue to work with local elected officials to ensure that local funding keeps pace with operating and capital matching fund requirements.			
2. Address the revenue lost from the route guarantees by finding alternative sources of revenue to cover North Shore Connector operating losses.			
3. Explore options to increase non-farebox revenue.			
4. Reassess parking supply, demand, and optimal pricing to create a systemwide parking master plan.			
5. Explore the potential for adding EV charging stations to PAAC-owned parking facilities.			

PART 3 – ACTIONS TO REDUCE OR CONTAIN OPERATING COST / REVENUE-HOUR

Recommendations from the narrative starting on page 17	Action	Estimated Initiation Date	Estimated Completion Date
1. Develop a Board-approved debt issuance and management policy.			
2. Contain recent operating cost increases attributable to non-operator salaries.			
3. Evaluate the potential benefits and costs of locating driver break facilities throughout the service area.			
4. Develop a long-term capital plan that focuses on phasing improvements and creating a pipeline of projects for current and future funding opportunities.			

PART 4 – OTHER ACTIONS TO IMPROVE OVERALL PERFORMANCE

Recommendations from the narrative starting on page 19	Action	Estimated Initiation Date	Estimated Completion Date
1. Communicate regularly with neighboring agencies to ensure that any new regional fare or technology concepts are understood and embraced by transit service providers throughout the region.			
2. Develop a formal program to assess the risks of new rolling stock technologies and factor those findings into capital purchase decisions.			
3. Identify and implement a range of strategies, that, when taken together, yield a financially stable business model.			
4. Ensure that any future plans to reconstruct Silver Line Library address the safety hazards and operating conditions that require the trains to travel slowly and result in service disruptions. Assess cross-traffic conflicts and identify opportunities to reduce rail and roadway conflicts.			

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pennsylvania
DEPARTMENT OF TRANSPORTATION