

Senate Transportation Hearing Testimony (April 20, 2023)

Good morning, Chair Wayne Langerholc and members of the Senate Transportation Committee. On behalf of PennDOT's Secretary of Transportation, Mike Carroll, and Deputy Secretary for Multimodal Transportation, Meredith Biggica, I'd like to thank each one of you for focusing on aviation today. Whether it is the airlines or an airport; whether it is hangars or terminals – whether it is cargo or technology delivering the cargo to meet the needs of our communities - every blade on the propeller plays a key role in Aviation. Thank you so much for this important opportunity to speak with you on three key items: 1-What aviation means in Pennsylvania? 2- What are the state's aviation needs in Pennsylvania? and 3 - What will it take to make Pennsylvania a national leader in aviation emerging technology?

My name is Tony McCloskey and I have been PennDOT's Director for the Bureau of Aviation the last 7+ years. My responsibility includes directing all the following aviation-related programs within PennDOT:

- Planning a continuous comprehensive and fiscally balanced Four-Year Plan and Twelve-Year Plan that detail the statewide aviation capital needs for our system of 120 Public-Use airports. Since the Four-Year and Twelve-Year Plans are fiscally balanced, the Bureau does not have contingency funding available. Therefore, the Bureau is unable to fund projects of an emergency nature without affecting previously planned projects.
- Administering the Federal Aviation Administration (FAA) State Block Grant Program for 40 federally eligible funded airports which the Bureau acts like the FAA and administers Federal Airport Improvement Program Funding (AIP).
- Deploying a Statewide airport development and improvement program that focuses on these priorities in order: safety/system preservation, economic development, and multimodal connectivity.
- Ensuring that all our 120 public use airports and heliports and 229 private airports and 284 private heliports are safe through our aviation safety inspections and comply with the state and FAA standards and regulations.
- Ensuring that all our 229 private airports and 284 private heliports are licensed according to our state aviation regulations.
- Provide air transportation for Governor Shapiro and his cabinet and the General Assembly from our Flight Operations, and
- Participate in state and federal aviation committees pertaining to emerging technologies

In the course of these responsibilities, the Bureau of Aviation has successfully sustained partnerships with the FAA that includes their lines of business and the Airports Harrisburg District Office, PA Department of Community and Economic Development, Pennsylvania Department of Environmental Protection, Pennsylvania Emergency Management Agency, the Aviation Council of Pennsylvania, the Aviation Advisory Committee, PA's Drone Association, Pennsylvania Senate Aviation Caucus, the National Association of State Aviation Officials (which I was Chair of last year), all of Pennsylvania's airports and heliports, and the consultant community.

What Aviation Means in PA?

Airports and heliports serve a unique role in their local communities and surrounding regions providing an integral link to a larger transportation system to move people and goods in Pennsylvania and all around the world. In addition to supporting a means to travel, airports facilitate necessary and sometimes critical services such as air cargo and freight, police and law enforcement, emergency medical services, firefighting, and disaster and emergency response. They contribute significant economic and social benefits to their local, regional, and state economies as centers of economic activity. Airports generate economic impact in a variety of ways, from employing people on-airport, to welcoming visitors from out-of-state who go on to spend money in the local economy.

The 2022 Pennsylvania Economic Impact Study (PA AEIS or Study) documents the economic contribution of our public-use airports, airport owners, tenants that employ workers to operate the airport and associated businesses (i.e., baggage handlers, maintenance technicians), and off-airport businesses that cater to the traveling public who arrive by air (i.e., hotel staff, restaurant wait staff, retail employees). Additional off-airport activities, like aerospace manufacturing corporations, cargo carriers, and 10 private hospital operators, that also employ staff and generate revenues were included.

A link for the Study is provided below.

[2022 Economic Impact of Aviation](#)

Extensive surveys and site visits were used to capture the data of all the stakeholders mentioned above.

This Study also took a closer look at the emerging technology of Uncrewed Aircraft Systems (UAS or drones) through 21 case studies across different major industries. The economic impact of UAS was not evaluated in the Study but the case studies lay the foundation for future analysis.

Due to the timing of this study with the COVID-19 pandemic, two base years were assessed. 2019 was used to document a regular year of activity and impact under normal circumstances, and 2020 was used to identify the changes in impact during a year of disruptions.

In 2019, the Aviation industry had a \$34.1B total impact on the Pennsylvania economy providing more than 226,000 jobs with a \$12.5B payroll. These numbers include direct impacts associated with on or near airport activities, indirect impacts associated when airport related businesses purchase goods and services from other businesses in the state, and induced impacts such as when an airport employee purchases food and clothing items at markets, restaurants, or shopping malls.

Exhibit A provides a comparison of impact on the Pennsylvania economy between our commercial service airports and our public-use general aviation (GA) airports economic impact data. Commercial service airports provided over \$32B of economic impact to the state as compared to the GA's providing nearly \$2B.

Even though the GA's represent slightly over 5% of the total state's impact, the GA's provide a variety of unique benefits to their surrounding communities by supporting and facilitating numerous activities, industries, and services. From providing a critical link to the medical system through air ambulance services to training the next generation of aviators through aviation education programs, these GA's serve a critical role in their local communities above and beyond the quantifiable economic contribution that they make to Commonwealth.

Exhibit B's PA Map for Public Use General Aviation Facilities color-coded map provides more clarity on the how the GA's impact each county in the state. The different colors provide a range of total economic impact costs to the respective county. The darker the color such as near Philadelphia and Pittsburgh; the higher impact of GA is to that county. The lighter the color; the lower impact of GA to that county. To summarize, over 85% of the counties in Pennsylvania are economically impacted by the GA community.

The Study includes an estimation of the impact of private hospital heliports as a separate category of impacts in the total economic impact of Pennsylvania's aviation system. Ten off-airport private MedEvac operators that are identified in Exhibit C had a \$150M impact in 2019.

Cargo or air freight plays a very important role in Pennsylvania. Let's face it, your online purchases that are ordered out of state may be transported by one of the air carriers such as UPS, FedEx or Amazon to one of our 4 cargo or 3 cargo feeder airports. The cargo is then delivered to your home or business, often by the next day. Cargo is tracked by the FAA. An airport designated by the FAA as a cargo service airport (which can be classified as commercial too) provides air transportation of cargo with a total annual landed weight (airplane plus cargo) of more than 100 million pounds. The total 2019 FAA reported Cargo Landed Weight was over 4.4 billion pounds that landed at Philadelphia, Lehigh Valley, Pittsburgh, and Harrisburg international airports. In comparison, this weight is equivalent to 218 Eifel towers.

Acknowledging the contribution that aviation provides to Pennsylvania and how important aviation is now and for the future, let's turn our focus to my second item - aviation needs in the state.

The ability of the state's aviation system to efficiently meet the current and future demand for passenger travel and air cargo services depends upon maintaining airport facilities in a state of good repair, undertaking prudent modernization projects, and pursuing strategic initiatives that will prepare the state for advancements in aviation's emerging technology.

When you get right down to it, the Commonwealth provides roughly \$22M to aviation that can be used for state matches to support our aviation system's infrastructure.

Capital Budget Aviation Transportation Assistance Program provides \$10M. The Bureau's Aviation Development Program which is funded by a 1984 Jet A Fuel Tax Legislation and is significantly lower in the surrounding five state region, provides \$4.5 to \$6M. The Act 89 Multimodal Transportation Aviation Fund provides approximately \$6M.

Looking at the FAA funding, the Bureau receives roughly \$13M per FFY to grant to the FAA State Block Program airports which typically requires a 5% state match up to \$800k.

Highlighting the Infrastructure Investment and Jobs Act (or referred to as BIL), the Commonwealth is receiving from the FAA \$71M annually for 5 years to FFY 25/26 for our airports. \$8M out of the \$71M will be administered by the Bureau for those 40 general aviation airports that are eligible for federal funding. BIL requires the Bureau to provide a 5% match annually. This adds up to \$1.6M annually for the next 5 years the Bureau must provide for matching BIL.

We are very appreciative of Governor Josh Shapiro's budget proposal that includes additional funding for the Aviation Restricted Account. The amount proposed per SFY is \$1.6M which would be utilized to match these BIL projects.

Pennsylvania's aviation assets are aging, with many airports dating to the 1950s or earlier and requiring investment for continued viability. Without a strategic program of adequate investment, the state's aviation infrastructure will continue to deteriorate faster than it is repaired. Ultimately this could result in reduced services and further airport closures. The failure to keep these facilities in a state of good repair can be expected to result in lost jobs and impeded movement of people and goods, including critical medical supplies that would be urgently affected by a disruption in the air cargo transportation system.

The current state funding is insufficient to meet those needs of our aging infrastructure in addition to planning for the new wave of emerging technology.

Based on the December 2022 Pennsylvania Transportation Advisory Committee report, Exhibit D shows the total annual amount funded and total amount needed for seven aviation investment categories. The total annual gap in funding that is needed amounts to \$53.5M.

Without the additional sustainable funding for the Bureau to invest in our aviation system, the Bureau continues to focus only on the critical safety and system preservation projects.

Exhibit E further illustrates the Bureau's perspective on the aviation capital need.

The red color designates critical investment for safety and system preservation projects. The Bureau currently has sufficient funding to address these projects.

The yellow color designates justified investment for accommodating current demand for airfield expansion and access improvements.

The dashed line for the concentric circle in the yellow color emphasizes the Bureau's limit to fund less than half of those projects for GA airports deemed to accommodate current demand such as hangar site development including access taxiways, aprons, ground access and automobile parking.

The green color designates economic growth for those projects that will attract more activity (airside or landside) and further provide opportunities for employment in PA. The kind of projects I am referring to are those that spur economic development such as runway extensions, fuel farm expansion projects that deploy alternative aviation fuels, and hangars. The Bureau currently does not have sufficient funding to address these projects.

Moving into my last topic – What will it take to make Pennsylvania a national leader in aviation emerging technology?

Aviation emerging technology is inclusive of utilizing drones and Advanced Air Mobility (AAM) for a multitude of purposes. The drone industry is growing at a fast rate as depicted in the Economic Study. AAM is emerging in the aviation markets using a revolutionary new aircraft that will be certified by the FAA in the next several years and can serve a variety of use cases such as:

- Supporting emergency management missions, such as air ambulance, emergency supply deliveries.
- Creating additional inclusive mobility options.
- Reducing times for travelers in rural and urban settings.
- Expanding access to goods delivery.

Let's benchmark some other state's efforts in the development of AAM and other technologies. Exhibit F shows a summary of other state activities focused on AAM.

I recently had the opportunity to attend Ohio's Air Mobility Symposium at Ohio State University in Columbus, Ohio. The state showcased their National Advanced Air Mobility Center of Excellence which collaborates with industry, academia, government, and community partners to leverage all of Ohio's capabilities and resources into AAM. As one of the leading states in AAM, Ohio has initiated the following:

- Developed and published an AAM Framework report that documents what is needed to provide another equitable mobility option for Ohioans that includes attracting Electrical Vertical Takeoff and Landing (eVTOL) Original Equipment Manufacturers (OEMs) and service providers to come, build, test, and fly in Ohio.
- Currently building a 30,000 SF of office space and 25,000 SF of hangar space at GA to support AAM flight testing, Research & Development, and collaboration among multiple state and federal divisions.
- Established a flight corridor along I-71 that will be used for healthcare delivery, regional air mobility, and regional air cargo delivery.

So, what will it take to move Pennsylvania a national leader in aviation emerging technology?

Let's refer back to Exhibit D that highlights PA's unfunded aviation needs. In the table, \$8.5M is the amount needed for the Bureau to adequately pursue Emerging Aviation Technology Initiatives. This seed funding would enable the Bureau to:

- Conduct a feasibility study and a concept of operations for AAM using our existing infrastructure first.
- Further evaluate AAM use cases that would include healthcare delivery, rural package delivery and distribution, and potentially developing corridors that can be used for regional mobility for air cargo and passengers.
- Plan and develop the infrastructure that supports alternative aviation fuels such as hybrid-electric, hydrogen, and electric-powered aircraft.
- Support the planning and development of the electric power capacity for airports constructing charging facilities (landside and airside).
- Developing public private partnerships to foster a test bed for AAM.

- Rejuvenate the Pennsylvania interagency group (PennDOT, DEP, DGS, PSP, PTC, PEMA) to focus on a framework for technology integration, policy and procedural development, training program development, safety management, and operational integration and coordination.
- Establish or gain licensing for a UAS information and data exchange program to foster public-private sector collaboration on research, testing and deployment.
- Establish a joint UAS training program for State and Municipal drone operators which would establish common operational guidelines for mutual aid support between municipal agencies.
- Collect data and flights, in partnership with an FAA test site as part of a national collaboration with other states.
- Demonstrate the value of an infrastructure through drone-based emergency services that will save people's lives.
- Demonstrate the value of delivering goods using the drone technology.
- Establish a Pennsylvania Airport Technical Assistance Program (AirTAP) that will help public and private sector airport staff to improve safety and efficiency of airport operations and increase the use of new aviation materials, practices, and technology.

Sharing with you the other state's achievements, a leader for the Commonwealth is truly needed to be established with sustainable funding. The Bureau of Aviation has the groundwork to be that leader for the Commonwealth. Since the Bureau of Aviation has successfully demonstrated partnerships with the FAA, NASA, the Aviation Council of PA, the Senate Aviation Caucus, the PA Drone Association, the Bureau of Aviation would be best suited to deploy a vision and mission to successfully engage all relevant stakeholders within the Commonwealth, our planning partners, and various industries to deliver a world class innovation ecosystem.

Most importantly, the Bureau is exploring options internally on how to support the new wave of emerging technology. Again – we need sustainable funding to do this.

As I conclude my testimony, I am confident you all understand the importance of how the state's aviation system impacts our local communities and surrounding regions that supports travel, air cargo and freight, police and law enforcement, emergency medical services, and emergency response. We must help grow together our state aviation's industry while providing an infrastructure that can safely deploy aviation's emerging technology.

The aviation industry is evolving. An aircraft's dependence on carbon-based fuel is shifting to alternative energy sources such as electricity and hydrogen. We must be in position to develop the skills of the new workforce so these types of energy efficient zero emission aircraft can be maintained and repaired in PA. It is very critical that we collectively work together in determining a dedicated funding source that does not fluctuate based on gallons of Jet A fuel consumed. Sustainable funding is what we need to help grow our state's aviation industry while providing an infrastructure that can safely deploy aviation's emerging technology.

Instead of hearing about Florida, North Carolina, Ohio, and other key prominent states, you can be proud to say – I had something to do with Pennsylvania being a recognized leader in aviation. I look forward to any questions you may have from my testimony.

Exhibit A: 2019 Economic Impact for Commercial and General Aviation Airports

2019 PA Aviation Economic Impact			
	Employment	Payroll	Output
Commercial Service Airports	216,732	\$11,886,376,700	\$32,261,882,600
General Aviation Airports	9,428	\$605,950,500	\$1,872,022,800
Total Impacts	226,160	\$12,492,327,200	\$34,133,905,400

Exhibit C:

Off-Airport Private MedEvac Providers
AGH LifeFlight
Conemaugh MedStar
Geisinger Life Flight
Guthrie Air (LifeNet of NY)
JeffSTAT
Life Lion
LVHN MedEvac
PennSTAR
STAT MedEvac
Temple MedFlight

Exhibit D: December 2022 Pennsylvania Transportation Advisory Committee Report
Total Annual Unfunded Aviation Need

Aviation Investment Category	Total Annual Amount Needed	Total Annual Amount Funded	Total Annual Unmet Need
Commercial Service Airports (14)	\$137,700,000	\$121,700,000	\$16,000,000
FAA-Administered General Aviation Airports (8)	\$17,500,000	\$13,500,000	\$4,000,000
Block Grant Aviation Facilities (40)	\$35,800,000	\$25,100,000	\$10,700,000
Public-Use Non-NPIAS Aviation Facilities (59)	\$8,000,000	\$3,700,000	\$4,300,000
Statewide Hangar Development	\$5,000,000	\$0	\$5,000,000
Other – Secretary’s Discretionary Fund, Emergency Projects, etc.	\$5,000,000	\$0	\$5,000,000
Emerging Aviation Technology Initiatives	\$8,500,000	\$0	\$8,500,000
TOTAL (121 Public-Use Aviation Facilities)	\$217,500,000	\$164,000,000	\$53,500,000

Exhibit E:

BOA'S PERSEPECTIVE ON AVIATION CAPITAL NEED

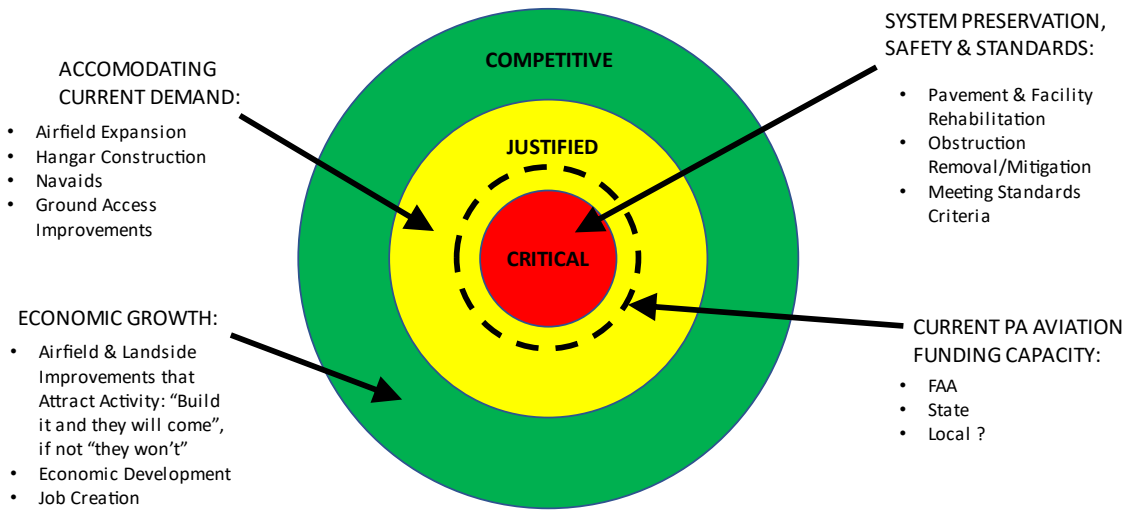


Exhibit F: Comparison of State's AAM Activities

State	Activities
Florida	<ul style="list-style-type: none"> • Passenger service launching market for regional air mobility¹⁰ • Developing vertiport networks¹¹ • Bringing attention to AAM transportation planning at city and metropolitan levels • UPS Flight Forward using sUAS to deliver pharmaceuticals to customers in The Villages
Massachusetts ¹²	<ul style="list-style-type: none"> • Demonstrating emergency medical supply delivery using sUAS • Researching UAS applications to support surface transportation systems
Minnesota	<ul style="list-style-type: none"> • Researching future Uncrewed Aerial Vehicle (UAV) capabilities and technologies¹³ • UAS being used for bridge inspections¹⁴
New York	<ul style="list-style-type: none"> • Defined and established "beyond visual line-of-sight" drone corridor¹⁵ • Launch market for urban air mobility passenger services • Offers drone and AAM testing facilities¹⁶
North Carolina	<ul style="list-style-type: none"> • Public demonstration of AAM aircraft¹⁷ • Early statewide drone traffic management concept¹⁸ • Participating in FAA UAS Programs¹⁹
Ohio	<ul style="list-style-type: none"> • Demonstrations including medical supply delivery with VyrTX sUAS and Beta/Kittyhawk test flights • Robust UTM system including BVLOS drone flight area and AAM testing facilities • Coordination with NASA and FAA on multiple fronts
Texas	<ul style="list-style-type: none"> • Using UAS to conduct research on environmental and weather impacts²⁰ • Collaborated with FAA to build out a UAS testing site²¹