ADVANCED AIR MOBILITY

COUNCIL REPORT

NOVEMBER 2025

Maryland

Advanced Air Mobility Council Report

November 2025

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Report provides supporting documentation considered by the Council in developing the recommendations required by Executive Order 01.01.2025.05, *Maryland Advanced Air Mobility Council*.

Executive Summary

Advanced Air Mobility (AAM) serves as an umbrella term that incorporates a wide spectrum of emerging aviation technologies, ranging from Uncrewed Aircraft Systems (UAS, or drones) to electric and hybrid- electric passenger and cargo aircraft. These aircraft may take off and land vertically like helicopters or conventionally like traditional airplanes and range in size from 4 to 19- seat configurations.

AAM represents a transformative shift in transportation, offering new opportunities to enhance mobility, improve emergency medical response and public safety, and stimulate economic development across Maryland. AAM is no longer a distant concept of the future; it is flying today, and Maryland has a unique opportunity to lead. It builds on the State's storied aviation history and aerospace expertise, presenting a clear example of an opportunity for national leadership within Governor Moore's aerospace and defense lighthouse industry sectors. A comprehensive AAM implementation plan holds the promise of economic benefits across the state including well-paying jobs, attraction of cutting-edge businesses, and improved quality of life for Marylanders.

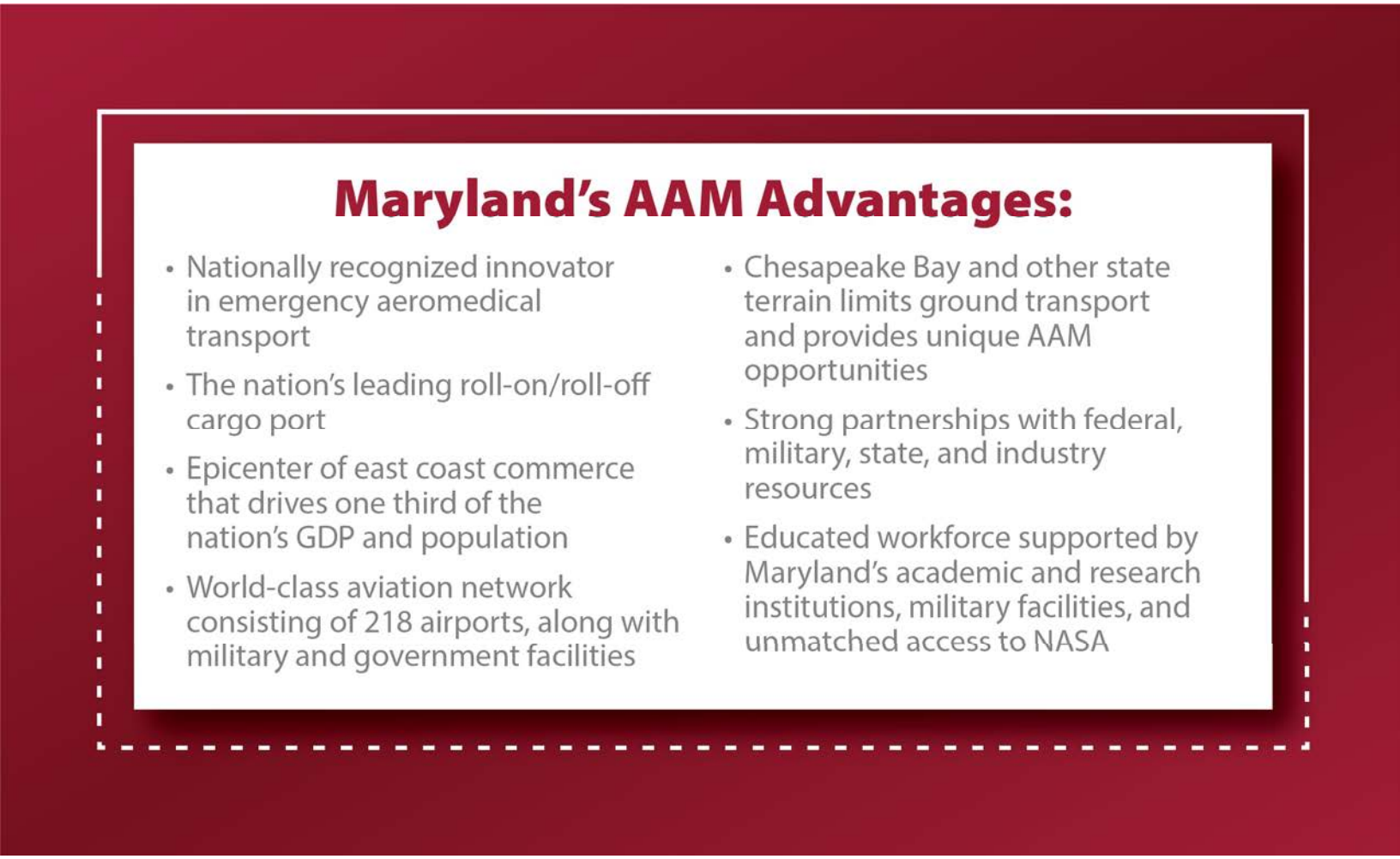
Recognizing this opportunity, Governor Wes Moore issued Executive Order 01.01.2025.05, establishing the Maryland Advanced Air Mobility Council (Council) to assess the State's readiness and develop strategic recommendations for integrating AAM technologies.[1] This report outlines key strategies, implementation pathways, and policy considerations to build AAM into an economic development, rural connectivity, and health and safety pillar for the State.

Often called the "third aviation revolution," following the Wright brothers and the jet age, AAM enables point-to-point travel, direct delivery of goods and services to homes and businesses, and life-saving opportunities in aeromedical services and public safety. The benefits of emerging technologies in air mobility are shared across multiple sectors. All industries discussed in this report will benefit from faster, more cost-efficient transportation. AAM has the potential to increase competitiveness and transportation efficiency, while decreasing transportation timelines, cost, and risk profiles for both producers and consumers in Maryland's economy. These technological changes are not replacing existing aviation but expanding its capabilities.

The recommendations in this report are designed to take advantage of these opportunities. The state's location on the Eastern Seaboard, existing aviation facilities and stakeholders, academic and research institutions, world class aeromedical industry, and educated and

[1] Moore, W. (2025, January 1). *Executive Order 01.01.2025.05: Maryland Advanced Air Mobility Council*. Office of the Governor, State of Maryland. https://governor.maryland.gov/Lists/ExecutiveOrders/Attachments/80/EO%2001.01.2025.05%20Maryland%20Advanced%20Air%20Mobility%20Council_Accessible.pdf

technically skilled workforce make Maryland a natural location for this new technology to flourish. These advantages position Maryland as an attractive destination for AAM businesses and operators, creating a compelling need to act now so the state secures these opportunities ahead of competing regions. The Council has developed a phased roadmap of recommendations to help Maryland prepare for the integration of AAM, offering actions that can begin immediately and build toward long-term success, as highlighted below.



Source: AECOM

For more information on the Aerospace Industry in Maryland, see **Appendix L:** Maryland Aerospace Brochure.

Recommendations

Near Term: Complete within the Coming Year

- **Action:** Appoint a statewide AAM coordinator as Maryland's ombudsman on all related matters. **Benefit:** Establishing a single responsible party will focus efforts, speed implementation, and align efforts across state agencies.
- **Action:** Prepare legislation for introduction during the 2027 legislative session to address AAM broadly, including small Uncrewed Aerial Systems (UAS), large UAS, and crewed electric aircraft. **Benefit:** Creating a comprehensive legislative framework for AAM in Maryland to update Senate Bill 370 (SB 370), a decade-old law that is specifically focused on drones only.
- **Action:** Complete a comprehensive survey/inventory of existing physical and digital infrastructure that can be leveraged by AAM operators. **Benefit:** Identifying assets that already exist and can be used as-is or modified for private, public, or shared use to help attract AAM users.
- **Action:** Invest in pilot projects and partnerships with high impact and visibility, including opportunities that will build on the State's world-class emergency medical system, bolster the Maryland Military Department's case to retain a flying mission in the state, and directly support existing Maryland businesses through AAM. **Benefit:** Beginning limited-scale implementation of AAM use cases will show benefits to Marylanders and build support for it.
- **Action:** Identify investment strategies and potential funding sources to support pilot projects and infrastructure development. **Benefit:** Advance AAM development in Maryland through sustainable funding strategies that ensure long-term viability.

Mid Term: Complete within Two-Three Years

- **Action:** Invest in selected infrastructure improvements at existing aviation facilities. **Benefit:** This will be a strong signal to AAM manufacturers, maintenance, repair, and overhaul (MRO) providers, and training programs that Maryland is AAM-ready.
- **Action:** Identify and invest in the digital infrastructure required to support robust public service uses for AAM including in law enforcement, joint military/ civilian emergency response, and public health and safety. **Benefit:** Will set the stage for at-scale public and commercial implementation of long-range UAS and manned Regional Air Mobility (RAM) and Urban Air Mobility (UAM) air systems.

- **Action:** Create and implement a workforce development plan focused on the opportunities to be created by the advent of AAM technologies in Maryland. **Benefit:** Establishing K-12, vocational, and higher education curricula and programs in a timely fashion to ensure Marylanders are ready for AAM jobs will provide a competitive advantage for the State and maximize the creation of well-paying AAM jobs.
- **Action:** Verify state cybersecurity plans address any vulnerabilities related to AAM. **Benefit:** Builds on the State's civilian and military cybersecurity leadership and minimizes cyber vulnerabilities.
- **Action:** Evaluate licensing and registration for commercial AAM facilities within the state. **Benefit:** Will provide consistency and predictability to attract the AAM industry, address liability concerns, and create a potential revenue stream for the State.
- **Action:** Develop and provide guidance to local jurisdictions governing AAM facilities and their siting, land use, zoning, and other concerns. **Benefit:** Ensuring harmonization of policies across the state will ensure a consistent regulatory landscape for AAM operators whose flight operations will span multiple jurisdictions.

Long Term: Complete in Four Years or More

- **Action:** Establish dedicated vertiport facilities at existing airports and other locations serving the public interest. **Benefit:** Will maximize opportunities for public safety, aeromedical, and commercial transportation operations.
- **Action:** Establish the digital infrastructure required to support robust public service and commercial uses for AAM. **Benefit:** Will ensure that both public safety and private sector AAM operations can operate to their full potential.

Ongoing (Begin Now and Continue over Time)

- **Action:** Establish a public information campaign to inform and educate the general public, policymakers, and legislators about AAM and its benefits to Marylanders while assuring them the State is taking steps to protect the public's interest in privacy and safety. **Benefit:** Educating citizens on the benefits of AAM and demonstrating the State's protection of vital public interests such as safety and privacy are critical components of AAM adoption.
- **Action:** Support efforts at the federal level to empower state authorities to play a role in detection and mitigation of threats posed by potential bad actors using UAS. **Benefit:** Enabling state and local authorities, including law enforcement, to play a vital role in counter-UAS planning and implementation.

- **Action:** Support regional, multi-state efforts to leverage AAM technologies for the benefit of the citizens and corporations of Maryland. **Benefit:** Will foster multi-state collaboration required for early AAM implementation efforts, directly benefiting Maryland.

This report provides a comprehensive overview of Maryland's current assets, challenges, and opportunities in the AAM space, focusing on three key segments: UAS, RAM, and UAM. It outlines actionable recommendations across policy, public engagement, workforce development, infrastructure, and pilot programs. Over the coming year, the Council will charter Working Groups to examine these recommendations more deeply and guide first steps in their execution. State agencies, county and municipal governments, industry, and other stakeholders will be represented in these working groups. The newly- established State AAM coordinator will serve a central role in this process, facilitating collaboration and driving the AAM implementation plan forward.

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1 Report Overview

On January 7, 2025, Governor Wes Moore signed Executive Order 01.01.2025.05 (E.O.), establishing the Maryland Advanced Air Mobility Council (Council) whose membership is comprised of the highest levels of state departmental leadership, academia and academic institutions engaged in elements of aviation and advanced mobility, local government, and airport/aviation industry experts. The E.O. tasks the Council with assessing available assets, opportunities for industry development and growth, system requirements, and anticipated costs available to and necessary for Maryland to acquire and expand access to new Advanced Air Mobility (AAM) services. Finally, the E.O. requires the Council to develop draft and final recommendations to the Governor regarding policy frameworks and regulatory models, phase-in timelines, and outreach / education campaigns before the end of 2025, including interim findings by June 2025 ahead of the full formation of the Council body.

The purpose of this report is to document relevant considerations and information pertaining to the emerging AAM industry considered by the Council in preparing draft findings and final recommendations within the timelines established by the E.O. The basic methodology is to capture the specified focus areas included in the E.O. and develop a framework of understanding for each.

The report content was prepared iteratively as the Council's work progressed through the investigative, outreach, and deliberative sessions for each of the focus areas identified by the E.O. It is the intent of the Council that this final report provides a foundation of understanding from which the Council recommendations and subsequent actions by Maryland, local government, and individual stakeholders will emerge in preparation for next-generation transportation across the state.

2 Introduction to Advanced Air Mobility

New trends in transportation are being driven by a convergence of technologies offering new models for the movements of goods, people, and services that are faster, environmentally cleaner, and more efficient than current transportation models. Although the underlying trends cross all modes of transportation, the innovations within the aviation sector, referred to as AAM, have been profound. AAM has already spawned an entirely new set of aviation vehicles which have the potential to augment traditional aircraft types and possibly overtake them altogether for some use cases. Throughout the world, regions are vying to capture crucial economic development elements within the industry's value chain such as research and development, manufacturing, assembly, distribution, logistics and market launches. This development is motivated by the added economic development opportunities and quality of life enhancements associated with having regional and local access to the most modern forms of transportation available.

This report, prepared at the direction of the Council, is intended to provide a strategic assessment of Maryland's overall preparedness in accommodating AAM and for the exploration of industry-enabling policy recommendations, permitting Maryland to achieve timely access to these potential paradigm shifts that may prove crucial to the State's future economic outlook and well-being of its residents, workforce, and visitors. An introductory brochure outlining the Council's mission and the fundamentals of AAM can be found in **Appendix K:** Maryland AAM Brochure.

Source: AECOM, AFAR

What is Advanced Air Mobility (AAM)

AAM has emerged as an umbrella term describing the most recent set of aerospace vehicles and technologies. It should be noted that AAM terminology is evolving and may not be consistently applied across geographies and timelines, but the definitions used in this report are widely accepted at present. For purposes of this report, AAM is a rapidly emerging sector within the advanced mobility field differentiated from traditional aviation using highly automated, electrically powered (including hybrid) low-altitude aircraft types, that will become increasingly connected to an integrated network of vehicle systems over the next 10+ years. AAM is anticipated to improve functions that are currently served by automobiles, trains, helicopters, and small/light aircraft. It will enhance the movement of people, goods, and services while also yielding positive economic, societal, and environmental benefits.

Characteristics of AAM

Because AAM is an umbrella term, there are different sectors within emerging aerospace fields. Three of the most common subsets of AAM are described below.

Uncrewed Aerial Systems (UAS):

Systems incorporating uncrewed aerial vehicles (UAVs), air vehicles commonly referred to as drones. As defined in this report, UAVs do not fly human passengers but are operated to perform a variety of tasks (i.e., work and emergency response drones), to deliver material (i.e., delivery drones), or for pleasure (i.e., recreational drones).

Regional Air Mobility (RAM):

This category consists of piloted vehicles that fly passengers or freight between regions. Many of the vehicles in this segment are anticipated to be winged aircraft powered by an electric or electric-hybrid powertrain and carrying between 4 and 19 passengers (or equivalent freight) over distances of 300 miles or more, pending battery capabilities. These vehicles will be able to utilize existing airport infrastructure, including in underserved locations, with some being able to operate from runways classified as short or very short, potentially as little as 150 feet. They will include both new aircraft designs and repowered electric or alternative fueled models of conventional aircraft. New electric vertical takeoff and landing (eVTOL) aircraft may also serve the RAM market. The key advantage of electric aircraft over traditional aviation is a dramatically lower cost of operation. This cost advantage can enable new point-to-point air service models that improve connectivity within the region and access to the world's air transportation network.

Urban Air Mobility (UAM):

This category includes highly automated piloted aircraft providing on-demand and scheduled commercial services within an urban area. UAM vehicles will transport small passenger groups (5 or fewer) over short distances (typically 5-40 miles), performing many roles served currently by helicopters, with the potential for improved efficiency and reduced environmental impact. UAM will augment existing commuter and intracity travel patterns dominated by automobiles as well. UAM is anticipated to emerge using piloted eVTOL vehicles with the potential to evolve toward remotely piloted or increasingly automated operations as technology and regulatory frameworks mature. The success of this business case requires a combination of rapid scaleup, high-voltage quick charger deployment, vertiport (facilities for eVTOL takeoff and landing and/or combined air-and-ground transportation) network development, low-altitude ecosystem development, increasing levels of system automation, and other proprietary-driven components specific to each operator.

Source: Joby

UAS, RAM, AND UAM IN MARYLAND

Uncrewed Aerial Systems (UAS)

Uncrewed aircraft that generally fly below 400 feet

This is an existing and rapidly growing industry. Growth anticipated to accelerate rapidly with passage of pending federal legislation.

Operations
- Middle-mile and last mile delivery
- Inspection and monitoring services
- Emergency response (search and rescue missions, assessing disaster areas, monitoring emergency situations)
- Transportation of Medical Materials

Infrastructure
- Offers lower cost options to existing use cases such as helicopters, small airplanes, cranes.
- ***Infrastructure:*** supporting digital infrastructure as volume increases (surveillance, weather, data-communication, cloud-based storage and broadband).

Regional Air Mobility (RAM)

Electric or hybrid aircraft that transport people and goods between regions (anticipate 5+ seats; 30-300 miles).

Minimal new policy, regulation, or infrastructure required.

Success dependent on ability of electric and hybrid technology to significantly lower aircraft operating costs.

Operations
- Regional commuting
- Middle mile logistics for transportation of goods
- Regional Medevac

Infrastructure
- Existing airports. Spoke airports are largely underutilized assets.
- Potential aircraft charging and other service support needs.

Urban Air Mobility (UAM)

Highly automated aircraft that provide commercial services to the public within an urban region.

Anticipated to be served by electric vertical takeoff and land (eVTOL) transporting small passenger groups (5 or less) over short distances (5-40 miles).

Part of the mobility-as-a-service chain affecting automotive travel.

Operations
- Commercial airports
- Downtown business districts
- Entertainment/ stadium districts
- Harbor/ marine port facilities
- Commuter spokes
- Niche service destinations (e.g., resort, hotel, etc.).

Infrastructure
- Augments intercity mobility and commuter routes that are historically subject to traffic delays
- Converted heliports, new vertiports and/or multiports.
- High capacity bulk-charging depots for scale.
- Maintenance Repair Overhaul (MRO)
- Digital infrastructure support for scale: surveillance, data-communication, cloud/broadband, micro-weather network, vertiport management, ground network.

Benefits:

Societal
AAM offers an enhanced quality of life by providing the public affordable, safe, efficient and accessible transportation of people, goods, and services

Economic
The AAM market is rapidly growing, creating jobs that stimulate the economy and generate tax revenue

Environmental
AAM offers alternative forms of transportaion with innovative airframes and propulsion system designed to reduce noise and emissions

Source: AECOM

Additional aviation categories are occasionally classified within the AAM umbrella, including Commercial Supersonic Technology (CST) and Commercial Space. Although Maryland has roles in each, for the purposes of this report, they are excluded since they do not require the same level of urgent state-level preparation as UAS, RAM, and UAM. For purposes of understanding and their current applications within Maryland, these terms are defined below:

Commercial Supersonic Technology (CST): Renewed interest in developing commercial supersonic (faster than the speed of sound) aircraft has emerged through several incumbent and new entrant aircraft manufacturers. Maryland's existing airport infrastructure and policy generally would accommodate such aircraft without specific statewide action, due to the presence of long runways at major airports and alignment with federal regulations governing high-speed aviation.

Commercial Space and Spaceport: The National Aeronautics and Space Administration (NASA) Goddard Space Flight Center in Greenbelt, Maryland is a premier space research and operating facility. It operates the Wallops Flight Facility near Chincoteague, Virgina, where launches are conducted. The launches from the Wallops site do not transit Maryland airspace. While Maryland is a leader in space-related technologies and economy, it is generally not anticipated to have launches due to the Federal Aviation Administration's (FAA) siting requirements for commercial spaceports.

Common AAM Aircraft Types

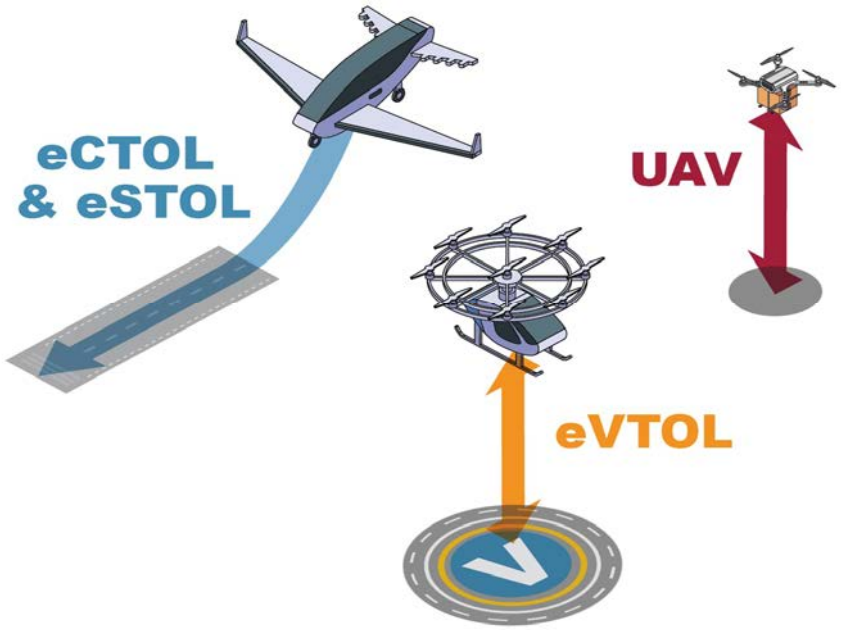
Across UAS, RAM, and UAM, a variety of aircraft types are being developed to meet distinct operational needs. Today, these are typically powered by propulsion systems using batteries to power electric motors. In the future, other more efficient means of powering electric motors, such as hydrogen or other chemical variants, will appear, increasing operational range and flexibility while taking advantage of higher efficiency and lower operating costs. These will include hybrid systems using various fuel types to generate electricity on board and possibly others directly generating electricity using hydrogen fuel cells. The following are the most common vehicle types in the AAM ecosystem.

Uncrewed Aerial Vehicle (UAV): aircraft that operates as part of a UAS, ranging from small, short-range recreational aircraft to large vehicles that can carry thousands of pounds over hundreds of miles.

Electric Vertical Takeoff and Landing (eVTOL) Vehicle: an eVTOL aircraft is capable of vertical takeoffs and/or landings which can be conducted from a small surface such as a helipad instead of a runway.

Electric Conventional Takeoff and Landing (eCTOL) Vehicle: electrically powered aircraft that require runways for takeoff and landing; some can use very short runways and are referred to as electric Short Takeoff and Landing (eSTOL) aircraft.

AAM AIRCRAFT TYPES



Source: AECOM

Current State of AAM

AAM IN 2025

CURRENT STATE	WHAT TO EXPECT
UAS drones are limited to small types that weigh less than 55 pounds and that must operate within the sight of the operator on the ground.	Impending federal approval for larger commercial UAS drones that can fly beyond visual line of sight (BVLOS). These vehicle operations will become more routine in the near-to mid- term.
RAM vehicle development and vehicle conversions are underway.	Initiation of new air service offerings in the mid-term.
Airports are assessing improvements to accommodate new AAM vehicle operations, often as part of a master planning process. UAS-drone detection and restriction efforts are also underway at commercial airports.	Increased airport electrification. Improved segregation of UAS and traditional aircraft activity.
Regulatory environment for AAM is not yet established.	Federal pathways will be clarified.
AAM deployments are entering demonstration phase.	Formation of regional and local collaboratives and partnerships.
Critical gaps in low altitude communications, navigation, surveillance, weather systems, and integrated mobility.	Ecosystem partnerships will begin adding ground infrastructure and services, including UAS Traffic Management (UTM).

Source: AECOM

UAS

UAS is already an existing industry that is progressing rapidly. According to figures from the FAA, as of 2016, there are more registered owners of drones in the United States than any other type of aircraft. In Maryland specifically, there are 2,806 aircraft in contrast to 9,259 drone owners, according to the FAA's main registry.[2]

ExxonMobil, GE, Shell, Dominion Energy, and Maryland state agencies are using UAS for inspection and monitoring. Amazon, Alphabet (Google's parent company), FedEx, UberEats, Walmart, DHL, and others are either actively using or testing UAS for delivery. Apple has used drones to take pictures for Apple Maps, while design and construction firms are using UAS for construction applications like surveying and tracking project progress.

RAM

RAM service can be introduced with limited changes to infrastructure or policy, capitalizing on existing airports to support the integration of new and/or converted aircraft. According to a Georgia Institute of Technology study on RAM in the in the U.S. Northeast Corridor, there may be a demand for approximately 25,000 passengers a day by 2040.[3]

Since RAM has fewer barriers to overcome than UAM, such as the need for new infrastructure or complex policy changes, it is anticipated to emerge sooner. Additionally, since RAM will use existing, often underutilized airports, state facilitation can be more specifically targeted (e.g., assess airport infrastructure and facilitate electric charging). A primary factor influencing the success of the RAM market is the anticipated lower acquisition, maintenance, and fuel costs of the aircraft, which in turn, would make the market launch more feasible. RAM holds the promise of scheduled air service at regional airports throughout the state.

UAM

Significant investments and flight testing is underway for this emerging sector that includes the development of a new classification of aircraft and the systems needed to support urban operations. Some of the forecasts anticipate rapid growth following aircraft certification and service initiation. Overall success of the industry depends on its ability to scale, which would drive costs lower. Before scaling, the industry is expected to evolve through a series of operational thresholds. Introduction of the new services and initial markets are anticipated to launch between 2026 and 2035. Although the full deployment of the UAM ecosystem may take time, initial services using eVTOL and eSTOL aircraft are expected to launch sooner. These aircraft can begin serving existing transportation niches in Maryland, such as short-range passenger flights currently operated by helicopters and small aircraft, while offering lower operating and maintenance costs compared to traditional-powered aircraft. As the UAM

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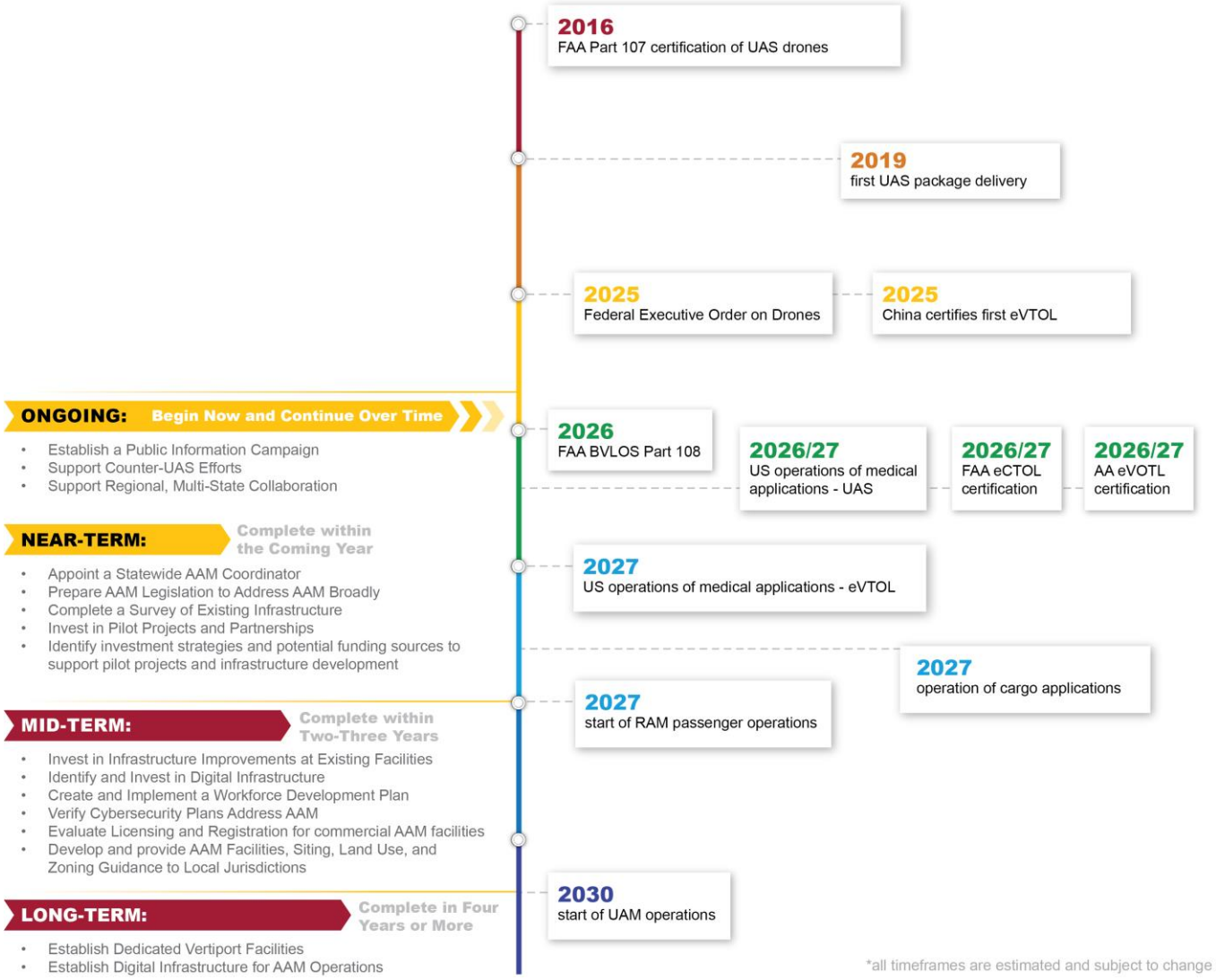
[2] Duncan, I. (2016, May 28). *Small drones in Maryland, nation now outnumber other kinds of aircraft*. The Baltimore Sun. https://www.baltimoresun.com/2016/05/28/small-drones-in-maryland-nation-now-outnumber-other-kinds-of-aircraft/

[3] National Academies of Sciences, Engineering, and Medicine. (2023). *Advancing Aerial Mobility: A National Blueprint*. The National Academies Press. https://nap.nationalacademies.org/read/27326/chapter/4

system builds out, UAM (or mobility) hubs will emerge within the urban core and perhaps more significantly, in the spoke locations around it. In this context, “spoke” refers to secondary sites connected to a central hub in a hub-and-spoke network. These spoke locations may fill a variety of functions such as overnight charging/storage, maintenance and repair, training, ecosystem and vehicle control centers, and more.

While true UAM operations within Maryland may be deferred in the near term as the vehicle manufacturers and FAA continue the certification process, the development of supporting policy frameworks, charging and vertiport infrastructure, and digital ecosystem controls will require significant lead time to create. Establishing the basic framework for service introductions and initiating the partnership and outreach programs as soon as possible will enable Maryland to accommodate the new service offerings when they become available. As seen in the timeline below, different segments of AAM are expected to emerge on varying timelines, with milestones in certification and operational deployment unfolding over the next several years. It is important to consider Maryland’s phased timeline in the context of the broader AAM industry timeline, recognizing that any delays in federal certification could directly impact the state’s implementation schedule.

AAM TIMELINE

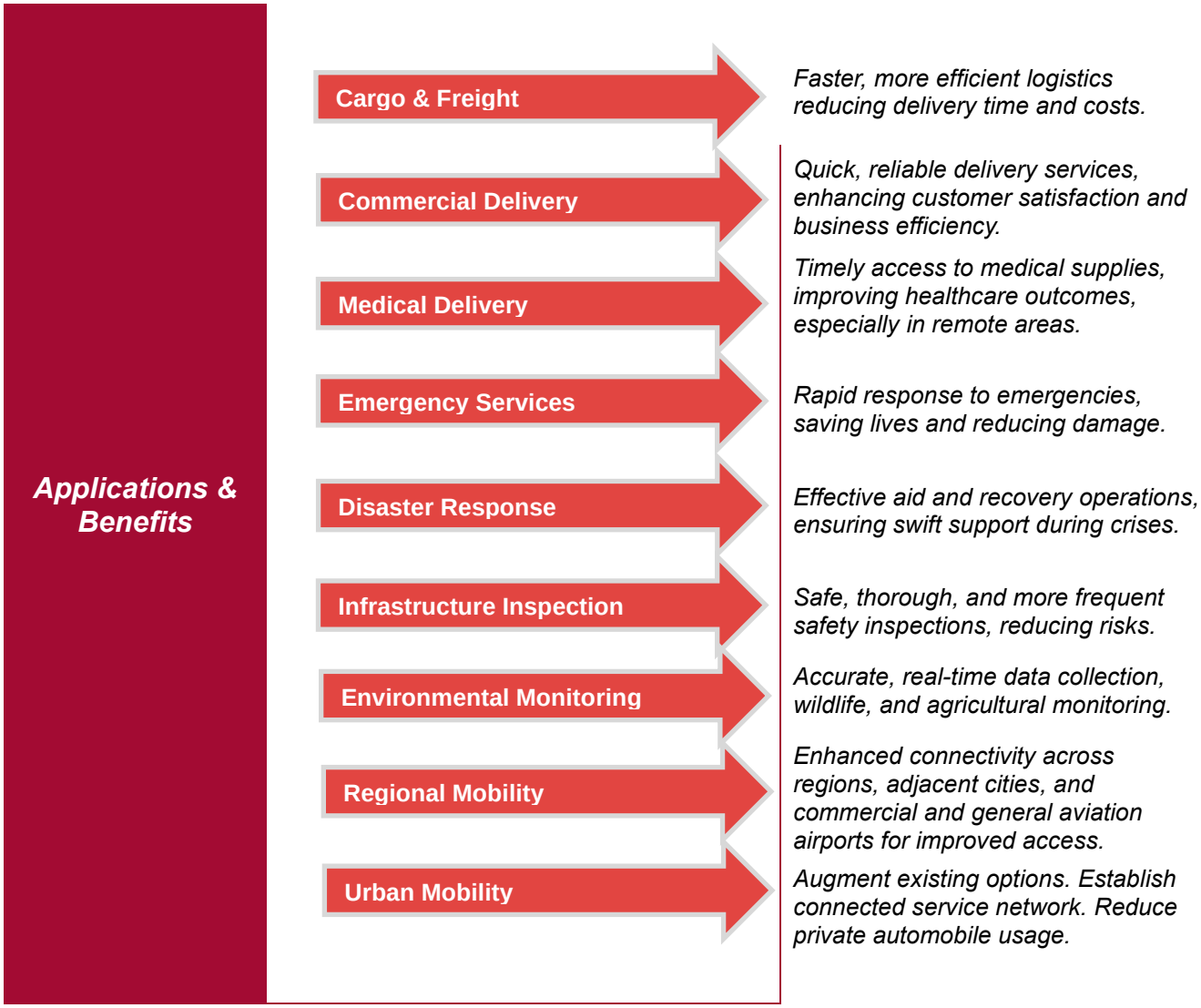


Source: AECOM

Why is AAM Important to Maryland?

The primary purpose of the Governor's Executive Order is to best position Maryland for the potential economic benefits associated with advanced air mobility, to guide development to enhance and protect the quality of life throughout the state, and to support effective and efficient rollout of AAM in Maryland. AAM has the potential to introduce many economic, societal, and environmental advantages to the State. It is important to note that UAS, RAM, and UAM are evolving at different rates, impacting Maryland over different timelines and varying by region. AAM offers Maryland an opportunity to connect communities across the state to essential services and economic activity through faster and more efficient transportation.

AAM APPLICATIONS AND BENEFITS



Integration Impacts:

- ✔ ***Facilitates*** *efficient and safe movement of people and goods.*
- ✔ ***Enhances*** *access to critical services.*
- ✔ ***Supports*** *development, equity, resilience, and sustainability.*
- ✔ ***Integrates*** *with and enhances existing transportation systems.*

Source: AECOM

UAS in Maryland

UAS can strongly enhance the aeromedical industry in Maryland, complementing the current administration's commitment to advancing innovative and equitable healthcare, reflected in the State's participation in the States Advancing All-Payer Health Equity Approaches and Development (AHEAD) Model.[4] As discussed in the Partnerships and Pilot Projects section, UAS can be a key part of the State's priority for ensuring world-class health systems for all Marylanders by providing improvements in medication delivery, medical equipment transport, organ transplant, and more.

In 2019, the University of Maryland Medical Center successfully received the first-ever organ delivered by drone, a donor kidney flown across Baltimore for transplant.[5] This historic achievement not only demonstrated the viability of UAS for critical medical missions but also positioned the University as a national leader in drone-enabled healthcare solutions. Maryland's world-class biomedical industry is a natural partner in these efforts. With continued investment and collaboration, Maryland has the opportunity to pave the way for lifesaving UAS applications across the state and beyond.

The University of Maryland (UMD) UAS Research and Operations Center (UROC) is currently involved in a UAS medical delivery project on Maryland's Eastern Shore as well. UROC additionally functions as a testing site and research facility for UAS.[6] The advancement of UAS for medical purposes will continue to provide opportunities for higher education research institutions to build core programs that benefit both the students and the state as a whole, which is further explained in the Workforce Development Section.

The Montgomery County Police Department operates a Drone as First Responder (DFR) program to provide support 911 or police generated calls. The DFR program is intended to improve response times, create more efficiencies with police resources, and provide real-time

[4] Office of Governor Wes Moore. (2024, November 1). *Governor Moore signs historic agreement to advance innovative and equitable health care, lower health care costs for Marylanders*. State of Maryland. https://governor.maryland.gov/news/press/pages/governor-moore-signs-historic-agreement-to-advance-innovative-and-equitable-health-care-lower-health-care-costs-for-marylan.aspx

[5] University of Maryland Medical Center. (2019, April 26). *UM's Schools of Medicine and Engineering first to use unmanned aircraft to deliver kidney for transplant at UMMC*. https://www.umms.org/ummc/news/2019/pioneering-breakthrough-unmanned-aircraft

[6] University of Maryland MATRIX Lab. (2023). *Taking healthcare higher: Drones deliver medicine in Crisfield*. University of Maryland. https://matrix.umd.edu/news/story/taking-healthcare-higher-drones-deliver-medicine-in-crisfield

information to officers to allow for better decision making.[7] Maryland may expand similar programs statewide, improving emergency response capabilities across regions.

UAS can be instrumental in providing the people of Maryland with a wide variety of goods and services like disaster relief, search and rescue, Emergency Medical Services, agricultural support, educational and technological resources for schools in remote areas, commercial and consumer goods, and environmental monitoring and conservation.

RAM in Maryland

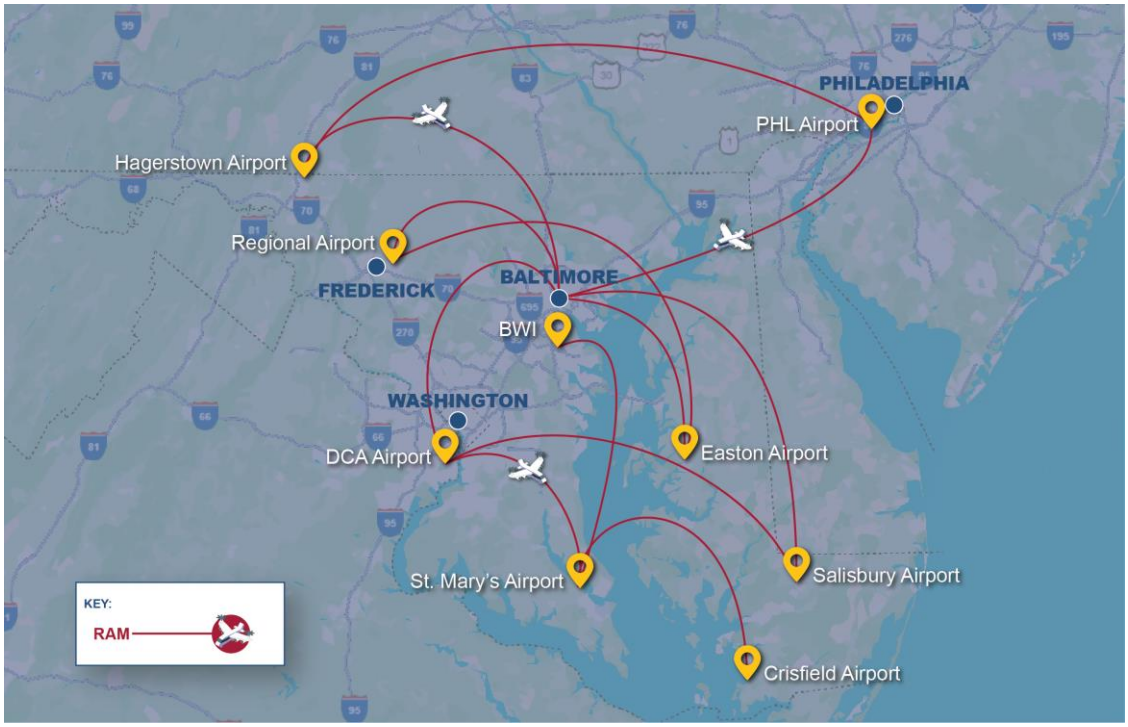
RAM is more easily implemented than UAM since it can more easily leverage existing infrastructure including airports, airspace, and air traffic management systems. The introduction of newly designed electric or electric-hybrid aircraft and conversion of petroleum-powered models are anticipated to significantly lower the cost of short-haul air travel. In recent decades, short-haul air travel was a thriving market which many airports were built to accommodate. However, high costs of operation have largely eliminated these routes. With the potential emergence of electric aircraft with dramatically lower operating costs, this sector could be revived, and the lost airport utilization and regional connectivity in Maryland recaptured. Due to its geography, dependence on bridges, and heavily congested roadway corridors, Maryland is particularly well positioned to present viable business cases for business and leisure travel connecting regional airports using AAM. By leveraging the State's existing network of airports and airfields, RAM can enhance mobility, support economic development through tourism and job creation, and improve access to emergency and public services across all regions in Maryland.

Maryland has a total of 218 airports, with 18 included in the FAA's National Plan of Integrated Airport Systems (NPIAS), a federal program that identifies airports critical to the national air transportation system and makes them eligible for significant federal funding. These 18 airports receive substantial investment for maintenance and improvements, while many of Maryland's other airports receive less funding and remain underutilized. Considering Maryland's numerous underutilized airports and limited roadway capacity in many parts of the state, RAM possesses a strong opportunity to revitalize the interregional commuter market. The map below demonstrates how RAM can improve transportation across Maryland and the

[7] Montgomery County Department of Police. (n.d.). *Drone as First Responder (DFR) Program*. Montgomery County Government. https://www.montgomerycountymd.gov/pol/howdoI/drone-as-first-responder.html

surrounding region by offering faster alternatives to long drives over bridges and through congested traffic corridors.

RAM IN THE REGION



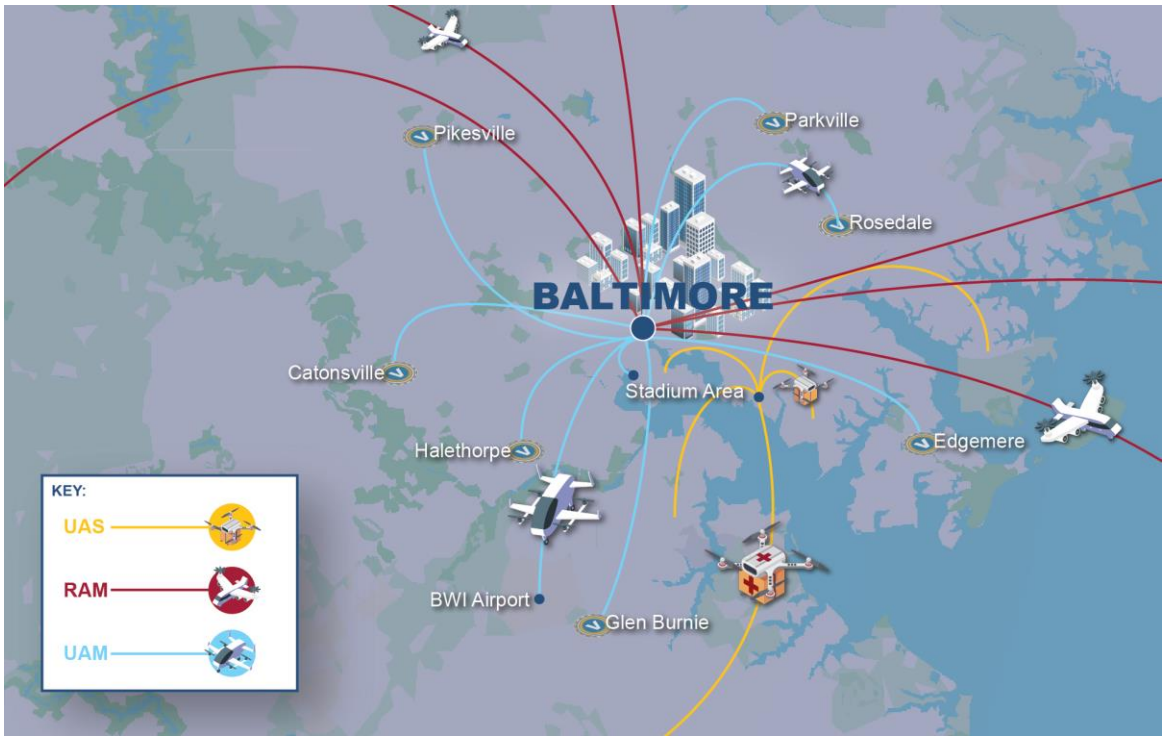
Source: AECOM

UAM in Maryland

UAM can enhance mobility, reduce congestion, and improve access to services in urban areas in Maryland by alleviating traffic; providing first mile/ last mile connections to airports; connecting underserved urban neighborhoods to job centers, hospitals, and educational institutions; supplying rapid medical transport and organ/ blood delivery within cities; supporting emergency response; and circulating scenic/ tourism flights between urban attractions.

The Baltimore commute and intercity travel would be the primary initial focus for implementation of UAM in Maryland, considering the airspace restrictions of Washington D.C. are anticipated to remain in place. The map below illustrates the envisioned integration of AAM in Baltimore, highlighting the opportunity for UAM to enhance intra-city connectivity.

AAM IN BALTIMORE



Source: AECOM

How should Maryland Position for AAM?

The rapid growth of UAS has necessitated many states to develop UAS policies, which many have broadened to include other segments of AAM such as RAM and UAM. Approaches applied by other states may generally be categorized into three broad classifications: proactive, restrictive, and passive. Although the states vary considerably in the AAM components they prioritize and the extent of their recommended actions, there is consensus focusing state efforts on the following areas:

- **Policy and Regulation:** Although the federal government has a preeminent role in establishing policy and regulation that will affect AAM development in Maryland and throughout the United States, the individual states and local government will be at the front lines in providing actions deemed necessary by their residents. Due to the crosscutting nature of implementing AAM, an AAM coordinator with authority to harmonize actions of local jurisdictions, align and direct actions across state agencies, and represent Maryland in multistate organizations will be crucial.
- **Public Informational Campaign**: It will be important to provide accurate and consistent messaging regarding AAM across all levels of government, among members of the public sector, and the general public at large. AAM is a topic that few are deeply familiar

with, yet it is poised to impact communities across the state in significant ways. In 2024, a sudden surge in public awareness around UAV activity in New Jersey and other mid-Atlantic states revealed how a lack of early education can leave space for misinformation and well-intentioned, but misinformed reactions. Many residents may not yet be fully aware of AAM and its advantages, making proactive outreach all the more important. The most effective way to build understanding and trust is through public education. Clear, consistent communication efforts will be vital to ensuring Marylanders feel informed, engaged, and confident in the State's approach to AAM.

- **Workforce Development:** The emergence of AAM technologies will require a new generation of skilled workers with experience in aviation, engineering, cybersecurity, maintenance, operations, network design and administration, and more. Early preparation for workforce development will ensure Maryland has the talent pipeline necessary to support safe and equitable AAM growth.

- **Infrastructure:** The successful integration of AAM into Maryland's transportation ecosystem will require a coordinated, statewide approach to both physical and digital infrastructure. This will include assessing existing infrastructure, alignment of standards including electrification and UAS Traffic Management (UTM), planning for highly secure and resilient wireless digital networks, providing guidance to standardize planning efforts, and collaborating with industry.

- **Partnerships and Pilot Projects:** Maryland should invest in targeted, high-impact pilot projects that both advance the state of the technology and tell the story of the public good these technologies stand to deliver.

The following sections outline a series of recommendations addressing the key efforts mentioned above. Based on a review of national trends, meetings with industry, and Maryland's unique opportunities, the Council has developed these recommendations to most effectively support the safe, equitable, and strategic advancement of AAM across Maryland. Additionally, the Council has conducted a review of other states' AAM preparedness and progress to use as a reference, as seen in the table below, examining if they have:

- **An AAM strategic plan:** a formal roadmap for integrating advanced air mobility into its transportation system, including goals, timelines, and policy frameworks

- **A UAS strategic plan:** planning for UAS, which often serves as a precursor to broader AAM integration

- **A planned Original Equipment Manufacturer (OEM) launch:** actively working with aircraft manufacturers to host initial operations, positioning itself as an early adopter and testbed for AAM technologies

- **Installed at least one electric charger compatible with AAM vehicles:** provides universal charging infrastructure compatible with many electric aircraft and ground vehicles, supporting scalable and flexible deployment across multimodal networks
- **Vertiports currently in design:** physical infrastructure designed and dedicated to support eVTOL operations
- **Joined the Multi-State Collaborative:** a forum convened with support from the National Association of State Aviation Officials (NASAO), enabling state aviation agencies to discuss policies and infrastructure needed to support AAM operations, with expert contributions from stakeholders across the industry[8]
- **Executive Orders or legislation related to AAM:** demonstrates regulatory support for AAM development, helping to streamline implementation and attract industry investment
- **An AAM Committee and/or statewide coordinator:** a dedicated individual or body to steer AAM planning, stakeholder engagement, and policy development
- **Active AAM-related manufacturing**: companies involved in producing AAM components or vehicles are operating within the state

[8] National Association of State Aviation Officials. (n.d.). *Advanced Air Mobility Multistate Collaborative*. Retrieved from https://nasao.org/page/advanced-air-mobility-multistate-collaborative

COMPARISON OF STATE AAM PREPAREDNESS

	UAS Strategic Plan	AAM Strategic Plan	Planned OEM launch	Electric charger	Vertiports in design	Members of Multi state	EO/Law	Committee	Manufacturing
Georgia	●	●	●	●		●	●	●	●
Utah	●	●	●		●	●	●	●	
North Carolina	●	●		●		●	●	●	
Florida	●	●	●	●	●	●	●	●	
New York	●		●	●	●	●	●	●	
California	●	●	●	●	●	●	●	●	●
New Jersey	●	●		●	●	●			
Maryland				●		●	●	●	
Oklahoma	●	●				●	●	●	
Texas	●	●	●	●	●	●	●	●	
Massachusetts	●			●		●	●	●	
Louisiana	●			●		●	●	●	
Virginia	●	●		●		●	●	●	●
Minnesota	●	●				●		●	
North Dakota	●						●		
Alabama	●			●		●	●	●	
Colorado	●						●	●	
Illinois		●				●	●	●	
Michigan	●	●		●		●	●		
Washington						●	●	●	
Arizona							●	●	
Arkansas	●	●		●			●		
Connecticut				●			●		
Alaska	●					●	●		
Nevada	●						●		
New Hampshire				●		●	●		
Ohio	●	●	●	●	●	●	●	●	●
Pennsylvania		●		●		●	●		
South Carolina				●				●	
Vermont				●			●		●
West Virginia				●		●	●		

While Maryland has made notable progress in several areas such as installing an electric charger, joining the Multi-State Collaborative, enacting executive orders and legislation, and establishing an AAM Committee (the Council), this table also highlights opportunities for further advancement. Compared to other states, Maryland has yet to develop a formal strategic plan, initiate a planned OEM launch, begin vertiport design, or host AAM-related manufacturing. These gaps present a clear path for continued growth and leadership in AAM readiness.

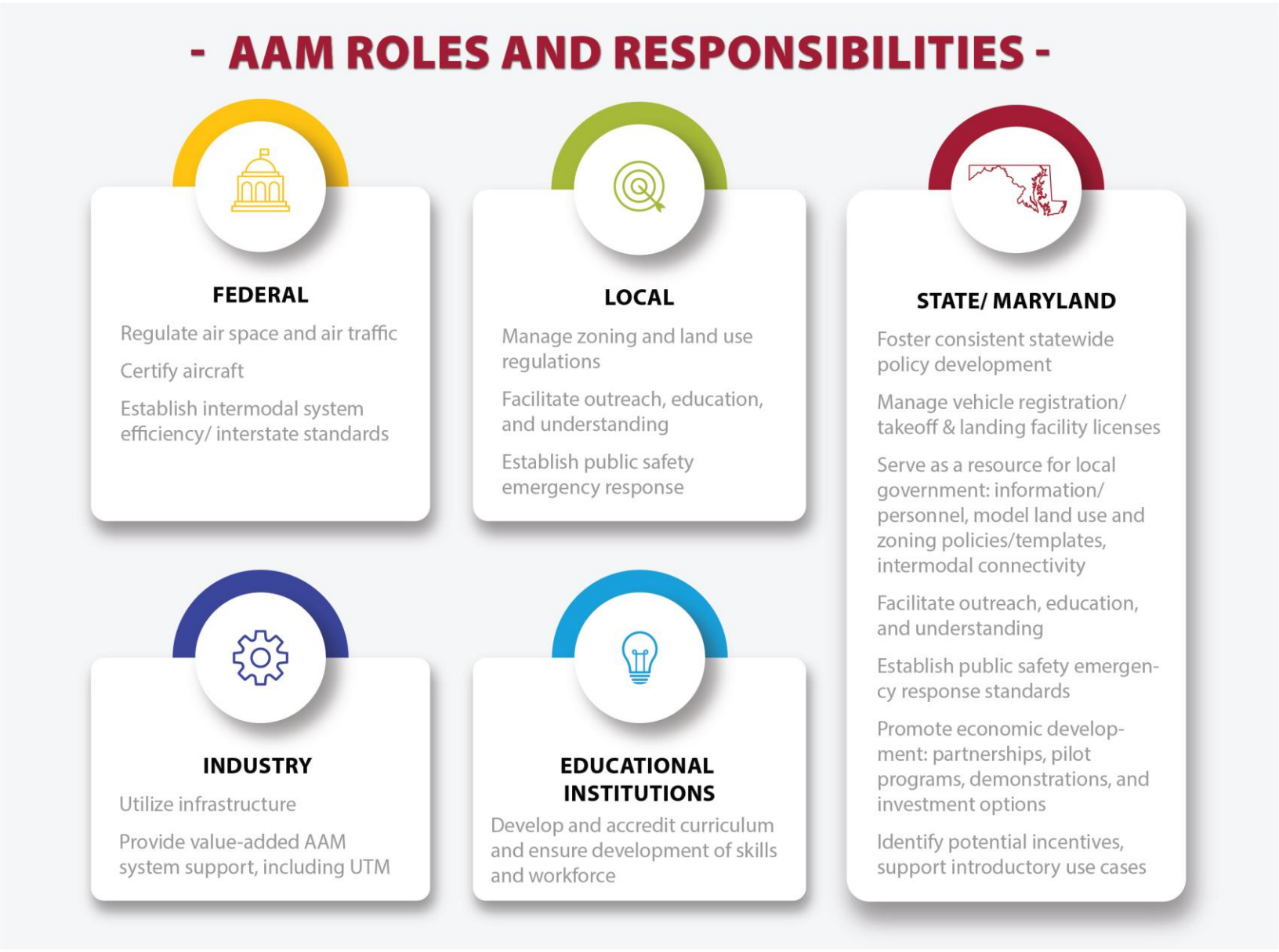
3 Government Roles and Responsibilities

The Council recognizes the preeminent role of the FAA in regulating, controlling, and operating the National Airspace System (NAS) and in promulgating regulations pertaining to the safety and certification of aircraft, equipment, and personnel. Both the FAA and NASA have prepared and continue to evolve framework-type plans for implementing AAM within the United States. At the national level, an Executive Order has been issued to "accelerate the safe commercialization" of AAM technologies.[9] The FAA Reauthorization Act of 2024 reinforces this direction by including provisions that prioritize advanced propulsion systems, electric aircraft integration, and sustainable energy strategies for AAM. This section attempts to clarify and harmonize the roles and responsibilities for developing AAM within Maryland. The Council recognizes that the State's near-term efforts to establish enabling guidelines may include matters that are subsequently addressed, clarified, or resolved at the national level or through local approval processes.

The information included in this section was compiled through a review of currently available federal guidance, similar AAM-readiness reports prepared by other states, and a review of Maryland regulatory policy. These roles and responsibilities are documented here to provide a reasonable reference for establishing framework policy guidance. Some evolution can be expected to occur within the roles and responsibilities as industry and government organizations adapt policy to the realities of AAM during implementation.

[9] The White House. (2025, June 6). *Unleashing American drone dominance*. Presidential Actions. https://www.whitehouse.gov/presidential-actions/2025/06/unleashing-american-drone-dominance/

AAM ROLES AND RESPONSIBILITIES



Source: AECOM

4 Near- Term Recommendations: Complete within the Coming Year

Appoint a Statewide AAM Coordinator

Action: Appoint a statewide AAM coordinator as Maryland's ombudsman on all related matters. **Benefit:** Establishing a single responsible party will focus efforts, speed implementation, and align efforts across state agencies.

To ensure continuity and leadership beyond the Council's charter, Maryland should appoint a statewide AAM coordinator. To maximize alignment across transportation innovation domains, Maryland should consider positioning the AAM Coordinator within the Secretary's Office at the Maryland Department of Transportation (MDOT) as part of a broader emerging transportation technology function. This role would not only oversee AAM but also coordinate across automation, electrification, alternative fuels, digital infrastructure, and cybersecurity initiatives that intersect aviation, surface, and maritime modes. This individual would serve as the central authority on all AAM-related matters, with the ability to align efforts across state agencies, represent Maryland in multi-state collaboratives, and serve as a liaison between public and private partners. Additional responsibilities may include engagement with Maryland's higher education institutions and technical training programs, monitoring market trends and building relationships with industry, and informing capital planning decisions to support sector growth. The coordinator would also oversee the implementation of the recommendations and serve as a point of contact for all stakeholders. In doing so, this role will collaborate closely with the Working Groups established by the Council, leveraging their expertise and input to guide priorities and refine strategies. The coordinator should also lead the formation of an Interagency Working Group (IWG) as a natural extension of the Council's work. This group will institutionalize the collaborative approach initiated by the Council, ensuring that recommendations transition into actionable steps.

The coordinator would also oversee the implementation of the Council's phased roadmap, guide regulatory development, and support local jurisdictions with planning and zoning guidance. Given the cross-cutting nature of AAM, impacting transportation, public safety, economic development, and environmental policy, a centralized figure with broad authority is critical to harmonize actions and ensure Maryland remains competitive. The coordinator should be positioned to lead not just facility siting and land use efforts, but all statewide AAM matters, including infrastructure planning, workforce development, and public engagement.

For more details on the coordinator's role and intergovernmental responsibilities, see **Section 3:** Government Roles and Responsibilities.

Prepare AAM Legislation

Action: Prepare legislation for introduction during the 2027 legislative session to address AAM broadly, including small Uncrewed Aerial Systems (UAS), large UAS, and crewed electric aircraft. **Benefit:** Creating a comprehensive legislative framework for AAM in Maryland to update Senate Bill 370 (SB 370), a decade-old law that is specifically focused on drones only.

To equip the State with a modern and comprehensive legal framework for AAM, the Council recommends preparing legislation for introduction during the 2027 legislative session. This legislation should address the full spectrum of AAM technologies, including small and large UAS, RAM, and crewed electric aircraft used in UAM. The goal is to create a forward-looking framework that supports innovation while ensuring public safety, privacy, and regulatory clarity.

This effort should include an update to SB 370, Maryland's existing drone law enacted a decade ago. While SB 370 was a pioneering step at the time, it is now outdated and narrowly focused on UAS. It references entities that no longer exist and does not account for the broader range of AAM technologies now emerging. A revised or new law should incorporate standardized definitions, address liability and registration, and align with national model legislation such as Association for Uncrewed Vehicle Systems International's (AUVSI) "Drone Prepared" and "AAM Prepared" frameworks. Doing so will help Maryland harmonize its policies with other states and position itself as a leader in AAM readiness.

For more details on legal frameworks, liability, and model legislation, see **Appendix A:** Policy Approach and Alignment.

Complete a Survey of Existing Infrastructure

Action: Complete a comprehensive survey/inventory of existing physical and digital infrastructure that can be leveraged by AAM operators. **Benefit:** Identifying assets that already exist and can be used as-is or modified for private, public, or shared use to help attract AAM users.

To support the integration of AAM across Maryland, the Council recommends completing a comprehensive survey and inventory of existing physical and digital infrastructure. This effort will identify assets that can be leveraged as-is or adapted for private, public, or shared use. By cataloging facilities such as airports, heliports, networks, charging stations, and public safety infrastructure, Maryland can accelerate deployment timelines and reduce costs by utilizing what already exists.

This inventory will also help pinpoint gaps in readiness and inform future investment decisions. For example, underutilized general aviation airports may be ideal candidates for Regional Air Mobility RAM operations, while existing heliports could be repurposed as vertiports for UAM. Similarly, broadband and telecommunications infrastructure can be assessed for its ability to

support low-altitude operations and automated systems. The survey should include both public and private assets and consider geographic equity to ensure statewide benefit.

For more details on infrastructure readiness and planning, see **Appendix D**: Infrastructure.

Invest in Pilot Projects and Partnerships

Action: Invest in pilot projects and partnerships with high impact and visibility, including opportunities that will build on the State's world-class emergency medical system, bolster the Maryland Military Department's case to retain a flying mission in the state, and directly support existing Maryland businesses through AAM. **Benefit:** Beginning limited-scale implementation of AAM use cases will show benefits to Marylanders and build support for it.

To build public trust and demonstrate the real-world value of AAM, Maryland should invest in pilot projects and strategic partnerships that showcase high-impact use cases. These projects serve as tangible demonstrations of AAM's potential to improve public health, safety, and mobility. Early pilot projects should focus on applications that resonate with Marylanders such as aeromedical transport, emergency response, and delivery of medical supplies, where benefits are immediate and visible. These efforts will help build public support, attract industry interest, and position Maryland as a national leader in AAM innovation.

Pilot projects also provide a controlled environment to test new technologies, identify operational gaps, and refine regulatory and infrastructure approaches. Existing partnerships with institutions like the University of Maryland Medical Center, Maryland Shock Trauma Center, and the Maryland Military Department (comprising the Maryland Air National Guard, Maryland Army National Guard, and Maryland Defense Force) offer a strong foundation for aeromedical pilots. These organizations have already demonstrated leadership in drone-enabled healthcare, including the first-ever drone delivery of a donor organ for transplant. By expanding these efforts, Maryland can continue to lead in lifesaving AAM applications while building momentum for broader deployment.

For more details on pilot programs, public-private partnerships, and aeromedical use cases, see **Appendix E:** Partnerships and Pilot Projects. For specific details on opportunity for partnerships with the Maryland Military Department, see **Appendix G.**

Identify Investment Strategies and Potential Funding Sources

Action: Identify investment strategies and potential funding sources to support pilot projects and infrastructure development. **Benefit:** Advance AAM development in Maryland through sustainable funding strategies that ensure long-term viability.

To enable the successful deployment of AAM technologies across Maryland, it is necessary to identify and pursue diverse investment strategies and funding sources. Pilot projects and infrastructure development will require capital, and while exact costs are still being assessed,

early investment is critical to drive progress. Funding is expected to come from a mix of public and private sources, including federal grants, state and local support, and third-party private investors. The State should explore public-private partnerships (P3s) and multi-partner collaboratives to share risk and maximize return on investment. These efforts will help ensure that Maryland's AAM initiatives are financially sustainable and positioned for long-term success.

For more details on investment strategies and funding sources, see **Appendix E:** Partnerships and Pilot Projects.

5 Mid-Term Recommendations: Complete within Two-Three Years

Invest in Infrastructure Improvements at Existing Facilities

Action: Invest in selected infrastructure improvements at existing aviation facilities. **Benefit:** This will be a strong signal to AAM manufacturers, maintenance, repair, and overhaul (MRO) providers, and training programs that Maryland is AAM-ready.

To prepare all regions of Maryland for the arrival of AAM, the Council recommends targeted investment in infrastructure improvements at existing aviation facilities. Maryland's network of general aviation and small commercial airports offers a strong foundation for AAM deployment, particularly for RAM operations. Many of these facilities are underutilized but possess core infrastructure such as runways, lighting, navigation aids, and ground access that can support electric aircraft with minimal upgrades. Investment in these sites can accelerate deployment timelines and reduce costs while expanding access to underserved areas.

Infrastructure improvements should focus on electrification, charging station installation, and enhancements to passenger amenities and safety systems. These upgrades will enable airports to support new aircraft types, such as eVTOL and new services such as passenger and cargo. Additionally, improvements should consider multimodal integration, ensuring that AAM facilities connect seamlessly with ground transportation networks. By investing in existing assets, Maryland can maximize return on investment, support equitable access to AAM services, and stimulate economic development in both urban and rural communities.

For more details on infrastructure planning and airport readiness, see **Appendix D:** Infrastructure.

Identify and Invest in Digital Infrastructure

Action: Identify and invest in the digital infrastructure required to support robust public service uses for AAM including in law enforcement, joint military/ civilian emergency response, and public health and safety. **Benefit:** Will set the stage for at-scale public and commercial implementation of long-range UAS and manned Regional Air Mobility (RAM) and Urban Air Mobility (UAM) air systems.

To support robust public service applications of AAM, Maryland must identify and invest in the digital infrastructure necessary for safe, scalable operations. This includes systems for communications, navigation, surveillance (CNS), automation, and UTM, which are essential for law enforcement, emergency response, and public health missions. Unlike traditional aviation systems, AAM technologies operate at low altitudes and often rely on automated or remotely piloted aircraft, requiring new digital capabilities that are resilient, secure, and interoperable.

Maryland should prioritize early-stage investments that enable safe, limited-scale AAM operations. This includes upgrading broadband connectivity, deploying initial remote towers at select regional airports, and integrating basic weather and emergency response systems. These steps will support pilot projects like aeromedical transport and emergency response while validating interoperability and resilience requirements. Early implementation will position Maryland to attract OEM partnerships and federal funding for advanced mobility initiatives. By investing early, Maryland can ensure that its digital ecosystem is ready to support both public and commercial AAM operations at scale.

For more details on digital infrastructure needs and planning, see **Appendix D:** Infrastructure.

Create and Implement a Workforce Development Plan

Action: Create and implement a workforce development plan focused on the opportunities to be created by the advent of AAM technologies in Maryland. **Benefit:** Establishing K-12, vocational, and higher education curricula and programs in a timely fashion to ensure Marylanders are ready for AAM jobs will provide a competitive advantage for the State and maximize the creation of well-paying AAM jobs.

To ensure Marylanders are prepared to take on the jobs created by the growth of AAM, the Council recommends creating and implementing a workforce development plan. This plan should focus on identifying the core competencies and skill sets required for careers in AAM, including aviation operations, cybersecurity, engineering, maintenance, and network administration. By aligning educational programs with industry needs, Maryland can build a talent pipeline that supports safe, equitable, and scalable AAM deployment.

The plan should include the development of timely curricula and training programs across K–12, community colleges, universities, and technical schools. It should also incorporate stackable credentials, credit for prior learning, and flexible entry and exit points to support both

traditional students and adult learners seeking career transitions. Partnerships with industry will be essential to create internships, apprenticeships, and real-world training opportunities that reflect evolving employer expectations. Maryland's strong educational infrastructure and proximity to federal agencies like NASA and the FAA position it well to lead in AAM workforce development.

For more details on curriculum design, training pathways, and existing workforce assets, see **Appendix C:** Workforce Development.

Verify Cybersecurity Plans Address AAM

Action: Verify state cybersecurity plans address any vulnerabilities related to AAM. **Benefit:** Builds on the State's civilian and military cybersecurity leadership and minimizes cyber vulnerabilities.

As Maryland prepares for the integration of AAM, it must proactively address the cybersecurity risks associated with new aviation technologies. AAM systems, particularly those involving autonomous or remotely piloted aircraft, will rely heavily on digital infrastructure, data exchange, and networked operations. These systems introduce new vulnerabilities that could be exploited by malicious actors, potentially compromising public safety, privacy, and operational integrity. Ensuring that Maryland's cybersecurity frameworks are updated to reflect these risks is essential for safe and resilient AAM deployment.

The Council recommends that Maryland review and revise its existing cybersecurity policies to account for the unique challenges posed by AAM. This includes assessing the security of communications, navigation, and surveillance systems; ensuring data protection for public service applications; and coordinating with federal agencies on counter-UAS strategies. As AAM technologies evolve, so too must the State's ability to detect, prevent, and respond to cyber threats.

For more details on cybersecurity considerations and federal coordination, see **Appendix A:** Policy Approach and Alignment.

Evaluate Licensing and Registration for Commercial AAM Facilities

Action: Evaluate licensing and registration for commercial AAM facilities within the state. **Benefit:** Will provide consistency and predictability to attract the AAM industry, address liability concerns, and create a potential revenue stream for the State.

To establish safe, accountable, and scalable AAM operations in Maryland, the Council recommends evaluating its licensing and registration framework for commercial AAM activities. This framework should address the unique characteristics of AAM technologies, including small and large UAS, eVTOL aircraft, and other emerging platforms. By proactively defining

licensing requirements, Maryland can reduce regulatory uncertainty, support operator compliance, and create a foundation for future growth.

This framework should also include mechanisms for liability coverage, operational oversight, and potential revenue generation. For example, registration fees for commercial UAS, already implemented in states like Utah, could help fund aviation programs and infrastructure improvements. Maryland should also clarify and update the Code of Maryland Regulations (COMAR) to reflect AAM-specific definitions and requirements, ensuring consistency across jurisdictions. Aligning with national model legislation, such as AUVSI's "AAM Prepared" campaign, will help Maryland maintain interoperability with federal standards and other states.

For more detail on regulatory models, COMAR updates, and national best practices, see **Appendix A:** Policy Approach and Alignment.

Develop and Provide AAM Facilities, Siting, Land Use, and Zoning Guidance to Local Jurisdictions

Action: Develop and provide guidance to local jurisdictions governing AAM facilities and their siting, land use, zoning, and other concerns. **Benefit:** Ensuring harmonization of policies across the state will ensure a consistent regulatory landscape for AAM operators whose flight operations will span multiple jurisdictions.

To encourage consistent and efficient integration of AAM across Maryland, the Council recommends developing and providing clear guidance to local jurisdictions on facility siting, land use, zoning, and the subsequent permitting process. Maryland's home rule framework grants counties significant autonomy over local land use decisions, which can lead to fragmented or conflicting approaches to AAM development. Without statewide coordination, this could result in inefficiencies, increased costs, and missed opportunities for regional connectivity and economic growth.

The Council recommends compiling best practices and publishing model ordinances and planning templates that local governments can adopt or adapt. These resources should be informed by national standards and tailored to Maryland's unique regulatory and geographic context. Additionally, a permitting flowchart should be developed to help jurisdictions navigate approval steps for AAM facilities, ensuring transparency and predictability for operators. The State should also establish a centralized clearinghouse for AAM-related activities, reports, and plans to foster inter-jurisdictional coordination. The statewide AAM coordinator will play a key role in supporting local jurisdictions, facilitating data sharing, and ensuring alignment with broader state goals. By harmonizing policies and providing technical assistance, Maryland can create a predictable and attractive environment for AAM investment and operations.

For more details on land use, zoning, and statewide coordination strategies, see **Appendix A:** Policy Approach and Alignment.

6 Long-Term Recommendations: Complete in Four Years or More

Establish Dedicated Vertiport Facilities

Action: Establish dedicated vertiport facilities at existing airports and other locations serving the public interest. **Benefit:** Will maximize opportunities for public safety, aeromedical, and commercial transportation operations.

To support the long-term scalability of UAM and RAM, Maryland should invest in the development of dedicated vertiport facilities. These facilities will serve as critical infrastructure for eVTOL aircraft, enabling safe, efficient, and high-frequency operations. Maryland's existing network of airports and heliports offers a strong foundation for vertiport development, particularly in urban centers and underserved regions. Repurposing existing heliports, especially those near hospitals, transit hubs, and business districts, can provide a cost-effective path to early deployment while ensuring alignment with public service goals.

Vertiport planning should prioritize scalability, multimodal integration, and geographic equity. Facilities should be designed to accommodate future growth, including passenger amenities, charging infrastructure, and maintenance capabilities. Maryland should also coordinate with local jurisdictions to harmonize land use, zoning, and permitting processes, ensuring consistent standards across the state. These efforts will help attract industry investment, support emergency response and aeromedical missions, and expand access to AAM services statewide.

For more details on vertiport siting, design, and integration, see **Appendix D**: Infrastructure.

Establish Digital Infrastructure for AAM Operations

Action: Establish the digital infrastructure required to support robust public service and commercial uses for AAM. **Benefit:** Will ensure that both public safety and private sector AAM operations can operate to their full potential.

Maryland must transition from pilot-scale systems to statewide, fully integrated infrastructure, building a resilient digital ecosystem to support the scalable deployment of AAM technologies. As mentioned above, this includes infrastructure for communications, CNS, automation capabilities, and UTM, which are essential for both public service missions and commercial operations.

Investments should focus on broadband expansion, remote tower networks, real-time weather monitoring, and integration of statewide emergency response systems. These capabilities will enable coordinated applications in aeromedical transport, disaster relief, and regional logistics. Maryland should also collaborate with industry and federal partners to ensure alignment with

national standards. Establishing this infrastructure will position the State as a leader in AAM readiness and unlock new opportunities for connectivity, safety, and economic development.

For more details on digital infrastructure planning and implementation, see **Appendix D**: Infrastructure.

7 Ongoing: Begin Now and Continue Over Time

Establish a Public Information Campaign

Action: Establish a public information campaign to inform and educate the general public, policymakers, and legislators about AAM and its benefits to Marylanders while assuring them the State is taking steps to protect the public's interest in privacy and safety. **Benefit:** Educating citizens on the benefits of AAM and demonstrating the State's protection of vital public interests such as safety and privacy are critical components of AAM adoption.

Public understanding and trust are essential to the successful roll-out of AAM technologies. Maryland should launch a statewide public information campaign that proactively educates residents, policymakers, and stakeholders about the benefits of AAM, while addressing concerns related to safety, privacy, and equity. This campaign should include clear messaging, hands-on engagement opportunities, and storytelling through pilot projects, especially those with visible public benefits like aeromedical transport and emergency response.

The campaign should be designed to reach diverse audiences across urban, suburban, and rural communities, and include tailored outreach to local governments and legislators. Additionally, integrating AAM into Science, Technology, Engineering, and Math (STEM) education may serve as a catalyst for long-term public engagement. Classroom visits, hands-on activities, and partnerships with Maryland schools and universities may spark excitement among children and young adults. These students may become enthusiastic messengers, sharing what they've learned with their families and communities and helping to organically expand public awareness and support for AAM initiatives. Maryland can also rely on lessons learned from other state and local initiatives to shape its outreach strategy and ensure broad public support. A dedicated working group should be formed to oversee implementation and coordinate messaging across agencies.

For more details on campaign design, engagement methods, and best practices, see **Appendix B**: Public Informational Campaign.

Support Counter-UAS Efforts

Action: Support efforts at the federal level to empower state authorities to play a role in detection and mitigation of threats posed by potential bad actors using UAS. **Benefit:** Enabling state and local authorities, including law enforcement, to play a vital role in counter-UAS planning and implementation.

As AAM technologies become more widespread, Maryland must advocate for expanded state authority to detect and mitigate threats posed by malicious or careless UAS operations. Current federal law restricts the use of counter-UAS technologies to a limited set of federal agencies, leaving state and local governments with few tools to respond to emerging threats. This gap in authority poses risks to public safety, particularly in high-density areas and critical infrastructure zones.

Maryland should support federal legislation that enables state and local agencies to deploy counter-UAS systems under appropriate oversight, balancing aviation safety with the need for responsive public protection. These systems are increasingly sophisticated and capable of identifying and mitigating threats, but without broader access, law enforcement and emergency responders remain limited in their ability to act. Interagency collaboration, including federal, state, airport authorities, and Maryland Military Department units, should be prioritized to develop counter-UAS initiatives that safeguard critical infrastructure, airports, and populated areas from unauthorized or malicious drone activity. By joining other states in calling for reform, Maryland can help shape a regulatory environment that protects its residents while enabling responsible AAM growth.

For more details on cybersecurity and public safety concerns, see **Appendix A**: Policy Approach and Alignment.

Support Regional, Multi-State Collaboration

Action: Support regional, multi-state efforts to leverage AAM technologies for the benefit of the citizens and corporations of Maryland. **Benefit:** Will foster multi-state collaboration required for early AAM implementation efforts, directly benefiting Maryland.

Maryland should actively participate in regional collaboration to accelerate AAM integration and maximize public benefit. These efforts allow states to pool resources, align infrastructure planning, and develop consistent regulatory frameworks across shared transportation corridors. Maryland's membership in the NASAO Multi-State Collaborative provides a strong foundation for this work, offering access to expert insights and joint planning opportunities.

Regional partnerships can also support grant applications, pilot programs, and workforce development initiatives that span state lines, helping Maryland attract investment and expand its influence in shaping AAM policy. By working with neighboring states such as Pennsylvania, Virginia, and West Virginia, Maryland can ensure that its residents and businesses benefit from

coordinated, cross-border mobility solutions while contributing to a broader regional strategy for advanced aviation technologies.

For more details on regional partnerships and pilot programs, see **Appendix E**: Partnerships and Pilot Projects.

8 Conclusion

Maryland stands at the threshold of a transformative era in transportation. AAM offers the potential to revolutionize how people, goods, and services move across the state, enhancing connectivity, improving public health and safety, and driving economic growth. Through the work of the Council, this report has outlined a comprehensive framework for preparing the state to embrace AAM technologies in a safe, equitable, and forward-thinking manner.

By leveraging Maryland's existing assets, its robust network of airports, strong educational institutions, proximity to federal agencies, and leadership in healthcare and emergency response, the state is uniquely positioned to lead in AAM innovation. The recommendations presented in this report emphasize a phased approach that balances industry potential with public safety, privacy, and comfort. Key strategies include launching pilot projects, investing in workforce development, modernizing infrastructure, and engaging the public through targeted education campaigns.

As AAM technologies continue to evolve, Maryland must remain collaborative and proactive. Continued coordination across government, industry, academia, and communities will be essential to ensure that AAM deployment reflects the values and needs of all Marylanders. With thoughtful planning, Maryland can become a national model for AAM readiness, delivering tangible benefits to its residents while shaping the future of aviation.

Appendices

Appendix A: Policy Approach and Alignment

The Council recommends adopting a policy approach that positions Maryland as a welcoming and supportive environment for introducing AAM technologies, services, and enhancements. To do so, the Council has determined the need for a harmonized statewide and intra-jurisdictional approach, providing a clear and consistent path for successfully introducing AAM services within the state. A rewrite of existing legislation originally enacted ten years ago, when UAS technology was beginning to proliferate, is due and should incorporate guidance for additional emerging electric air vehicles. The AAM Prepared and Drone Prepared model legislation created by AUVSI provides a recommended starting point.[10,11]

The Council understands that while the federal government plays a critical role in the certification process prior to the launch of introductory AAM services, securing those services is a market-driven function executed at the state, regional, and local levels. To that end, this section introduces potential policies that may make Maryland more attractive to AAM providers, and ideally, will be adopted jurisdictionally across the state.

> … this section introduces potential policies that may make Maryland more attractive to AAM providers, and ideally, will be adopted jurisdictionally across the state.

Public Safety, Privacy, Security, and Cybersecurity

This subsection identifies several key areas of anticipated concern by Marylanders related to the introduction of new AAM vehicles, services, and components. The identification and monitoring of safety, privacy, and security concerns as well as the relevant actions taken to

[10] Association for Uncrewed Vehicle Systems International. *Drone Prepared*. Retrieved from https://www.auvsi.net/droneprepared/home

[11] Association for Uncrewed Vehicle Systems International. *AAM Prepared: Model Legislation for State and Local Policymakers*. Retrieved from https://www.auvsi.org/advocacy/advocacy-initiatives/aam-prepared/aam-policymaking

address them should be managed and communicated for transparency even where federal regulatory policy either preempts or functions as the primary policy.

Federal (FAA) Role: A core function of the FAA is ensuring aviation safety. The safety-related oversight roles embedded within the FAA are numerous: aircraft, personnel, and system certification/licensure; development of performance-based minimum standards and tolerances; operational procedures; data management and dissemination; record-keeping requirements; process and inspection protocols; and more. While Maryland may not have a substantial role developing these core functions of the FAA, the State will play a critical role communicating the FAA's regulations and approaches to the public and will execute all safety-related features established within the state.

Maryland's Authority to Regulate: As mentioned above, although Maryland is not prohibited from passing aviation regulations, it recognizes and supports FAA primacy and has refrained from adopting duplicative or conflicting policies. For the case of AAM, federal policy has not yet been established. FAA publications acknowledge that state and local governments retain a role in regulating UAS, provided their regulations do not conflict with federal aviation rules.[12] Other states have passed legislation regulating AAM operations, and Maryland can look to these efforts as a guide when shaping its own policy framework. States like Ohio and Virginia have implemented UAS laws that strike a balance between fostering innovation and ensuring public safety, providing useful examples for Maryland as it considers its own regulatory framework. For a more detailed legal analysis, see **Appendix H**, which includes a memorandum from the Maryland Attorney General's Office addressing this issue.

[12] Federal Aviation Administration. (2016, June 28). *Operation and certification of small, unmanned aircraft systems*, 81 Fed. Reg. 42064–42194.

Public Health and Welfare: State and local governments have a responsibility to provide for the health and welfare of the general public within their respective jurisdictions. This responsibility includes not only general preparedness, but also the authority to implement policies that promote public welfare, so long as those policies do not conflict with federal aviation regulations. In the context of AAM, this may include establishing standards for land use, noise, emergency response, environmental protection, and community engagement. As federal policy continues to evolve, Maryland has an opportunity to shape a proactive and complementary regulatory framework that supports innovation while safeguarding public interests.

There is a threat to public safety posed by the misuse of AAM technologies, particularly drones, for conduct that is careless or even malicious in nature. State and local agencies have little or no authority under existing federal law to actively counter this type of threat. The state of Maryland should encourage its congressional delegation to push for federal action that balances the interests of aviation safety with other public safety risks posed by the misuse of aviation technology. Current federal restrictions on counter-UAS measures are so stringent that, while they protect legitimate aviation users, they also leave law enforcement unable to intervene—allowing bad actors nearly unrestricted access to U.S. airspace. Current counter-UAS technologies are available, and while they aren't able to solve every threat, they can identify and mitigate many of them. Counter-UAS systems will be indispensable for maintaining airspace security as UAS operations expand, but if they are only available to a small cadre of federal law enforcement, the public will be put at greater and greater risk.

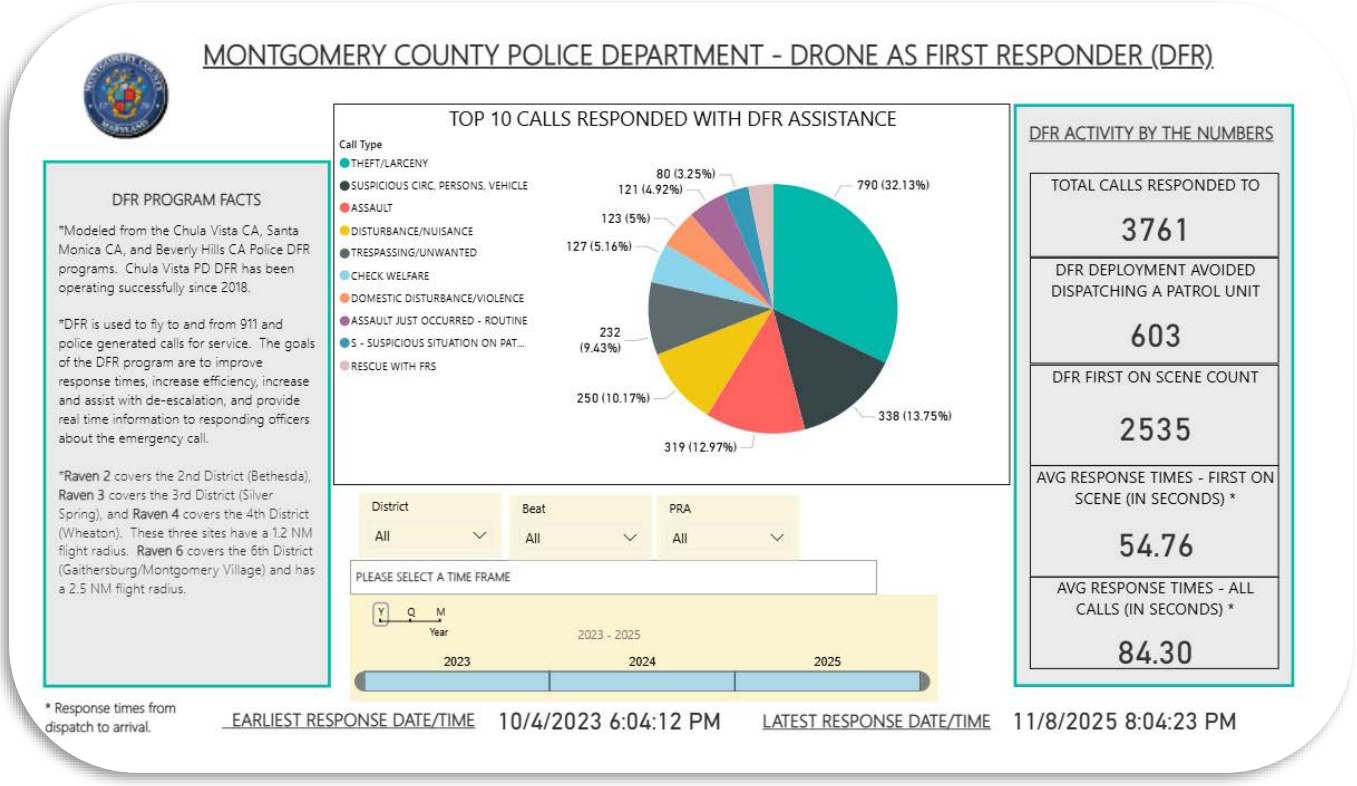
Privacy: The Unmanned Aircraft Systems Research, Development, Regulation, and Privacy Act of 2015 (SB 370) grants the State exclusive power to regulate drone usage, preempting municipalities and counties from enacting their own ordinances. This law is outdated, as it was enacted in the earliest days of UAS development in the civil sector. While acknowledging federal precedence, the act aimed to create a consistent regulatory environment that attracts drone business and economic growth. This intent should be carried through into an updated SB 370 or a new law that replaces it entirely to more broadly address AAM. In such an update, privacy concerns that have arisen in the intervening years should be acknowledged and appropriately addressed.

As AAM technology becomes more prevalent, privacy concerns among Marylanders will intensify. While Maryland has yet to pass privacy legislation specific to AAM, several bills have been introduced over the years, many focused on requiring warrants for aerial surveillance or criminalizing intrusive drone behavior. Despite support, these bills have consistently failed to pass. In 2025, House Bill 1349 (HB-1349) sought to criminalize intentional drone incursions within 50 feet of a dwelling with the intent to harass or record. The bill was opposed by the

Maryland Department of Commerce, which cited concerns about undermining public confidence in emerging technologies. Organizations like the American Civil Liberties Union (ACLU) have raised concerns about both law enforcement and private use of UAS, urging Maryland to consider appropriate limits and guardrails that address privacy risks of UAS given their increasing prevalence. However, overly restrictive legislation may inadvertently stifle the growth of the AAM industry. For example, such proposed laws typically attempt to limit where citizens can operate drones. State and local laws aiming to limit airspace access are preempted by federal law, and when challenged, have consistently been overturned in the courts. However, despite the likelihood of prevailing in court, the expense of litigation and deployment delays often drive business away in search of other more welcoming jurisdictions. Maryland can rely on existing general privacy laws and constitutional protections to govern the misuse of these systems in ways that violate privacy. Misuse of AAM applications may be addressed through enforcement of existing statutes related to harassment, trespass, or unlawful surveillance, without imposing broad restrictions that could inhibit beneficial applications of the technology.

Law enforcement agencies have demonstrated that drones are extremely effective in quickly responding to 911 calls. In numerous documented cases, drones have reached reported crime scenes ahead of officers, resulting in de-escalation when reports of weapons are shown to be false or reported situations are found not to exist at all. Conversely, they have provided arriving officers situational awareness of crimes in progress, enabled arrests that would otherwise have been impossible, and ended barricades when suspects simply surrendered to drones. The Montgomery County Police in Maryland operates a Drone as First Responder Program (DFR), deploying UAS as first responders to certain calls for service in densely populated areas in the county. When it was first deployed, privacy concerns among the public were widespread. Their DFR program addresses this head-on, operating under a directive that outlines the conditions under which drones may be used, their intended purposes, and protocols for data retention and release. In addition to the requirements of the directive, the DFR program maintains a public website that is updated daily, as seen in the figure below, providing maps of the flightpaths of the UAS, flight times, and nature of the calls. The Montgomery County Police personnel have testified that UAS cameras are pointed up and not activated until they reach the scene they were called to, minimizing any privacy intrusion. The DFR program operates UAS under self-imposed rules and transparency requirements, demonstrating how local agencies can proactively implement accountability measures to address public concerns over privacy.

MONTGOMERY COUNTY POLICE DFR WEBSITE



Source: Montgomery County Police Department

AAM-use must comply with all constitutional protections, including those under the Fourth Amendment. While the Fourth Amendment protects individuals from unreasonable searches and seizures, the State has the authority to adopt even stronger privacy standards, but any privacy- related framework should be carefully calibrated to avoid deterring AAM innovation.[13,14] For a more detailed analysis of UAS and privacy considerations, see **Appendices I and J,** which include a memorandum from the Maryland Attorney General's Office and a letter from the Assistant Attorney General addressing this issue.

Maryland Legal Liability: As the State fulfills its duty to safeguard the health and welfare of the public, it must also proactively assess the legal and financial implications of its involvement in AAM operations and infrastructure. Maryland's liability for AAM-related incidents will depend on the extent of its involvement in operations and infrastructure. If the State acts solely as a

[13] U.S. Const. amend. IV. (n.d.). *Constitution Annotated*. Congress.gov. https://constitution.congress.gov/constitution/amendment-4/

[14] Maryland Department of Transportation Maryland Aviation Administration, Office of the Attorney General. (2025, May 30). *Legal liability memorandum – Advanced Air Mobility Council*.

regulator, its exposure to liability is minimal. However, if Maryland owns or operates facilities such as charging stations, vertiports, or hangars, it could face liability similar to that of a private entity.[15] For more information on Maryland's potential legal liability as it pertains to AAM, see **Appendix H** which includes a memorandum from the Maryland Attorney General's Office.

Cybersecurity: The federal government may establish AAM national standards pertaining to data collection and dissemination, foreign data controls, and component manufacture requirements. Additionally, existing cybersecurity regulations and policy established by the State of Maryland will likely be applicable to new AAM technologies. Existing cybersecurity rules and regulations should be updated to account for AAM and other new technological developments and changes to the federal code.

Licensing, Registration and Requirements

The Marland Aviation Administration (MAA) licenses all public-use and/or commercial-activity airports, defined as "designated landing areas." The licensing requirements include compliance with applicable FAA design standards, local building code compliance, minimum liability coverage, and physical details about the airport and its activity. This language is sufficient to cover dedicated facilities to be used by eVTOLs (vertiports) or some short takeoff and landing aircraft, but it is recommended that the language of COMAR be clarified to cover all commercial AAM operations to address liability concerns. Additionally, it is recommended that Maryland codify key definitions related to AAM within COMAR to ensure consistent terminology across jurisdictions, support regulatory clarity, and align with federal standards.

AUVSI's AAM Prepared and Drone Prepared are educational campaigns that aim to help states and localities prepare for the future of aviation, including the integration of AAM into their communities. The campaign is developed, vetted, and supported by leading manufacturers and operators in the AAM industry.[16] Through these campaigns, AUVSI has developed model legislation and a standardized glossary of AAM-related definitions to assist lawmakers in crafting consistent and informed policy.[17, 18] It is recommended that Maryland reference AUVSI's model legislation and definitions when developing its own AAM regulatory framework, to promote alignment with national standards and support interoperability across jurisdictions. Additionally, AUVSI has developed an AAM legislation database that tracks both

[15] Ibid.
[16] Association for Uncrewed Vehicle Systems International. (2025). *AAM Prepared*. https://www.auvsi.org/advocacy/advocacy-initiatives/aam-prepared/
[17] Association for Uncrewed Vehicle Systems International. (2025, March). *Model Advanced Air Mobility (AAM) bill*. https://www.auvsi.org/wp-content/uploads/2025/03/Model-AAM-Bill.pdf
[18] Association for Uncrewed Vehicle Systems International. (2025, March). *AAM Prepared definitions*. https://www.auvsi.org/wp-content/uploads/2025/03/AAM-Prepared-Definitions-2.pdf

proposed and enacted state-level legislation related to AAM.[19] This resource can be a valuable tool for Maryland as it considers policy development and alignment with national trends.

Maryland does not require aircraft registration but does require minimum liability coverage to operate aircraft within the state and sales tax payment on aircraft sales determined through FAA registration. These requirements transfer to both eC/STOL and eVTOL aircraft types. UAS-drones do not currently have liability coverage requirements for operation within the state, but it is recommended that the State extend its aviation liability requirements to include UAS operations. Some states, including Washington and Utah, have imposed registration fees for commercial drones, which help support aviation programs and provide a mechanism for tracking UAS activity in the state. This approach may offer useful insights as Maryland considers future approaches to UAS policy and infrastructure funding.

AAM Facility Siting, Land Use, and Zoning

Maryland's home rule framework empowers counties with significant autonomy over local land use and zoning. Although home rule may permit substantial freedom for individual jurisdictions to adopt AAM priorities and development, that approach may also lead to inefficient, inconsistent, competitive, and costly development patterns. Such inconsistencies could discourage AAM proponents from investing or developing in the state, potentially leading them to avoid certain jurisdictions. This may also create risks for both local jurisdictions and the State, including limited access, reduced investment interest, or redundant infrastructure development.

Therefore, Statewide efforts that enhance consistency and promote inter-jurisdictional connectivity will be important for deriving the statewide benefits and efficiencies of AAM. These efforts should be closely coordinated with the Maryland Department of Planning (MDP) to ensure that AAM facility siting aligns with broader state and regional planning goals.

State-level efforts may be undertaken to enhance uniformity across jurisdictions. It is recommended that Maryland:

- Compile best practices and develop guidelines, including clarification on specific local authorities and responsibilities, as a reference resource for local jurisdictions pursuing AAM services
- Publish model ordinances and planning templates that can be readily applied by local governments to support consistent and informed decision-making

[19] Association for Uncrewed Vehicle Systems International. (2025, March). *Advanced Air Mobility (AAM) legislation database*. https://www.auvsi.org/wp-content/uploads/2025/03/Advanced-Air-Mobility-AAM-Legislation-Database-1.pdf

- Establish a statewide database, depository, and clearinghouse of AAM-related activities, interests, reports, plans, and projects to foster inter-jurisdictional system coordination.
- Develop a standardized permitting framework and visual flowchart to guide local jurisdictions and operators through approval steps for AAM facilities.
- Appoint a State AAM coordinator, who would serve as a central point of contact for stakeholders, facilitate data sharing, and ensure alignment with federal guidance and regional priorities. It is recommended that this role be expanded to encompass all statewide AAM matters.
- Provide AAM-informed personnel to support local jurisdictions and conduct periodic information sessions to disseminate information directly.
- Follow AUVSI's Drone Ready and AAM Prepared policies and approaches for preparedness

Counties without charter or code home rule are governed by a board of commissioners relying more heavily on state legislation for local governance. To ensure that commissioner counties are adequately supported, it is recommended that Maryland pass legislation that formally addresses AAM integration as part of the SB 370 update, further serving as a guide for all counties to follow, regardless of their form of government.

State AAM Coordinator and Interagency Working Group

To ensure continuity beyond the Council's charter, Maryland should establish an AAM coordinator as the central authority for all AAM-related matters. This position should be housed within the Secretary's Office at the Maryland Department of Transportation (MDOT) and structured as part of a broader emerging transportation technology function. Doing so enables Maryland to align AAM efforts with other innovation domains such as automation, electrification, alternative fuels, digital infrastructure, and cybersecurity across aviation, surface, and maritime modes. Specific responsibilities include:

- Coordinate with state agencies such as the Maryland Departments of Commerce, Labor, Planning, and the Attorney General's Office
- Engage Maryland's higher education institutions, including the University of Maryland system, community colleges, and other relevant vocational and technical programs
- Monitor market trends and maintain industry relationships to position Maryland competitively and inform best practices for deployment
- Advise on capital planning and investment decisions to support sector growth

The coordinator should lead the formation of an Interagency Working Group (IWG). This group should include MDOT, the Departments of Commerce, Labor, Planning, the Maryland Air National Guard, the Attorney General's Office, and any other agencies with relevant responsibilities. The IWG will serve as an operational arm to advance Council recommendations. The IWG should meet at least quarterly and deliver an implementation timeline, outlining goals and steps to achieve Maryland's early AAM objectives. While the IWG should begin at the cabinet level, it may operate and enlist at the subcabinet level to ensure progress and responsiveness. It is recommended this role seek alignment with existing state initiatives such as the Maryland Aerospace and Technology Commission (MATC) and Maryland's Connected and Automated Vehicle (CAV) Program to ensure coordinated progress across emerging mobility technologies as well.

Transportation, Intermodal, and System Plan Integration

Through the organization and operation of MDOT, Maryland has the unique advantage of a truly intermodal statewide transportation system. It may be beneficial for Maryland to incorporate AAM into statewide and regional transportation planning documents to effectively integrate AAM into the State's transportation goals such as improving access to underserved/remote areas, enhancing emergency response capabilities, and reducing traffic congestion. This will position Maryland to guide equitable, efficient, and sustainable AAM deployment. Similar statewide benefits may be derived by refreshing multimodal plans led by MDOT and each of its transportation modes to assess the implications of converging vehicle technologies, combined multiport placement, capital programming, and regional coordination across a wider pool of users and potential partners. Potential impacts on commercial trucking routes and maritime port connectivity should also be considered as part of intermodal and system plan integration. Plans to be reviewed as part of this process include the Maryland Aviation System Plan (MASP) and the 2050 Maryland Transportation Plan (the Playbook).

Appendix B: Public Informational Campaign

A comprehensive campaign that bolsters public trust while promoting the benefits of AAM is essential to ensuring its successful adoption and integration into daily life in Maryland. Most of this section will focus on informational techniques borrowed from industry and other state AAM initiatives. A major takeaway is that early public education is essential and should extend beyond the general public to include engagement with state, county, and local officials.

Public support is the most critical element in to enabling AAM development within the state. As technological advancements in AAM rapidly outpace public familiarity, new introductions risk triggering fear and resistance, potentially leading to delays and the need for reactive communication strategies to rebuild public confidence. Additionally, the pending passage of federal regulation Part 108 permitting Beyond Visual Line of Sight (BVLOS) operations by large commercial UAS vehicles is expected to significantly increase the visibility of AAM, possibly coming as a surprise to many Marylanders. It will be important for the State to take a proactive approach to educating its residents, ensuring that clear and accessible information is shared with the public in advance of this regulatory shift. By drawing on best practices from other states, these challenges may be proactively addressed through a multi-layered, multi-year communication strategy that helps communities embrace AAM as an enhancement quality of life, rather than a disruption.

> Public support is the most critical path to enabling AAM development within the state.

Campaign Design and Rollout

It is recommended that the AAM outreach efforts focus on building public trust and understanding, fostering acceptance through positive early experiences, highlighting the positive impacts of AAM, presenting information in a clear and easily digestible manner, and ensuring all communities have equal access to outreach materials and engagement opportunities. To guarantee consistency and effectiveness across all outreach efforts, Maryland should develop clear communication guidelines and establish a dedicated working group to oversee implementation, coordinate messaging, and support the creation of these materials.

It is important to prepare for extreme or skeptical feedback. Key concerns to anticipate and address include privacy, noise, visual pollution/ overflight, safety, budget/ funding transparency, and equitable access. Notable benefits of AAM to highlight are societal

(enhanced quality of life due to an increase in safe and accessible transportation of people and goods), economic (job creation and tax revenue), and environmental (reduced noise and emissions).

Local and county engagement efforts may include tailored briefings, informational toolkits, and opportunities for dialogue to build trust and understanding. Relevant Maryland organizations to involve in this process are the Maryland Association of Counties (MACo), the Maryland Municipal League (MML), and the Maryland-National Capital Park and Planning Commission (MNCPPC). Legislative outreach focuses on aligning AAM messaging with policy priorities and providing clear, actionable information to support informed decision-making. Similar to efforts at the local and county level, legislative engagement should also empower policymakers with the insights and resources needed to confidently address constituent questions and concerns. While local, county, and legislative engagement is fundamental for building support, the majority of outreach strategies outlined in this section are directed toward engaging the general public. These efforts will focus on raising awareness and building trust. Public outreach is designed to resonate with diverse audiences across Maryland, using tailored messaging and community partnerships to ensure relevance and reach.

Target Audiences and Stakeholder Engagement

Identifying target audiences and stakeholders is crucial to shaping effective outreach, as the goals and purpose of engagement will vary depending on the needs, interests, and influence of each group. Stakeholders may be categorized into the following groups, as outlined in the table below.

AAM STAKEHOLDERS

Source: AECOM

Target audiences may be distinguished in various ways, including by geography: urban, suburban, and rural areas; by use case: aeromedical, emergency response, law enforcement, goods delivery, and passenger transport; and by demographic: youth, seniors, and underserved communities. Target audiences often involve multiple stakeholder groups, with some stakeholders potentially belonging to more than one category.

Engagement Methods

A successful outreach campaign relies on a variety of engagement methods tailored to the needs, preferences, and accessibility of different stakeholder groups. Techniques may range from briefings and demonstrations to interactive games, social media outreach, and public hearings. Each technique may be paired with specific tools like videos, brochures, online surveys, and digital platforms such as Instagram or YouTube to enhance communication and participation. The following table outlines a selection of techniques and tools that may be used to support them.

AAM ENGAGEMENT METHODS

Techniques for Educating and Gathering Input	Tools to use with Engagement Techniques
• Briefings • Games and contests • Social/ digital media • Traditional media • Site visits and demonstrations • Telephone outreach and surveys • Online polling and surveys • Listening sessions/ public hearings and town halls • Interactive displays and kiosks (in schools, at fairs)	• Public information materials (handouts, brochures) • Videos/ simulations • PowerPoints • Websites • Newspaper • Television • Instagram • Facebook • YouTube • Email and text newsletters • Email and call/ text hotlines • Library/ database of information

Source: AECOM

Media outlets specific to Maryland that may be leveraged for outreach are *Maryland Matters*, the *Baltimore Banner*, and regional press like the *Frederick News-Post*. In addition to media engagement, high-traffic public events such as the Maryland State Fair offer valuable opportunities for direct community engagement, where agencies may set up booths to educate residents and build trust around AAM initiatives.

The State will harness the power of storytelling, particularly through pilot projects, to educate communities and build public support. The aeromedical use case offers a strong foundation for pilot projects in Maryland, providing tangible examples of how AAM may directly benefit communities. Applications like medicine delivery demonstrate life-saving potential and operational efficiency. Additionally, scenarios such as real-time monitoring and emergency

response coordination during large-scale outdoor events, like marathons and Ironman races, may showcase AAM's ability to enhance public safety and health services. Pilot projects may play a vital role in helping the public not only accept AAM, but embrace it with enthusiasm.

Additionally, integrating AAM into Science, Technology, Engineering, and Math (STEM) education may serve as a catalyst for long-term public engagement. STEM programs offer a powerful avenue for introducing AAM concepts to students in K-12 and higher education settings. Classroom visits, hands-on activities, and partnerships with Maryland schools and universities may spark excitement among children and young adults. These students may become enthusiastic messengers, sharing what they've learned with their families and communities and helping to organically expand public awareness and support for AAM initiatives.

Maryland may also consider undertaking a branding effort with compelling slogans which may serve as a powerful tool to raise public awareness while also advancing the State's economic development goals by attracting industry interest and investment. In addition, the State should collaborate with national organizations such as AUVSI, NASAO, the American Association of Airport Executives (AAAE), Airports Consultants Council (ACC), and the Airport Cooperative Research Program (ACRP). These partnerships can amplify outreach efforts, provide access to best practices, and ensure Maryland's messaging aligns with national standards and industry trends.

Best Practices from Other Initiatives

This section integrates best practices and insights drawn from initiatives done by NASA, the FAA, AUVSI, the DOT, Maryland's Connected and Automated Vehicle (CAV) Program, and several states including North Carolina, Georgia, Texas, and Virginia.

Maryland's CAV Program serves as a valuable model for shaping outreach strategies within the state. In addition to establishing a working group that may serve as a key point of contact for Maryland outreach recommendations, the program has published documents outlining its framework and implementation plan, including existing engagement platforms throughout Maryland. Additionally, the program published a CAV toolkit for Maryland local jurisdictions, which may serve as a valuable model for AAM education and outreach at the local level.

Appendix C: Workforce Development

Due to its strong educational infrastructure, proximity to federal agencies such as NASA and the FAA in Washington D.C., and deep ties to the aerospace and defense industry, Maryland is well equipped to develop a robust workforce development program supporting AAM. A well-designed workforce development plan is key to unlocking the full potential of AAM in Maryland. By aligning training and education with industry needs, the State can strengthen its education system, create jobs, drive economic growth, and increase public acceptance of AAM.

This section outlines the recommended approach to building a strong AAM workforce in Maryland, including curriculum development and technical training, supported by existing educational assets and informed by successful workforce development models in other states.

Curriculum Development

Maryland shall pursue a coordinated statewide approach to AAM-related credentials and certifications to ensure consistency across institutions. This includes stackable credentials, credit for prior learning, and multiple entry/ exit points for learners. Much of this workforce development will build upon existing career pathways such as piloting, risk management, cybersecurity, telecommunications, electrical systems, safety management systems, and maintenance. To support this, core competencies and skillsets required for AAM careers should be identified by conducting a gap analysis, determining where current programs may lack alignment with AAM workforce needs. Diagramming and mapping existing educational and workforce pathways may help pinpoint where AAM-related content can be integrated most effectively. Maryland should establish a dedicated working group to ensure statewide coordination and alignment. This effort should be closely coordinated with the Maryland Higher Education Commission (MHEC) and the Maryland Department of Labor (MDOL), which are well-positioned to co-lead the group.

MARYLAND CURRICULUM DEVELOPMENT

Source: AECOM

K-12 Engagement

Introducing AAM concepts to young students not only helps spark interest at an early age but also contributes to community awareness and enthusiasm. As students learn about AAM, their excitement could extend beyond the classroom, sparking conversations at home, fostering broader public acceptance, and possibly inspiring friends and family to explore careers in AAM too. Strategies to engage K-12 students include:

- Classroom demonstrations and career talks
- Informational materials like brochures and videos
- Hands-on experiences like design challenges and competitions
- Field trips and site visits
- Integrating AAM topics into existing STEM curriculum
- Encouraging high school students to pursue their FAA Part 107 drone pilot certification

Higher Education Integration

The workforce development working group should establish mechanisms for collaboration between high schools, four-year universities, community colleges, and vocational schools to create a coordinated pipeline into the AAM workforce. With an increasing number of adult learners seeking career transitions, state educational institutions should offer upskilling and retraining tailored to AAM careers, flexible learning paths through community colleges and technical centers, and credit for prior experience which can benefit veterans and displaced workers.

Identifying the disciplines that align with emerging AAM needs may help with mapping out pathways for education, certification, and training. Important fields of study and training are categorized in the table below.

PATHWAYS FOR AAM

Engineering & Technical Disciplines	Aviation and Flight Operations	Computer & Data Sciences	Industry Readiness and Operations
• Aerospace	• Aviation	• Computer Engineering	• Supply Chain Management
• Aeronautics	• Professional Pilot	• Computer Science	• Risk Management
• Civil Engineering	• Air Traffic and Airspace Management	• Data Science	• Quality Control
• Chemical Engineering	• Aviation Management and Logistics	• Applied Mathematics	• Associate of Science
• Electrical Engineering	• Unmanned Aircraft Systems Flight Operations	• Artificial Intelligence	
• Mechanical Engineering	• FAA Part 107 Remote Pilot Certificate	• Machine Learning	
• Systems Engineering		• Information Technology	
• Sustainability		• Network Engineering	
• Environmental Science		• Cybersecurity	
• Radio Frequency		• Business Analytics	
• Welding		• Geographic Information Systems (GIS)	
• Advanced Composite Certification			
• Production Technician Certification			
• FAA Part 147 Aviation Maintenance Technician Training			

Source: AECOM

It's important to consider key areas of focus that will shape workforce pathways. These focus areas help identify where talent, training, and investment should be directed to support scalable AAM operations.

AAM FOCUS AREAS

Areas OF Focus

TO CONSIDER ARE:

- Electric propulsion, STOL/ VTOL
- Energy storage and EV charging infrastructure
- Materials, Structures, and Manufacturing
- Communications/Data Transmission, Navigation, and Surveillance
- Cyber-security, hardware and software, cloud, data storage, and broadband
- Demonstrations/ R&D sites
- Artificial intelligence
- Automation and robotics
- Manufacturing and Assembly
- Shipping and Logistics
- Regulatory Policy, Standards, and Certifications
- Environmental Effects
- UTM
- Counter- UAS
- Emergency Response and Recovery
- Regulatory Compliance and FAA Certification
- Transportation System Planning, Infrastructure Requirements, and Siting
- Networking expertise to support wireless connections at low altitudes

Source: AECOM

Educational assets play a critical role in preparing students for careers in AAM by providing hands-on experience with emerging technologies and systems.

Examples include:

- **Air Traffic Control Simulator**
- **Visual Flight Simulator**
- **Extended Reality (XR) Lab**
- **Autonomous Systems Lab**
- **Cybersecurity Lab**
- **Renewable Energy Lab**
- **UAS Fleet**
- **3D Printers**
- **Digital Twin Development, Data Management, and Mapping**

Training and Job Skills Development

While curriculum development is essential for building foundational AAM knowledge, training programs that equip learners with practical, industry-ready skills are equally as important. This includes technical certifications and internships/ apprenticeships. Examples of valuable technical certifications for the AAM industry are Part 107 Remote Pilot, Part 147 Aviation Maintenance Technician program certificates, Airframe and Power Plant (A&P) license, Safety Management Professional (SMP) certificate, and certifications in the areas of cybersecurity, telecommunications, and electrical systems. Internships and apprenticeships not only help individuals build practical skills but also foster meaningful partnerships between educational institutions and industry leaders. Collaborating with companies which are likely to develop their own internal training modules can ensure that Maryland's workforce development efforts remain aligned with real-world needs and evolving employer expectations. Such partnerships can also open doors for shared training programs and expanded career pathways for learners.

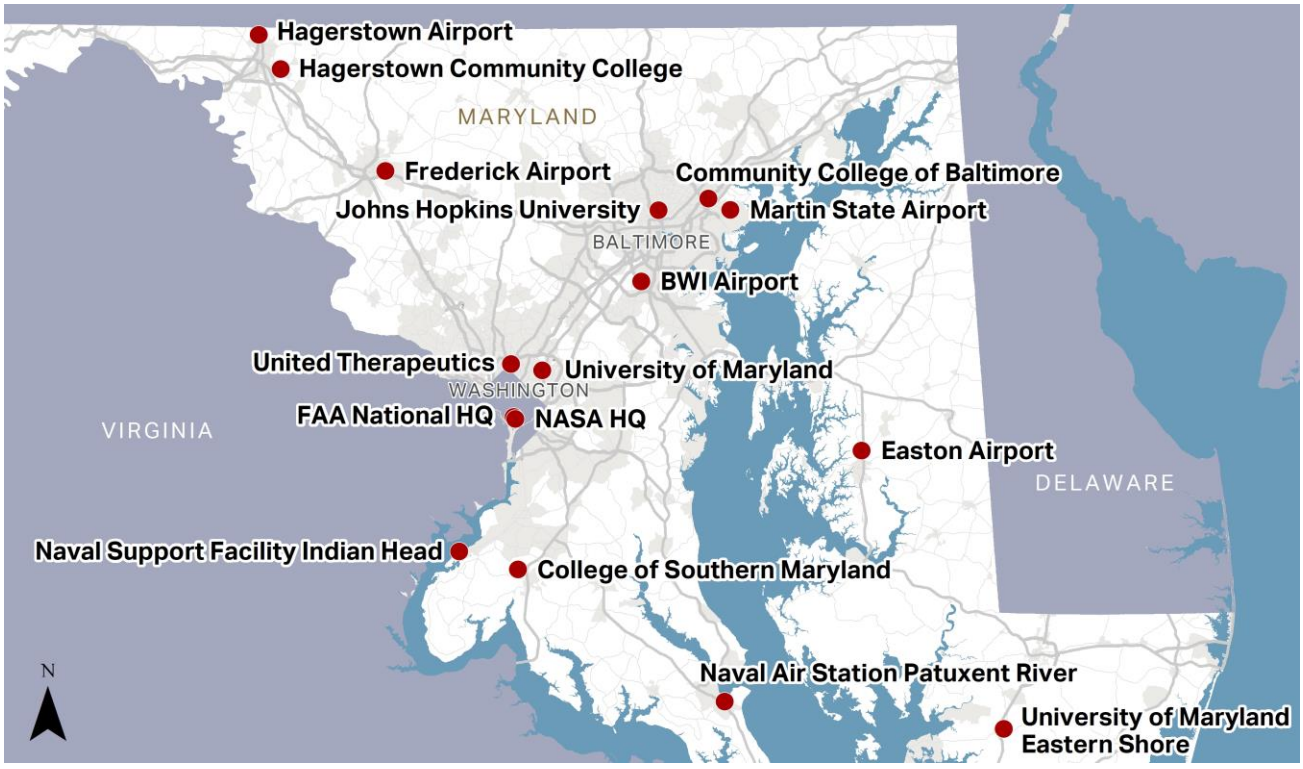
Existing Workforce Assets in Maryland

Maryland is home to a diverse network of educational institutions that offer strong foundations for AAM workforce development, as seen in the figure below. The University of Maryland offers degrees in aerospace engineering and cybersecurity and is also home to the UAS Research and Operations Center (UROC). The College of Southern Maryland features a School of STEM and Professional Studies and its Hughesville Center for Trades and Energy Training. The University of Maryland Eastern Shore provides an Aviation Science degree with concentrations in piloting, aviation management, aviation electronics, and aviation software,

along with an aviation maintenance technician program. Hagerstown Community College supports technical training through its A.A.S. in Technical Studies and a partnership with the Pittsburgh Institute of Aeronautics which administers an FAA-certified Aviation Maintenance Technology program at its Hagerstown Branch. The Community College of Baltimore County hosts Aviation Technology programs and has a partnership with the Baltimore County Public Schools Office of Career and Technical Education to offer aviation-related opportunities to high school students. Johns Hopkins University offers engineering and cybersecurity programs as well. The Maryland Military Department's aviation training programs offer a robust foundation for AAM workforce development, particularly in areas such as unmanned aircraft operations, air traffic control, and aerospace ground equipment maintenance.

Additionally, assets like the Naval Air Station Patuxent River (Naval Air Systems Command (NAVAIR) headquarters), Naval Support Facility Indian Head, and Maryland regional airports provide real-world aviation and defense infrastructure with opportunities for workforce integration. United Therapeutics, headquartered in Silver Spring, Maryland, represents a promising partner in workforce development with potential to serve as a pipeline for specialized talent in the emerging field of aeromedical applications within AAM, including organ transport via electric aircraft and drones.

AAM ASSETS IN MARYLAND



Source: AECOM

To support hands-on training in AAM, Maryland should leverage existing apprenticeship and workforce development infrastructure such as the Maryland Apprenticeship and Training Program, which offers structured pathways into skilled trades and technical careers. Initiatives like Maryland Accelerating Cybersecurity Careers (ACC) provide a strong model for implementing AAM-relevant skills by integrating specialized training into workforce pipelines. Partnerships with organizations like the International Brotherhood of Electrical Workers (IBEW) may be especially valuable as well, providing training in many core areas that align closely with the operational demands of AAM.

Maryland may build on its existing internship opportunities to connect students with real-world aviation and AAM environments. These include opportunities offered at UROC, Baltimore/Washington International Thurgood Marshall Airport (BWI), Martin State Airport, Naval Air Station Patuxent River, and Naval Support Facility Indian Head.

In addition to capitalizing on Maryland's educational and industry resources, collaboration with neighboring states may offer additional opportunities for aligning training programs, sharing educational assets, and creating cross-state career pathways that support a resilient workforce across the region.

Learning from Existing Workforce Development Successes

To develop and maintain a competitive AAM-ready workforce, Maryland will need to monitor and assess institutions, universities and programs in other states and countries for successful workforce development strategies and practices for potential replication and/or collaboration opportunities. Additionally, Maryland may draw on lessons from similar initiatives it has successfully implemented in the state, leveraging proven strategies, partnerships, and infrastructure to ensure impactful outcomes.

EXAMPLE:

One project that serves as a strong guide for Maryland is the UAS Curriculum Initiative for the Mingo County Redevelopment Authority in West Virginia. Marshall University and Sinclair Community College partnered with the redevelopment authority, NASA, and research and consulting firms to develop an education initiative that creates a UAS curriculum, statewide programs that foster AAM-related entrepreneurship, and an AAM workforce pipeline. By looking to this example, Maryland can gain valuable insights into how partnerships and targeted educational initiatives can accelerate the development of a strong AAM ecosystem.

EXAMPLE:

Another valuable model Maryland can look to is the Center for Advanced Air Mobility at Kent State University, which demonstrates how higher education institutions can play a pivotal role in building a skilled workforce for AAM. Kent State University hosted an AAM higher education workshop which explored the implementation of a community- driven collaborative approach for workforce development. Maryland should consider organizing similar workshops to facilitate collaboration among educators and other stakeholders.

Funding and Incentives

To ensure effective use of resources, it is important to establish clear priorities within the workforce development strategy. This will allow the State to target funding toward the most critical and high-impact initiatives. Leveraging existing incentives like EARN Maryland, a state-funded workforce development grant program may help attract employers and ensure they have the talent they need to compete and grow. EARN Maryland invests in industry partnerships between education, workforce, and economic development initiatives to address the needs of companies, starting with the training of skilled workers. This kind of collaboration is essential for scaling sustainable talent pipelines in emerging sectors like AAM.

Appendix D: Infrastructure

The successful deployment of AAM in Maryland will depend on the development and coordination of both physical and digital infrastructure. The type, scale, and phasing for developing said infrastructure will depend on the AAM sector it supports: UAS, RAM, or UAM. As AAM technologies evolve, so must the systems that support them. This section outlines the infrastructure considerations necessary to support AAM across Maryland, with a focus on enabling near-term operations while preparing for future growth.

Physical Infrastructure

Maryland's existing transportation assets provide a strong foundation for AAM deployment. However, realizing the full potential of AAM will require upgrades and investment in both new and existing infrastructure. This encompasses not only airports, vertiports, and droneports themselves, but also the integrated systems within them like charging and fueling infrastructure, passenger amenities, and safety support systems.

Existing Assets

Maryland's network of airports and heliports offers a valuable starting point for AAM integration. Many of these assets are located near population centers, employment hubs, and healthcare facilities. A significant portion of Maryland's general aviation and small commercial airports are underutilized, representing a strategic opportunity for AAM. These facilities often have available capacity, existing infrastructure, and proximity to key industries or communities. With targeted, and often minimal, upgrades, these airports could serve as regional nodes for RAM operations. Additionally, existing heliports may be repurposed as vertiports, offering a cost-effective path to UAM readiness. Many heliports already occupy valuable urban real estate and are integrated into hospital or emergency response networks, making them ideal candidates for conversion.

Droneports and Vertiports

The development of droneports for UAS operations and vertiports for RAM and UAM operations will be integral to support a full spectrum of AAM services. These facilities should be designed to accommodate a range of vehicle types and operational tempos. The figure below depicts a conceptual layout of a vertiport, featuring key components such as designated takeoff and landing areas, parking aprons, loading areas, charging stations, and an operations center with passenger facilities. New vertiports should be designed with scalability in mind, allowing for phased buildout as demand grows. The term droneport is not clearly defined yet, but generally refers to a facility that supports high volumes of small UAS operations such as those anticipated for large commercial delivery services like Walmart or Amazon Prime Air. Most drone operations won't need droneports and public operations with fixed locations will likely be collocated with other public facilities. Facilities that integrate air and ground mobility

such as co-located transit stations, park-and-ride lots, or logistics hubs will be particularly valuable in enhancing accessibility and reducing congestion.

VERTIPORT LAYOUT

Source: FAA

Charging and Fueling

AAM operations will require a potential mix of electric charging, hydrogen, and other alternative fueling infrastructure, depending on vehicle type and mission profile. In the near-term, this infrastructure will likely include electric charging stations at airports and vertiports, and disaster- resilient backup power systems to ensure continuity of operations. Grid capacity and, where applicable, microgrids, and resilience at candidate sites should be assessed to ensure reliable power delivery and avoid overloading local energy systems. A microgrid is a localized, self-sufficient energy system that can operate independently from the main utility grid, providing critical resilience during outages or emergencies. Because much of this infrastructure does not yet exist, a coordinated plan among utility companies, local governments, and industry partners will be needed to deploy a coordinated plan for charging and fueling infrastructure.

BETA AIRCRAFT AND CHARGER AT FREDERICK MUNICIPAL AIRPORT

Source: Frederick Municipal Airport

Support Systems

Many of the support systems required for AAM operations such as weather monitoring, fire safety infrastructure, passenger amenities, and maintenance and storage hangars are either underdeveloped or entirely absent at potential AAM deployment sites. These systems are integral to ensuring safe and reliable operations. Low-altitude drone operations will require real-time microweather data. Existing aviation weather systems are designed for higher-altitude, crewed aircraft and will not provide sufficient coverage for AAM. Expanded sensor networks, including integration with environmental monitoring systems, will be needed to support low-altitude, uncrewed aircraft. RAM and UAM facilities will require unique fire safety protocols and equipment. These systems must be designed in coordination with local fire departments and emergency services, few of which will be familiar with AAM operations. RAM and UAM facilities will need to accommodate passengers with appropriate waiting areas and multimodal transfer points. Many existing heliports and small airports lack these amenities and are not currently equipped to support public- facing AAM operations. Renovations and new construction will be necessary to meet passenger expectations and operational requirements. New vertiport designs should incorporate scalable passenger infrastructure in the initial design

phase. In addition, dedicated maintenance and storage hangars will be essential to ensure vehicle readiness, safety, and operational efficiency.

Digital Infrastructure

Maryland's AAM ecosystem will rely heavily on digital infrastructure. This includes systems for CNS, traffic management, and data connectivity. While some components may leverage existing aviation infrastructure, many will require new development, integration, and coordination across public and private stakeholders.

CNS

Traditional CNS systems like radar, radio communications, and navigation aids are currently optimized for high- altitude, crewed aircraft. To support AAM operations, these systems will need to be adapted and expanded to address the unique requirements of low-altitude, high-density, and often autonomous flight environments. Additionally, deployment of remote tower infrastructure at smaller airports and vertiports should be explored to support cost-effective surveillance and air traffic services.

UTM

UTM systems will play a central role in coordinating low-altitude UAS operations and will be foundational to managing increasing traffic volumes, avoiding conflicts, and enabling growing operations. Unlike traditional air traffic control, UTM systems are decentralized and may be operated by independent service providers. While RAM aircraft typically operate at higher altitudes and within controlled airspace, allowing them to integrate into existing FAA Air Traffic Control (ATC) infrastructure, there is a growing need for interoperability between UTM and other systems supporting low-altitude operations. As UAS, RAM, and future UAM platforms begin to share the same airspace, Maryland should support the development of a broader emerging airspace traffic management ecosystem. This includes investing in surveillance and detect-and-avoid technologies, such as ground-based sensors and cooperative tracking systems, to ensure safe and efficient integration of all low-altitude aircraft types.

Data and Connectivity

A highly resilient digital infrastructure system that can support communications and automation will be central to the success of Maryland's AAM ecosystem. Broadband and telecommunications infrastructure will be needed to enable high-bandwidth data exchange between aircraft, ground systems, and operators. Reliable connectivity is especially important for UAS and UAM operations in urban and low-altitude environments, where latency and coverage gaps could impact safety and performance. In parallel, facility automation and control systems will play a pivotal role in managing AAM, streamlining optimized charging, scheduling, passenger flows, and emergency response.

Infrastructure Study

An infrastructure study should be conducted to determine hotspots and assess readiness of existing assets for integration into the AAM ecosystem. This effort should be coordinated with the MAA and aligned with the State's Consolidated Transportation Program (CTP) to ensure AAM infrastructure needs are incorporated into broader transportation planning and capital investment strategies. This study should evaluate both physical and digital infrastructure.

UAS

UAS is currently the most developed and widely deployed segment of AAM, with widespread applications in inspection, mapping and surveying, public safety, and recreational use. As operations scale, particularly with the anticipated implementation of FAA's Part 108 regulation enabling large scale UAS BVLOS aircraft traveling longer distances, Maryland will need to expand both digital and physical infrastructure to support safe and efficient UAS integration.

As UAS operations expand, the development of droneports, designated facilities for launching, landing, and servicing UAS, will be helpful in advancing the growth of UAS in Maryland. These may be privately owned or located at existing logistics hubs, such as warehouses or distribution centers. Unlike UAM or RAM facilities, droneports typically require low-capacity charging, making them relatively simple and cost-effective to deploy.

RAM

RAM represents a near-term opportunity for AAM deployment in Maryland, offering services between existing airports. Compared to UAM, RAM faces fewer regulatory and infrastructure hurdles, as many aircraft in this segment can operate under existing certification frameworks and utilize current airport facilities.

One of the advantages of RAM is compatibility with Maryland's existing network of general aviation and small commercial airports. Increased utilization of Maryland's underserved airport assets should be encouraged. These facilities already possess core infrastructure such as runways, lighting, navigation aids, aircraft and vehicular parking, passenger amenities, maintenance and ground handling services, and ground transportation access that can support many RAM aircraft with minimal modification. This allows for faster deployment and lower upfront costs compared to building new infrastructure. As part of the infrastructure study the State should identify underutilized airports with proximity to population centers, employment hubs, and key industries. Additionally, as part of the study, an inventory of available space and a categorization of developable land should be conducted, paired with realistic timelines for site readiness. Companies exploring RAM deployment may seek operational sites within a 12-month window, while current turnaround times for site development often extend to three

years. Accelerating site identification for hangar space will be critical to attracting early investment and enabling near-term operations.

Some RAM aircraft are being designed for short or very short takeoff and landing (eSTOL) capabilities, which could further expand the number of viable operating sites across the state. This opens the door to using smaller airfields, repurposed industrial sites, or even new low-footprint facilities in areas not currently served by commercial aviation. Site assessments of existing potential short-runway facilities should be implemented into the infrastructure study as well.

UAM

While UAM faces more complex regulatory and infrastructure challenges than other AAM segments, its long-term potential impact on improving access to services is significant. The successful deployment of UAM will require a sequenced buildout of infrastructure, beginning with low-tempo operations and scaling toward high-tempo, automated networks.

The deployment of UAM services will require a network of vertiports capable of supporting high-frequency, short-range operations in urban and suburban environments. As mentioned previously, Maryland may prioritize the redevelopment of existing heliports as a cost-effective strategy for early vertiport deployment. Many heliports are already located near hospitals, business districts, and transit hubs, and possess aviation zoning and basic infrastructure that can be upgraded to support eVTOL operations. As part of the recommended infrastructure study, Maryland should identify high-potential vertiport sites based on population density, employment centers, and existing travel demand patterns.

UAM operations will require infrastructure capable of supporting rapid turnaround times and high throughput. Most vertiports will be designed with multiple landing pads, ground handling systems, and passenger facilities. As operations grow, centralized control centers will be needed to manage fleet logistics, airspace coordination, and emergency response. Automation will be required for efficient UAM operations including charging, maintenance, passenger flows, data monitoring, and emergency protocols. UAM vehicles will rely heavily on electric propulsion, necessitating the deployment of high-capacity charging infrastructure at vertiports and maintenance hubs. UAM operations will follow a hub-and-spoke model, with vertiports serving as central nodes for passenger access and multimodal connectivity, and spoke locations supporting operational needs such as vehicle storage, maintenance, and control operations.

Multimodal Integration

AAM is not a standalone system; it is an augmentation to Maryland's existing transportation network. To realize its full potential, AAM must be integrated with rail, bus, road, and existing air transportation systems. This integration will require collaboration with city planners, transit

agencies, and municipalities to ensure that infrastructure plans align with broader mobility goals.

The siting of mobility hubs, locations where air and ground transportation converge, will play a vital role in the success of AAM. These hubs should be located in urban cores and spoke locations to support both passenger and cargo operations. Planning for these hubs must consider land use, zoning, multimodal access, and community needs.

A statewide coordination of AAM-related infrastructure improvements and standards should be established to avoid infrastructure conflicts and maximize efficiency. This includes aligning electrification efforts across sectors, ensuring that charging infrastructure for AAM complements broader electric vehicle (EV) and transit electrification plans. Coordination will also be important for deploying UTM systems and integrating digital infrastructure. Local jurisdictions should be engaged to address land use and zoning considerations, including integration of AAM into comprehensive planning processes, land use compatibility (such as noise management), vertiport siting, and multimodal access.

An airport guidebook should also be developed, looking to examples from other state transportation departments including Georgia (GDOT), Florida (FDOT), and North Carolina (NCDOT). This guidebook should provide planning tools for airport authorities and municipalities, outlining best practices for vertiport siting, design, permitting, standards and regulations, master planning updates, electrification, multimodal access, community engagement, and funding opportunities.

Collaboration with industry will be necessary to identify market concentrations and guide infrastructure development. Recommended actions include:

- Analyze existing travel demand patterns to pinpoint high-potential corridors
- Engage with aircraft OEMs, operators, and airport authorities to understand vehicle capabilities, operational needs, and preferred deployment areas
- Leverage state and regional demographic and economic data to identify promising passenger and cargo markets including medical transport, business travel, and tourism
- Coordinate with local businesses and institutions to assess interest in regional air mobility services
- Assess seasonal and event-driven travel patterns (beach traffic, sports events, festivals) that may support temporary operations.
- Align market identification with broader state transportation goals, including congestion relief, economic development, and environmental sustainability

To ensure Maryland is prepared for the future of aviation, infrastructure planning must be proactive, inclusive, and data-driven. By leveraging existing assets, coordinating across sectors, and engaging with public and private stakeholders, the State can build a resilient AAM ecosystem. Continued investment in both physical and digital infrastructure, guided by a statewide study, will position Maryland as a leader in AAM and unlock new opportunities for connectivity and economic growth.

Economic Development

The advancement of AAM infrastructure in Maryland presents a significant opportunity to stimulate economic growth across multiple sectors. Strategic investment in physical and digital infrastructure will not only support emerging aviation technologies but also catalyze job creation and regional competitiveness.

AAM-related infrastructure projects such as vertiport construction, droneport deployment, and UTM system integration will require skilled labor and the creation of jobs, as mentioned previously in the workforce development section. AAM infrastructure development can revitalize local economies, particularly in rural and underserved areas. These investments may attract new businesses, improve access to services, and support tourism, logistics, and healthcare delivery. Additionally, Maryland's leadership in securing grants, as discussed in the following section, demonstrates the State's capacity to leverage external funding to drive innovation and economic development.

It is recommended that Maryland integrate economic development goals into its AAM infrastructure planning efforts through coordination with the Department of Commerce, Department of Planning, and Department of Transportation. By aligning infrastructure planning with economic development strategies, Maryland can position itself as a national leader in AAM while delivering tangible benefits to its communities.

Appendix E: Partnerships and Pilot Projects

Pilot projects and partnerships are among the most effective ways to demonstrate how AAM will positively impact the lives of Marylanders while engaging legislators, public servants, and the general public to embrace these efforts. This involves storytelling, and that story should begin by illustrating the potential to save lives, improve health outcomes, enhance public safety, and deliver new levels of confidence to citizens. State investment in pilot programs will not only demonstrate Maryland's commitment to a leadership role in AAM but also make the State more attractive to commercial entities seeking favorable locations for early operations.

Beyond guiding the development of real-world technical AAM solutions, pilot projects offer a compelling option to help audiences visualize the technology in action. Partnerships between public and private entities to perform high-visibility projects of limited scope may play an important role in advancing public understanding and support.

In the UAS domain, both technology and regulation are sufficiently advanced to allow immediate execution of pilot projects aligned with compelling use cases. Proven applications such as on-demand emergency medical services (EMS) and routine medical supply deliveries demonstrate the feasibility of real-world deployment. Investment in these pilot projects can provide immediate practical benefits while demystifying drone operations for the public.

For RAM and UAM, the work can start now to identify pilot projects focused on aeromedical and regional transportation use cases. As aircraft receive certification in the near future, these projects can be prepared in advance and ready for deployment as soon as possible.

In addition to state investment, Maryland may identify and pursue grant opportunities that incentivize the use of advanced technologies to enhance public health and broaden transportation networks.

MARYLAND AAM COUNCIL MEETING AT THE HAGERSTOWN AVIATION MUSEUM 10-06-25

Public-Private Partnerships

Promising funding resources may emerge through the formation of public-private partnerships (P3s). Alternate delivery methods such as P3s may enhance the risk/ reward balance to improve viability of developing and operating infrastructure. Key to this strategy is understanding the business models of the various AAM operator- owners. Additionally, by establishing multi-partner collaboratives, it may be possible to link multiple projects together, such as electrification efforts, which helps spread the risk across a wider group of potential beneficiaries. Maryland can also benefit by facilitating partnership formation without directly investing and participating in the partnership itself.

Pilot Projects

Pilot projects can be a foundational tool for advancing AAM in Maryland, providing an environment to test new technologies, conduct gap analyses, build public awareness and acceptance, and further attract investment.

Pursuing grants and forming P3s offers a pathway to unlock early AAM opportunities, including pilot projects and early use case testing. Pilot projects can be a foundational tool for advancing AAM in Maryland, providing an environment to test new technologies, conduct gap analyses, build public awareness and acceptance, and further attract investment. Priority areas Maryland shall pursue for early AAM pilot projects are aeromedical transport and disaster response operations. These are clear and compelling use cases for AAM technologies in Maryland that have the potential to improve access to care, enhance emergency response capabilities, and save lives. Pilot projects for these applications not only demonstrate the public benefit of AAM but also help advance real-world capabilities. Some high-impact use cases that directly support public health and emergency response in Maryland include:

- Delivery of Medical Supplies: rapid deployment of critical items like Stop the Bleed kits, Automated External Defibrillators (AEDs), EpiPens, and Narcan
- Medication Delivery: timely transport of prescriptions and treatments, especially in remote or underserved areas
- Organ and Blood Delivery: fast transport between hospitals and transplant centers
- Disaster Response: support for emergency operations through aerial assessment and supplies delivery

These high-impact use cases can be introduced through a phased implementation approach, allowing Maryland to build operational capacity over time while demonstrating tangible public benefits at each stage.

Maryland is uniquely positioned to lead in aeromedical and emergency response applications of AAM through partnerships with the Maryland Shock Trauma Center, the Maryland State

Police Aviation Command, and the Maryland Military Department. The Maryland Shock Trauma Center is a national leader in trauma care, offering a strong foundation for piloting AAM aeromedical missions. The Maryland State Police Aviation Command operates a fleet of helicopters that provide critical services including MEDEVAC, search and rescue, law enforcement support, and homeland security missions. Their existing assets and operational expertise make them an ideal collaborator for integrating AAM technologies into emergency response workflows. Both the Maryland Air National Guard and Army National Guard have potential to expand their mission set to include disaster response and aeromedical support using AAM.

The Maryland National Guard is establishing a UAS pilot program that leverages the State's technological and academic assets to address current capability gaps at the federal level. This initiative is designed to foster collaboration across Maryland's emerging UAS industry, creating pathways for local companies to validate and demonstrate their technologies. By supporting both military and civilian applications, this pilot project exemplifies the type of high-impact, dual-use initiative Maryland should prioritize. For more information on this pilot project, see **Appendix G:** Maryland Military Department Contribution to Advanced Air Mobility.

The eVTOL and AAM Integration Pilot Program

The FAA has established the eVTOL and AAM Integration Pilot Program (eIPP) which enables limited commercial operations of AAM aircraft prior to full certification. This pre-certification gives participants an opportunity to test real-world operations under FAA oversight. Its intended to accelerate learning, reduce barriers, and allow testing of innovations in live conditions. To participate, a governmental entity must partner with a U.S.-based private entity experienced in AAM development, manufacturing, operations, or supporting technologies[20]. Maryland is participating in a multi-state proposal for this program with other states including Pennsylvania, Virginia, Oklahoma, Oregon, Massachusetts, Maine, Georgia, North Carolina, Alaska, Illinois, Washington, and potentially other states as well. Multiple mission sets may be prioritized for Maryland under the eIPP including:

- Short- range medevac and emergency logistics
- Short- range emergency passenger transport
- Short- range transportation of organs, blood, and other critical cargo
- Longer- range transportation of organs, blood, and other critical cargo regionally using fixed- wing electric aircraft

[20] Federal Aviation Administration. (2025, September 16). *Electric vertical takeoff and landing and advanced air mobility integration pilot* (90 FR 44623). Federal Register.

- Longer- range regional passenger flights using fixed-wing electric aircraft

Maryland's involvement in the eIPP not only positions the state to influence AAM policy, attract investment, promote workforce development, and become a hub for aviation innovation, but also exemplifies the type of pilot programs and partnerships the state should actively pursue to accelerate innovation and readiness.

Grants and Other Funding

As noted previously, Maryland's medical delivery pilot program, led by the University of Maryland's UROC, demonstrates the potential of AAM technologies to improve critical services. This initiative was supported through the U.S. DOT's SMART Grant Program, underscoring the value of federal funding in advancing innovative transportation solutions.[21] It is recommended that the State continue to pursue and support similar grant opportunities to sustain research, expand pilot programs, and accelerate the integration of AAM technologies across Maryland.

The University of Maryland is also participating in the Defense Advanced Research Projects Agency (DARPA) Triage Challenge. The challenge is funded by DARPA under its Research Infrastructure for Trauma with Medical Observations (RITMO) program.[22] It is recommended that Maryland continue to identify and apply for federally funded research initiatives like this to accelerate innovation and expand the operational use cases of AAM technologies.

The Maryland Department of Health is currently leading the State's response to the recently announced federal Rural Health Transformation Program, a $50 billion initiative administered by the Centers for Medicare & Medicaid Services (CMS) to improve rural health care access, quality, and outcomes.[23] It is recommended that Maryland

> It is recommended that Maryland continue to prioritize grant opportunities of this nature to advance research, pilot programs, and infrastructure planning for AAM technologies.

[21] University of Maryland UAS Research and Operations Center. (2025, October 8). *UROC spearheads medical delivery pilot program*. https://uroc.umd.edu/news/story/uroc-spearheads-medical-delivery-pilot-program
[22] University of Maryland Department of Aerospace Engineering. (2025, October 8). *UMD-led team selected for DARPA Triage Challenge*. https://aero.umd.edu/news/story/umdled-team-selected-for-darpa-triage-challenge
[23] Centers for Medicare & Medicaid Services. (n.d.). *Rural Health Transformation (RHT) Program overview*. U.S. Department of Health & Human Services. https://www.cms.gov/priorities/rural-health-transformation-rht-program/overview

continue to prioritize grant opportunities of this nature to advance research, pilot programs, and infrastructure planning for AAM technologies.

Maryland may also explore future applications of AAM technologies through cooperative agreements with the Air Force Research Laboratory, including the potential establishment of a geographically separated unit located at the Shock Trauma Center. An expanded partnership with the Air Force could offer accelerator opportunities and deepen federal collaboration, further positioning Maryland as a national leader in AAM-enabled emergency response and trauma care innovation.

Maryland should also prioritize partnerships with the Maryland Military Department, whose aviation infrastructure and operational expertise offer a strategic advantage for AAM deployment. Martin State Airport, home to the Maryland Air National Guard, is a dual-use facility that can serve as a demonstration site for both military and civilian AAM operations. Federal funding associated with a new flying mission for the Air National Guard at Martin State could support infrastructure upgrades that benefit emergency response, aeromedical transport, and commercial AAM services. By aligning infrastructure improvements at Martin State Airport with both military and civilian AAM objectives, Maryland can unlock federal funding opportunities and establish the site as a AAM hub for innovation and deployment.

Partnerships with NASA may provide additional funding opportunities and technical resources as well, through their initiatives such as the AAM National Campaign and UTM research.

Statewide Partnerships

It is recommended that Maryland establish statewide AAM industry partnerships, which may serve as a mechanism to unify stakeholders, coordinate efforts, and accelerate innovation. Unlike traditional partnerships or P3s, partnerships bring together a broader cross-section of public agencies, private sector leaders, academic institutions, and community organizations under a shared vision. For example, an Aeromedical and Emergency Response AAM Partnership could foster collaboration between the Maryland Shock Trauma Center, other Maryland hospitals, the Maryland Military Department, the Maryland State Police, other state and local emergency management agencies, OEMs, and operators. Similarly, an AAM Infrastructure Partnership could connect airports, utility companies, local governments, OEMs, and operators to coordinate vertiport and droneport planning, electric grid readiness, and multimodal integration. These examples represent potential partnerships and are not exhaustive; Maryland should ensure that all relevant AAM stakeholders have opportunities to participate in groups that align with their roles and capabilities. By fostering regular dialogue and joint planning, partnerships can help ensure that AAM development aligns with Maryland's goals.

AEROMEDICAL + AAM IN MARYLAND

Source: AECOM

Investments and Cost

Strategic investment will be the cornerstone of Maryland's AAM readiness. While the full cost of implementation is still being determined, it is clear that meaningful financial support will be required to advance pilot programs, build infrastructure, and attract industry partners. Maryland must develop a proactive investment strategy that leverages federal grant programs, state funding mechanisms, and private capital. This includes identifying opportunities for co-investment with commercial stakeholders, aligning infrastructure upgrades with economic development goals, and coordinating with agencies such as the Maryland Department of Commerce and Department of Transportation. By establishing a clear framework for investment and funding, Maryland can accelerate AAM deployment and maintain momentum toward becoming a national leader in advanced aviation technologies.

Appendix F: Definition of Terms

- **Advanced Air Mobility (AAM):** an umbrella term describing the most recent set of aerospace vehicles and technologies; a rapidly evolving sector within the advanced mobility field, differentiated from traditional aviation by using highly automated, electrically powered aircraft types, both crewed and uncrewed, that operate at lower altitudes and will become increasingly connected to an integrated network of vehicle systems over the next 10+ years
- **Beyond Visual Line of Sight (BVLOS):** an operation where an uncrewed aircraft is flown beyond the pilot's direct line of sight
- **Code of Maryland Regulations (COMAR):** the official compilation of all administrative regulations issued by agencies of the state of Maryland
- **Droneport:** an area that is dedicated for the landing and takeoff of UAS aircraft
- **Electric Conventional Takeoff and Landing (eCTOL) Vehicle:** electric versions of general aviation aircraft that require standard runways for takeoff and landing
- **Electric-Hybrid Vertical Takeoff and Landing (eh-VTOL) Vehicle:** an electric- hybrid VTOL
- **Electric Short Takeoff and Landing (eSTOL) Vehicle:** an electric aircraft designed to operate from short runways
- **Electric Vertical Takeoff and Landing (eVTOL) Vehicle:** an electric aircraft capable of vertical takeoffs and/or landings which can be conducted from a small surface such as a helipad instead of a runway.
- **Multiport:** an multi-modal connecting hub supporting various advanced mobility vehicles.
- **National Airspace System (NAS):** a network of both controlled and uncontrolled airspace, both domestic and oceanic, managed by the FAA
- **National Plan of Integrated Airport Systems (NPIAS):** identifies nearly 3,300 public-use airports that are included in the national airport system, the roles they currently serve, and the amounts and types of airport development eligible for Federal funding under the Airport Improvement Program (AIP) over the next 5 years
- **Original Equipment Manufacturer (OEM):** for the purposes of this report, a company that designs, builds, and supplies aircraft or supporting technologies for AAM operations

- **Regional Air Mobility (RAM):** Involves electric or hybrid aircraft that transport people and goods between regions carrying between 5 and 30 passengers (or equivalent freight) along a distance of 30 to 300 miles or more. RAM vehicles will be able to utilize existing aviation infrastructure.
- **Uncrewed Aerial Systems (UAS):** Systems incorporating uncrewed aerial vehicles (UAVs) commonly referred to as drones. UAS are used for a wide variety of purposes, both commercial and public-service, in addition to recreationally.
- **Uncrewed Aerial Vehicle (UAV):** aircraft that operates autonomously as part of a UAS
- **Uncrewed Traffic Management System (UTM):** a digital system designed to safely coordinate low-altitude airspace operations for uncrewed aircraft
- **Urban Air Mobility (UAM):** Consists of highly automated aircraft that provide commercial services to the public within an urban area. Will transport small passenger groups (5 or less) over short distances (5-40 miles), performing many roles currently fulfilled by helicopters at lower cost and with less environmental impact.
- **Vertiport:** an area used to support the landing, takeoff, servicing, passenger pickup/drop-off, and storage of powered-lift aircraft

Appendix G: Maryland Military Department Contribution to Advanced Air Mobility

Maryland Military Department Contribution to Advanced Air Mobility Development

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Maryland Military Department Contribution to Advanced Air Mobility Development

Executive Summary

The Maryland Military Department stands as a critical strategic partner in advancing the state's Advanced Air Mobility objectives. Through decades of operational aviation experience, existing infrastructure assets, and deep connections to Maryland's defense and aerospace industries, the MMD offers unique capabilities that directly address several of the Council's identified focus areas. The convergence of federal priorities for unmanned systems dominance, the Maryland National Guard's operational expertise, and the state's broader AAM goals creates an unprecedented opportunity for collaborative advancement of this emerging sector.

Background and Strategic Context

The Maryland Military Department's engagement with Advanced Air Mobility represents the intersection of national defense priorities and state economic development objectives. On July 10, 2025, the Secretary of Defense issued a comprehensive memorandum establishing U.S. military dominance in unmanned aerial systems, directly responding to Executive Order 14307, "Unleashing American Drone Dominance." This federal directive addresses critical capability gaps in small drone deployment across military units and provides a framework within which the Maryland National Guard can serve as both beneficiary and enabler of AAM development.

The Maryland Military Department comprises both the Maryland Army National Guard and the Maryland Air National Guard, bringing complementary capabilities to the AAM ecosystem. The MDARNG previously operated sophisticated unmanned systems including the RQ-7 Shadow and RQ-11 Raven platforms, accumulating substantial operational expertise in intelligence, surveillance, reconnaissance, and tactical applications. The MDANG maintains critical aviation infrastructure at Martin State Airport and possesses deep institutional knowledge of complex airspace operations, safety protocols, and mission planning. Together, these organizations represent a significant state asset that can accelerate Maryland's AAM preparedness while simultaneously strengthening military readiness and national security objectives.

Operational Expertise and Capability Development

The Maryland Army National Guard's historical operation of the RQ-7 Shadow tactical unmanned aircraft system provided personnel with advanced experience in beyond visual line of sight operations, coordinated airspace management, and integration of unmanned systems with manned aviation activities. This expertise directly translates to several AAM applications identified by the Council, particularly in emergency response, infrastructure inspection, and regional coordination. The Shadow system's employment required sophisticated understanding of weather impacts on unmanned operations, communication system redundancies, and mission planning in complex airspace environments. These skills remain resident in Maryland's military workforce and represent transferable knowledge applicable to commercial AAM operations.

Maryland Military Department Contribution to Advanced Air Mobility Development

Building upon this foundation, the Maryland National Guard is establishing a comprehensive UAS pilot program designed to leverage the state's technological and academic assets while addressing current capability gaps identified at the federal level. This initiative focuses on Group 1 and 2 small, unmanned aircraft systems, which the Department of Defense has reclassified as consumable commodities rather than durable property. This classification significantly simplifies acquisition procedures and enables more rapid deployment cycles, creating opportunities for Maryland-based manufacturers to demonstrate systems in operationally relevant environments.

The pilot program will collaborate extensively with Maryland's emerging UAS industry, including companies such as Mistral Incorporated in Nottingham, UAV Solutions in Jessup, Airgility in College Park, Platform Aerospace in Hollywood, American Robotics in Baltimore, Department 13 in Columbia, and Maryland Aerospace in Crofton. These partnerships create pathways for Maryland companies to validate their technologies through military evaluation, potentially leading to Blue List certification that enables Department of Defense-wide procurement. Beyond military applications, these validations provide commercial credibility that can accelerate civilian market adoption, directly supporting the Council's objective of attracting AAM businesses to Maryland.

Infrastructure Development and Regional Integration

Martin State Airport represents a cornerstone asset in Maryland's AAM infrastructure strategy. The Maryland Air National Guard's advocacy for a new manned flying mission creates the catalyst for substantial facility improvements that will benefit both military and civilian AAM operations. Proposed upgrades include obstruction removal and powerline adjustments at the Runway 15 approach, enhancements that will improve operational safety margins and expand the envelope of aircraft types that can effectively utilize the facility. These modifications are particularly relevant for electric vertical takeoff and landing aircraft and Regional Air Mobility services, both of which require careful consideration of approach path clearances and emergency landing options.

The Department of Defense investment associated with a new flying mission would channel substantial federal resources into Maryland, generating construction employment, modernizing infrastructure, and creating a facility capable of supporting the full spectrum of AAM operations. Martin State Airport's location within the Baltimore metropolitan area positions it as an ideal hub for demonstrating urban air mobility concepts while its existing infrastructure provides the foundation for rapid implementation of AAM services. The airport's dual military-civilian use character also provides unique opportunities for shared development costs and integrated operations that maximize utilization of limited airspace resources.

Beyond Martin State Airport, the Maryland National Guard maintains relationships with numerous facilities across the state through training activities, emergency response coordination, and mutual support agreements. This network positions the MMD to facilitate regional deployment assessments called for in the Council's initial findings. Military planners regularly

evaluate airfield capabilities, infrastructure adequacy, and operational constraints across diverse environments, bringing analytical frameworks that can be applied to assessing which regional airports are best positioned to support specific AAM use cases. The Guard's experience with dispersed operations and logistics networks also informs understanding of how AAM services can integrate with existing transportation systems to create resilient, multi-modal solutions.

Workforce Development and Educational Partnerships

A new Maryland Air National Guard flying mission would introduce a cadre of highly skilled aviation professionals to the state's workforce. These individuals bring not only technical proficiency in aircraft operations, maintenance, and logistics, but also the safety culture and operational discipline developed through military aviation training. Many Guard members maintain dual careers, working in civilian aviation or aerospace sectors while serving part-time in military roles. This dual status creates natural knowledge transfer pathways between military and commercial aviation domains, accelerating the diffusion of best practices and operational lessons learned.

The Maryland Military Department maintains established partnerships with the University of Maryland UAS Research and Operations Center at St. Mary's County Regional Airport. UROC has conducted groundbreaking operations including the first documented drone organ delivery and continues to advance research in autonomous systems, traffic management, and operational safety. The Military Department's collaboration with UROC creates opportunities for joint testing and evaluation, shared use of facilities, and integrated curriculum development that prepares students for both military and commercial UAS careers. Similarly, partnerships with Johns Hopkins Applied Physics Laboratory provide access to cutting-edge research in collision avoidance technologies, fixed-wing autonomy, and system integration challenges that are critical to safe AAM operations.

The Council has identified workforce development as a key focus area requiring coordination among industry, academia, state labor agencies, and economic development leaders. The Maryland Military Department can serve as Co-Chairs for technical working groups focused on AAM-specific competencies, certification pathways, and training standardization. Military occupational specialties in aviation maintenance, air traffic control, unmanned aircraft operations, and aerospace ground equipment provide existing frameworks that can inform civilian credential development. The Guard's tuition assistance programs and education partnerships also create pipelines for service members to transition into civilian AAM careers, providing Maryland companies with a ready pool of pre-trained, security-cleared personnel.

Maryland Military Department Contribution to Advanced Air Mobility Development

Emergency Response and Public Safety Integration

The Maryland National Guard serves as the state's primary military reserve for domestic emergencies, with extensive experience in disaster response, civil support operations, and coordination with state and local agencies. This mission set aligns closely with several high-priority AAM applications identified in the Council's initial findings, particularly emergency medical services, disaster response, and critical infrastructure protection. The Guard's existing relationships with Maryland's emergency management agencies, first responder communities, and healthcare systems position it to facilitate AAM integration into emergency operations plans and mutual aid frameworks.

Unmanned aircraft systems offer significant potential for enhancing the "Golden Hour" of trauma care through rapid medication delivery, blood product transport, and organ transplant logistics. The Maryland National Guard can provide operational support for pilot programs testing these applications, offering communications infrastructure, airspace coordination, and security assets that reduce barriers to demonstration projects. Guard aviation units routinely coordinate with civilian medical helicopters and understand the complexity of integrating air operations with ground-based emergency services. This expertise is directly applicable to establishing procedures for eVTOL medical transport and UAS delivery operations in emergency scenarios.

The Council has noted that public outreach and education represent critical elements of AAM implementation. The Maryland National Guard maintains robust community engagement programs and possesses credibility as a trusted state institution. Guard personnel can support public education initiatives by participating in demonstrations, explaining safety protocols, and addressing community concerns about noise, privacy, and operational impacts. The military's emphasis on safety, training, and accountability provides reassurance to communities that may be apprehensive about new aviation technologies operating at low altitudes over populated areas. The Guard's experience with managing community relations around airfield operations offers valuable lessons for AAM operators seeking to build public acceptance.

Regulatory Framework and Safety Protocol Development

The Council has identified the need for Maryland to develop consistent statewide approaches to AAM regulation and operation. The Maryland Military Department operates under comprehensive safety management systems, standardized operating procedures, and risk assessment methodologies that have been refined through decades of aviation operations. These frameworks can inform civilian AAM safety requirements, particularly for operations in complex environments, inclement weather, and emergency situations. Military aviation safety investigations follow rigorous protocols that identify causal factors and develop systemic solutions, practices that can be adapted to commercial AAM oversight.

Maryland Military Department Contribution to Advanced Air Mobility Development

Airspace coordination represents one of the most complex challenges facing AAM implementation, particularly in Maryland where restricted airspace around the National Capital Region creates significant operational constraints. The Maryland National Guard works daily with federal aviation authorities, air defense sectors, and civilian air traffic control to manage airspace utilization. This experience provides insights into developing low-altitude airspace policies that balance competing demands while maintaining safety for all users. The Guard can facilitate dialogue between AAM operators and federal agencies, helping to identify acceptable solutions that enable operations while respecting security imperatives and existing aviation activities.

The Council has noted that statewide oversight may require designating a single state agency or individual to drive unified AAM policy across departments. The Maryland Military Department's structure provides a model of coordinated operations across diverse functional areas with clear chains of authority and established coordination mechanisms. Military staff planning processes emphasize integrated solutions that consider second and third-order effects across multiple domains. These methodologies can inform how Maryland structures its AAM governance to ensure that infrastructure, workforce, regulatory, and economic development efforts remain synchronized and mutually reinforcing.

Testing, Evaluation, and Innovation Support

Maryland's military installations and training areas offer potential venues for controlled AAM testing and evaluation. The state's geographic diversity, ranging from dense urban environments to rural agricultural areas and coastal regions, enables representative testing across varied operational scenarios. Military ranges provide secure areas for evaluating systems that may not yet be ready for operations in civilian airspace, reducing barriers to technology demonstration and accelerating the development cycle. The Maryland National Guard's experience managing live-fire ranges and restricted areas translates to expertise in managing test airspace, ensuring safety, and coordinating with regulatory authorities.

The pilot program for small, unmanned aircraft systems creates an immediate opportunity for Maryland companies to demonstrate capabilities in operationally relevant scenarios. Rather than solely pursuing military requirements, this program can be structured to evaluate dual-use technologies that serve both defense and commercial applications. Successful demonstrations not only support military procurement decisions but also generate performance data, operational experience, and safety records that facilitate Federal Aviation Administration certification processes. This approach creates a force multiplier effect where military investment accelerates commercial viability.

The Maryland Military Department can also serve as an early adopter of mature AAM technologies, providing a sophisticated customer that validates business models and operational concepts. Guard units require transportation of personnel, equipment, and supplies across the state for training events, maintenance activities, and emergency responses. These predictable,

recurring transportation demands could be partially served by RAM or UAM services as they become available, providing revenue stability that helps operators achieve the scale necessary for broader market viability. Military adoption also signals confidence in technology maturity, potentially accelerating acceptance by civilian users and investors.

Economic Development and Industry Partnership

The Council has emphasized that Maryland must prepare to capture economic benefits associated with AAM industry growth. The Maryland Military Department's procurement activities, facility improvement projects, and technology partnerships represent substantial economic activity that can be strategically directed to support in-state companies and workforce development. By prioritizing Maryland-based manufacturers in the UAS pilot program, the Guard can help grow companies that subsequently expand into civilian markets, creating jobs and increasing the state's tax base.

The relationship between military validation and commercial success is well established in aerospace industries. Technologies that prove themselves in demanding military applications gain credibility that facilitates civilian market entry. The Maryland National Guard can structure its industry partnerships to explicitly support this pathway, providing rigorous evaluation feedback, operational data, and performance documentation that companies can leverage in pursuing commercial certifications and customer relationships. This approach requires minimal additional state investment since the military has independent requirements for these capabilities yet generates spillover benefits for Maryland's broader economic objectives.

Federal defense spending represents a significant economic input to Maryland, and the state should seek to maximize retention of these dollars while aligning military requirements with civilian priorities. Infrastructure improvements at Martin State Airport, UAS procurements, and training facility upgrades all represent opportunities to demonstrate this alignment. By making explicit connections between military modernization and AAM development, Maryland can make compelling cases to federal decision-makers that investments in the state's military assets simultaneously advance national security and domestic economic objectives.

Recommendations for Council Consideration

The Maryland Military Department recommends that the Advanced Air Mobility Council formally recognize military assets and capabilities as integral components of the state's AAM strategy. Specifically, the Council should consider establishing a standing military liaison position to ensure ongoing coordination between MMD activities and civilian AAM initiatives. This liaison would facilitate information sharing, identify partnership opportunities, and ensure that military infrastructure improvements align with broader state AAM objectives.

The Council should also advocate for state and federal funding to implement proposed improvements at Martin State Airport, positioning the facility as Maryland's premier dual-use AAM hub. These investments should be structured to support both military mission requirements and civilian AAM operations, maximizing utilization and return on investment. The Council can strengthen advocacy efforts by documenting how military facility improvements generate spillover benefits for civilian transportation, economic development, and emergency response capabilities.

Workforce development initiatives should explicitly incorporate military training pathways and veteran transition programs. The Council should work with state labor and education agencies to ensure that military aviation credentials receive appropriate recognition in civilian licensing frameworks and that veterans with relevant experience can efficiently transition into AAM careers. Educational institutions receiving state support for AAM-related programs should be encouraged to develop partnerships with military installations, creating research collaborations, internship opportunities, and joint use of specialized facilities.

The Maryland National Guard's UAS pilot program should be recognized as a catalyst for commercial AAM development, and appropriate state resources should be dedicated to maximizing its effectiveness. This could include supporting partnerships between military evaluators and Maryland companies, facilitating access to test ranges and airspace, and documenting lessons learned in formats that inform civilian operational development. Success metrics for the pilot program should include not only military capability delivered but also commercial technologies validated, and Maryland jobs created.

Finally, the Council should ensure that emergency response and public safety applications remain priority focus areas for AAM implementation. The Maryland Military Department stands ready to support pilot programs, provide operational expertise, and facilitate coordination with emergency management agencies. Early demonstration of AAM capabilities in life-saving scenarios will build public support and create political will for necessary infrastructure investments and regulatory adaptations.

Conclusion

The Maryland Military Department brings unique assets, expertise, and relationships that position it as an essential partner in advancing the state's Advanced Air Mobility objectives. Through operational experience with unmanned systems, control of critical infrastructure, deep industry connections, and commitment to public service, the MMD can accelerate Maryland's AAM readiness while simultaneously strengthening military capabilities and national security. The alignment between federal priorities for drone dominance and state economic development goals creates a window of opportunity that Maryland should aggressively pursue. By integrating military capabilities into the broader AAM strategy, the Council can develop recommendations that maximize return on investment, compress development timelines, and position Maryland as a national leader in this transformative technology sector.

Appendix H: Memorandum on Legal Liability

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION
OFFICE OF THE ATTORNEY GENERAL

MEMORANDUM

TO: **Maryland Advance Air Mobility Council**

FROM: **Office of the Attorney General**
Maryland Aviation Administration

DATE: **May 30, 2025**

SUBJECT: **Preliminary Legal Liability Related Advanced Air Mobility**

This is Advice of Counsel and not An Opinion of the Attorney General

I. Authority to Regulate

Pursuant to the Governor's Executive Order 01.01.2025.05, the Advance Air Mobility Council ("Council") is required to explore "policies and regulatory operations that are necessary for advanced air mobility technologies to operate and excel in the State" of Maryland. To do so we must first determine what authority the State possesses to create policy and regulate Advanced Air Mobility ("AAM").

A. Federal Law

Under federal law, the United States Congress maintains that, "[t]he United States Government has exclusive sovereignty of airspace of the United States." See, 49 U.S.C. § 40103(a)(1). While the states are not precluded from passing aviation regulations, it is recognized that the Federal Government exclusively controls much of the field. *United Parcel Serv., Inc. v. Flores–Galarza*, 318 F.3d 323, 336 (1st Cir. 2003). How this control of the airspace is applied to advanced air mobility systems has yet to be fully determined fully. In *Singer v. City of Newton* 284 F. Supp. 3d 125, 128 (2017), a municipality in Massachusetts enacted an ordinance which regulated Unmanned Aircraft Systems ("UAS" or commonly referred to as "drones") for the purpose of "protecting the privacy of residents". While the ordinance provided that it was "intended to be read and interpreted in harmony with all relevant rules and regulations of the FAA", it imposed registration requirements upon owners of UAS as well as general restrictions on their operation which conflicted with FAA regulation. It was challenged by an FAA certified unmanned aircraft pilot who owned several drones. *Id* at 127. The Court ruled that the sections of the ordinance which conflicted with federal regulation (registration provision, altitude restrictions, and visual operation limit) were preempted, but allowed the balance of the ordinance to stand, and invited the city to redraft the ordinance to avoid preemption issues. *Id* at 132-133.

B. State Law Regulation of UAS

The state of Texas enacted a more narrowly tailored law making it unlawful to use an unmanned aircraft to "capture an image of an individual or privately owned real estate in the state with the intent to conduct surveillance on the individual or property captured in the image". *National Press Photographers Association v. McCraw,* 90 F.4th 770, 777-778 (2024). The Texas law also made it illegal to fly a UAS above sensitive sites like critical infrastructure, prisons, and large sports venues. *Id.* The statute was distinct from the statute in the *City of Newton* case, in providing 21 exemptions for persons and entities to include: education, industry, law enforcement, emergency services and others. The Texas statute permitted recording public property and recording from publicly accessible locations under certain conditions. See, Vernon's Texas Statutes and Codes Annotated, Government Code, Executive Branch, Subtitle B, Chapter 423. This statute was challenged by members of the press on First Amendment grounds that it violated their free speech right by preventing them from using drones for journalistic purposes. *Id* at 779. The press argued that that Texas law was preempted by FAA regulation of national airspace. *Id* at 795. The Court ruled for Texas, holding that the Plaintiff did not show that the FAA intended to occupy the entire field of drone regulation. The Court noted that federal law has not completely preempted regulation as to UAS flying over certain buildings and structures. *Id* at 796. Citing an FAA agency rule on drone regulation, the Court held that the FAA expressly declined to preempt all state regulation of UAS.[1] *Id.*; see *Operation and Certification of Small Unmanned Aircraft Systems*, 81 FR 42064-01, 42194 (June 28, 2016). The *McCraw* Court also cited a Fact Sheet issued by the FAA which though it asserts exclusive authority by the FAA to regulate aviation safety and the efficient use of airspace by aircraft, indicates "that a law seeking to advance other objectives is generally not covered by field preemption unless it impairs the reasonable use by UAS of the airspace". *Id*. at 797, see also *State and Local Regulation of Unmanned Aircraft Systems (UAS) Fact Sheet, FAA, Office of Chief Counsel* (July 14, 2023).

In addition to Texas, other states have also sought to regulate the use of UAS. In a January 2025 Ohio law, Ohio prohibits "operat[ing] an unmanned aerial vehicle on the land[,] water or air space [in] the state in a manner that knowingly endangers any person or property or purposely disregards the rights or safety of others." Ohio Statutes and Court Rules, Title XLV Motor Vehicles – Aeronautics-Watercraft, Chapter 4561.15, 50 – 53. Similar to the Texas statute, the Ohio law provides protections for "critical facilities" which are defined in the Statute. *Id* at 4561.52. It also delegates to local governments the ability to regulate use and operation unmanned aerial vehicles operated hobby or recreational purposes in parks or other property owned the local government.

[1] "[t]he FAA is not persuaded that including a preemption provision in the final rule is warranted at this time. Preemption issues involving small UAS necessitate a case-specific analysis that is not appropriate in a rule of general applicability. Additionally, certain legal aspects concerning small UAS use may be best addressed at the State or local level. For example, State law and other legal protections for individual privacy may provide recourse for a person whose privacy may be affected through another person's use of a UAS*". Operation and Certification of Small Unmanned Aircraft Systems*, 81 FR 42064-01, 42194 (June 28, 2016)

Id at 4561. Given the recency of its passage there have been no reported legal challenges to the legality of the Ohio law.

Prior to the 2025 law, which imposed restrictions on the use of UAS, a Framework and an Economic Impact Study ("Study") was prepared for the Ohio Department of Transportation in 2021, which seems designed to encourage the development and use of UAS in Ohio. The Study has sections dealing with local and federal regulation and the impact study discusses AAM operations as related to local noise ordinances. The Study indicates that at the time of its preparation Ohio cities villages, counties, and park districts had enacted rules or ordinances regulating UAS's that while including language derived from FAA regulations or deferring to the FAA contained overly broad language that may contradict FAA regulations. Study at p 66. The Study's Executive Summary indicates that "Ohio can steer the AAM transition and scale AAM to its full potential ahead of the rest of the county" and touts Ohio's ability to collaborate across all levels of government and stakeholder industries". *Id*. at p. 10-11.

In addition to the Study, the Ohio Department of Transportation also commissioned a report titled *Infrastructure to Support Advanced Autonomous Aircraft Technologies in Ohio,* ("Report"), which was released in June 2021. The purpose of the Report was to "forecast the industrial and economic benefits of AAM systems and services through the year 2045". *Id.* at p. 2. While Ohio is attempting to lead in advancing UAS use, the state has also recently placed limitations on the use of UAS. The sponsor of the 2025 law provided testimony to the legislature indicating that his legislation was intended to take, "necessary actions to facilitate this exciting frontier and ensure a safe sky." Testimony of Bernie Willis, May 9, 2023.

The State of Virginia has sought to encourage the use of UAS and moved to regulate its use. In 2013, Virginia joined the Mid Atlantic Aviation Partnership (see the section on Maryland law for more information on the Mid Atlantic Aviation Partnership) and on January 1, 2021, a Virginia statute came into effect which preempted regulation of UAS by local government in favor of the state. See, Annotated Code of Virginia, Title 15.2, Subtitle II, Chapter 9, Article 1, Section 27-15.1. While these actions would both be seen to encourage the development and use of UAS within Virginia, the state has legislation that limits the use of UAS. For example, on July 1, 2023, Virginia made it a misdemeanor to, "cause an unmanned aircraft system to secretly or furtively peep or spy or attempt to peep or spy into or through a window, door, or other aperture of any building, structure, or other enclosure occupied or intended for occupancy as a dwelling". Id. Title 18.2, Chapter 5, Article 5, Section 18.2 -130.1. Virginia also updated its law on the use of UAS by public agencies on March 24, 2025. The updated law provides specific instances and circumstances in which state and local law enforcement may use UAS without obtaining a search warrant, administrative warrant or inspection warrant issued pursuant to law. Id. Title 19.2, Chapter 5, Section 19.2-60.1. In addition, the Virginia Administrative Code also provides that except as authorized by the Director of the Department of Natural Resources individuals may not utilize an unmanned aircraft to hunt or herd any wild animal for the purpose of hunting or to harass a wild animal. See, Code of Virginia, Title 4, Agency 15, Chapter 20, 4VAC15-20-240. The code also prohibits the UAS operation within state parks. Code of Virginia, Title 4, Agency 5, Chapter 30, 4VAC5-30-400.

C. Maryland Law

On April 5, 2015, the Maryland General Assembly passed the Unmanned Aircraft Systems (UAS) Research, Development, Regulation, and Privacy Act of 2015. It was signed into law by the Governor on May 12, 2015. The Act consists of two sections in Title 14 (Miscellaneous Provisions) of the Economic Development Article, Annotated Code of Maryland. Section 14-301, Laws Governing the testing and operation of unmanned aircraft systems defines "unmanned aircraft" and "unmanned aircraft system". It also preempts the authority of local governments to "prohibit, restrict, or regulate" the testing or operation of UAS. In accordance with section 14-302, monitoring of regulation of small commercial unmanned aircraft systems (UAS), it provides that the Maryland Department of Transportation ("MDOT") [specifically including MAA], shall: (1) monitor the FAA for any proposed regulations or rulemaking that relate to the operation of small commercial UAS, (2) determine the impact of any proposed regulations or rulemaking on the State, and (3) determine if it is in the public interest for the State to consider legislation relating to the operation of UAS. It requires MDOT and MAA to consult with: (1) the University of Maryland, in its role as a member of Mid-Atlantic Aviation Partnership,[2] (2) county and municipal governments, and (3) other parties that MDOT, MAA determine appropriate. If MDOT or MAA determine that any proposed regulation or rulemaking that relate small commercial UAS have been or are likely to be adopted by the FAA, they shall report any finding and recommendations to the Governor and General Assembly.

D. Conclusion

While the UAS Research, Development, Regulation, and Privacy Act of 2015 explicitly preempts any local authority regulation of UAS in favor of state level regulation in Maryland the more difficult question is, how much authority remains for Maryland to regulate in this space given federal preemption? FAA publications indicate that while the agency is asserting exclusive authority as to UAS safety and airspace use they do acknowledge a role for state and local governments in regulating UAS outside of those areas. How large the role available to state government is uncertain. While neither is binding law on a Maryland Court, a review of the *Singer* and *McCraw* decisions do provide guidance and would be seen as persuasive authority for a court reviewing a challenge to Maryland laws regulating the use of UAS. While *McCraw* affirms the Texas restrictions on UAS operations and Singer finds that many of the UAS restrictions imposed by a municipality in Massachusetts to be preempted by federal law both decisions are consistent in that the Court in both acknowledged a role for state and local regulation so long as it does not

[2] Primary source materials appear to not be readily available, however the Mid-Atlantic Aviation Partnership appears to have been formed via a Memorandum of Understanding between the University of Maryland, Virginia Tech and Rutgers University on December 30, 2013. Virginia Tech University has posted significant on-line information regarding its operations as part of the partnership but makes no mention of the other partners (Mid-Atlantic Aviation Partnership | Mid-Atlantic Aviation Partnership | Virginia Tech). The University of Maryland and Rutgers have little information available on-line regarding the partnership, with Univ. of Maryland as noted elsewhere in the Advanced Air Mobility Findings Technical Report, having what appears to be a separate program at the UAS Research and Operations Center (UROC Site).

conflict with federal regulation. There is space for Maryland to regulate UAS usage so long as the state is careful to narrowly tailor laws and regulation so as to not run afoul of federal regulation and face preemption.

II. Public Safety and Privacy

A. UAS Legislation in Maryland

Privacy concerns have seeming grown as the popularity and prevalence of UAS has increased and this Council in its draft has recognized privacy as the most significant concern of Marylanders as it relates to UAS. Though the UAS Research, Development, Regulation, and Privacy Act of 2015 is thus far the only UAS specific law that has been enacted in Maryland, other laws have been proposed which for the most part would serve to restrict rather than facilitate the use of UAS within the state.

During the 2014 session bipartisan legislation was introduced that would have required agents of the state and local governments to obtain judicial warrants in order to utilize a drone to collect evidence and would have further required them to provide to the General Assembly each year a report on their drone usage during the previous year. The legislation had four sponsors in the House of Delegates (HB 847) and four sponsors in the Senate (SB 926). Neither bill made it out of committee. In 2020, he introduced a bill in the Maryland House of Delegates that would require any state agency or agency of a political subdivision to obtain a search warrant to conduct aerial surveillance for the purpose of gathering evidence or information in a criminal investigation. The bill failed. Thereafter, Delegate Grammer reintroduced the bill in 2022, 2023, 2024, and 2025 sessions of the General Assembly, each time the bill failed to pass committee. Up until 2025, he either sponsored the bill himself or co-sponsored it with another delegate. In 2025, though it still did not make it out of committee, the bi-partisan support increased for the bill as 16 delegates sponsored it.

During the 2025 session, nine members of the House of Delegates sponsored HB-1349. HB 1349 would have criminalized intentionally causing an UAS to enter the property of another and come within 50 feet of a dwelling with the intent to harass or to obtain video of the property or a person on the property. HB 1349 was opposed by the Maryland Department of Commerce citing restrictions such as this reducing public confidence in essential technology that presents a growing opportunity for Marylanders. Ultimately, HB 1349 did not make it out of committee.

On January 15, 2025, the Maryland House Judiciary Committee held a briefing on the use of drones by law enforcement. The briefing featured testimony from Montgomery County Police representatives, who operate a program in which UAS are the first responders to calls for service in high population areas in the county. The Montgomery County program prepositioned UAS on the roofs of buildings at various locations. The drones were programed to respond upon receipt of certain 911 calls. The American Civil Liberties Union ("ACLU") also presented testimony regarding concerns with law enforcement and private use of UAS. The ACLU asked the committee to consider what type of limits or guardrails the legislature should be put in place regarding UAS usage given their increasing prevalence and the privacy concerns that the usage raises.

B. Existing Maryland Law Applicable to UAS

Under Maryland's Criminal Law section 3-803, Harassment, it provides a punishment of up to 180 days incarceration and $1,000 fine for a repeated offender who "conduct[s] visual surveillance of an area of another's residence where the other has a reasonable expectation of privacy" with the intent to "harass, alarm, or annoy", after "receiving a reasonable warning or request to stop". Additionally, the surveillance must have a "legal purpose". While there are no reported cases in Maryland where an UAS was alleged to have been used to violate this statute, by its plain language it is reasonable to believe that it possible to use an UAS in manner that would constitute a criminal violation. In *State v Johnson,* 328 Or. App 340 (2023), the Court of Appeals of Oregon ruled on a defendant's appeal of his stalking conviction where one of the acts that served as a basis for his conviction was that the defendant flew his drone over the victim's home several times and then confronted her with what he observed via the drone. Unlike Oregon's stalking law, in order to establish stalking in Maryland it must be established that a potential defendant's conduct placed the victim in reasonable fear of serious bodily injury, assault, rape/sexual offense, false imprisonment or death and thus the Maryland stalking law would likely not apply to UAS surveillance. See, Annotated Code of Maryland, Criminal Law, Section 3-802 (Stalking).

Maryland law does address "visual surveillance" by the "use of cameras" or "electronic device[s] that can be used surreptitiously to observe an individual." Criminal Law Art., section 3-901. The law provides a penalty of 30 days incarceration and/or $1,000 fine for those that "conduct visual surveillance of an individual in a private place with the consent of that individual". *Id.* The penalty is increased to one-year of incarceration and/or $2500 if the visual surveillance is conducted with prurient intent. Id., Section 3-902 (Visual Surveillance with Prurient Intent). While there are no reported cases in which Maryland prohibitions on visual surveillance have been applied to the use of UAS, it would appear from the plain language of the statute that under the appropriate facts and circumstances that Maryland's criminal sanctions would be applicable to use of a UAS in Maryland.

Furthermore, Maryland criminal trespass statutes require that the perpetrator enter or be "on" the property of another for a trespass violation to occur. Annotated Code of Maryland, Criminal Law, Section 6-402 through 6-411. While there are no Maryland cases on point, it would seem unlikely that a UAS operating in the airspace above a property would be considered "on" the property of another.

C. Conclusion

Given the growing public concern regarding intrusions into privacy by UAS, it may be advisable to develop comprehensive legislation which would allow and encourage commercial and government use of UAS in a responsible manner to provide the maximum benefit to Marylanders. Also, the law should be developed to provide reasonable restrictions that would assure the public that their privacy is protected. The aforementioned Texas statutes (Chapter 423) which survived a constitutional challenge in the United States Court of Appeals, Fifth Circuit in 2024 would likely be instructive to this endeavor.

III. Potential Damages from Advance Air Mobility Incidents

A. Common Law

Based on the Maryland Constitution, a common law principle required that "every man, for any injury done to him in his person or property, ought to have remedy by the course of the Law of the Land[.]" See, Maryland Constitution, Declaration of Rights, Art. 19. In order to establish a cause of action in negligence for an accident, a plaintiff must prove the existence of four elements; (1) a duty owed to the plaintiff, (2) a breach of that duty, (3) a legally cognizable causal relationship between the breach of duty and the harm suffered, and (4) damages. *Cramer v. Housing Opportunities Comm'n*, 304 Md. 705, 712 (1985); *Scott v. Watson*, 278 Md. 160, 165 (1976). In order for the State to be found to face liability in undertaking activities related to UAS, a plaintiff would first have to overcome the limitations of sovereign liability.

Prior to 1976 the State of Maryland and its agencies enjoyed complete sovereign immunity from both tort and contract actions. *Tollenger v. State* 199 Md. App. 586, 592 (2011). "Sovereign immunity is a long-standing doctrine "[g]rounded in ancient common law[.]" Condon *v. State of Maryland-Univ. of Maryland*, 332 Md. 481, 492, 632 A.2d 753 (1993). In Maryland, sovereign immunity "prohibits suits against the State or its entities absent its consent." *Magnetti v. University of Maryland*, 402 Md. 548, 557 (2007). The consent may only be waived, "directly or by necessary implication[.]" *Katz v. Washington Suburban Sanitary Comm'n*, 284 Md. 503, 507-08 (1979).

B. Maryland Tort Claims Act of 1981

In 1976, the State first granted a conditional waiver of sovereign immunity and in 1981 enacted the Maryland Tort Claims Act (MTCA). The MTCA waives sovereign immunity for liability up to $400,000 to a single claimant for injuries arising from a single incident or occurrence. State Governments Article, §12-101 *et. seq*. Sovereign immunity is not waived as to punitive damages or tortious acts or omissions by State personnel that are not within the scope of their employment or made with malice or gross negligence. Courts and Judicial Proceedings Art., §5-501 *et seq*.

If it were determined that the State had consented to a suit through a waiver of its sovereign immunity, a plaintiff would first need to establish what if any duty the State owed the plaintiff. This duty would vary substantially depending upon the State's involvement. For example, where the State's only involvement to be the regulatory body of UAS activity, the potential for liability would be considerably reduced as compared to a situation in which the State owned and/or operated the facilities utilized in the operation of UAS. In an instance where the State owned or operated charging/fueling facilities, vertipads, hangers, or other facilities related to the operation of UAS they would, subject to the limitations of sovereign immunity, face the same liability as would a private entity.

Conclusion

The measure of State financial responsibility for accidents and losses relative to UAS use will largely be a function of the level of the State's ownership and/or involvement in UAS operation and the facilities related to their operation.

Appendix I: Memorandum on Privacy

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION
OFFICE OF THE ATTORNEY GENERAL

MEMORANDUM

TO: Maryland Advanced Air Mobility Council

FROM: Theodore W. Eyler ϯWƐ
Assistant Attorney General
Office of the Attorney General
Maryland Aviation Administration

DATE: September 15, 2025

SUBJECT: Questions from July 28, 2025, Advance Air Mobility Council Meeting

During the Maryland Advance Air Mobility Council ("Council" or "AAMC"), meeting held on July 28, 2025, the Council requested that the Marland Aviation Administration's ("MAA"), Office of the Attorney General ("OAG") research and provide information on the current law in Maryland as it relates to privacy and government/law enforcement use of Unmanned Aircraft Systems ("UAS" or "drones"). The Council asked that it be provided with information on (1) current privacy protections in place in Maryland and (2) any potential UAS legislation related to privacy protections including the UAS Research, Development, Regulation, and Privacy Act of 2015, also known as Maryland Senate Bill 370 ("SB370").

On July 31, 2025, OAG received an additional follow-up question seeking information as to whether evidence obtained by a drone on the way to a designated mission would be "admissible in court".

Maryland Senate Bill 370

SB370 is the only Maryland Legislation specifically addressing UAS[1]. It was passed by the Maryland Legislature on April 5, 2015, and signed into law by the Governor on May 12, 2015. It consists of six sections. Two of these sections are codified[2] in Title 14 (Miscellaneous Provisions) of the Economic Development Article, Annotated Code of Maryland ("Econ. Dev.") with the balance being uncodified.

[1] UAS were included among other miliary equipment in the Police Accountability Act of 2021 – Surplus Military Equipment and Investigation of Deaths Caused by Police Officers which prohibited law enforcement from receiving certain surplus military equipment from the federal government. This equipment included among other items, "weaponized drone[s]".

[2] Codified means that it appears in the Annotated Code of Maryland. Section (1) and section (4) of the act are codified, with the balance of the act being uncodified. Uncodified acts carry the force of law but appear only in the Session Laws. Uncodified legislation is passed by the legislature and signed by the governor but is generally of effect for a limited time or expresses the legislature's reason(s) for or intent in passing the law and by not codifying a portion of the law the legislature prevents superfluous language from cluttering the Annotated Code of Maryland. See *Prince George's County v. Maringo,* 151 Md. App. 662, 669 (2003), *Prince George's County Maryland v. Logtin*, 190 Md. App. 97, 125 (2010), *Maryland State Bd. of Educ. V. Bradford*, 387 Md. 353, 376 (2005).

Section (1), codified in Econ. Dev. §14-301, provides definitions of "unmanned aircraft" and an "unmanned aircraft system". It also preempts the authority of local government to "prohibit, restrict, or regulate" the testing or operation of UAS in Maryland.

Section (2) required state agencies to report to the General Assembly by December 31, 2015, findings and recommendations which: identify the benefits UAS, identify policies to address privacy and other concerns related to UAS, identify polices to address concerns specific to various industries, and provide certainty to companies that "want to use unmanned aircraft systems in the State". The Maryland Department of Commerce prepared a report in compliance with Section (2). See UAS and Maryland: Opportunity and Accountability, A Report Connected to the Unmanned Aircraft Systems Research, Development, Regulation, and Privacy Act of 2015.

Section (3) "encourages" county and local governments to work with federal and local law enforcement to determine how to enforce laws generally and Federal Aviation Administration ("FAA") laws as they relate to UAS.

Section (4), codified in Econ. Dev. §14-302, requires that the Department of Business and Economic Development ("DBED"), and Maryland Department of Transportation ("MDOT") (the act specifically includes MAA as part of MDOT) shall:

> (1) monitor the FAA for any proposed regulations or rulemaking that relate to the operation of small commercial UAS,
>
> (2) determine the impact of any proposed regulations or rulemaking on the State, and
>
> (3) determine if it is in the public interest for the State to consider legislation relating to the operation of UAS.

Under section (4) of SB370, MDOT and MAA are required to consult with: (1) the University of Maryland, in its role as a member of Mid-Atlantic Aviation Partnership, (2) county and municipal governments, and (3) other parties that MDOT or MAA determine to be appropriate. The bill also requires that if MDOT or MAA determine that any proposed regulation or rulemaking that relate to small commercial UAS have been or are likely to be adopted by the FAA, they shall report its findings and recommendations to the Governor and General Assembly.

Under Section (5) of the bill, the Maryland State Police, MAA, local law enforcement and "other appropriate local government" officials "shall review the state of UAS recreational use" in the Maryland to document incidents or patterns of unauthorized or unsafe use and report to the Governor and General Assembly with findings and recommendations on or before December 31, 2018. Pursuant to this requirement, a report titled Unmanned Aircraft Systems in the State of Maryland was generated and submitted in December 2018.

Section (6) provided that the act was in effect on July 1, 2015.

Analysis

Sections (2) and (4) of the Act, require the DBED and the Mid-Atlantic Aviation Partnership to generate a report with findings and recommendations as well as make recommendations to the Governor and the General Assembly. On October 1, 2015, the Governor announced the formation of the Department of Commerce, which replaced the DBED and brought

with it six newly created subcabinets, including a Department of Planning and Department of Transportation as well as a promise to put an "emphasis on growing industries" such as aerospace in the state of Maryland. *Governor Larry Hogan Announces Formation of Maryland Department of Commerce*. (October 1, 2015).

The Mid-Atlantic Aviation Partnership was formed via a Memorandum of Understanding ("MOU") between the University of Maryland, Virginia Tech and Rutgers University on December 30, 2013. The MOU expired in December 2016. The University of Maryland has moved forward with its own UAS program at its UAS Research and Operations Center ("UROC"). The requirement that any actions proscribed by Section (2) of the Act be undertaken has become a nullity due to the passage of time and the expiration of the requirement. However, section (4) has no date of expiration, and thus mandates an open and ongoing obligation naming two entities which no longer exist. While the Department of Commerce, as the successor to the DBED, may be able to assume the now replaced agency's role and due to the broad language in the Statute, UROC may be able to provide consultation in place of the Mid-Atlantic Aviation Partnership. The outdated language of the Act does speak to the changes that have occurred since its passage. Given the changes in the structure of the Department of Commerce and emphasis on growing industries, the Legislature, were it to take up this legislation today it may wish to alter the Commerce agency's mandate.

Aside from Section (1) definitions and preemption language, the requirements of SB370 are almost exclusively directing research, collection of information, and recommendations to the Governor and General Assembly for potential future legislation or regulation of UAS. By the nature of these requirements, it would appear the intent is for the legislature to consider future UAS related regulation. Whether the present, especially given the FAA's August 6, 2025, Beyond Visual Line of Sight ("BVLOS")[3] rule proposal, is the appropriate time for that legislation is a question to be determined by the legislature with recommendations as deemed appropriate by this Council.

The legislature could choose to update SB370 by amending it to correct the outdated terms. It could also choose to update SB370 by expanding it to specifically regulate government or private use of UAS. The legislature could also choose to replace it in its in entirety or supplement it by passing separate legislation. As discussed later, there have been subsequent attempts to pass additional legislation in Maryland, which would regulate government use of UAS.

Private Property Surveillance by Law Enforcement or Government Agencies

Throughout the United States, privacy concerns have seemingly grown as the popularity and prevalence of UAS has increased. This Council recognizes privacy as the most significant concern of Marylanders as it relates to UAS. Though the UAS Act of 2015 is thus far the only UAS specific law passed in Maryland, other laws have been proposed which for the most part would serve to restrict the use of UAS within the state by law enforcement and government.

[3] Proposed FAA rule for safely normalizing BVLOS drone operations which includes detailed requirements for operations, aircraft manufacturing, keeping drones separated from other aircraft, operational authorizations and responsibility, security, information reporting, and record keeping.

During the 2014 session, legislation was introduced that would have required agents of the state and local governments to obtain judicial warrants to utilize a drone to collect evidence. That proposed legislation would have also required them to provide to the General Assembly a report on drone usage during the previous year. The legislation failed. Proposed legislation was introduced in the Maryland House of Delegates during the 2020 session that would require any state agency or agency of a political subdivision within the state to obtain a search warrant to conduct aerial surveillance for the purpose of gathering evidence or information in a criminal investigation. The bill did not make it out of committee. The bill was reintroduced in 2022, 2023, 2024, and 2025 sessions of the General Assembly, each time the bill failed to pass committee[4].

On January 15, 2025, the Maryland House Judiciary Committee held a briefing on the use of drones by law enforcement. The briefing featured testimony from Montgomery County Police representatives, who operate the Drone as First Responder Program ("DFP"), in which UAS are the first responders to certain calls for service in higher population density areas in the county. The Montgomery County program has UAS prepositioned on the roofs of buildings at various locations. These drones respond upon receipt of certain 911 calls in concert with surface patrol units. The DFP launched on November 20, 2023, and as of July 30, 2025, had responded to 3064 calls for service with the UAS arriving first on the scene in 68% of those calls. In fact, 481 of the calls in which UAS were dispatched were cleared without the need to dispatch patrol units. Additionally, the DFP average response times was 82.94 seconds with UAS responding to a wide variety of calls including various criminal offenses. The DFP program operates under a directive that prescribes under what circumstances UAS can be used and for what purpose(s) they may be used. The DFP directive also controls retention and release of any recording obtained via UAS.

In addition to the requirements of the directive, the DFP program maintains a public website, which is updated daily providing maps showing the flightpath of the UAS, flight times, and nature of the calls. Though not explicit in the directive, in testimony before Maryland House Judiciary Committee, Montgomery County Police personnel testified that cameras on the UAS are pointed up and not activated until they reach the scene to which they were called to minimize any intrusion into members of the community's privacy. While the DFP program operates UAS under self-imposed rules and transparency requirements, there is very little authority in statutory or case law restricting their use in Maryland. However, UAS use does need to comply with all constitutional protections.

The Fourth Amendment of the United States Constitution protects "the right of people to be secure in their persons, houses, papers and effects, against unreasonable searches and seizures". The United States Supreme Court interpreted the Fourth Amendment in *Katz v. United States*, 389 U.S. 347, 360 (1967), holding that a telephone listening device attached by the government to a public telephone, which allowed agents to listen in on the defendant's call regarding gambling information, violated the "reasonable expectation of privacy" provided by the U.S. Constitution. The Court in the *Katz* case developed a two part test to determine if a government action violated constitutionally protected privacy. First, the person in question must have exhibited an actual (subjective standard) expectation of privacy, and second, that the expectation of privacy must be one that society is prepared to recognize as reasonable (objective standard). In *Oliver v. U.S.*, 466

[4] It is worth noting that while in prior years the bill was either sponsored by the same lone delegate or co-sponsored with a second delegate, in 2025 the bill was sponsored by 16 delegates (7 Republican and 9 Democrat).

U.S. 170 (1984), the U.S. Supreme Court clarified that the *Katz* standard did not apply to so called, "open fields." The defendant in *Oliver* was growing marijuana, in a fenced field marked, "No Trespassing". Law enforcement personnel walked passed the sign and around the fence and located the marijuana growing approximately a mile from defendant's home. The Court held that areas outside the "curtilage"[5] of a dwelling, or "open fields," because they are accessible to the public in ways that a home would not be, are not entitled to the protections of the Fourth Amendment and thus the test in *Katz* is inapplicable.

The *Katz* standard was subsequently applied to aerial surveillance. The U.S. Supreme Court held that there was no constitutional violation in officers observing marijuana plants growing in the defendant's back yard from 1,000 feet above ground in a fixed wing airplane with their naked eyes. See, *California v. Ciraolo*, 476 U.S. 207 (1986). The Court reasoned that even though the defendant had a ten-foot privacy fence, any member of the public could view the marijuana plants in his yard via a vehicle that was taller than the fence or by flying over his property in an aircraft operating within navigable airspace. Additionally, in *Florida v. Riley*, 488 U.S. 445 (1989), the Court held that police using a helicopter hovering 400 feet above private property in order to observe marijuana plants inside a partially covered greenhouse in the defendant's backyard did not violate the Fourth Amendment because "[a]ny member of the public could legally have been flying over [the defendant]'s property" in the same manner that the police did. The Court in *Riley* did note that the outcome could have been different had there been a showing that: (1) helicopters were sufficiently rare in the county to lend substance to defendant's claim that he reasonably anticipated that his greenhouse would not be subject to observation; (2) the helicopter interfered with the defendant's normal use of the greenhouse; (3) intimate details connected with the use of home or area around the home were observed by the police in the helicopter; or (4) there was undue noise, wind, dust or threat of injury as a result of the flight.

Furthermore, in *Giancola v. W. Va. Dept. of Public Safety* 830 f.2d 547 (1987), the owner of a rural property in West Virginia sued after law enforcement utilized two helicopters to locate and seize marijuana growing on the property. The owners alleged that the helicopters flew over the property for ten to twenty minutes at an altitude of less than 100 feet. The owner could not determine the number of occupants in the aircraft and admitted that the wind generated by the rotors did not disrupt anything on the ground but believed that flying at such a low altitude was dangerous. The Court noted even though the aircraft was below navigable airspace, federal regulations "specifically allow the operation of helicopters below certain established minimum altitudes as long as 'the operation is conducted without hazard to persons or property on the surface'" and ultimately ruled that the actions by the officers "did not constitute unreasonably intrusive surveillance in violation of the Fourth Amendment."

In contrast, in a Pennsylvania intermediate appellate court case, *Commonwealth v. Ogliarloro*, 377 Pa.Super. 317 (1988), the court ruled against the government on relatively similar facts. In *Ogliarloro*, a government helicopter hovered for approximately 15 seconds, 50 feet above a shed which was found to be within the curtilage of a residence and the officers within the aircraft observed marijuana plants being grown through a translucent roof panel. The court found that had the observations been made while the helicopter was flying in navigable airspace that they would have unquestionably not violated the Fourth Amendment. However, once the helicopter descended

[5] Curtilage – the land or yard adjoining a house. *Black's Law Dictionary.*

below navigable airspace, even though federal regulation allowed it to do so, it lost the automatic legitimization of observations made from it. The court went on to find that the resident "had a constitutionally protected expectation of privacy from intrusion by the police, which occurs through aerial observation from non-navigable airspace" and thus the government had violated the Fourth Amendment.

In a more extreme case, the government was also found to have violated the Fourth Amendment in *National Organization For Reform of Marijuana Laws v. Mullen,* 608 F. Supp. 945 (1985). The court granted an injunction limiting governmental use of helicopters to enforce marijuana laws in California after a review of enforcement practices. The court cited evidence that government agents had engaged in conduct that violated federal air safety regulations such as closely following vehicles and horse mounted riders, and "buzzing" livestock at extremely low altitude. Complainants alleged that the aircraft were so low they were able to describe the helicopter occupant's hair color and facial features and that the aircrafts were positioned such that they had a clear view in to bedrooms and bathrooms of homes.

While Maryland Courts have applied the *Katz* Fourth Amendment test to aerial surveillance by government personnel, (see *Leaders of a Beautiful Struggle v. Baltimore Police Department*, 2 F.4th 330, (2021), *Matter of Murphy*, 2023 WL 2999975 (2023)) no Maryland Court has applied it to UAS operations in a reported opinion. Though there are not large number of cases on point nationally, some other state courts have applied *Katz* to UAS surveillance. For example, in *State v. Stevens*, 210 N.E.3d 1154 (2023), the Court of Appeals of Ohio ruled on police use of a drone to locate a vehicle that was involved in a hit and run accident and the police believed the vehicle was hidden on private property. In *Stevens*, the police drone was operated at altitudes of 300 to 396 feet and took pictures of the property with a camera that was described as being "similar to a cell phone camera". While the court was able to rule on the legality of police action on a separate basis, the court indicated that it saw, "no reason to distinguish the use of the drone in this case from other air surveillance." The court noted that:

> [nothing] in the record suggests the drone in the instance case, flying at an altitude of 300-396 feet, is more intrusive than the helicopter flying at 400 feet in Riley. [*Florida v. Riley* as previously referenced] The vehicle was not located in the curtilage of the home, and no steps were taken to hide the vehicle from view, either at ground level or by air. The camera attached to the drone was similar to a cell phone or I-pad camera, both of which were readily available to the public, and the drone itself was a model readily available to the public. The drone was flying in Class G airspace within FAA regulations. We find the trial court did not err in finding the warrantless flyover by the drone in this case did not violate the Fourth Amendment.

Id. at 1162.

In 2022, the government sought permission from the Federal District Court of North Carolina to conduct surveillance on two residences in North Carolina using UAS, which prompted the court to apply Fourth Amendment law to government use of UAS. *In the Matter of the Application of the United States of America for Order Authorizing Small Unmanned Aircraft System Surveillance of Private Property*, 637 F. Supp.3d 343, (2022), the government's application

indicated that they intended to use unmanned aerial drones to determine who was entering and leaving the locations to determine the identity of those who were part of an alleged drug ring. The Court recounted prior caselaw in *Katz* and its progeny as it related to aerial surveillance and was uncomfortable applying the line of reasoning of those cases to the immediate facts. The Court noted that "[simply] put, it is questionable whether law enforcement can—consistent with traditional conceptions of property law—intrude upon an individual's curtilage with a low-altitude camera to survey its contents without a warrant." First, prior low level aerial surveillance was of a short duration, generally minutes. By the nature of the request here and the available technology, it seemed at least possible that one or more UAS would loiter for extended periods. Second, though the prior cases supported relatively low altitude flights by helicopters below navigable airspace in some cases, at some altitude below navigable airspace over the curtilage of a dwelling a trespass would occur. The Court reasoned that the *Katz* line of cases protected against fourth amendment intrusions outside a physical trespass but that "an officer operating a drone at a low altitude implicates trespass law in a way that a pilot flying in navigable airspace does not." The court noted:

> [if] law enforcement wants to conduct drone surveillance with the freedom to fly at any altitude in and around a home's curtilage—with the express purpose of searching the curtilage for evidence of wrongdoing—it might need a warrant to do so. Thus, the constitutionality of the United States' proposed surveillance is uncertain.

Id at 356.

The court ultimately denied the government request based on a belief that government use of UAS which had the ability to fly at a very low altitude in close proximity to the dwellings or the curtilage surrounding them for long periods of time to surveil the occupants represented a physical trespass rather than a lawful use of airspace above the property.

As noted, Montgomery County Police Department personnel testified that the UAS cameras utilized in their DFP are trained upward and not activated until such time as it arrives at the scene of the call to protect the privacy of the community. However, there is no statutory law or caselaw in Maryland that obligates the DFP to orient their cameras in a specific direction or not activate them at certain locations which their UAS is lawfully permitted to operate. While there are no UAS specific cases in Maryland that address whether the Fourth Amendment would require them to do so previous caselaw has generally allowed that police may acted upon observations that they so make so long as they are lawfully at the location in which they make the observation. See *Brewer v. State,* 22 Md.App. 89, 101 (2014), a Maryland case in which the court upheld the seizure of illegal drugs after a police officer standing on the front stoop of a residence is able to observe the drugs in the home through a glass door. The court reasoned that by social norms any member of the public could approach the front door and knock on the front door from the location in which the officer stood, and that the observation was unaided [by any device or technology]. See also *Texas v. Brown* 460 U.S. 730, 740 (1983), where the Court held "there is no reason [the officer] should be precluded from observing as an officer what would be entirely visible to him as a private citizen". Whether a court would extend this reasoning to a law enforcement officer making observations via camera of a legally operating a UAS is uncertain. If the court were to extend the

doctrine, any observations and evidence directly obtained, or subsequently obtained as a result of those observations would, absent other evidentiary issues, generally be admissible.[6]

Analysis

The Constitutional protections provided by the Fourth Amendment provide a minimum protection of privacy. Federal or State legislatures may expand on the constitutional protections via legislation. Interpretation of any constitutional or legislative protections are conducted by the judiciary. All courts are obligated to follow decisions of the U.S. Supreme Court, but as to a question where there is no Supreme Court guidance, lower courts will rule based on their interpretation of the constitution and any applicable legislation, legislation history, or prior related caselaw precedence. In Maryland, the legislature could choose to amend SB370 or replace it in its entirety.

The *Katz* line of decisions which have been applied to constitutional privacy protections as related to aerial government surveillance are well developed. However, the introduction of a new technology, in this case potentially Advanced Air Mobility ("AAM"), often leads courts to apply those same protections differently. The *Katz* opinion itself was a response to evolving technology, in that case a public telephone and the government's ability to surreptitiously listen to conversations occurring on the telephone. In *Katz*, the government argued, in keeping with caselaw at that time, that because their agents never physically penetrated the phone booth in question that the Fourth Amendment was not implicated. In an analogues case, *Kyllo v. U.S.*, 533 U.S. 27 (2001), the Supreme Court addressed a challenge of the government's use of thermal imaging to scan a suspected Oregon marijuana grower's home for heat associated with the indoor cultivation of marijuana. The thermal scan of the home by the police only took a couple of minutes and the police performed it from a public street from a location which they were entitled to occupy. The Court opined that it "would be foolish to contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology," noting "that the technology enabling human flight has exposed to public view (and hence, we have said, to official observation) uncovered portions of the house and its curtilage that once were private". *Id* at 33-34. The Court ruled against the government in *Kyllo* holding that when "the government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a "search" and is presumptively unreasonable without a warrant". *Id.* at 40. The rapid expansion of UAS capabilities and availability would be something that could be considered by a court in applying established Fourth Amendment protections relative to UAS use.

While there is little direct guidance as to how a Maryland Court would apply existing Fourth Amendment protections to government use of UAS surveillance, certain factors would likely weigh heavily. First, a court would consider if the area subjected to the surveillance was part of a home and its associated curtilage or a less protected area such as an "open fields" area. As the cases noted discussed, open fields areas are not entitled to Fourth Amendment protections while dwellings and their curtilage are entitled to the highest level of protection. Thus, UAS

[6] The commonly known "fruit of poisonous tree" doctrine, first put forth by the Supreme Court in *Nardone v. U.S.*, 308 U.S. 338, 341 (1939), held that not only will direct evidence obtained by government agents in a violation of the law be inadmissible but also any evidence which was derived from improperly obtained evidence would also be inadmissible.

surveillance over an area which the court determined to be open fields would likely be permitted under existing law. See also, *Dow Chemical Co. v. U.S.*, 476 U.S. 227 (1986)(the Supreme Court found that Dow Chemical's 2000 acre fenced industrial complex falls, "somewhere between 'open fields' and curtilage" and that taking aerial photographs from navigable airspace is not a search prohibited by the Fourth Amendment).

Next, a court would also consider whether the UAS was being operated lawfully. Since aerial surveillance cases first came before the courts, an important distinction in reviewing the government's actions were whether a member of the public could legally undertake the same actions and courts were careful to note whether the aircraft was operating in accordance with the applicable laws and regulations. Courts in other states ruling on UAS surveillance have untaken the same analysis, considering not only federal laws and regulations but also any state level laws that serve to regulate UAS. A UAS would potentially have the ability to maneuver in proximity to a residence and its curtilage in a way that would be impossible for traditional crewed aircraft and to do so without violation of aviation law. However, depending on the circumstances, a court in Maryland might consider other more general laws applicable to UAS, such as West's Annotated Code of Maryland, Criminal Law, Section 3-901 (Visual Surveillance). This law provides a penalty of 30 days incarceration and/or $1,000 fine for those that "conduct visual surveillance of an individual in a private place without the consent of that individual" and were a UAS flying at a very low level and directing its camera to a location within a residence or its curtilage it could represent a violation of this law.

In virtually all aerial surveillance cases, the court considers the altitude of the vehicle conducting the surveillance. In many cases, the court also considers the duration of the intrusion, as well as the any effect the intrusion has on the occupants such as damage caused by wind from helicopter rotors.

In most cases, a court would likely apply the *Katz* test. The *Katz* test has two parts, the first is that the person in question exhibited an actual (subjective standard) expectation of privacy, and second, that the person's expectation of privacy must be one that society is prepared to recognize as reasonable (objective standard). Whether an individual has an expectation of privacy is particular to the person and subject wide variance depending upon the individual and their motivations. See *U.S. v. White*, 401 U.S. 745 (1971) (where a defendant charged with drug offenses argued that he had a reasonable expectation of privacy in statements he made to a co-conspirator he later learned was an informant). An individual may be able to establish that they had a "reasonable" expectation through only their own actions and words.

The second part of the *Katz* test, whether the subject's expectation of privacy is one that society is prepared to recognize, is more difficult to define and has been criticized as being circular, subjective and unpredictable. See *Kyllo* at 34. To determine if society is prepared to recognize that expectation of privacy to be reasonable, "involves consideration of the kind of place in which the individual claims the privacy interest and what expectations of privacy are traditional and well recognized." *Minnesota v. Carter* 525 U.S. 83, 101 (1998). Thus, how a court would apply Fourth Amendment privacy protections to government use of UAS would be in large part determined by how society views UAS use generally. If, for example, it is a regular occurrence for UAS equipped with cameras to be seen traversing the sky and UAS use is viewed as a common and accepted part of living in contemporary society in which the UAS, like traditional manned aircraft benefit society

generally the court would be more likely to ascribe to the belief that society's expectations of privacy are consistent with UAS use in that manner. The relative wide variance in the types of UAS will almost certainly play a role here. It's likely that relatively few individuals would have reason to object to Regional Air Mobility use of existing infrastructure, or smaller UAS transporting medical supplies or transplant organs directly between medical facilities, however, other uses may be more concerning. At this time, it is not certain that society generally would accept, small UAS used for residential package delivery flying at a low altitude in proximity to their homes in order to deliver packages to their neighbors especially if they have no way to determine if the UAS is equipped with a camera that records video. They would likely question where that video is going, who is retaining it, and what if any use, the person or entity retaining the video intended for it. The public would be perhaps even more concerned if they did not have a ready method to determine if the UAS was even involved in a legitimate package delivery. As previously discussed by the council and noted in the draft report, outreach to bolster public trust and promote the benefits of AAM is essential and in this area of law would help in allowing UAS use to expand to the benefit of the populous of the state.

While the Fourth Amendment provides a "baseline" protection for the "right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures", *Florida v. Jardines* 569 U.S. 1, 6 (2013), the legislature may provide additional protections via legislation. While the Maryland legislature has not passed legislation directly related to government use of UAS as it relates to privacy, the legislature has that authority and could elect to provide a higher level of privacy protection should they choose to do so. As noted, constitutional privacy protections as interpreted by *Katz* are substantial, and while the second part of the *Katz* test is an objective standard, that standard can evolve based at least in part by what society views as "reasonable". Thus, at least in part the standard by which UAS use is presently governed is controlled by society's informal view of how they should be utilized.

Conclusion

This Council's mandate requires that Council provide a recommendation to the Governor outlining "policies and regulatory operations that are contemplated for AAM technologies to operate and excel in the State" and provides six (6) topics which should be included in that recommendation. One of the included topics is "privacy". This research provides the Council with the current state of privacy law in Maryland as it relates to UAS and assists in the development of any recommendations deemed appropriate to the Governor.

CC: William Lindsey, Deputy Principal Counsel, MAA
Robert Sager, Assistant Deputy Principal Counsel, MAA

Appendix J: Letter from the Office of the Attorney General

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May 28, 2015

The Honorable Nicholaus R. Kipke
Maryland House of Delegates
212 House Office Building
Annapolis, Maryland 21401-1991

Dear Delegate Kipke:

You have inquired about whether there are any laws regulating the operation of small "drones," specifically the legality of such devices hovering over private property of another and recording video or still images. You have also asked if there are any laws that recently have been enacted in other states regulating these devices and addressing privacy concerns. This appears to be an evolving area of the law, with both the federal government developing guidelines and regulations relating to the use of unmanned aircraft systems ("UAS"), and a number of individual states recently enacting laws in an attempt to place restrictions on the use of UAS. Neither federal law nor Maryland law currently appears to generally prohibit the use of UAS over the private property of another or recording video images of others from UAS. Although there is some question about whether some of the recent enactments in other states regulating the operation of these devices may be preempted by federal law or are otherwise unenforceable, some restrictions enacted by states that restrict surveillance or recording of others through the use of UAS, but which do not otherwise restrict the allowable flight operations of UAS, do not appear to directly conflict with federal law.

Use of UAS and federal regulation of navigable airspace.

A property owner does not appear to possess exclusive ownership or property rights in the airspace above the owner's property, and does not appear to be able to generally restrict or prevent a UAS from operating in the airspace over his or her property. Although historically, a property owner enjoyed a possessory interest under the Roman law maxim *cujus est solum, ejus usque ad coelum* (whoever has the land possesses the space upward to an infinite extent), with the development of modern aviation, in 1926 Congress enacted the Air Commerce Act, which reserved for the federal government, "complete and exclusive national sovereignty in the air space" over the United States, which substantively remains in place today. *See* 49 U.S.C. § 40103(a)(1) ("The United States Government has exclusive sovereignty of airspace in the United States."). The Act also protects a citizen's "public right of transit through navigable airspace" in the country. 49 U.S.C. §40103(a)(2).

In 1946, the Supreme Court examined the scope of navigable airspace and the rights enjoyed by a property owner in his or her airspace in *United States v. Causby*, 328 U.S. 256 (1946), which involved the question of whether military aviation landings that passed 83 feet over a neighboring chicken farm, resulting in the death of a number of chickens from fright, constituted an improper government taking of a property interest. In that case, although the Court dismissed the ancient *ad coelum* doctrine as having "no place in the modern world," and determined that use of navigable airspace (which is generally unrestricted over 500 feet) over private property generally did not amount to a taking, the Court did find a taking under the facts of the case, however, holding that "there was a dimunition in value of the property and that the frequent, low-level flights were the direct and immediate cause." *Id.* at 260, 267. The Court reasoned that flights over private land were not government takings "unless they are so low and so frequent as to be a direct and immediate interference with the enjoyment and use of the land," that a property owner "owns at least as much of the space above the ground as the [owner] can occupy or use in connection with the land," and that a landowner, as an incident to the ownership of the land, has a claim to this "superadjacent airspace" that is "so close to the land that continuous invasions of it affect the use of the surface of the land itself." *Id.* at 263-67. Subsequent case law has recognized similar private tort actions seeking damages against private actors for interference with the possession or use of a landowner's property. *See Palisades Citizens Ass'n v. C.A.B.*, 420 F.2d 188 (D.C. Cir. 1969).

Congress has generally asserted the federal government's sovereignty over airspace above public and private property. Under federal law, "[t]he United States Government has exclusive sovereignty of airspace in the United States." 49 U.S.C. § 40101(a)(1). The Administrator of the Federal Aviation Administration (FAA) is required to "develop plans and policy for the use of navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace." § 40101(b).

In February 2015, the FAA issued a Notice of Proposed Rulemaking proposing a regulatory framework for the use of small UAS, including operational limitations on non-recreational UAS. *See* proposed 14 CFR Part 107, (https://faa.gov/uas/nprm/ (last visited 5/27/15)). The new rules would not apply to "model aircraft" that are flown exclusively for hobby or recreational purposes. *Id.* (*see also* Sec. 336 of Public Law 112-95 (FAA Modernization and Reform Act of 2012)). Among the proposed operational requirements for non-recreational UAS is a 55-pound weight limit with operations limited to daylight hours at an altitude not exceeding 500 feet, with a requirement (subject to certain exceptions) that the operator maintain a visual line of sight of the UAS and may not operate the UAS in careless or reckless manner or operate the UAS over any persons not directly involved in the operation. Non-recreational UAS operators would be required to obtain certification from the FAA. *Id.*

The operation of "model aircraft" UAS exclusively for hobby or recreational purposes would not require FAA authorization under the proposed rules. The FAA has established safety guidelines in conjunction with UAS industry associations that model aircraft UAS operators are

"strongly encouraged to follow," including limiting UAS to under 55 pounds, operating at altitudes below 400 feet, maintaining a visual line of sight with the UAS, remaining clear of obstacles, people, and stadiums, and not operating the UAS in a careless or reckless manner or in a manner that interferes with manned aircraft. *See* FAA Model Aircraft Operations, (https://www.faa.gov/uas/model_aircraft/ (last visited 5/27/15)). The FAA maintains its authority to pursue enforcement actions against persons operating model aircraft who endanger the safety of the national airspace system. Sec. 333, Public Law 112-95.

State UAS legislation

Despite the FAA's apparent insistence that regulation of U.S. airspace and aircrafts (including federal protections against the interference and destruction of civil aircraft), is exclusively under federal jurisdiction, at least 17 states have reportedly passed laws restricting the use of UAS by law enforcement and private citizens. *See* "Drones Boom Raises New Question: Who Owns Your Airspace?" *Wall Street Journal* (*WSJ*), 5/13/15 (http://www.wsj.com/articles/drones-boom-raises-new-question-who-owns-your-airspace-1431535417 (last visited 5/27/15)). According to the National Conference of State Legislatures (NCSL), as of May 2015, at least 26 states have enacted laws that address UAS issues, including Maryland. *See* NCSL, "Current Unmanned Aircraft State Law Landscape" (www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx (last visited 5/27/15)).

In 2013 and 2014, laws were enacted in a number of states that restrict UAS operators from filming or surveilling bystanders without permission (Indiana, Louisiana, North Carolina, Tennessee, and Texas). *Id.* Similar legislation was passed in 2015 in Arkansas, Florida, Mississippi, and North Dakota. Several states have also enacted or passed restrictions on the use of UAS as an investigative tool by law enforcement agencies (Alaska, Florida, Illinois, Indiana, Iowa, Montana, North Carolina, Oregon, Tennessee, Texas, Utah, Virginia, and Wisconsin). Other states have passed restrictions on the use of UAS for the purpose of hunting or interfering with hunters (Illinois, Michigan, New Hampshire, Oregon, Tennessee, and West Virginia). *Id.*

This past legislative session, the General Assembly passed Senate Bill 370 (Ch. 164, Laws of Maryland 2015), which preserves for the State, subject to any federal preemption, the exclusive authority to regulate the testing or operation of UAS in the State, and preempts and supersedes any authority of a local government in the State in the regulation of UAS. The law also requires various State agencies to report to the Governor and the General Assembly on policies and recommendations relating to the regulation of UAS in the State. The legislation did not contain any specific requirements or restrictions on the use of UAS in the State.

In light of the recent enactment of UAS restrictions in various states, there does not appear to be any reported judicial decision to date that addresses the issue of preemption by the FAA regarding state or local regulation relating to the use or operation of UAS. Most of the state

legislation appears to limit the allowable uses of video or still images that may be captured through the use of UAS, rather than specifically restricting the flight locations or operations of a UAS. This limitation on the allowable uses of UAS, rather than limits on the operation or flight of UAS in certain locations, do not appear to directly conflict with federal law, and may fall outside of federal preemption of the regulation and use of national airspace.

Maryland trespass, nuisance, and privacy laws and UAS

Current Maryland law does not appear to generally restrict the operation of UAS in airspace over public or private property in the State. Maryland's trespass and privacy laws do not appear to prohibit the use of UAS over private property, nor prohibits the viewing or recording of video images of private property or individuals taken from UAS in flight. Individuals may have a Fourth Amendment right to be free from unreasonable warrantless searches by governmental actors employing UAS.

Maryland's trespass statutes generally prohibit unauthorized entry or trespass by a person "on" private or posted property without the consent of the land owner. *See* Title 6, Subtitle 4 of the Criminal Law Article (CR). Additionally, under CR § 6-408, a person may not "enter on the property of another" for the purpose of invading the privacy of an occupant of a building or enclosure located on the property by looking into a window, door, or other opening. A required element of these trespass offenses includes entry upon the property of another by the offender. It is unclear, but in my view, unlikely, that the use of UAS to view or record the occupant of a building could be prosecuted under the current trespass statutes without physical entry of the offender (or the offender's UAS) on the property of the victim. Other visual surveillance prohibitions under State law are limited to specific private areas of retail establishments, CR § 3-901, visual surveillance with prurient intent in a private place, CR § 3-902, or the placing of a camera on real property of a residence to surreptitiously observe an individual in the private residence. CR § 3-903.

Private nuisance actions similarly appear to be largely inapplicable regarding the use of UAS. A landowner may bring a common law private nuisance action in the State if there is "a nontrespassory invasion of another's interest in the private use and enjoyment of land," in that where there is an action by an adjoining property owner that "interferes with the reasonable and comfortable enjoyment by another of his [or her] property, a wrong is done to a neighboring owner for which an action lies." *Rosenblatt v. Exxon Co., U.S.A.*, 335 Md. 58, 80 (1994). Historically, nuisance actions have addressed solutions to "discordant land uses" involving nuisances caused by activities on the neighbor's property, rather than on the property of the aggrieved landowner. *Carroll v. Absolute Tank Removal, LLC*, 834 A.2d 823, 825 (Conn. 2003), citing *Rosenblatt*, 335 Md. at 80 ("private nuisance requires an interference with a *neighbor's* use and enjoyment of the land"). As use of UAS by a neighbor would not appear to involve a "land use" by the neighbor, a private nuisance claim might be difficult to sustain. Other private tort claims against a UAS operator might be possible, if the aggrieved property owner could demonstrate that the use of UAS

interfered with the possession or use of a landowner's property. *See Palisades Citizens Ass'n.*, 420 F.2d at 188. In such an instance, however, any alleged damages sustained by the property owner from use of UAS in the airspace over the property may be difficult to establish or quantify.

Although prohibitions against the interception of oral communications under § 10-402 of the Courts and Judicial Proceedings Article could conceivably be implicated if a UAS intercepted a private conversation in which one of the participants had a reasonable expectation of privacy, with respect to UAS that is used to capture only video images, the wiretap statute does not prohibit the capture of exclusively video image of another. *See Ricks v. State*, 312 Md. 11, 20 (1988) ("there is nothing in either [the federal or State wiretap] Act, express or implied, which prohibits or in any way undertakes to regulate video surveillance. The legislative history underlying passage of the Maryland Act in 1977, while scant at best, demonstrates that video surveillance was never discussed, even though that method of investigation was then in known use by the police.").

Warrantless video surveillance of private property or an individual on or in private property by law enforcement or another governmental actor may implicate Fourth Amendment concerns if the target individual has a reasonable expectation of privacy. The Supreme Court has established a two-part inquiry for establishing a reasonable expectation of privacy in the Fourth Amendment context. First, has an individual alleging a violation "manifested a subjective expectation of privacy," and second, "is society willing to recognize that expectation as reasonable." *California v. Ciraolo*, 476 U.S. 207, 211 (1986) (citing *Smith v. Maryland*, 442 U.S. 735 (1979)). Generally, where an individual's actions are subject to public exposure, no reasonable expectation of privacy arises. *See, e.g., California v. Greenwood*, 486 U.S. 35, 40-41 (1988) (finding that public accessibility of a garbage bag on a public street defeats claim of Fourth Amendment protection); *Ciraolo*, 476 U.S. at 211-13 (upholding aerial observation of fenced-in backyard visible from public airspace). Additionally, if a law enforcement officer has a legal right to occupy a location, public or private, it appears that the officer may be able to use equipment that augments their five senses to conduct surveillance. *See Ciraolo*, 476 U.S. at 213 (police may see what may be seen from a public vantage point where they have a right to be). *See also United States v. Dubrofsky*, 581 F.2d 208, 211 (9th Cir. 1978) ("[p]ermissible techniques of surveillance include more than the five senses of officers and their unaided physical abilities").

Conversely, the unprecedented reach of surveillance capabilities by law enforcement and other government actors into private property or dwellings that is afforded by UAS and the technology that UAS may carry with it, could have an impact on what constitutes an allowable governmental intrusion under the Fourth Amendment. The number of states that have recently acted to limit or define the use of UAS for law enforcement purposes appears to demonstrate some concern regarding governmental use of UAS technology for investigative or surveillance purposes.

In summary, neither federal nor State law currently appears to generally prohibit the use of UAS over the private property of another or recording video images of others from UAS. Various states have recently enacted various restrictions on the use of UAS, despite some question about

potential federal preemption with respect to the regulation of such devices. In my view, there may be some room for states to regulate surveillance or recording activities performed through the use of UAS, without restricting the allowable flight operations of UAS that may be subject to preemption under federal law.

I hope that this is responsive to your question. If you have any questions or need any additional information, please feel free to contact me.

Sincerely,

Jeremy M. McCoy
Assistant Attorney General

Appendix K: Maryland AAM Brochure

MARYLAND AAM 101 & FAQs

WHAT IS AAM?

Advanced Air Mobility (AAM) has emerged as an umbrella term describing the most recent set of aerospace vehicles and technologies. AAM is a rapidly evolving sector within the advanced mobility field, differentiated from traditional aviation by using highly automated, often electrically powered aircraft types, both crewed and uncrewed, that operate at lower altitudes and will become increasingly connected to an integrated network of vehicle systems over the next 10+ years.

AAM is anticipated to improve functions that are currently served by automobiles, helicopters, small/light aircrafts, and fixed/mobile structures such as cranes and structural tethering. It will enhance the movement of people, goods, and services while also yielding positive economic, societal, and environmental benefits.

WHAT IS THE MARYLAND AAM COUNCIL?

The Maryland AAM Council was established by Governor Wes Moore in January 2025. It is a collaborative effort between State and private partners to make recommendations to the Governor on how Maryland can best leverage and regulate AAM Systems.

Per Executive Order 01.01.2025.05, the council is to catalog existing State assets related to the advanced air mobility industry; engage with the advanced air mobility industry, regulators, local governments, and other relevant parties regarding the operation of advanced air mobility technologies in Maryland; study and identify opportunities to attract, develop, and grow the State's advanced air mobility industry; and identify potential use cases for advanced air mobility systems in the State.

AAM CAN BE BROADLY DIVIDED INTO THREE PRIMARY CATEGORIES:

Uncrewed Aircraft Systems (UAS)

Systems incorporating uncrewed aerial vehicles (UAVs) commonly referred to as 'drones'. UAS are used for a wide variety of purposes, both commercial and public service, in addition to recreationally.

Regional Air Mobility (RAM)

Involves electric or hybrid aircraft that transport people and goods between regions carrying between 5 and 30 passengers (or equivalent freight) along a distance of 30 to 300 miles or more. RAM vehicles will be able to utilize existing aviation infrastructure.

Urban Air Mobility (UAM)

Consists of highly automated aircraft that provide commercial services to the public within an urban area. Will transport small passenger groups (5 or less) over short distances (5-40 miles), performing many roles currently fulfilled by helicopters at lower cost and with less environmental impact.

WHAT ARE THE BENEFITS OF AAM?

- Societal: offers an enhanced quality of life by providing the public affordable, safe, efficient, and accessible transportation of people, goods, and services
- Economic: creates jobs that stimulate the economy and generate tax revenue
- Environmental: offers alternative forms of transportation designed to reduce noise and emissions
- Enhancement of:
  - » Cargo & Freight Operations
  - » Commercial Delivery
  - » Medical Delivery
  - » Emergency Services
  - » Disaster Response
  - » Infrastructure Inspection
  - » Environmental Monitoring
  - » Regional Mobility
  - » Urban Mobility

COMMON AAM AIRCRAFT TYPES:

- **Uncrewed Aerial Vehicle (UAV):** aircraft that operates as part of a UAS, ranging from small, short-range recreational aircraft to large vehicles that can carry thousands of pounds over hundreds of miles.
- **Electric Vertical Takeoff and Landing (eVTOL) Vehicle:** an eVTOL aircraft is capable of vertical takeoffs and/or landings which can be conducted from a small surface such as a helipad instead of a runway.
- **Electric Conventional Takeoff and Landing (eCTOL) Vehicle:** electrically powered aircraft that require runways for takeoff and landing; some can use very short runways and are referred to as electric Short Takeoff and Landing (eSTOL) aircraft.

*AAM terminology is constantly evolving; these definitions are widely accepted at present.

WHY IS AAM IMPORTANT TO MD?

In addition to the general benefits outlined above, AAM has the potential to significantly strengthen Maryland's robust aeromedical programs, capitalize on the state's many underutilized airports, and alleviate congestion in densely populated areas while improving connectivity to remote regions. The aerospace sector is already a significant employer in Maryland, offering opportunities to position for the future. There is an urgent need to evaluate and modify job training, skills development, and higher education to fully capture the potential of the AAM industry..

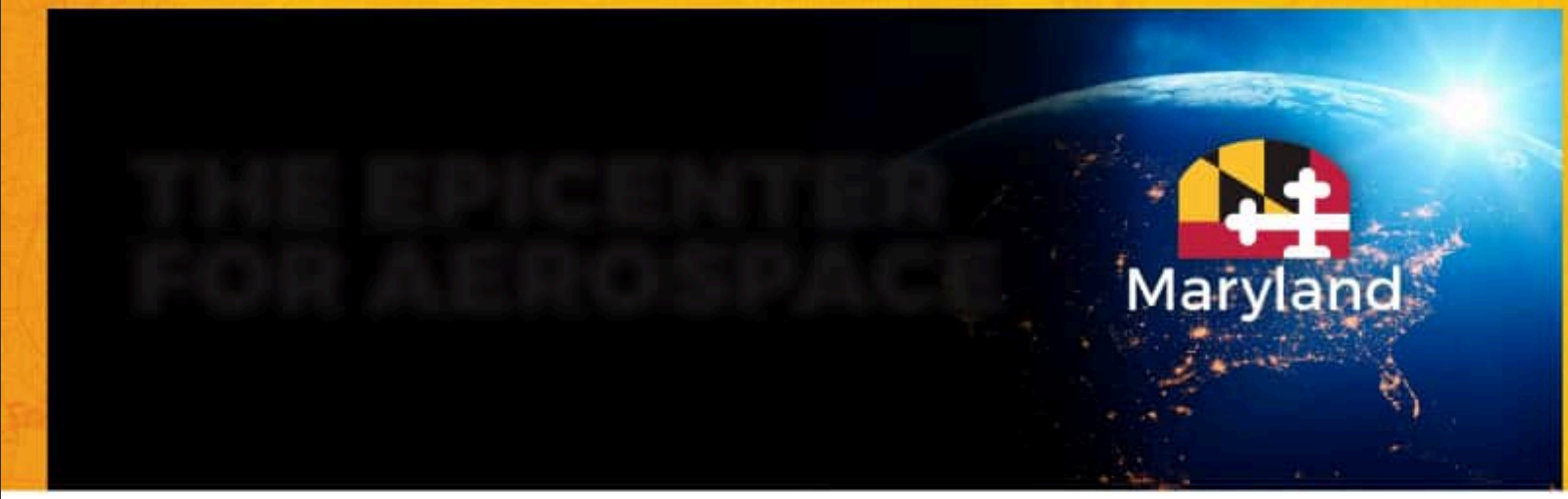
WHAT IS THE CURRENT STATE OF AAM?

UAS is an existing industry that is progressing rapidly. Drones generally weigh less than 55 pounds and operate within the site of the operator on the ground, but federal approval for larger commercial drones that can fly beyond visual line of sight (BVLOS) is imminent. Many companies are already using UAS for inspection and monitoring and others are actively using or testing UAS for delivery.

RAM and UAM vehicles are being developed and are in the demonstration phase. Electric chargers are being installed at airports throughout the country, with one install complete in Maryland and two under construction. Airports are assessing improvements to accommodate new AAM vehicle operations, often as part of a master planning process. RAM is anticipated to emerge sooner than UAM, as it can leverage existing infrastructure.

The regulatory environment for AAM is not yet established and there are critical gaps in low altitude communications, navigation, surveillance, weather systems, and integrated mobility. Federal guidance will need to be clarified and necessary infrastructure will develop over time as the industry grows.

Appendix L: Maryland Aerospace Brochure



From advanced air mobility and autonomous systems to next-generation defense, Maryland powers the future of flight, space exploration, and national security—driven by exceptional talent, cutting-edge research, and a dynamic innovation ecosystem.

A MAGNET FOR TALENT

Maryland offers access to one of the nation's highest concentrations of aerospace engineers, fueling a powerful ecosystem of private companies, federal agencies, and military installations. With a steady stream of graduates from leading aerospace programs, the state maintains a continually refreshed pipeline of top-tier talent.

#1
Concentration of aerospace engineers nationally
(California-Lexington Park, MD)

Top 15
Graduate aerospace engineering engineering program in the U.S.
(University of Maryland)

#6
Undergraduate engineering program in the U.S.
(U.S. Naval Academy)

#1
Largest organization of earth and space scientists and engineers in the U.S.
(NASA Goddard)

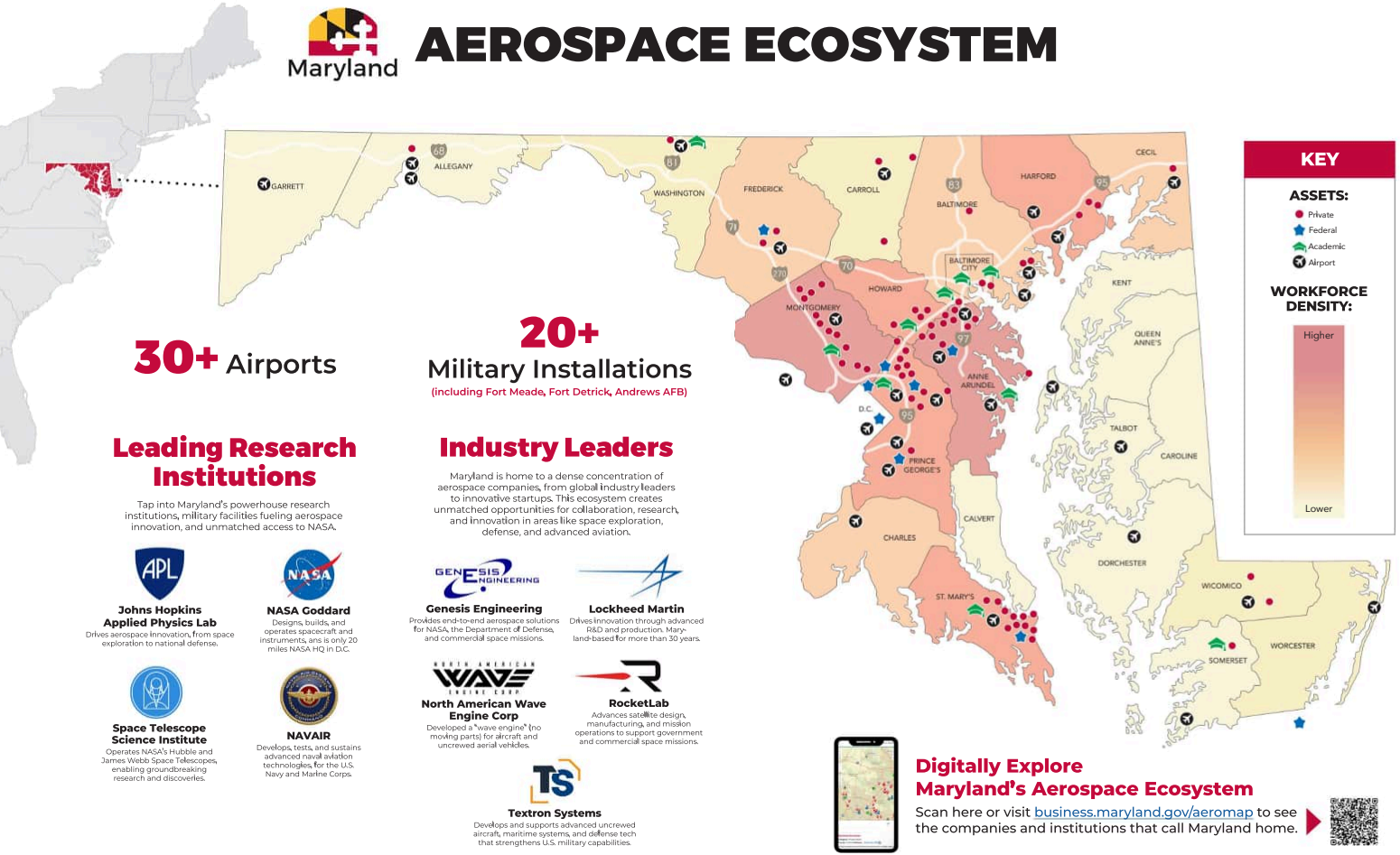
R&D at The Ready

Maryland's aerospace ecosystem unites academia, industry, and government to fuel breakthrough innovation. Companies benefit from next-door access to leading Department of Defense and NASA research centers, while the University of Maryland's world-class facilities, like the UAS Research & Operations Center, are advancing the future of uncrewed systems.

#1 Federal Tech Transfer Facilities

#2 Federal Obligations for R&D

Maryland AEROSPACE ECOSYSTEM



30+ Airports

20+
Military Installations
(including Fort Meade, Fort Detrick, Andrews AFB)

Leading Research Institutions

Tap into Maryland's powerhouse research institutions, military facilities fueling aerospace innovation, and unmatched access to NASA.

Johns Hopkins Applied Physics Lab
Drives aerospace innovation, from space exploration to national defense.

NASA Goddard
Designs, builds, and operates spacecraft and instruments, ans is only 20 miles NASA HQ in D.C.

Space Telescope Science Institute
Operates NASA's Hubble and James Webb Space Telescopes, enabling groundbreaking research and discoveries.

NAVAIR
Develops, tests, and sustains advanced naval aviation technologies, for the U.S. Navy and Marine Corps.

Industry Leaders

Maryland is home to a dense concentration of aerospace companies, from global industry leaders to innovative startups. This ecosystem creates unmatched opportunities for collaboration, research, and innovation in areas like space exploration, defense, and advanced aviation.

Genesis Engineering
Provides end-to-end aerospace solutions for NASA, the Department of Defense, and commercial space missions.

Lockheed Martin
Drives innovation through advanced R&D and production. Maryland-based for more than 30 years.

North American Wave Engine Corp
Developed a "wave engine" (no moving parts) for aircraft and uncrewed aerial vehicles.

RocketLab
Advances satellite design, manufacturing, and mission operations to support government and commercial space missions.

Textron Systems
Develops and supports advanced uncrewed aircraft, maritime systems, and defense tech that strengthens U.S. military capabilities.

Digitally Explore Maryland's Aerospace Ecosystem

Scan here or visit business.maryland.gov/aeromap to see the companies and institutions that call Maryland home.

EXCELLENCE IN POSITIONING, NAVIGATION & TIMING

Maryland is shaping the future of aerospace with advanced positioning, navigation, and timing (PNT) technologies – driving innovations from satellite alignment and secure communications to autonomous flight. Backed by world-class federal and academic facilities, Maryland's strong research and defense infrastructure, coupled with bold investments in quantum technology, is powering assured precision and next-generation flight.

FIND YOUR COMPETITIVE EDGE

Maryland is a launchpad for growth. Here, benefit from close connections to federal agencies, military installations, and test sites that are eager to collaborate and validate new technologies. With a dense network of primes, small businesses can plug into a thriving supply chain, tap into specialized talent, and accelerate innovation from concept to deployment.

Programs that Power Innovation

Maryland is investing in companies that will help secure our position as the Epicenter of Aerospace. Some programs include:

- **Build our Future Grant:** Up to $2 million for projects that accelerate growth in technology sectors.
- **R&D Tax Credit:** Up to $250,000 based on eligible R&D spending.
- **Job Creation Tax Credit:** Up to $5,000 per new job.
- **TEDCO:** State-backed funding for early-stage investment.
- **RISE Zone Rental Assistance:** Provides financial rental assistance.
- **Global Gateway:** Provides $10,000 grants to help foreign companies that soft land in the U.S.
- **Employer Security Clearance Cost Tax Credit:** Up to $200,000 for qualified security clearance administrative expenses.
- **Workforce Training Grants:** Matching grant funds to reimburse up to 50% of a qualified project.
- **Advantage Maryland:** Up to $5,000 for each net new job accompanied by significant private capital investment.

LET'S LAUNCH YOUR FUTURE

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Maryland

10_2025