The Advanced Air Mobility National Strategy

A Bold Policy Vision for 2026–2036

December 17, 2025

Created by the Advanced Air Mobility Interagency Working Group

U.S. Department of Transportation

Advanced Air Mobility
Interagency Working Group

The U.S. Vision for Advanced Air Mobility

After collaboration with Congress and private industry, the United States has a new *Advanced Air Mobility National Strategy: A Bold Policy Vision for 2026–2036* (Strategy). Under this Strategy, the Federal Government will lead a nationwide effort to accelerate the development and deployment of Advanced Air Mobility (AAM) technologies throughout the United States. We will align policies and programs behind a bold vision, while also providing leadership and support for State, local, Tribal, and territorial (SLTT) governments, for which new AAM transportation options could provide substantial benefits. We will emphasize safety, security, national defense, and economic competitiveness, thereby expanding jobs and opportunities.

- By 2027, there will be demonstrations and initial operations for contemporary aircraft as we leverage and modify our extensive airport infrastructure. We will encourage a full U.S.-based supply chain, encompassing automation technology companies with highly efficient avionics, advanced carbon component manufacturers, and telecommunications providers, which could increase radio spectrum versatility.
- By 2030, there will be new air operations in multiple urban and rural areas, including quiet flights with Powered Lift aircraft,[1] and short-takeoff-and-landing flights that will increase travel options and reduce noise impacts. These operations may fly from new and accessible vertiport infrastructure that will be funded mostly by private sources, able to reach new areas of the country and helping to address transportation gaps such as over-water and rural flights. We will take advantage of full-scale air traffic modernization as envisioned in the United States Department of Transportation (DOT) "brand new state-of-the-art Air Traffic Control system" to establish efficient, low-altitude traffic management for AAM and unmanned aircraft, such as drones that are already deployed.
- By 2035, there will be advanced air operations with exciting use cases, including fully autonomous flight in geographies with insufficient labor or harsh conditions that might otherwise limit flights from operating—advancing possibilities.

Our vision expands the U.S. aviation edge created when the Wright Brothers invented the airplane. We envision a strong and lucrative job base with new and expanded career pathways in aviation. We imagine fabricating cutting-edge passenger and cargo aircraft and their components in the United States and selling them to trading partners in a robust supply chain. We will demonstrate difficult and impactful feats such as quiet and cost-effective vertical takeoff and landing flights, energy- and space-efficient infrastructure construction, and new airlift, logistic, and automation capabilities, increasing mobility for Americans.

This Strategy and accompanying Plan detail the path forward.

[1] See FAA rulemaking, "Integration of Powered-Lift: Pilot Certification and Operations; Miscellaneous Amendments Related to Rotorcraft and Airplanes."

THE MANY MISSIONS OF AAM

Travel Over Difficult Terrain

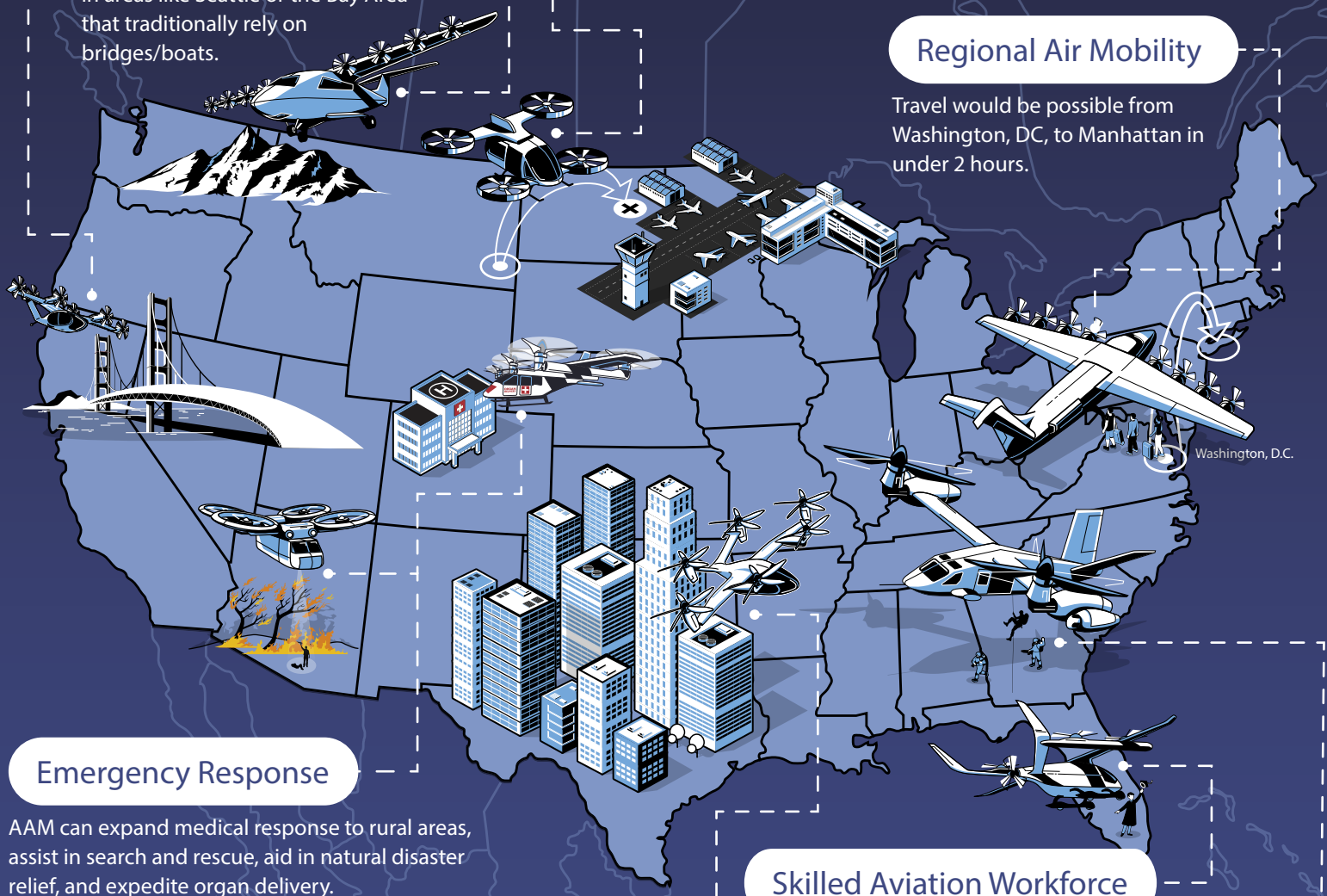
AAM can provide alternative travel in areas like Seattle or the Bay Area that traditionally rely on bridges/boats.

Access to National Airports

AAM can connect smaller airports to the larger transportation network.

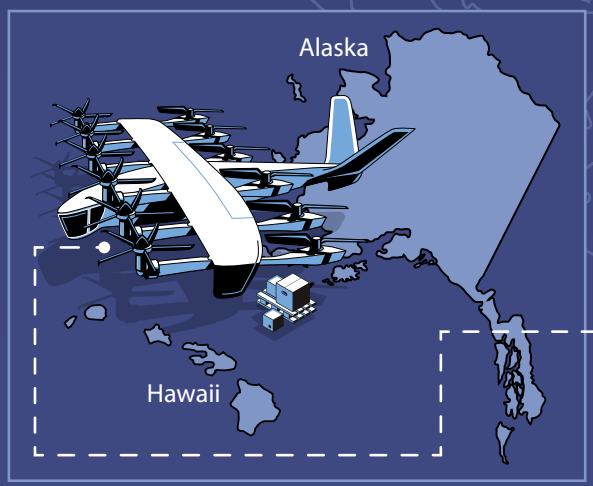
Regional Air Mobility

Travel would be possible from Washington, DC, to Manhattan in under 2 hours.



Emergency Response

AAM can expand medical response to rural areas, assist in search and rescue, aid in natural disaster relief, and expedite organ delivery.



Skilled Aviation Workforce

The use of simplified flight controls can allow for aviation to be done easier and taught to a new class of pilots.

Air Taxi

AAM can connect people within and between communities.

Military Transportation

You could quickly move military troops or cargo from one place to another.

Cargo Operations

AAM can add new cargo capability and supplement existing cargo shipments for priority items.

Table of Contents

Introduction

American ingenuity and leadership in the first century of aviation have benefited the United States and the world. Today's U.S. aviation industry and its workforce, from large manufacturing and commercial operations to robust general aviation, support $1.8 trillion in total economic activity and contribute 4.0 percent of the U.S. gross domestic product.[2] The future of aviation will include AAM that can provide new levels of mobility, connectivity, and convenience for the transportation of people and cargo.

Congress defined AAM in the *Advanced Air Mobility Coordination and Leadership Act*[3] as a transportation system that transports people and property by air between two points in the United States using aircraft with advanced technologies, including electric aircraft or electric vertical take-off and landing aircraft, in controlled and uncontrolled airspace.

AAM encompasses a collection of new technologies and business models designed to enable small, low-altitude aircraft operations at increasing scale and decreasing cost. It introduces new aircraft designs, including manned and unmanned aircraft with novel flight characteristics, control schemes, modes of operation and propulsion sources, that can fly quietly and efficiently. It also includes air traffic management solutions to manage high volumes of aircraft safely, securely, and efficiently at low altitudes. Finally, AAM incorporates new and modified infrastructure that integrates flight networks into the hearts of communities. Taken together, this AAM ecosystem creates opportunities for aviation to provide commercially viable local and regional mobility solutions that benefit Americans.

The Future of AAM in the United States

AAM will transform aviation's role in American life by introducing cutting-edge technologies and forward-thinking concepts with the potential for substantial returns on investment. Although AAM is not an all-encompassing solution and may not represent the largest segment of transportation by overall passenger or cargo volume, its wide-ranging applications have the power to serve as a catalyst by unlocking entirely new aviation services and reshaping how communities connect and thrive.

AAM has the potential to make aviation a more effective and beneficial part of American life. Applications of AAM technology across diverse use cases should create unprecedented aviation services leading to stronger transportation connections between and within small and rural communities. Public benefits could include noise reduction, reduced traffic congestion in some areas, and dynamic job opportunities, including a new generation of aviators. AAM could deliver enhanced mobility options for the traveling and shipping public

and more timely delivery options for goods. AAM can also provide new methods to perform other crucial missions—like providing emergency services in a disaster area, organ transplant delivery, and tactical mobility for our armed forces. AAM will expand the benefits of aviation and increase its access for the general American public.

Serving All Americans

To achieve its full potential benefits, AAM must operate with high levels of safety and security in line with the public's expectations from traditional aviation. Public confidence in AAM depends on the Federal Government to set standards for safe manufacture and operation of AAM aircraft, to carefully integrate it within existing policies, to facilitate development of a resilient base of manufacturing and services, and to create economic opportunities. While automation will be crucial to AAM aircraft and airspace management, integration of AAM operations is expected to be incremental, moving from currently approved means of operation, such as operating with human pilots onboard, to revolutionary operations, such as fully autonomous aircraft. The certification and preparation efforts for these revolutionary operations are underway now.

As these new technologies continue to mature, the Federal Government has an opportunity to plan and ensure all relevant departments, agencies, and partners are prepared to support a new aviation system and its future technologies with appropriate investments. This Strategy recognizes that while various departments and agencies have different roles to play to ensure long-term success, each best contributes by focusing on necessary steps within its core mission areas.

AAM National Strategy and Comprehensive Plan

In 2022, recognizing the need for a whole-of-government approach to support AAM technology best, Congress passed the A*dvanced Air Mobility Coordination and Leadership Act*,[4] which required the DOT to convene an interagency working group (IWG) that would develop a concrete strategy for AAM over the next decade. The IWG, comprising more than 100 subject matter experts from more than 25 Federal agencies, conducted a comprehensive review of the regulatory, technical, and policy issues facing the AAM industry. To inform their work, IWG members met regularly over a period of nearly three years. They engaged with stakeholders in Congress, private industry, and SLTT governments, solicited public input through listening sessions and a Request for Information, and reviewed technology demonstrations on-site at industry locations.

The results of this effort are two documents intended to move the United States into a leading position for the future of aviation. This document, the Strategy, sets the policy vision and goals of the United States. The companion AAM Comprehensive Plan (Plan) details how Federal agencies can execute that vision over time. The AAM National Strategy provides findings and recommendations organized by key pillars of a strong AAM system: airspace, infrastructure, security, community planning and engagement, workforce development, and automation. A seventh section adds overarching recommendations. The companion Plan defines key agency roles, next steps, sequencing, and prioritization for the recommendations in the Strategy.

United States
KEY GOALS

Scope of the AAM National Strategy

The AAM National Strategy is built on seven pillars that support successful integration of AAM in the U.S. transportation system and is both flexible enough to adapt to technological developments in the AAM industry and durable enough to guide Federal actions over the coming decade. The continued interagency coordination and dedication to the research, civic engagement, technological development, responsive policy, and legislative actions envisioned in this Strategy will position America's emerging AAM industry to be a driving force for the country and the world.

Not expressly included in the pillars, but very much part of the U.S. strategic policy vision for transportation, are the efforts of the DOT to ensure that its aviation regulatory activities support the integration of AAM. Those activities—such as rules for airworthiness (aircraft) certification, rules for certificating operations (including for air carriers), rules for airport operations, aircraft registration requirements, and economic regulatory and market access rules—are treated lightly in this Strategy because they are already being considered, consistent with the recommendations provided in this document. These activities, such as the Federal Aviation Administration's (FAA) Special Federal Aviation Regulation for the Operation of Powered-Lift,[5] Roadmap for AAM Type Certification,[6] and Engineering Brief 105,[7] remain under and aligned with the larger umbrella of U.S. aviation policy and this strategic vision.

Across key pillars of Airspace, Infrastructure, Security, Automation, Community Planning and Engagement, and Workforce:

- **Position** *the United States as a global leader in AAM*
- **Maintain** *high levels of safety, security, and national defense*
- **Encourage** *smart and timely private investment in the AAM sector and develop public-private cooperation models*
- **Enhance** *planning between and among all levels of government—with a clear vision and coordinated effort at the federal level*
- **Achieve** *new public benefits over time, such as enhanced safety, mobility, economic development, accessibility, emergency management, and noise mitigation*
- **Optimize** *existing infrastructure to support AAM services, while creatively planning and financing new physical, energy, and communications infrastructure as needed*
- **Promote** *competition, market entry, and broad access to critical inputs in the U.S. market*
- **Expand** *the U.S. aviation workforce and diversify supply chains*
- **Coordinate** *and increase effectiveness of government research and testing to support faster benefits for the U.S. industrial base*

[2] See Economic Impact of Civil Aviation on the US Economy – FAA.
[3] See Public Law No: 117-203, *Advanced Air Mobility Coordination and Leadership Act*.
[4] See Public Law 117-203 (October 17, 2023).
[5] See 89 Fed. Reg. 92296 (November 21, 2024).
[6] See NAA Network Roadmap at https://www.faa.gov/air-taxis/NAA-Network-Roadmap-Advanced-AirMobility-Aircraft-Type-Certification-Edition-April2025.pdf.
[7] See Engineering Brief 105 at https://www.faa.gov/airports/engineering/engineering_briefs/eb_105a_vertiports.

PILLAR 1:

Airspace

The United States has the world's busiest and most complicated airspace, simultaneously serving commercial operations, general aviation, and military aircraft. FAA is currently pursuing an ambitious modernization of its air traffic control system. Now is the right time to build for the future, including transforming low-altitude airspace to support AAM.

Emerging aviation will make the skies more accessible but also introduce new challenges. As the AAM industry matures, AAM aircraft will operate where traditional air traffic control services may not be readily available due to the configuration of a particular airspace, insufficient radar surveillance, or inconsistent Global Positioning System (GPS) coverage. Substantial technological and regulatory changes will be required to achieve the full benefits of AAM and to accommodate higher volumes of aircraft. The United States will need to extend its current capabilities and explore new models of cooperation between air traffic control and operators.

The Federal Government, acting through DOT and the FAA, oversees the airspace and designs the rules for accessing it.[8] In the near term, the FAA expects AAM aircraft will operate within the current regulatory and operational framework. However, an evolution of this existing framework is needed to support the higher volumes of aircraft envisioned in a mature AAM operating environment, estimated at 2035 or later.[9]

As air traffic volume increases, the FAA will adopt a new approach to evolve airspace management models to enable a more automated, flexible, and scalable environment. One concept under consideration is the integration of cooperative operating practices within defined portions of airspace (called "cooperative areas"), supported by multiple service providers operating under FAA rules and oversight. Operators will use FAA-approved services to meet defined performance requirements and assist in managing growing operational demand in designated airspace.

Rather than a wholesale shift, this approach will support a transition to more distributed models and cooperative operations, enabled by approved systems and providers that are interoperable with the existing ecosystem. These capabilities must meet the longstanding standards of safety, security, and efficiency that define the U.S. airspace system.[10]

Once validated, cooperative service concepts will enhance the system's ability to adapt rapidly to changes in operational volume, complexity, and density while maintaining the required high levels of safety. While the FAA retains regulatory authority over the national airspace, cooperative operations will benefit from a shared and secure technical environment where trusted operators are responsible for coordination, execution, and management of their activities. A robust, secure, and networked information exchange will be key for stakeholders and represents a significant shift in how air traffic is managed today.

As new technologies emerge to support air traffic services, the FAA's and the Department of War's (DOW)[11] systems must evolve in parallel—integrating compatible services, modernizing system interfaces, utilizing increased automation, and facilitating seamless transitions between low-altitude and traditionally controlled airspace.[12] These developments are intended to augment, not replace, existing air traffic management approaches, enabling scaled AAM operations that would be difficult to sustain under the current structure.

The major challenges for airspace include:

Anticipated growth and demand *for AAM that will strain existing infrastructure, procedures, and air traffic management capabilities;*

Current surveillance systems, *communication methods, and decision support tools were originally designed for traditional aircraft operations and can only support initial proposed AAM operations at lower altitudes; and*

Insufficient information *to support the FAA's development of a regulatory scheme and adequate funding that must be provided to explore information gaps and synthesized to support AAM.*

Pillar 1
KEY GOALS

- **Maintain** *and mature sound regulatory oversight of airspace safety, security, efficiency, access, and economic competition*
- **Pioneer** *a new public-private cooperative model to manage low-altitude airspace, with a vision to integrate advanced aviation safely and efficiently with traditional aircraft*
- **Modernize** *systems and management practices, including adapting the Federal workforce to oversee a federated air traffic system to maximize the economic benefits of aviation for all Americans*

The following five recommendations are presented to address the challenges described above and to propel the U.S. forward in modernizing the airspace for AAM.

Recommendation 1.1: Capitalize on existing modernization efforts to transform air traffic control systems and further enable all Federal air traffic controllers to provide services that ensure the safe, secure, and efficient use of dynamic and high-tempo airspace in the future.

The United States has begun a rapid air traffic control system modernization effort.[13] That modernization needs to extend beyond immediate efficiencies and plan for the concepts, support tools and procedures that will enable air traffic controllers to oversee unprecedented amounts of air traffic in the future.

Most FAA and DOW automation systems and decision support tools (software used by air traffic controllers to help facilitate quick decision making) were designed and developed in the late 1990s. Updates to software and functionality have occurred but the core technologies have not changed since their development. The existing automation systems and decision support tools may not be compatible with or sufficient to manage near or long term AAM operations. DOT and DOW should prioritize planning today for the development of future air traffic control systems and decision support tools to enable a safe and efficient future airspace. In doing so, these agencies should consider the equities of their law enforcement and security partners at the Federal level.

The FAA's Automation Evolution Strategy[14] (AES) is the approach the FAA is using to modernize the airspace automation infrastructure. The evolution strategy provides a robust and flexible infrastructure that can adapt to the unique demands of AAM. The service-based architecture of AES ensures that foundational computing resources, software platforms, and mission-critical applications can effectively integrate and manage the complexities of AAM. Integration of these new or modernized systems to support mature-state AAM operations will require research to develop a roadmap for airspace modernization. The Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA) should take action to ensure the effective spectrum management as required by these new systems.

Recommendation 1.2: Support research, development, testing, and implementation of new surveillance solutions for low-altitude, high-density operations.

In the traditional air traffic services environment, surveillance—such as radar coverage—is one of the many tools for air traffic controllers to provide deconfliction and separation of aircraft. Existing surveillance systems, whether ground-based surveillance or broadcast from aircraft, are designed to provide coverage based on operational needs. The coverage is tailored to the specific requirements of the airspace, with different surveillance types serving different purposes.

The FAA recognizes that some projected AAM operations may occur outside of traditional surveillance areas. To ensure the safety of AAM operations, the FAA may require expanded surveillance capabilities where existing

systems are unavailable. This expansion would enhance conflict management and support the integration of AAM operations into the future airspace and may require expanded surveillance infrastructure to provide continuous, reliable service levels in new areas where AAM activities are anticipated.

The FAA and the National Aeronautics and Space Administration (NASA) should research future surveillance needs essential for enabling collaborative AAM operations in contexts outside the traditional air traffic service frameworks, such as low-altitude strata and rural areas. This research should encompass the exploration of self-reported position data, and the integration of situational awareness services provided by third parties,[15] including companies providing aviation traffic management and communication services as part of a new shared responsibility paradigm between Federal air traffic control and private companies. New surveillance systems not currently used may be certified and adopted to enhance coverage beyond what radars can currently provide.

Recommendation 1.3: Research new methods of communication between aircraft and air traffic management to enable air traffic to be more efficiently managed.

Voice communication is one of the primary modes of information exchange between aircrew and air traffic controllers today. However, the projected increase in AAM aircraft in lower-altitude airspace will place substantial pressure on an already strained communication infrastructure. Private companies engaging in traffic management and autonomous control of various types of aircraft will necessitate a shift from strictly voice commands, and new efficient and effective communication methods will be needed to address capacity constraints.

The FAA envisions future routine communications as automated information requiring less bandwidth than voice communications while providing more information, which will increase coordination between multiple aircraft in a given area. These communications methods should allow for aircraft to communicate better with air traffic control, other aircraft, and ground infrastructure. They may include significantly larger data sets using video (rather than just text and voice) in the form of streaming, Artificial Intelligence (AI) analysis of data, and real-time monitoring and deconfliction of aircraft.

Further research is required into scalable, high-efficiency data communication solutions for AAM and emerging technologies for the future, including cybersecurity and integration of commercial wireless service providers (e.g., mobile phone companies and global satellite service providers using 5G and beyond technologies). This research should include development of an efficient and safe process for transitioning legacy aviation operations to digital systems. The FAA and NASA should conduct this research in coordination with the FCC, and NTIA. Appropriate consultations should also occur with Federal law enforcement, security agencies, and industry.

Recommendation 1.4: Establish information exchange protocols, technology requirements, and security requirements for integrated updates to facilitate free flows of information among providers of air traffic management services in cooperative environments and other areas.

Beyond the more specific methods of communication in recommendation 1.2 (between traditional air traffic control and aircraft operators), there is an additional need to transform the national airspace into an interconnected, adaptable, and inclusive network that facilitates extensive data sharing. Central to this vision is the integration of technologies with diverse entities like third-party service providers, remote pilots, and automated systems, which is essential for effective conflict management within the AAM community and the national airspace.

The safety and security of airspace operations, especially in transitions between classes of airspace and between types of air traffic service provisions, requires essential access to surveillance, communications, flight plan information, and speed and trajectory-based information at a minimum for all personnel with airspace management responsibilities, both Federal and private

service providers. While the processes and technologies for achieving these data transfers may evolve, establishing performance requirements, data formats, standards, and procedures for data sharing will be critical to ensure consistency and interoperability in AAM and other nearby airspace operations. The FAA and NASA should develop these protocols in coordination with industry, DOW, FCC, NTIA, Federal law enforcement, and security agencies.

> **Recommendation 1.5:** Research and develop the requirements, roles, and responsibilities expected of third parties in complementary air traffic management and surveillance operations and the related regulatory framework.

The FAA and NASA, with the participation of law enforcement and security agencies, should explore potential roles and responsibilities of third parties in providing complementary air traffic management and surveillance operations. Building on the information acquired from research in recommendations 1.2, 1.3, and 1.4, the FAA will need to develop a new regulatory framework governing third-party systems that take on air traffic control responsibilities or support those responsibilities with commercial or privately held communication systems that includes how they are to be managed and what roles and responsibilities third-party operators should expect. In addition to the FAA regulatory framework, accommodating increased capacity and third-party managers on shared Federal and non-Federal spectrum used for ATC communications and surveillance will require action by the FCC and NTIA.

[8] See 49 U.S.C. § 40103.
[9] See FAA Aerospace Forecasts, at https://www.faa.gov/data_research/aviation/aerospace_forecasts.
[10] The FAA has introduced the cooperative services approach in other documentation, including the Urban Air Mobility Concept of Operations 2.0, accessible at https://www.faa.gov/sites/faa.gov/files/Urban%20Air%20Mobility%20%28UAM%29%20Concept%20of%20Operations%202.0_1.pdf.
[11] See Executive Order 14347 "Restoring the United States Department of War" September 5, 2025.
[12] Additionally, as an air traffic service provider for airspace over military installations, Department of War systems must evolve in parallel with the FAA.
[13] See "Brand New Air Traffic Control Plan" at https://www.transportation.gov/sites/dot.gov/files/2025-05/Brand%20New%20Air%20Traffic%20Control%20System%20Plan.pdf, May 8, 2025.
[14] See Automation Evolution Strategy at https://www.faa.gov/about/office_org/headquarters_offices/ang/icn/aes#sec1.
[15] Explained this way, the "first party" is the pilot or operator, and the "second party" is traditional air traffic control. "Third- party" services as envisioned would be neither, but private companies providing services under government supervision.

PILLAR 2:

Infrastructure

AAM has the potential to create new air routes and services, some of which will not be limited to traditional airport locations. Locations with limited to no aviation operations in the present could benefit from aviation services in the future. Successfully achieving this potential will require consideration of the places where aircraft will take off and land, how to deliver energy to those locations, what communications methods will be necessary to facilitate operations, and how weather is measured and evaluated. For example, many AAM vehicles will be powered with electricity via batteries or hydrogen rather than traditional aviation fuels. Flying at lower altitudes will create distinct requirements for some AAM aircraft, such as increased data exchange to support communication, improved local surveillance, and robust navigation methods.

AAM aircraft may be able to use airports or heliports without modification, but others anticipate using "vertiports" for takeoff and landing—locations specially designed for Powered Lift aircraft, also commonly called electric or fuel cell vertical takeoff and landing vehicles.

The primary components of AAM infrastructure are:

Physical Infrastructure: *Landing facilities, buildings, and structures like airports, heliports, and vertiports must be built or modified to accommodate AAM operations for both vertical and short takeoff and landing aircraft;*

Energy: *Energy infrastructure is needed to charge or fuel AAM aircraft and support facilities and equipment;*

Radio Spectrum: *Future aviation operations will require modernization of Communications, Navigation, and Surveillance (CNS) technologies and systems and innovative solutions in radio spectrum to ensure safe, secure, and resilient CNS functions. These technologies and systems must accommodate densely trafficked airspace and growing automated aircraft needs; and*

Weather: *New sensor arrays and services must improve detection, reporting, and prediction of low-altitude weather in environments that will impact AAM operations.*

While many communities throughout the U.S. are familiar with operating a general aviation or commercial service airport, AAM will "localize" aviation in new ways that may incentivize new infrastructure investments. Development of aviation infrastructure regardless of aircraft type typically takes several years, and any infrastructure reliant on public funding must fit within local budgets, plans, and land-use processes. SLTTs, communities, and private companies that want to be adopters of AAM are seeking clear guidance from the Federal Government on infrastructure requirements. A future aviation system that includes AAM should include infrastructure considerations noted in this section at the Federal and private levels and strong partnerships at the SLTT levels.

The major challenges for infrastructure include:

A lack of performance and operational data *needed to inform vertiport policy, perform site reviews to identify impacts to airspace use, and determine achievable separation minimums for aircraft;*

A lack of an existing framework *to accommodate AAM into aviation infrastructure and energy infrastructure planning;*

A lack of available radio communication frequencies *to support air traffic operations. Also, strained capacity on existing congested Automatic Dependent Surveillance-Broadcast frequencies, which will be impacted by AAM growth; and*

A need for improved precision weather detection *and reporting networks.*

These recommendations highlight the steps needed to develop AAM infrastructure and connect it to other regions, modes of transportation, and utilities, while meeting community (SLTT) needs.

> **Recommendation 2.1:** Use existing regulations, standards, policies, and processes, where applicable, to encourage and facilitate the use of existing or repurposed infrastructure for near- and medium-term AAM operations.

With nearly 20,000 total landing facilities in the United States, including approximately 13,000 airports and over 6,000 heliports, the United States has an extensive network of infrastructure ready to accommodate flights. Of those airports, approximately 4,800 are public use, enabling most Americans to access air transportation with a short drive or transit connection.[16]

Pillar 2
KEY GOALS

- **Adapt** *existing infrastructure for new uses and technologies, leveraging current assets for immediate benefits*
- **Improve** *energy planning and distribution in aviation*
- **Develop** *spectrum solutions for future mobility needs*
- **Develop** *additional weather networks and forecasting capabilities*
- **Achieve** *new levels of accessibility, competition, and interoperability*

While existing facilities are not currently purpose-built to accommodate AAM, their use could lower initial barriers to entry for new AAM operations in both urban and rural environments. Existing facilities may require minor modifications to enable near-term operations and could present communities with attractive means to connect to the national commercial aviation system affordably, turning the local airport into an economic hub.

The FAA has longstanding regulations, guidance, policies, and processes to ensure that airports in which the U.S. Government has Federal investment[17] (known as "federally obligated" airports) are operated and maintained in a safe and efficient manner and that FAA oversight is consistent nationwide. Leveraging these existing rules and processes will provide timely and cost-effective means for modifying existing facilities to accommodate early entry-into-service by AAM operators.[18] AAM operators should also consider all types of existing infrastructure and not limit themselves to operating only from those federally obligated airports. Facilities in which there is no FAA oversight may allow for more expeditious entry.[19] In all cases though, communities should establish principles to encourage competitive access by operators, which will drive accessibility and lower costs.

The DOT and other Federal agencies should leverage current policies and programs capable of facilitating rapid integration of safe and efficient AAM operations. Such an effort should include:

- Reviewing current regulations, standards, practices, policies, and program guidance for applicability to facilitate the integration of AAM operations into existing facilities and infrastructure. This review should identify policies in place that could be leveraged or revised to support near- and mid-term operations. Agencies should also seek existing means to encourage innovation, including testing.
- Identifying any plans an airport sponsor must adopt to accommodate AAM aircraft in the near- and mid-term planning horizon. Such information can help identify nationwide infrastructure needs for future Federal investment decisions and policy development.

Some agencies have already begun adapting existing law and policy into infrastructure development to support AAM. The FAA has received numerous proposals for purpose-built vertiports and modifications to existing infrastructure to facilitate early entry-into-service operations. To ensure safety of these early facilities, the FAA has leveraged existing processes where possible to analyze these proposals on a case-by-case basis. While such an approach is untenable as the number of proposals increases, it has provided the agency the opportunity to enable early adopters while more permanent processes and policies are refined.

> **Recommendation 2.2:** Engage with SLTT governments and industry on future models for planning and financing AAM infrastructure while funding existing programs for early operations.

While communities may accommodate initial AAM operations with existing infrastructure, timely scaling of AAM will require advance planning to ensure a network of private- and public-use vertiports is available, utilities can meet the demands of multiple operators, AAM complements traditional transportation options, and AAM is accessible to a broad user base. Early planning also increases opportunities for community engagement to make sure infrastructure facilities are built in a way that aligns with local priorities.

SLTT governments traditionally look to Federal grants to support their infrastructure planning and development needs. The IWG heard repeatedly from SLTT governments and communities about the need for reliable Federal financing to plan, develop, and ultimately maintain aviation infrastructure that would support AAM.

However, Federal requirements and funding models that do not actively include SLTT governments as partners in development run the risk of creating a system disconnected from operators and risks failure. With respect to ground infrastructure in particular, SLTT governments are critical operational partners with the Federal Government and private industry to deploy AAM as something beyond a research concept. Many SLTT governments and industry organizations are eager to partner with the Federal Government to create a financially sustainable national transportation system, and the Federal Government should embrace that partnership.

As one example, the National Association of State Aviation Officials has coordinated the AAM Multistate Collaborative, a group representing 35 States and the Choctaw Nation of Oklahoma, which is developing a series of consensus papers[20] that outline key considerations and best practices for AAM as a roadmap for States to contribute locally to a more rapid rollout of a consistent national aviation system. These papers can be a guide for advancing AAM through policy harmonization, data and information exchange, addressing infrastructure needs and service levels, and encouraging interstate collaboration—while acknowledging and respecting the distinct characteristics and authorities of each State.

With limited AAM operations expected in the near-term, the United States has time to develop the infrastructure planning and financing necessary to support more efficient and scaled AAM deployment. However, because planning and development of infrastructure requires timelines measured in years, now is the time to convene experts to determine infrastructure needs for AAM, how they will be financed, and how to evolve Federal programs to address them. These experts can explore private funding opportunities, public-private partnerships, and existing Federal programs for AAM services that will enhance quality of life while being wise stewards of taxpayer dollars.

Executive Order 14307

Unleashing American Drone Dominance

Section 6 of Executive Order 14307 "Unleashing American Drone Dominance" (June 6, 2025) creates an eVTOL and AAM Integration Pilot Program for SLTT governments. While vertiport standards are still under development, and this pilot program is ongoing, Congress could support the same goals as E.O. 14307 by considering a future approach for AAM infrastructure that:

- Assesses the financial needs for AAM infrastructure;
- Enables the Federal Government to provide guidance and leadership to SLTT governments seeking to advance AAM in their locations;
- Funds a range of planning and engagements projects on a local level on a pilot basis; and
- Plans ahead for integration into existing programs, as well as new programs or oversight mechanisms, concerning delivery of adequate electrical capacity, security protocols, land use/zoning, public interest use cases and integration of AAM into the airspace without causing new problems.

Recommendation 2.3: Identify facility and equipment requirements specific to remotely piloted/supervised and autonomous AAM aircraft at airports, vertiports, and heliports and assist with demand/capacity balancing of low-altitude airspace.

Some AAM operators and manufacturers are focused on conducting remotely piloted and autonomous operations. Beyond FAA certification efforts to ensure safe aircraft, there will be technology, and procedure needs regarding precision landing and traffic management functions for automated aircraft. Current airport, heliport, and vertiport guidance does not account for facility or equipment requirements necessary for the safe integration of remotely piloted or autonomous aircraft. For example, existing infrastructure guidance for signage, marking, and lighting stems from decades of human factors research and guidance based on a pilot in the flight deck of the design aircraft identified for the facility.

Focused research is needed to enable automated navigation and precision landing for remotely piloted and automated AAM flight. This research should focus on the requirements for AAM infrastructure assuming that automated vehicles are involved and whether those requirements are different from infrastructure requirements assuming manned AAM aircraft operations. Examples of such research could include studying if high-fidelity digital maps of airports and known obstacles are necessary to be maintained and provided to unmanned aircraft or if real-time information on objects that move around surface areas, such as passenger shuttles or ground servicing equipment, need to be provided to unmanned aircraft. Finally, just as radars do today, advanced surface-based equipment that provides information to enhance demand and capacity balancing will be crucial to assisting air service providers with managing greater numbers of aircraft in ever-more demanding environments. The equipment and software needed to help manage aircraft approaching, departing, and taxiing around takeoff and landing areas must also integrate into existing airport and air traffic operations to avoid causing incidents, accidents, and inefficiencies for other aircraft.

Recommendation 2.4: Expand guidance on vertiport design.

As noted above in recommendation 2.1, unless a specific air landing facility receives Federal money or is co-located with a federally funded airport, communities, airport/heliport owners, and developers are not required by Federal regulations to design and build a vertiport to comply with FAA design standards.[21] Many SLTT governments, however, use FAA nonbinding design standards as part of licensing and zoning requirements for air landing facilities regardless of how they are funded. Accordingly, having FAA design standards or guidance in place early may enable SLTT governments to proceed faster with vertiport development.

In September 2022, FAA published Engineering Brief 105, which provided initial design guidance for public and private vertiports and vertistops, including modification of existing helicopter and airplane landing facilities and establishment of new sites. However, these standards are limited in scope and applicability and do not address the variety of aircraft designs, proposed operations, and increased operational tempo to scale facilities successfully.

The FAA has begun a two-fold effort to update guidance concerning landing areas for AAM aircraft. The first is a revision to Engineering Brief 105 that provides interim guidance for the design of vertiports for powered-lift aircraft with vertical takeoff and landing (VTOL) capabilities.[22] In December 2024, the FAA published an update to the Engineering Brief that provides standards and guidance for the planning, design, and construction of heliports serving VTOL aircraft.[23] For the second phase, FAA plans to publish a unified Vertical Lift Infrastructure Advisory Circular, which will combine existing heliport and vertiport design guidance into one document.[24]

The two-phased approach complies with section 958(a)(3) of the *FAA Reauthorization Act of 2024*, which requires the FAA to review the Heliport Design Advisory Circular for applicable guidance on modifications that might make existing heliports readily usable for AAM aircraft. This new document will help guide SLTT governments as they seek to enable AAM in their communities, regardless of whether those facilities receive Federal funding.

In addition, the Federal Government should seek ways to streamline existing requirements. Section 953 of the *FAA Reauthorization Act of 2024* instructs the FAA Administrator to apply categorical exclusions in accordance with the *National Environmental Policy Act* (NEPA) in considering the environmental impacts of a proposed vertiport project and to take steps to establish additional categorical exclusions for vertiports on airport property. Categorical exclusions are environmental documents for types of projects that normally do not have a significant effect on the human environment and, therefore, do not require an environmental assessment nor an environmental impact statement.

To streamline environmental review of vertiport projects, the FAA included 'vertiports' in the categorical exclusion related to heliports in FAA's NEPA Implementing Procedures (FAA Order 1050.1G) published June 30, 2025.[25] As the FAA builds experience with environmental reviews for vertiport projects, it will consult with the Council on Environmental Quality to establish new categorical exclusions, as appropriate.

> **Recommendation 2.5:** Research energy infrastructure needs for AAM, plan joint demonstrations that establish best practices, and work with industry to plan for ample energy distribution.

The Department of Energy (DOE) can analyze and quantify future renewable power needs on a national scale but requires assistance from other Federal agencies to obtain aircraft/operational performance data and aircraft power requirements that provide information to support planning and investment decisions.[26]

A holistic energy analysis for aircraft and airports is underway in a DOE and DOT partnership, supported by NASA research. Reliable power provision will require different solutions in different regions of the country, leading to a need for regionalization and localization of power sources and distribution planning as already occurs today. Where additional power or fuel will be needed for AAM flight, finding the right combination of electrical power provision and distribution to foster AAM transportation may require more resources than local entities have available. In 2023, as a precursor, DOE completed a study regarding potential electrical needs that airports, heliports, and vertiports could face in the future.[27]

DOE has the research and development labs and expertise to design programs that will help sites identify and plan for energy generation and distribution to support AAM with firm, reliable energy sources and strategies. DOE's collaborative Athena Project[28] is an example of such an effort. Targeted demonstrations can create model sites to demonstrate charging and power distribution processes, while also working with industry to standardize charging protocols and fuel storage/distribution options that maximize efficiency and compatibility while reducing vulnerabilities of cyberattacks and accidents.[29] These programs must be integrated with existing electric vehicle charging, hydrogen fuel, and electrification programs to accurately capture energy needs for planning and should develop solutions for AAM power generation.

While some regions of the United States already generate ample energy to serve the additional power requirements of AAM transportation systems, other parts of the Nation will need to assess and invest in new technologies to meet their future power needs.

Recommendation 2.6: Address aviation spectrum needs and spectrum bands for future airspace management transformation.

As noted in the air traffic section, aviation CNS systems and practices will need modernization to accommodate various components of the AAM ecosystem. Many aviation systems used for CNS are dated, and some air traffic control communications use decades-old technology. The growth of AAM and emerging aviation technologies provide opportunity to replace aging systems to benefit all aviation. Digitization and modernization of certain CNS systems could address capacity constraints of older technologies and could also add benefits including increased aviation systems resilience to interference and/or cyber vulnerabilities.

To transition and enable CNS efficiency for future aviation operations, including AAM, the FCC, NTIA, FAA, law enforcement and security agencies, and other agencies with equities should collaborate with standards bodies and industry to evaluate the equipage and spectrum needs of the aviation industry. This collaboration should proactively identify future needs to facilitate growth, automation, resilience, and cybersecurity for AAM and legacy aviation operations. Ideally, these functions could be accommodated within existing spectrum for safety and integrity of transmissions through transition to more efficient technologies. As outlined under Pillar 1, research must explore the appropriate role of commercial radio services, e.g., 5G and satellite service providers, and private traffic management entities in satisfying increased demand for CNS functions. This research should examine how these services can provide sufficient reliability for aviation purposes and how any harmful interference risks can be managed and/or mitigated.

The FCC anticipates that it will continue to explore spectrum needs of AAM through rulemaking proceedings,[30] including by reviewing allocations, technical rules, and assignment mechanisms, in coordination with NTIA and the FAA as needed to protect Federal spectrum users from harmful interference.[31,32]

Recommendation 2.7: Develop Complementary Positioning, Navigation, and Timing (CPNT) options.

Positioning, Navigation, and Timing (PNT) refers to the fundamental capabilities that determine location, track movement, and synchronize time. These capabilities are critical for a wide range of applications, from everyday navigation to critical infrastructure operations and banking. Global Positioning System (GPS) is the most relied upon navigational technology in global transportation, but it is not without vulnerabilities, including signal disruption, denial of service from interference, and spoofing of signals that can undermine secure air traffic management. Further, GPS does not always work accurately for flight in geographies such as urban canyons, thick tree canopies, and areas of high latitude where accuracy and reliability are reduced. A backup service to existing GPS (CPNT services) to meet AAM performance requirements must be a focus of interagency research and a priority for deployment where AAM fleets are expected to operate in increasing numbers.

As part of its ongoing responsibilities, DOT has developed a Complementary PNT Action Plan[33] to drive adoption across the Nation's transportation system and within other critical infrastructure sectors. The plan describes actions that DOT will pursue over the next several years, including engaging PNT stakeholders, monitoring and supporting the development of CPNT specifications and standards, establishing resources and procedures for CPNT testing and evaluation, and creating a Federal PNT Services Clearinghouse. Taken together with efforts of other Federal partners,[34] these initiatives will continue to strengthen the resilience of the United States' PNT

dependent systems, resulting in safer, more secure critical infrastructure.

Recommendation 2.8: Develop enhanced weather detection, forecasting, and reporting network capabilities for AAM operations.

AAM aircraft will generally fly at altitudes below 5,000 feet,[35] where weather conditions are less stable, less served by approved sources of weather information, and present more difficulties for detection than at levels in the atmosphere where traditional aircraft typically fly.[36] Low altitude airspace is less stable and more turbulent due to solar heating of the Earth's surface and friction from air flow along topography and around buildings. Weather satellites have trouble penetrating upper atmospheric conditions to predict weather phenomena accurately at low altitudes depending on how the satellites are equipped. Therefore, adverse weather detection at low altitudes is more difficult than weather at high altitude.

Weather is discussed across all UAS Operational Capabilities and Implementation Phases as defined in the FAA UAS/AAM Integrated Research Plan.[37] The current aviation weather information ecosystem does not have the resolution to detect "microscale" weather, defined as atmospheric motions with spatial scales of 2 kilometers or less.[38]

Planning for microscale weather becomes increasingly important to ensuring safety as AAM operations scale and become increasingly dependent on provided data to make essential flight decisions that affect passengers and other aircraft in close proximity. While microscale weather detection would enhance aviation safety, AAM aircraft may experience a greater benefit because AAM aircraft may be more susceptible to reduced operational capacity from wind and wind gusts (e.g., battery life, vehicle handling qualities). In addition, most AAM operators intend to offer services in more densely populated areas where buildings and other obstacles create microscale weather phenomena.

Development of an interdependent low-altitude weather sensing network, whether Federal, private, or public-private, that depicts microscale weather conditions, will eventually be essential to navigate safely in low-altitude, densely trafficked flight operations anticipated by AAM. Importantly, AAM aircraft could be equipped to gain information on microscale weather that could be shared with other aircraft. Development of an interdependent low-altitude weather sensing network will become essential to plan for and allow AAM aircraft to safely navigate around areas of potential hazardous weather during low-altitude flight, and a localized weather network that will transmit accurate and timely weather data is crucial to AAM operators. The spectrum resources required to communicate weather from AAM aircraft and disseminate it to users must be identified.

Once such a network is established, the Federal Government can work with industry to move from a networked, near real-time "nowcast" system to a future system that predicts weather in the short term, and at low altitudes, rather than simply reporting it. Such a system could potentially support the creation of weather-related regulatory processes, standards, and policies for AAM, as well as decision support tools for operators to avoid hazardous weather or weather that is likely to disrupt passenger experience such as turbulence.

Establishing this network is safety-critical and necessary to mature potential services and applications that will improve AAM "weather aware" operations. Development of the network will also necessitate establishment of the standards and enable the FAA to evaluate and codify UAS/AAM weather performance standards.

[16] See FAA Airport Categories at https://www.faa.gov/airports/planning_capacity/categories#:~:text=There%20are%20approximately%2014%2C400%20private,Integrated%20Airport%20Systems%20(NPIAS).
[17] Any airport that has received federal funds or federally conveyed property is a "federally obligated" airport requiring adherence to certain operating/maintenance standards and other matters. The FAA ensures that these airports are operated safely and in the public's interest through the Airport Compliance Program. See https://www.faa.gov/sites/faa.gov/files/airports/airport_compliance/compliance_guidance/airportSponsorAndUserRightsBrochure.pdf.
[18] Section 952(2)(D) of the *FAA Reauthorization Act of 2024* states: "It is the sense of Congress that the FAA should leverage the existing aviation system to the greatest extent possible to support advanced air mobility operations."
[19] As one example, development at airports that are not federally obligated may not require Federal environmental analysis (see recommendation 2.4.
[20] See NASAO's Multistate Collaborative at nasao.org/page/advanced-air-mobility-multistate-collaborative.
[21] Even in cases where adhering to FAA design standards is not required, a vertiport proponent will still have to adhere to the requirements of 14 C.F.R. part 157 (Notice of Construction, Alteration, Activation, and Deactivation of Airports).
[22] Section 958(a)(1) of the *FAA Reauthorization Act of 2024* requires this revision be completed by December 31, 2024.
[23] Engineering Brief No. 105A, Vertiport Design, Supplemental Guidance to Advisory Circular 150/5390-2D, Heliport Design, accessible at https://www.faa.gov/airports/engineering/engineering_briefs/eb_105a_vertiports.
[24] This new advisory circular will offer expanded vertiport design guidance to address enhanced AAM operations including best practices for design and operation of vertiports supporting multiple operators and higher tempo operations, short takeoff and landing operations, and facilities, equipment, and design considerations for remotely piloted aircraft, autonomous aircraft and operations during Instrument Meteorological Conditions. Visual and instrument meteorological conditions (VMC and IMC) are terms for human eyesight-based weather conditions that allow pilots to fly based on visual references or require pilots to fly using instruments instead of visual references, as defined by visibility, cloud ceiling, and distance to clouds. Instrument conditions are those below what is acceptable for Visual Flight Rules (VFR).
[25] See FAA's NEPA Implementing Procedures at https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050.1G.pdf.
[26] As one example, the Department of Energy National Renewable Energy Laboratory conducted a study for the FAA documenting the potential electrical challenges that airports, heliports, and vertiport will face in the future. See https://www.nrel.gov/docs/fy24osti/86245.pdf.
[27] See Federal Aviation Administration Vertiport Electrical Infrastructure Study at https://docs.nrel.gov/docs/fy24osti/86245.pdf, October 2023.
[28] The Athena Project is a collaborative effort funded by the U.S. Department of Energy, led by DOE's National Renewable Energy Laboratory (NREL) in partnership with Oak Ridge National Laboratory to help transportation hubs integrate and adapt to transformative technologies that support ambitious energy goals. See https://www.athena-mobility.org/.
[29] Some FAA reauthorization sections have already begun to address this as well: Section 742(a) of the *FAA Reauthorization Act of 2024* amends 49 U.S.C. 47140 to require the Secretary of Transportation to establish a program under which the Secretary shall encourage the sponsor of public-use airports to consider aircraft electric charging as part of airport planning, 49 U.S.C. 47140(a)(1)(A)(i)(IV); and Section 745 of the *FAA Reauthorization Act* requires FAA to establish a pilot program for electric aircraft charging stations.
[30] On March 17, 2025, the FCC published a Notice of Proposed Rulemaking proposing changing spectrum rules to support AAM and Uncrewed Aerial Systems. See 90 Fed. Reg. 12243.
[31] See OMB Circular No. A–11 (2024), Section 31.11—Radio spectrum-dependent communications-electronics systems.
[32] As an example of this process and collaboration, the FCC is engaged in an ongoing rulemaking proceeding to establish service rules for Command and Control (C2) operations in the 5030-5091 MHz band. See FCC, Spectrum Rules and Policies for the Operation of Unmanned Aircraft Systems, Notice of Proposed Rulemaking, FCC 22-101, WT Docket No. 22-323 (2022); FCC, Spectrum Rules and Policies for the Operation of Unmanned Aircraft Systems, Report and Order, FCC 24-91, WT Docket No. 22-323 (2024) (adopting service to allow UAS operators to obtain direct frequency assignments in a portion of the 5030-5091 MHz band for non-networked operations). NTIA is coordinating with the FCC and FAA on this band.
[33] See DOT Complementary PNT Action Plan at https://www.transportation.gov/pnt/complementary-pnt-action-plan.
[34] See, e.g., FCC, Promoting the Development of Positioning, Navigation, and Timing Technologies and Solutions, Notice of Inquiry, FCC 25-20, WT Docket No. 25-110 (Mar. 28, 2025) (seeking comment from a broad array of stakeholders to build a record on specific actions the FCC can take to support government and industry efforts, and encourages the development of robust and reliable PNT technologies and solutions).
[35] See Innovate 28 Plan at https://www.faa.gov/sites/faa.gov/files/AAM-I28-Implementation-Plan.pdf.
[36] See Atmospheric Boundary Layer at https://glossary.ametsoc.org/wiki/Atmospheric_boundary_layer.
[37] See FAA UAS/AAM Integrated Research Plan at https://www.faa.gov/sites/faa.gov/files/2022-02/508.FY22-27BLIPlanA11L1-26-22FinalforREDAC.pdf.
[38] Glickman, T. S. (Managing Ed.), 2000: Glossary of Meteorology. 2d ed. American Meteorological Society, 855 pp.

PILLAR 3:

Security

Security is a key component of the Federal Government's role and oversight of the U.S. aviation sector. Aviation security policies and procedures have evolved to mitigate emergent threats, from the hijackings during the 1970s to the 9/11 attacks and beyond. The United States works with partners across the globe to ensure compatible and mutually supportive security policies. As AAM operations mature, security policies and procedures will need continual reexamination and reassessments, including potential security impacts outside of aviation (e.g., surface transportation and critical infrastructure assets). The Federal Government must ensure that security policies and procedures keep up with expanding types of aviation, including AAM, and that industry has clear guidance and predictability of future procedures and security requirements to the fullest extent practicable.

Operational aspects of aviation security include:

- **Security Programs:** Establishing appropriate aviation security programs based on the type of operations and level of risk, which may include requiring a security coordinator, controlling access to sensitive assets, and ensuring appropriate levels of vetting and screening. Whether developing and/or managing AAM aircraft or traffic technologies, the government should assess risk and ensure that such entities are trusted and have appropriate security measures in place.
- **Vetting:** Checking and validating information pertaining to a person's identity against existing Federal watchlists to prevent known or suspected terrorists or other nefarious actors from gaining access to the aviation sector.[39]
- **Screening:** Requiring passengers and their personal property to go through a security checkpoint prior to boarding an aircraft. For operations where screening is required, trained personnel and technology at security checkpoints ensure that weapons or other prohibited items are not taken onboard.[40] With regards to cargo, screening may include a physical examination or non-intrusive methods for cargo validation and to assess whether cargo poses a threat to transportation security.[41]

- **Cybersecurity:** Protecting systems, functions, operations, networks, devices, and data from unauthorized access, ensuring that control of AAM aircraft and technology always remains in authorized hands, defending an interdependent network of information technology infrastructure from malicious attacks or known vulnerabilities, ensuring recovery from unexpected events, and maintaining integrity of information and operations.[42,43]
- **Supply Chain Resilience and Supply Chain Risk Management:** Ensuring the supply of critical materials recovers quickly from unexpected events or economic shocks, while also implementing protections to mitigate exploitation.[44]

The most visible aviation security regulations and security programs are administered by the Transportation Security Administration (TSA), which is charged with protecting the transportation security of airports, aircraft operators, and other aviation entities. The specific actions required—performed by the government, airport, or individual air carriers—depends on a variety of factors including the size, weight, and/or performance of the aircraft, the number of passengers it carries, its type of operations, where the aircraft will operate, and the level of access permitted to the airport and/or the aircraft by passengers, crew, or aviation workers. TSA has a comprehensive list of programs with specific requirements[45] and maintains a risk-based, intelligence-driven approach with multiple layers of security.

TSA and FAA coordinate to ensure safety and security requirements are implemented cohesively across the aviation sector. FAA's most critical security-related functions include regulation of aircraft design approval to be "secure by design," oversight of aircraft manufacturing and operations, and execution of the day-to-day operation of the U.S. airspace, including security oversight for aviation communications, navigation, and surveillance.

In the physical security domain, a key challenge is ensuring adequate resources for vetting and screening processes. While the exact personnel and technology requirements will require further analysis, AAM operators have proposed future operations in which aircraft access new entry points to large

airports, including areas beyond TSA checkpoints. This will necessitate robust vetting, screening, and secure transfer of both passengers and luggage. Continuously assessing and providing the necessary personnel and technology for these tasks will be an ongoing requirement.

In cybersecurity, identifying risks to the future AAM environment will likely necessitate requirements beyond FAA's current certification requirements for manufacturers and TSA's cybersecurity requirements for certain airports and operators. For example, supporting infrastructure, like charging stations and fuel cells, lacks the same level of review as aircraft, despite involving data transfers during charge cycles.[46] Protecting personally identifiable information is crucial, during vetting and screening and in managing AAM scheduling and commercial processes.[47]

Finally, there are security risks in the supply chain.[48] Supply chain risks include parts and materials to manufacture aircraft, which may be different for certain proposed AAM vehicles that fly using electric power instead of traditional aviation fuel. The United States must ensure a consistent supply of needed raw materials and implement best practices to mitigate supply chain threats to prevent exploitation.

The major challenges for security include:

- **The ability and capacity to anticipate and respond** to continually evolving safety and security threats;
- **Insufficient operational information** for assessing risks, including cybersecurity, because there have been no commercial operations to date;
- **Statutory constraints** on the availability of innovative security models for emerging aviation technology like AAM; and
- **Broad supply chain challenges** affecting multiple industries that may also impact AAM.

Pillar 3
KEY GOALS

- **Apply** *existing security frameworks immediately as needed*
- **Develop** *a risk-based approach to identify and address potential physical, personnel, and cybersecurity threats to AAM operations, with enhanced coordination between agencies*
- **Develop** *resilient security measures for AAM manufacturing and service in the United States to promote independence and economic vitality*

Recommendation 3.1: Apply existing security regulatory frameworks to initial AAM operations, where applicable, and assess risks to inform future security policy decisions.

Initial AAM operations may align to existing regulatory frameworks and be treated similarly to traditional aviation operations. This is similar to the way private general aviation operations use a risk-based approach that relies heavily on asset owners and operators. The IWG does not recommend departing from this established approach for initial manned AAM operations, where there is a pilot onboard and very little change in operations from current traditional general aviation aircraft.

TSA's vetting requirements for pilots, crew, and aviation workers, along with the FAA's cybersecurity requirements for AAM aircraft through its certification process, apply to the AAM environment. TSA's cybersecurity requirements for certain aircraft operators and airports may also be relevant. In addition, current vertiport planning and guidance follows existing TSA security guidelines for general aviation airport operators and users.

Airports typically have ground-side infrastructure with a basic level of security and air-side infrastructure with higher security, particularly within sterile areas.[49] Since initial commercial AAM operations are expected to include a pilot onboard and primarily involve travel to and from non-sterile areas—such as general aviation airports and fixed-based operators—existing security frameworks may be sufficient for early operations, according to preliminary risk assessments.

AAM operations expected to take place within secure or sterile areas of federalized U.S. airports[50] can proceed under current security frameworks, provided passengers are vetted and screened before entering the sterile area.[51] Current TSA screening procedures at a standard TSA security checkpoint at the destination airport are viable for operations landing on airport grounds outside of the sterile area. Pilot programs are in place that could offer alternatives to improve the AAM passenger experience, as outlined in recommendation 3.5.

Recommendation 3.2: Monitor intelligence reports and conduct recurring security risk assessments, taking into account anticipated changes in AAM operations, to guide policy decisions on future security measures needed to address risks.

Current understanding of proposed business use cases indicate that existing aviation security regulations will support initial AAM entry into the airspace and operations in the near-term. However, in the mid- and long-term, as AAM operations evolve to include remote and autonomous operations, ride share applications open to the public, and a broader scale of operations over dense populations or in and around public venues and/or critical infrastructure, operational changes must be reevaluated. Risk analysis will help determine whether additional security requirements should be implemented via regulation or other administrative action. Specific mid- to long-term recommendations on security for AAM operations are unclear given unknown future threats, but through ongoing risk assessments, the Federal Government can best update policies and procedures as needed.

As AAM operations develop, assessments of their risks must be informed by the Intelligence Community's and law enforcement agencies' latest understanding of the AAM threat environment and new identified threats (including supply chain intelligence). These assessments must consider risks to the AAM ecosystem and consider how AAM could be leveraged as a threat that necessitates mitigation measures. Consistent with current processes, relevant agencies should jointly ensure threat and risk assessments appropriately consider the AAM environment and use them to inform future AAM security policy decisions. Among other measures that may be appropriate, TSA, FAA, and others in close coordination with the Intelligence Community should conduct unclassified and classified briefings for trusted industry members as is done currently in commercial aviation and other industries.

Recommendation 3.3: Utilize existing regulatory frameworks to ensure proper vetting of AAM pilots, ground crew, and anyone entering the sterile areas of federalized airports, while continuing risk analysis to assess any future vetting needs.

One effective aviation security measure is TSA's authority to conduct background checks or to "vet" flight crews and aviation workers with access to sensitive areas of the aviation sector[52] and prescreening of passengers against U.S. Government watchlists under the Secure Flight program.[53]

FAA designates certificated entities for pilots and crew, and this should continue in the AAM environment for individuals with access to the aircraft and cargo. TSA will vet such entities against U.S. Government watchlists, consistent with current processes for traditional aviation operations. TSA will also continue vetting aviation workers with access to secured areas of federalized airports and prescreening passengers who enter the sterile area of a federalized airport via Secure Flight prior to entry. TSA should work with FAA and industry to assess future vetting needs, to include AAM operators as remote and autonomous operations emerge.

Current understanding of initial AAM use cases and preliminary risk assessments suggests passenger prescreening for all AAM operations may not be necessary. However, TSA should continue risk analysis and explore the future need for vetting AAM passengers and, as necessary, ensure that clear policies, procedures, and rules for passenger prescreening are in place and consistent with legal and privacy requirements.

Recommendation 3.4: For initial AAM operations, align physical screening requirements with existing TSA regulations and security programs, unless emergent risks dictate otherwise.

TSA has existing authority to conduct physical screening of passengers, pilots, crew, and aviation workers.[54] The agency also has authority to screen cargo and require aircraft operators to have security programs.[55] TSA should continue its risk-based approach under existing requirements for staff screening of pilots, ground crew and aviation workers, as well as screening of passengers (to include personal property and checked baggage) entering the sterile area of federalized airports, and cargo operations. Risk analysis must inform policy decisions regarding the future need for AAM passenger screening outside the sterile environment.

AAM operations are anticipated in the near-term at general aviation airports and fixed-based operators which do not currently require passenger screening. However, continued risk assessments should evaluate changes in the operational environment anticipated for the mid- and long-term to inform policy decisions related to passenger screening requirements.

Prior to accessing the sterile area of a federalized airport, all individuals must be screened.[56] TSA must address physical security needs at any landing/take-off points away from established TSA checkpoints. Prospective AAM operators should work with airport authorities to submit required documentation for operating locations to the FAA, while simultaneously engaging TSA Federal Security Directors to determine viable screening options.

Recommendation 3.5: Expand and extend the current TSA Reimbursable Screening Services Program (RSSP) or establish it as a permanent program to improve access to screening for AAM operations entering the sterile areas of federalized airports.

Some U.S. airlines have invested in and partnered with AAM manufacturers to develop an expedited customer experience for passengers seeking more efficient transportation from vertiport locations in hub cities with faster access to the carriers' traditional aircraft operations within the sterile areas of federalized airports. This could necessitate screening solutions distinct from standard TSA checkpoints. These complicated operations may introduce new costs for airports and other third parties but are manageable from a security perspective.

A Federal pilot program already exists to accommodate such industry operations while maintaining appropriate security. The TSA RSSP allows industry investment for screening areas at federalized airports outside the traditional TSA screening checkpoint and reimburses staffing costs, equipment, maintenance, and other administrative costs associated with processing applications and invoices. However, the existing statutory language limits the program to eight locations and will expire in 2025.[57] Congress would need to expand and extend the RSSP pilot, or make the program permanent, to ensure an ongoing viable solution based on the timetables proposed by industry.

Because the RSSP program has a broader impact than just future AAM operations, continued evaluation of the existing pilot can determine measures of success indicating that: (1) RSSP provides the same level of security as standard TSA screening, (2) RSSP does not detract from TSA's ability to ensure the same level of security screening is maintained at the standard TSA checkpoint, without degradation, and (3) RSSP has not caused negative unintended consequences that have not been sufficiently remedied. These efforts are ongoing under the legislative requirements establishing the RSSP pilot, and the results of the program are reported to Congress annually.

Recommendation 3.6: Establish a working group to evaluate AAM cyber vulnerabilities, identify gaps, and develop recommendations for any required legislative, policy, or regulatory changes.

Cybersecurity is a major concern for emerging industries, including commercial aviation, and domestic and global bad actors may seek to harm U.S. economic and other interests. The risk of interfering with aircraft operations remotely through cyber vulnerabilities could lead to catastrophic outcomes, particularly in automated operations where no pilot is available for emergencies in flight.

Current FAA authorities and regulations ensure that certain aircraft manufacturers comply with established cybersecurity standards, covering not only the aircraft itself, but any communications or physical access to its avionics and information technology networks. TSA also regulates cybersecurity through existing security programs for certain airports and aircraft operators, focusing on cybersecurity best practices and industry standards such as network segmentation, access control, continuous monitoring and detection, and vulnerability management.

Agencies should establish a working group or leverage an existing one to review current cybersecurity requirements and best practices to propose mitigation strategies as AAM operations evolve, new cybersecurity threats emerge, and technologies advance. The group should:

- Review FAA aircraft certification cybersecurity standards, TSA aviation sector cybersecurity requirements, and any relevant government work related to information technology or communication links for aviation, vehicle charging or fueling stations for AAM (on or off airport property), and airport/vertiport or other infrastructure;
- Ensure proper reporting mechanisms of potential cyber or technology-related incidents, including real-time reporting from flight systems and potential spectrum impacts;
- Ensure systems are in place to link the physical identities of aircraft with their electronic identities in the national airspace while validating data accuracy;
- Consider response plans that clearly define authorities and responsibilities; evaluate the potential adoption of a cybersecurity bill of materials, similar to a software bill of materials, to promote strong cybersecurity practices and address cyber supply chain risks; and
- Identify gaps and provide recommendations for any necessary legislative, policy, or regulatory changes.

As a start, the FAA kicked off the Aviation Cybersecurity Aviation Rulemaking Committee[58] in June 2025. Required under section 395 of the *FAA Reauthorization Act of 2024*, the committee will provide recommendations for protecting against cyber threats in aircraft. While this critical effort will be invaluable as the aviation industry evolves, an interagency effort focusing on the wider aviation sector covering the topics listed above will be necessary.

Recommendation 3.7: Ensure agency Privacy Impact Assessments (PIAs) are updated as the AAM industry evolves and leverage best practices for cybersecurity in accordance with the National Institute of Standards and Technology (NIST) framework for protecting Personally Identifiable Information (PII).

The growth of AAM will introduce new privacy concerns. Whether transporting cargo or passengers or providing emergency services, data and personal information will facilitate AAM services to the traveling public. Any data and PII gathered by the government must be appropriately handled and protected in accordance with current legal and privacy policies. Ongoing or periodic evaluation of the integrity of information technology systems housing such data and communications must occur to ensure continued protections from the near to long term.

Consistent with existing procedures, Federal agencies should consult with privacy officers at all data collection points as AAM operations evolve to ensure adherence to privacy policies. Necessary changes for AAM should be updated accordingly, and data collection requirements should be limited to the least intrusive need. The Federal Government must ensure that its data collection is not excessive in view of its authorized scope and purpose.

Recommendation 3.8: Leverage existing Department of Homeland Security (DHS), Department of War (DOW), and Department of Commerce (DOC) analyses on supply chain resilience in related sectors to help agencies understand AAM supply chain needs.

U.S. policies and programs must work to support a robust domestic manufacturing base. To ensure the longevity of the AAM industry and industries reliant on similar technologies, the supply of key raw materials must be identified and maintained. Supply chains must be protected from disruption or sabotage through ongoing supply chain resilience efforts and the implementation of best practices in supply chain risk management.

The Department of Commerce and the Department of Homeland Security have recently begun efforts to collaborate better with industry to strengthen supply chains generally by means of the DHS Supply Chain Resilience Center[59] and the Commerce Supply Chain Center.[60] DOW also consistently analyzes the supply chain of emerging technologies to ensure systems and components do not originate in a foreign nation. The three departments should ensure common awareness of best practices on assessing supply chain resilience and identifying supply chain risks and challenges for AAM technologies. This assessment should include consultation with DOJ/FBI to identify and mitigate foreign-influenced vendors, compromised hardware/software, and counterintelligence risks within the AAM supply chain. Considerations should also include risks for the information technology supply chain, third-party service providers or vendors, and poor security practices by lower-tier suppliers. Efforts must focus on preventing the use of compromised software, hardware, counterfeit hardware, or hardware with embedded malware and addressing these threats in consensus standards or regulatory documents, as needed.

---

[39] See TSA Secure Flight Program at https://www.dhs.gov/publication/dhstsapia-018-tsa-secure-flight.
[40] 49 C.F.R. §§ 1540.107-1540.111.
[41] 49 U.S.C. § 44901(g). Methods of screening cargo include x-ray systems, explosives detection systems, explosives trace detection, explosives detection canine teams certified by the Transportation Security Administration, or a physical search together with manifest verification.
[42] See Cybersecurity best practices at https://www.cisa.gov/topics/cybersecurity-best-practices and Cybersecurity Roadmap at https://www.tsa.gov/sites/default/files/tsa_cybersecurity_roadmap.pdf.
[43] See *Cyber Incident Reporting for Critical Infrastructure Act of 2022*, Pub. L. No. 117-103, Div. Y (2022); see also Cybersecurity Supply Chain Risk Management Practices for Systems and Organizations, NIST SP 800-161 Rev. 1 (2022).
[44] See Protecting Critical Supply Chains at https://www.dni.gov/index.php/ncsc-what-we-do/ncsc-supply-chain-threats.
[45] Specific requirements for aircraft security programs are defined at 49 C.F.R. part 1544 and are generally broken down into full or partial programs, commercial or charter operations, and programs for aircraft not otherwise covered by other programs but carrying passengers and over 12,500 pounds (the "twelve-five" program) and which are operating under FAA regulations at 14 C.F.R. parts 119, 121, 129 or 135.
[46] This vulnerability is not just data breach, but data manipulation that could cause damage to the recipient platform or charging infrastructure. DOE/NREL published a high-level report regarding electric aviation cybersecurity in 2023 at https://www.nrel.gov/docs/fy23osti/82856.pdf.
[47] See OMB Memorandum, Safeguarding Against and Responding to the Breach of Personally Identifiable Information, M-07-16 (2007).
[48] See NIST SP 800-161 Rev. 1; see also *Buy American Act of 1933*, 41 U.S.C. 8301-8305.
[49] For the purposes of this document "sterile areas" are defined as specific areas within an airport where all persons have been screened for weapons or other prohibited items on an aircraft.
[50] A federalized airport, in the context of TSA, is an airport where the security operations, including passenger and baggage screening, are primarily conducted by TSA employees (Transportation Security Officers).
[51] The Interagency Working Group received numerous comments, and identified impediments, for future AAM operations occurring within sterile areas and specifically immediately adjacent to or on top of terminals. Among others, those current impediments separate from security include the structural integrity of the terminal facilities, congestion in taxiways, and conventional assumptions about separation of aircraft to mitigate the impacts of wakes.
[52] TSA's authority for flight crews is 49 U.S.C. § 44936 and 49 CFR § 1544.229.
[53] 49 C.F.R. Parts 1540, 1544, and 1560. Established pursuant to *Intelligence Reform and Terrorism Prevention Act 2004* (IRTPA). Under the Secure Flight Final Rule, TSA requires covered aircraft operators to request a passenger's full name, gender, date of birth, passport country of issuance and number (if available), and Redress Number (if available) or Known Traveler Number (if available).
[54] TSA's authority for passengers is 49 U.S.C.§ 44903(j)(2)(D)(i), 49 U.S.C. § 114(h), and 49 C.F.R. Part 1560 (Secure Flight Final Rule).
[55] See 49 U.S.C. § 44901(g), 49 CFR § 1544.101.
[56] See 49 C.F.R. Part 1542 Airport Security Program.
[57] See *Department of Homeland Security Appropriations Act* (P.L. 116-6), as amended by the FY2023 *Consolidated Appropriations Act* (P.L. 117-328), see also 49 C.F.R. Part 1500.
[58] An Aviation Rulemaking Committee (ARC), established under 49 U.S.C. § 106(p)(5), is a group of experts from the aviation industry, government, and other stakeholders convened by the FAA to provide advice and recommendations on specific aviation-related regulatory issues.
[59] See DHS Supply Chain Resilience Center at https://www.dhs.gov/scrc.
[60] See Strengthening America's Supply Chains at https://www.trade.gov/supply-chain-center.

PILLAR 4:

Community Planning and Engagement

AAM could significantly change the relationship between aviation and local communities. Currently, aviation services are delivered from large commercial service or general aviation airports, with impact issues discussed or debated in community engagement forums such as airport sponsored roundtables. AAM offers the potential to introduce new, smaller facilities that could be tightly integrated into communities—both rural and urban—rather than located separate from population centers. This elevates the importance of both community engagement and decision-making at the local level as the AAM ecosystem evolves. The novel and emerging nature of AAM operations and aircraft elevates the need for the AAM industry to play a significant role in this engagement.

An increasing number of airports, municipalities, and AAM operators are planning for landing and take-off sites both co-located with and separate from airports. As the potential locations for aviation expand, so will benefits and impacts, introducing the need to plan for and manage an entire network of aviation assets within a broader local transportation network. As the interest in AAM rises, so will the questions regarding siting, design, operation, and direct and indirect impacts to communities. SLTT governments must consider several issues when evaluating and integrating AAM operations into their communities.

The major challenges for community planning and engagement include:

Clarifications of Authority: *Confusion exists regarding Federal and SLTT regulatory authority and governance structure that affects the siting, design, and integration of AAM infrastructure and operations, especially understanding what is subject to Federal oversight and under what circumstances;*

Guidance on Engagement: *Lack of public engagement may inhibit communities from planning for smoother AAM-related transitions. Community members will require mechanisms to provide input on how localized AAM operations and facilities can best reflect local priorities;*

Understanding Operational Impact: *As an emerging aviation segment, there is not yet sufficient data to understand the privacy, noise, safety, land use, mobility, and environmental impacts of AAM; and*

Planning for Accessibility: *Currently, the Federal Government has not clarified how or if existing accessibility requirements would be applied to AAM aircraft and facilities, and it is not clear to what extent industry will consider and address accessibility needs absent requirements to do so.*

The following community planning and engagement recommendations aim to provide resources to SLTT governments and communities to help plan for AAM operations without direct Federal involvement in local decisions. Robust engagement by the project proponent can help craft AAM solutions that are responsive to local concerns and tailored to local needs. This Strategy is one element of a larger effort to provide communities with guidance and information they need to assess and support AAM solutions that will help better connect communities to the national airspace and other forms of transportation.

Recommendation 4.1: Clearly communicate information and guidance on roles, responsibilities, and best practices for AAM planning to SLTT governments.

Given the novelty of AAM and its localizing effect on aviation, there may be sometimes confusion or limited understanding about Federal and SLTT legal authorities, environmental and quality-of-life impacts, and the availability of grant programs. There are trade-offs between infrastructure requirements for each type of AAM vehicle or operator and community-defined requirements. These can be legal in nature such as zoning ordinances but can also be general agreements imposed by a community such as operating hours and educational partnerships. SLTTs communities can benefit from a framework and best practice guidance as they determine the AAM strategy that works best for their prioritized needs, budget, economic profile, as well as their geographic and demographic position within the national airspace.

The Federal Government can provide technical assistance such as:

- Clarifying the roles of relevant public (Federal and SLTT) and private entities in the planning and development of system-wide network and siting of individual takeoff and landing facilities. This includes noise and visual impacts, the difference between private and public facilities such as those included in the National Plan of Integrated Airport Systems, and FAA's role in providing obstruction evaluations;
- Outlining the steps of successful AAM implementation. These can include but are not limited to vehicle manufacturing, aircraft certification, vertiport system and facility planning, operator roles, and integration of these operations into the airspace so the communities understand the entire process;

- Developing topic-specific guidance and/or fact sheets for communities to consider in developing, reviewing, permitting, and conducting outreach/engagement with respect to approving vertiport sites. Topics could include noise, overflights, community engagement/public outreach, and other privacy, safety, and environmental considerations; and
- Developing an "AAM Primer" that provides the information above as well as additional information such as existing resources on vertiport design and development, land use compatibility, and potential impacts.

Recommendation 4.2: Develop and publish community involvement resources regarding AAM operations.

Early and effective public engagement will enable communities to plan for smoother AAM-related transitions and to allow community members to plan for AAM in a manner that reflects local priorities. The public will have greater opportunity to influence the direction of AAM plans and policy changes if they have played a significant role in their development. Collaboration and early engagement by community leadership, operators, and project stakeholders are essential for the successful implementation of AAM projects. The primary responsibility for involving communities will fall on the operators, manufacturers, or community leaders, depending on the main project proponent.

The Federal Government is positioned to assist those stakeholders and prepare them for success by sharing best practices in community involvement. Meaningful community involvement includes effectively engaging communities, encouraging exchange of information, and having community viewpoints heard early in the process before decisions affecting those communities are made.

KEY GOALS

- **Help** *local officials and government leaders better understand the roles and responsibilities of each stakeholder in the delivery of AAM to their communities*
- **Provide** *a repository of best practices and resources to assist local officials and government leaders to communicate with the public*
- **Develop** *new resources to measure noise impacts of AAM*
- **Promote** *accessibility in AAM aircraft and operations*

Recommendation 4.3: Research and develop tools to help communities, policymakers, and aircraft developers and operators evaluate noise impacts.

Many AAM aircraft are quieter than traditional aviation, but much of the current available information on noise is anecdotal. Non-proprietary noise data from AAM aircraft/operations should be gathered systematically and made available to the public, allowing communities to make informed, fact-based decisions about how to incorporate AAM operations.

Federal and SLTT governments require an understanding of noise exposure and impact of AAM operations to inform land-use and other planning decisions and to comply with regulatory requirements for environmental review. Likewise, communities desire transparency and disclosure on the potential noise impacts resulting from AAM operations.

Information on noise impacts from traditional aviation is based on decades of research. This research has led to policy development regarding aviation noise at the Federal and SLTT levels, including requirements for land-use planning and environmental review. This research has helped to develop tools and methodologies such as FAA's Aviation Environmental Design Tool,[61] which models and predicts noise from traditional aviation activities to inform policy makers and communities about impacts from current aircraft operations and proactively plan for future operations.

Additional research into AAM operational noise is crucial. This includes commitment from AAM manufactures and operators to provide data that generates noise exposure information. Understanding how communities will respond to AAM operational noise will help Federal and SLTT governments engage communities and allow them to provide informed input into AAM planning decisions. NASA and the FAA are currently planning research in this area,[62] and this effort should be continued and expanded.

Recommendation 4.4: Identify mission-critical AAM use cases supporting public safety, disaster response, medical transportation, and other needs and publish case studies.

AAM operations may reduce costs or enhance mission delivery for services that benefit public safety, security, disaster response, or other critical needs. Examples of these capabilities and a framework for savings, benefits, and impacts would benefit Federal agencies and localities responsible for providing public services. Furthermore, collaboration and information sharing across government agencies should increase efficiency in mission delivery.

Federal agencies should consider where AAM could support mission delivery, including emergency/disaster response and recovery, human services and medical transportation, and law enforcement. Such consideration would include a description of the specific use case in a realistic location, an analysis of existing costs, a projection of costs to implement the AAM operation, and discussion of the anticipated benefits and impacts of utilizing AAM. In addition, if the use case has been implemented, notes should include lessons learned from the implementers.

Recommendation 4.5: Promote accessibility for those with disabilities in the planning and design of AAM aircraft, vertiports, and other supporting infrastructure.

Initial AAM vehicle designs vary with respect to accessibility, and it is unclear if and how existing accessibility requirements will apply to AAM aircraft and facilities, particularly if the latter are privately-owned. As a new industry, AAM has an opportunity to consider the needs of passengers with disabilities early in technology and infrastructure development. This requires a clear understanding of accessibility needs and requirements for people with different types of disabilities, including physical, sensory, and cognitive.

Applicability of existing nondiscrimination authorities to private facilities and small aircraft may currently be limited. The regulatory framework that applies to airports is administered via the Airport Improvement Program[63] grant assurances and the FAA's Airport Disability and Nondiscrimination Compliance Programs.[64]

While some AAM companies have begun to incorporate accessibility needs into design and testing, the IWG recognized a need to consider it comprehensively as the industry develops. DOT and FAA should:

- Identify accessibility needs for people with physical, sensory, and cognitive disabilities;
- Compile previous efforts and conduct research considering the needs in AAM aircraft and ground facility designs;
- Review existing accessibility authorities, policy, and guidance to determine if and how they apply to AAM aircraft and ground facilities; and
- Consider developing guidance, best practices, and resources to encourage accessibility in AAM aircraft and facilities.

DOT could utilize the existing Air Carrier Access Act Advisory Committee,[65] initially created in 2019 and recently extended through 2028, to assist. This committee advises the Secretary of Transportation by assessing the existing and emerging disability-related access barriers for passengers with disabilities, evaluating the extent to which the Department's programs and activities are eliminating those access barriers, and proposing improvements related to the air travel experience for differently abled passengers.

DOT should encourage AAM accessibility through research, funding opportunities, and stakeholder engagement. This could include prize competitions, stakeholder workshops, or design workshops. In 2020, the Inclusive Design Challenge sought solutions to improve passenger vehicle accessibility in vehicles equipped with Automated Driving Systems and incentivize development of new designs and technologies, and a similar program could benefit AAM accessibility.

---

[61] See FAA Aviation Environmental Design Tool, at https://aedt.faa.gov/.

[62] The NASA-led UAM Noise Working Group provides an open forum for participants from across industry, government agencies, academia, and community groups, with a focus on reducing or eliminating the challenges to UAM and AAM associated with community noise. Based on input from a wide spectrum of participants, the UNWG published a set of recommendations in 2020 intended to address those challenges across four areas of interest: tools and technologies, ground and flight testing, human response and metrics, and regulation and policy. These recommendations have been widely used to guide ongoing AAM noise research programs, and the continued leadership of the working group is strongly recommended. In addition to engagement with the UAM Noise Working Group, continued engagement and collaboration with other federal agencies on AAM noise research is critical. Ongoing coordination on aviation noise through the Federal Interagency Committee on Aviation Noise, in addition to coordination between various federal agencies as needed, could help to further accelerate research across federal agencies through providing opportunities for expanded collaboration.

[63] See Airport Improvement Program at https://www.faa.gov/airports/aip.

[64] Applicable authorities include the *Americans with Disabilities Act of 1990* (ADA), Section 504 of the *Rehabilitation Act of 1973* ("Sec. 504"), Title VI of the *Civil Rights Act of 1964* ("Title VI") and its implementing regulations at 49 C.F.R. Part 21, and other related civil rights requirements. The *Air Carrier Access Act* (49 U.S.C. § 41705) prohibits discrimination in air travel based on disability. While broad nondiscrimination authorities apply to all commercial air travel in the United States, specific provisions generally only apply to aircraft that are larger (measured by seating capacity) than what is currently being considered by the AAM industry.

[65] See *Air Carrier Access Advisory Act* at https://www.transportation.gov/airconsumer/ACAACommittee.

PILLAR 5:

Workforce

For AAM to mature into a successful industry, the United States will need a private and public workforce with new skills that apply to new methods of flight, advanced technologies, and supporting elements of the AAM ecosystem.

As a new entrant in air transportation, AAM has the potential of bringing skilled jobs to U.S. communities. The personnel to fill these jobs will require special training (e.g., high voltage systems repair, software assurance). There will be new opportunities within an aviation industry already in need of more pilots, maintenance personnel, air traffic controllers, and other skilled personnel.

The traditional aviation industry currently projects workforce shortages in various categories. Flight training company CAE estimates that by 2032 global aviation will need 284,000 pilots, 402,000 maintenance technicians, and 599,000 cabin crew in the commercial and business aviation sectors to fill vacancies due to retirement and attrition, and the expansion of the aviation industry in areas such as AAM.[66] In a May 2023 report, Boeing forecasted demand for nearly 2.3 million new commercial aviation personnel globally by 2042.[67] A 2022 Government Accountability Office (GAO) report stated that "the aerospace industry has faced difficulties acquiring sufficient numbers of qualified pilots and aviation maintenance technicians, and stakeholders … anticipate these challenges may become worse in the future."[68]

There are few education and workforce development programs keyed directly to career pathways, SLTT workforce needs and priorities, and certificate, apprenticeship, and postsecondary degree programs to support the development of the AAM workforce. Since AAM occupations will have different skills and certifications from those of traditional aviation, retraining opportunities will be necessary, even for transitioning personnel.

The Federal Government can support industry and enhance partnerships with SLTT governments to train the required workforce. There will be opportunity to reach people new to aviation careers to participate in this oncoming U.S. industry.

The major challenges for workforce development include:

Existing gaps in curricula *supporting aviation currently rely on an informal network of volunteers, educators, and administrators. There is limited coordination, standardization, or strategized distribution of resources across required disciplines or work groups;*

Cost and complexity for education systems *to develop new curricula without clear connection to a return on investment for students; and*

Promoting SLTT educational institutions' knowledge *that AAM is maturing and will bring new employment opportunities.*

> **Recommendation 5.1:** To support the potential growth of AAM, develop an interagency action plan to determine future workforce impacts, address future workforce needs, and provide training and workforce development resources.

Programs already in place can help industry and academia meet identified workforce needs, including:

- The *Carl D. Perkins Career and Technical Education Act of 2006*, known as Perkins V,[69] the Department of Education's largest formula grant program for secondary and post-secondary career and technical education that provides approximately $1.4B annually to States;
- The *Workforce Innovation and Opportunity Act*, managed by the Department of Labor that provided approximately $2.9B in FY24[70] in formula funding to States for adult, youth, and dislocated worker employment and training;
- Section 625 of the *FAA Reauthorization Act of 2018* that established the Aviation Workforce Development Grant Program (managed by the FAA) for specific programs to provide grants for eligible projects to support the education of future aircraft pilots and development of the aircraft pilot workforce and to support education and recruitment of aviation maintenance technical workers and the development of the aviation maintenance workforce. Section 625 was amended by Section 440 of the *FAA Reauthorization Act of 2024* to include a program that provides grants for eligible projects supporting education and recruitment of aviation manufacturing technical workers and aerospace engineers and developing the aviation manufacturing workforce;

- **Expand** *the aviation workforce and the number of aviators, while managing introduction of new and automated technologies to improve safety and public welfare*
- **Create** *new pathways to aviation careers*
- **Incorporate** *aviation skills into technical education programs*
- **Create** *opportunities for upskilling and retraining existing workforce*

- DOW-managed Skillbridge programs that provide 6 months of on-the-job training for outgoing service members. AAM industry participants can apply to be Skillbridge partners; [71] and
- The *National Apprenticeship Act*, also known as the *Fitzgerald Act*, that authorizes Registered Apprenticeship Programs.[72] Registered Apprenticeship is an industry-driven, high-quality career pathway where employers develop and prepare their future workforce, and individuals obtain paid work experience with a mentor and receive progressive wage increases, classroom instruction, and a portable, nationally recognized credential. Registered Apprenticeships are industry-vetted and are approved and validated by the Department of Labor or a State Apprenticeship Agency.

None of these programs is unique to AAM or aviation. The AAM industry will compete for workers with traditional aviation and other industries. Developing a workforce strategy now that uses programs listed above while developing capabilities to address gaps will enable the Federal Government to support U.S. workers and the AAM industry. The workforce strategy should anticipate impacts, address future needs, and provide training and development resources that focus on effective knowledge sharing, development, and upskilling, in order to ensure the United States sustains a strong aviation workforce for the future. This effort should specifically:

- Leverage existing Federal resources and public-private partnerships to support SLTTs and industry in building sustainable workforces and talent development pipelines. Federal funding opportunities could include the programs listed above;
- Partner with university researchers to identify current capabilities and competency gaps in workforce development programs supporting AAM careers;
- Collaborate with the current workforce to develop strategies that anticipate and address workforce impacts, training requirements, and transition plans for existing civil and government labor forces;
- Offer recommendations on which military specialty codes include skills that are directly relevant to the AAM industry and explore creating direct and preferential hiring pathways for military personnel with such qualifications to transfer from the military into the AAM industry;
- Leverage existing Registered Apprenticeship programs and explore options for creating new Registered Apprenticeship programs that support the unique training required for AAM, and additional ways to upskill workers for careers in aviation, especially AAM;
- Recommend how existing career and technical education programs administered by local education agencies can be adapted or expanded to provide early awareness and work-based learning opportunities that offer high school students a pathway to AAM-related occupations; and
- Examine existing FAA workforce certification requirements and determine if emerging aviation technology fits in existing definitions or if it requires updating (such as 14 CFR 65.71–65.107 and see recommendation 7.5).

Recommendation 5.2: Update Standard Occupational Classification (SOC) codes to include occupational profiles for AAM-related careers.

An academic or workforce-related institution may be unable to apply for Federal grants to support new or expanded education curricula without reference to a unique SOC code. SOC codes are utilized for career exploration, vocational counseling, job postings/position descriptions, job training, curriculum development validation for academic programs, and grant/resource justifications. Potential new SOC occupations would need to be task differentiable from existing SOC occupations and large enough to survey for a unique classification to be established. A similar effort could be led by the FAA and used to submit comments for an upcoming SOC open comment period.

Initial efforts have been made by the FAA through its Unmanned Aircraft Systems (UAS)-Collegiate Training Initiative[73] to address the gap for UAS-related workers. A joint look at potential careers between FAA, NASA and industry produced an initial list of 35 occupations related to pre-operations/design, 17 related to operations, and 31 occupations in which UAS are utilized as a tool on the job, providing evidence that creating additional SOCs is warranted and valuable.

The next cycle for the Standard Occupational Classification Policy Committee is expected to begin with the reference year 2028, revising the 2018 edition. This effort is expected to be completed by early 2027. The Office of Management and Budget (OMB) published the initial Federal Register notice soliciting public comment on the revision on June 12, 2024, with the comment period closing on August 12, 2024.

OMB, with support from the Department of Labor, the Department of Education, and the FAA, should conduct a near-term effort to gather data and evidence from the AAM industry to determine careers that would require entirely new SOC codes, as well as careers that may need adjustments to key terms to be inclusive of AAM specializations such as "pilot" or "aircraft maintainer." This data will support revisions to the 2028 SOC update to be utilized by educational and vocational institutions to train the workforce supporting AAM operations. The effort should develop and publish a mid-term plan as part of the workforce strategy in recommendation 5.1 to create SOCs for emerging AAM-related job classifications, gathering and integrating it with SOCs for related fields. Data collection should leverage academic, industry, and labor coalitions to provide input when biennially updating the mid-term plan and for creating, updating, or retiring SOCs in the future.

Another option would be direct Congressional action out of the Senate Committee on Health, Education, Labor and Pensions or the House Committee on Education and Workforce to directly change SOC codes as needed for the AAM industry.

Recommendation 5.3: Promote AAM and aviation in existing and emerging workforce development programs and plans at both the K–12 and post-secondary levels and engage with existing White House-level organizations to ensure AAM is considered in national strategies that promote technical innovation, excellence, and workforce development initiatives.

The Committee on STEM Education, led by the Office of Science and Technology Policy in the Executive Office of the President, reviews STEM education programs, investments, and activities in Federal agencies to ensure their effectiveness. Many of the participants on the AAM interagency working group are also members of a subcommittee supporting this larger effort. DOT, FAA, and NASA should work with ED to synchronize agencies as they develop or support industry and/or partner organizations' aviation-based skills training or career-readiness programs to expose young learners to opportunities available in AAM.

All Departments and agencies involved with White House workforce readiness and STEM initiatives (particularly NASA, DOT, and FAA) should socialize the AAM concept with all participants, to decide how AAM needs might be factored in future iterations of the STEM education strategic plan. A collaborative AAM-related effort could identify existing gaps, plan for future strategic efforts, and serve as a pathfinder for future White House-level STEM efforts.

[66] See "Where are all the eVTOL pilots (and maintainers) coming from?" Royal Aeronautical Society, September 15, 2023, at https://www.aerosociety.com/news/where-are-all-the-evtol-pilots-and-maintainers-coming-from/.
[67] See Boeing Forecasts Global Demand for Nearly 2.3 Million New Commercial Aviation Personnel at https://services.boeing.com/news/boeing-forecasts-global-demand-commerical-aviation-personnel.
[68] See GAO-22-105020 "Stakeholders Identified Issues to Address for 'Advanced Air Mobility'" May 2022, p. 25.
[69] In addition to the formula grant program, the Perkins and Innovation and Modernization (PIM) grant program could potentially facilitate AAM workforce development if grant priorities are established to support new and emerging national employment needs.
[70] The President's FY26 Budget Request proposes, as an alternative to WOIA funding, "Make America Skilled Again" block grants to states that would consolidate programming and include up to 10% of block grants to support apprenticeship.
[71] See Skillbridge Program at https://skillbridge.osd.mil/.
[72] See Registered Apprenticeship Program at https://www.apprenticeship.gov/employers/registered-apprenticeship-program.
[73] See UAS Collegiate Initiative at https://www.faa.gov/uas/educational_users/collegiate_training_initiative.

PILLAR 6:

Automation

Automation is not new to aviation, but its uses will be expanded and diversified in small aircraft as the emerging AAM industry matures. Every day, thousands of Americans benefit from automated technology in aviation, from onboard datalinks that communicate the status of critical systems to autopilot programs used routinely onboard commercial airliners to decision support systems that enable air traffic controllers to manage airspace operations more efficiently and safely. By and large, automation enhances safety and maximizes the contributions of pilots, mechanics, controllers, and other aviation personnel. It may provide for better workforce conditions and enable a new generation of aviators to emerge.

Global aviation is experiencing a profound transformation, driven by increasing demand and growing operational complexity. Traditional aircraft will soon share the skies with an increasing variety of new and diverse vehicles with novel concepts for operations—unmanned aircraft systems, AAM aircraft, high-altitude pseudo satellites, sub-orbital aircraft, super-pressurized balloons, supersonic aircraft, space vehicles, and more. Compared to tens of thousands of daily operations in today's airspace, the number of daily operations will be in the hundreds of thousands or millions, providing a density challenge to overcome.

The long-term increase in airspace density and complexity will challenge humans' reaction times. Today's airspace must be upgraded by leveraging emerging technologies such as autonomy, cloud and edge computing, machine learning, and artificial intelligence. Traditional aviation presents a constant influx of variables and new context that humans are adept at handling. Pilot and controller training and experience aims to condition humans to adapt to these challenges in the right ways. The potential of automation is that automated systems will be able to perform those same functions in ways that maintain, or even increase, the level of safety in aircraft and the aviation ecosystem.

To overcome future airspace challenges, a bold transformation is needed for airspace operations and safety. While humans must remain a key component in safe aircraft systems operations, the future airspace envisions humans working in concert with automation and intelligent systems to accomplish tasks safely and more consistently while scaling airspace operations. This approach reduces the need for manual orchestration of operations and increases the use of automation to operate vehicles safely through simplified vehicle controls, upset recovery, and integrated resilient vehicle control.

The American public has justifiably high expectations of aviation safety, and to be successful, Federal agencies and industry will need to collaborate to achieve levels of safety in automated flight that meet or exceed the high levels of safety in conventional flight today.[74]

The major challenges for automation include:

Maintaining high levels of safety and security *in technology and programming of automated aircraft;*

Determining how (or if) virtual testing can be useful *in development of automated aircraft; and*

Effectively coordinating *multiple testing and evaluation efforts.*

Note: challenges and recommendations regarding airspace automation are contained in Pillar 1.

This Strategy aims to enhance both safety and innovation through advanced research and testing of automation concepts, with government working alongside industry as technology develops and matures. Future automation will expand workforce opportunities, maintain, or improve safety, and introduce new efficiencies. These efforts will position the United States to strengthen its global leadership posture in AAM automation and autonomous systems technologies. As research and testing advance and regulatory structures mature, the United States will influence international standards development.

> **Recommendation 6.1:** Without deterring existing certification efforts, develop an aviation autonomy roadmap in consultation with the AAM industry.

Comprehensive methods for validating and verifying fully automated or autonomous aircraft to ensure system-wide safety have not yet been established, and some degree of human oversight or supervision of autonomous aircraft operations will likely remain necessary for their operations. While the FAA is ultimately responsible for civil aircraft validation and verification through the aircraft certification process, and DOW is responsible for the certification of military aircraft, shared understanding of new automation technologies among government agencies and between the government and industry will speed the establishment of safety assurance processes tied to automation.

There are several independent roadmaps that currently exist, such as NASA's Autonomy Verification & Validation Roadmap and Vision 2045,[75] the Association for Uncrewed Air Vehicles Systems International's "Roadmap to Autonomy,"[76] and the European Union Air Safety Agency (EASA) paper on artificial intelligence and machine learning that incorporates many aspects of autonomous flight.[77] Recently, the FAA's autonomy working group has formed to integrate government and industry's interests. Ongoing efforts within the DOW focused on autonomous systems can inform FAA in creating automation performance requirements, standards, and regulatory frameworks. These roadmaps vary in terms of recommendations and next steps.

A public/private partnership among government agencies and the AAM private sector that develops key source material with goals for the future will help to inform the FAA better, among other agencies, in creating automation performance requirements, standards, and regulation frameworks. The roadmap should include definitions of autonomy for aircraft, airspace, and vertiport infrastructure and establish associated levels of responsibility for actors within each system by developing performance standards and system architectures. It should also develop best practices for safe use of data, competitive protections of intellectual property, and assurance frameworks that establish responsible Artificial Intelligence and Machine Learning concepts. These best practices will help to develop standards that become regulatory tools for ensuring safety, competitive balance, and integration of transportation systems beyond aviation.

As a starting point, the roadmap could use the DOW's Development Test and Evaluation of AI Enabled Systems Guidebook, published in February of 2025.[78] The guidebook was created to support the developmental test and evaluation of artificial intelligence systems and artificial intelligence-enabled systems (AIES). It provides technically sound, consensus-based guidance designed to address the unique challenges posed by AI technologies. The guidebook aims to support government test teams in planning and executing developmental test and evaluation for AI-enabled components, applications, and systems, while assisting in delivering critical insights to decision makers and stakeholders during AIES development and deployment. Interagency collaboration on the verification/validation of AI/Machine Learning systems should leverage existing DOW guidance to establish a means to validate and verify fully automated or autonomous aircraft and to inform industry consensus standards.

Pillar 6
KEY GOALS

- **Enable** *automated AAM flight into the future airspace*
- **Coordinate** *testing and evaluation methods to shrink development time and cost*
- **Position** *the United States as the world leader in automated flight*

> **Recommendation 6.2:** Assess the feasibility and cost-effectiveness of virtual testing to provide data needed to understand widescale use of increasingly autonomous aircraft and scaled operations.

The complexity of automated technologies suggests there could be significant benefits from commonly designed testing solutions available to all industry players. Understanding performance requirements of a given aircraft requires scenario-based analysis using sophisticated and expensive tools that generate large data sets. Scenarios must include nominal conditions that test aircraft under perfect operating conditions, as well as contingencies likely to be encountered in regular operations.

Testing for some of these exigencies in physical environments can be risky for personnel and expensive for single firms to establish on their own, especially in urban environments where an accident could result in significant damage to people and property. Significant time can elapse waiting for certain conditions to emerge, or resources can be spent inducing physical representations of natural phenomena (e.g., wind tunnels).

During the research, testing, development and evaluation phase, digital engineering and mixed-reality testing/simulation can assist industry in reducing the overall time, risks, and costs to achieve certification.

Virtual testing in early phases does not eliminate the need for physical testing as required by the FAA for safety. However, it could provide a means to find more errors and faults prior to that physical testing requirement by creating a repeatable and inexpensive testing method that informs certification.

Assessing the feasibility of these testing methods, with structured input from the AAM and advanced aviation industries, will help inform Federal policy efforts. Such input and feasibility assessments should include, at a minimum:

- Broad cross section of high-technology interests in aviation;
- Contribution from Federal agencies with testing resources and expertise;
- Participation from non-government entities such as federally funded research and development centers that could serve as conduits or facilitators of a cooperative business model for such complex testing; and
- Advice from expert regulators regarding how best to apply results from the testing directly to existing safety assurance processes.

Sections 1041–1044 of the *FAA Reauthorization Act of 2024* establish the Interagency Working Group for AAM and UAS Integration and task the working group to develop a strategic research plan. The working group and the strategic research plan should be utilized as the formal means by which Government agencies will maintain and coordinate a robust, innovative, and integrated research, development, testing, and evaluation ecosystem.

Recommendation 6.3: Research, develop, and implement processes to identify benefits as well as risks of automation technologies.

Many AAM manufacturers and future operators are pursuing aircraft with high levels of automation that promise improved accessibility, operational flexibility, and operational economics. For example, "Simplified Vehicle Operations" is a proposed design approach that relies on automation to reduce or eliminate tasks ordinarily accomplished by pilots. Simplified Flight Controls, a subset of Simplified Vehicle Operations, are air controls usable and installable into new or legacy aircraft that would make piloting an aircraft simpler for tasks regarding flight control and stabilization. In addition, others propose remotely piloted or remotely supervised autonomous aircraft. Each offers a range of potential benefits including increasing the amount of people who can join the aviation industry as pilots or remote supervisors, while maintaining or increasing safety.

The FAA, DOW, and NASA should research human-machine interactions and clarify respective roles in highly automated and autonomous aviation systems, including flight in off-nominal conditions. This research should assess risks and implications of coexistence and simultaneous use of varied pilot training models (e.g., hours-based and competency-based) and transitioning between them. Research should also assess a minimum level of air vehicle automation and design assurance necessary to preclude ever requiring pilot intervention for automated tasks including those attributable to associated system failures. In addition, research should assess the proportion of creditable training performed in AAM flight simulators.

Recommendation 6.4: Maintain and coordinate government aircraft testing and evaluation efforts to accelerate safe AAM aircraft to market.

Although AAM companies are making great strides towards initial certification and entry-into-service, the maturation of the AAM industry requires a significant amount of technology research and development to enable safe, efficient, high-tempo operations. Gathering data needs from Federal agencies, as well as meeting regularly to share data needs and jointly planning for shared test opportunities, could result in faster policy development and eliminate redundancies in taxpayer-funded research projects.[79]

Government agencies can save considerable funds by coordinating test requirements and evaluation opportunities across agencies to reduce redundancies in testing for the AAM industry. Such collaborations should respect intellectual property of manufacturers and clearly delineate the purposes of tests and evaluations. Efforts performed on the front end of aircraft testing could save AAM manufacturers and their investors time and money through the type certification testing and evaluation process. This coordination could become more standardized and means of sharing test opportunities and data across agencies without compromising intellectual property and data protections could be further developed to the benefit of industry and government.

[74] Existing operational regulations (as an example, 14 C.F.R. part 91 "General Operating and Flight Rules") would also need revisions in multiple places to accommodate autonomous flight, as many parts naturally assume a pilot would be on board.
[75] See NASA Autonomy Verification and Validation Roadmap at https://ntrs.nasa.gov/citations/20230003734.
[76] See Roadmap to Autonomy at https://www.auvsi.org/sites/default/files/Blueprint-for-Autonomy-Building-Blocks-for-Our-Collective-Future.pdf.
[77] See EASA Artificial Intelligence and Machine Learning at https://www.easa.europa.eu/en/document-library/general-publications/easa-artificial-intelligence-concept-paper-issue-2.
[78] See DOD Development Test and Evaluation of AI Enabled Systems Guidebook at https://www.cto.mil/dtea/te_aies/.
[79] As manufacturers perform test flights for NASA, the DOW, and FAA, time and money could be saved for government and industry by compiling joint test requirements prior to tests to reduce the number of repetitive tests conducted for different agencies. Similarly, researching technologies for air traffic management systems of the future is greatly enhanced when there is interagency coordination between the DOT, FCC, and NTIA on any proposed use of spectrum required to make proposed systems work reliably.

Overarching Recommendations

While some of the recommendations listed in this document can be addressed in the short- or medium-term by certain Federal agencies, most will require many years of interagency and public-private coordination to complete successfully, including planning and research, and the entire Federal Government will need to adapt as new commercial developments occur. These overarching recommendations will help to tie these efforts together, create a resilient foundation for a national policy, and realize the vision of a robust and beneficial AAM industry in the United States. In order to achieve that, Federal agencies will need to stay focused on the underlying objectives over time, through inevitable changes in technology and personnel.

Recommendation 7.1: Develop an ongoing and consistent interagency coordination effort that ensures completion of the recommendations of this Strategy.

Since most of the recommendations span multiple equities of several Federal Government entities, continued interagency coordination, calibration, and tracking to ensure implementation over the long term will be essential to success. An interagency coordination effort, led by the White House, could track progress on shared research goals and conduct periodic assessments of policy work toward their completion. Many of the issues facing AAM are also not unique to AAM maturation (e.g., artificial intelligence and machine learning safety assurance) and will require agencies to ensure AAM is considered in those larger efforts. Other interagency coordination could include complementary policy implementation strategies such as spectrum and air traffic requirements in cooperative areas, and information sharing on policy development at early stages to enhance agency awareness and investment decisions.

Recommendation 7.2: All agencies should plan to incorporate existing recommendations in this Strategy into their annual budget requests and spending plans beginning in Fiscal Year (FY) 2027.

All Federal departments and agencies are required to operate within the President's annual budget submission process and rules developed by the Office of Management and Budget. Many of the recommendations in this document may require adapting programs and dedicated funding for research, resources, and program investment. The earliest annual budget process already underway is fiscal year 2027 (beginning October 1, 2026), and agencies should prepare to include program and funding needs from this Strategy into their FY27 budget plans, consistent with other priorities.

Recommendation 7.3: Congress should examine existing aviation funding methods and, if necessary, update them.

Traditional ways of funding critical aviation oversight programs must be reevaluated continually and adapted as technologies change. Existing funding mechanisms may need updating to support the transformation of domestic aviation in the best interest of the United States and its citizens.

For many years, Congress has dedicated funding for aviation oversight activities of Federal regulatory agencies. For example, the Aviation Trust Fund and the Airline Passenger Security Fee fund are primary sources of funding for the FAA and the TSA, respectively. These dedicated funds are derived principally from taxes and fees on commercial flights, like fuel taxes, excise (ticket) taxes, and airline passenger security fees.

Maturing advanced aviation technologies are steadily increasing the workload at Federal regulatory agencies, especially at the FAA. AAM aircraft often require new certification efforts, specialized airspace design procedures for initial operations, and extensive work with airports wishing to modify existing space for new AAM landing facilities. As AAM and other technologies come online, commercial operations in the national airspace that are not currently subject to existing user fees will increase. A lack of authorizing legislation and implementing regulations creates an imbalance where some industry participants bear the increased costs for services and likely pass along those costs to their customers, while other participants avoid these costs altogether. This discrepancy could leave Federal agencies with difficult decisions about how to prioritize resources to ensure safety while promoting efficiency and fairness.

Consideration of new funding structures should follow these general principles:

- Users of the National Airspace System should contribute to the costs of operation of the national airspace, enhancing safety, and mitigating environmental impacts;
- Contributions should be equitable across user groups and proportional to the burden placed on the national airspace;
- Revenues collected from costs incurred by users should be reasonable, transparent, and predictable, and should not create a significant administrative burden; and
- American entrepreneurs and small firms should be incentivized to improve transportation safety and sustainability and should not be disadvantaged when

fostering innovation, enhancing competition, and/or developing new technologies or markets.

Recommendation 7.4: Demonstrate global leadership in advanced aviation by removing regulatory barriers and adapting economic policies to secure investments, partnerships, and security assurances needed for a strong U.S. aviation industry.

The U.S. AAM industry is still in a nascent stage, focusing its resources on developing and certifying new technologies such as electric and hydrogen propulsion, simplified flight controls, and new flight profiles with smaller separation requirements. Development and certification cycles to operate aircraft safely are years long and can cost billions before American businesses see returns on investment. This hurdle creates financial risks for innovators and investors, which creates a risk of these same innovators and investors leaving the United States for other opportunities. The United States needs to open economic opportunity for aircraft manufacturing and operations by removing unnecessary barriers without compromising safety, security, or national interest.

To support broader aviation innovation, the United States should review economic policy to support the AAM industry with new investment opportunities and expanded market access. Working with Congress to revise legislation, the Department of Transportation could enable more flexible foreign direct investment from allies and partners, provided that the U.S. Government would continue to exercise national security authorities, such as that of the Committee on Foreign Investment in the United States, to address any national security risks arising from transactions. DOT could also utilize existing air transportation agreements to facilitate growth by U.S. companies in foreign markets. The Department of Commerce's International Trade Administration can also promote U.S. AAM manufacturers in foreign markets by identifying business opportunities and navigating regulatory barriers.

In addition, the Department of State can identify foreign policy opportunities and challenges. It can help identify emerging markets, strategic alliances, and geopolitical threats to fair competition. The Department of State can also advocate for economic policies in other countries that advance the U.S. commercial interests and use diplomatic tools to showcase U.S. leadership, build collaborative international networks, promote U.S. exports, and encourage investment in the United States.

To maximize the economic benefits of AAM, U.S. policy should provide flexibility for firms to develop and innovate and operate and serve U.S. communities and others beyond our borders, without sacrificing the safety or national security aims of current policies.

Led by DOT, Federal agencies with equities in international aviation and commerce should work together to review U.S. policy with the AAM industry to ensure economic policy and regulations developed for traditional aviation do not limit the new industry's ability to succeed in the global marketplace. This cooperation will help tailor policy and regulatory approaches to ensure that the United States is well positioned to support the AAM industry. DOT, in consultation with Federal agencies, should coordinate directly with like-minded foreign civil aviation regulators, and within the International Civil Aviation Organization (ICAO), to standardize policies and assure equal opportunity with international allies. A prime example of such international leadership is the AAM Certification Roadmap,[80] in which the FAA is collaborating with aviation authorities from Australia, Canada, New Zealand, and the United Kingdom to align airworthiness and certification standards, facilitate data sharing, research, and safety information, and streamline the certification and validation processes for AAM aircraft across these countries.

As many aviation policies are set in statute, Congressional support will be needed when creating new flexibilities that foster the global competitiveness of U.S. firms, including concerted legislative and industry collaboration efforts to:

- Facilitate foreign investment without creating national security risks, including changes to ownership and control statutes or exemptions to enforcing regulations;
- Impose security safeguards on the emerging airspace management provisioning industry that would engage in data services, raising privacy and security-sensitive implications; and

- Open new operational opportunities by revising regulations that currently restrict aircraft sizes, passenger loads, and eligible airports for service. (See recommendation 7.5.)

Recommendation 7.5: Proactively review regulations regarding small commercial aircraft manufacturing, operations, and infrastructure to find ways to open safe, performance-based regional, charter, and flexible service markets for AAM and other small commercial air services.

AAM has the potential to help revive regional and small market air services that could open new opportunities for American manufacturing, air carriers, commercial pilots, and underused airports and their surrounding communities. In consultation with communities and industry, the IWG witnessed a renewed interest in regional air mobility operations that are smaller, quieter, more economical, and better scheduled. This could reverse several decades of decline in regional air service across the United States as operating costs for large carriers have necessitated focus on larger aircraft with 70 or more seats, which spread operating costs but are impractical for serving regional and small airports.

A supportive regulatory structure would enable this regional air service revival. It should allow for production of safe aircraft with appropriate seat capacities for regional and small communities, and the certification of the operators, crews, and airports able to provide small carrier services. While most of the existing regulations affecting these aviation stakeholders are within the FAA, other government agencies play a crucial role in establishing security requirements, supporting safe operations, and regulating aspects that effect commercial viability.

For instance, the DOT should explore reforming the current regulatory framework for small commercial aircraft to allow right-sized aircraft to safely enable new business models to address current air service deficiencies and open opportunities to increase mobility. Such exploration could revitalize general aviation airports, aircraft manufacturing, and small business air carrier operations across the United States. It could also introduce new safety benefits to regional flight through advanced airframes, could create economic hubs where communities currently suffer from lost air service, and could lead to new and better ways for commutes, day trips, or priority logistics.

The FAA's processes for conducting safety risk management analyses for aviation system-level changes informs the regulations that govern aircraft certification, air carrier operations, pilot certification, and airport requirements. These should be employed proactively with support from other agencies. The results could be coordinated with interagency partners who play vital supporting roles to ensure existing regulations change ahead of the pace of AAM's expected growth in the United States.

Recommendation 7.6: Leverage Public-Private Partnerships and other appropriate structures to facilitate and accelerate investments in, and sustained adoption of, AAM technologies.

To fully realize AAM's benefits, a multifaceted approach emphasizing public-private partnerships and diverse sources of funding is essential. This recommendation underscores the importance of collaborative investment strategies from Federal and SLTT government agencies, private sector players, research institutions, and communities. The President's Executive Order 14307 "Unleashing American Drone Dominance"[81] supports this strategy with early implementation efforts to catalyze public-private innovation. Specifically, Section 5 instructs DOT to fully utilize established test ranges to further AAM testing. In addition, Section 6 instructs DOT, acting through the FAA, to establish an Integrated Pilot Program that makes use of public-private partnerships to accelerate the deployment of safe and lawful AAM operations in the United States. A Request for Proposal to start this program was issued on September 12, 2025.[82]

AAM requires significant capital investment to advance technology, develop necessary infrastructure, validate operational concepts, and sustain efforts to realize benefits. Public-private partnerships represent a strategic approach to pool resources, share expertise, and mitigate risks associated with pioneering aviation technologies. Recognizing the collaborative nature of this initiative, the Federal Government should actively incentivize private investment through targeted grants, tax credits, and

investment vehicles designed to promote innovation and accelerate AAM deployment.

Engaging private stakeholders is crucial to establishing a sustainable AAM ecosystem. Private partners support research and development initiatives, including the creation of vertiports, integration of sustainable energy solutions, and development of advanced safety measures. By leveraging existing infrastructure such as airports and heliports, the public-private model could facilitate the rapid growth and testing of AAM operations while minimizing costs. Leveraging public-private partnerships effectively distributes investment in AAM technologies and infrastructure.

Robust investments in supporting infrastructure, particularly in the energy grid and new sources of electricity (see recommendation 2.5), and the modernization and capability expansion of communication, navigation, and surveillance systems (see pillar 1) will contribute to AAM implementation. Public-private partnerships can assist with funding the research and development necessary for these efforts.

> **Recommendation 7.7:** Enhance Federal Government research and development efforts, with a focus on pre-competitive work to advance technologies that will propel AAM (e.g., advanced batteries, airframe designs, and detect-and-avoid solutions).

The Federal Government should research and develop pre-competitive aviation concepts and technology to introduce universally beneficial technologies and concepts, while seeking to mature integrated systems that enhance safety and/or efficiency for all competitors in the aviation industry. Pre-competitive research focuses on proving out concepts expected to be used across an industry and is usually conducted either jointly with or prior to private companies developing business models based on the concept. Government research and development activity should include DOT, NASA, DOW, DOE, and law enforcement and security agencies. It allows government agencies and private-sector entities to contribute to concepts and technologies from early stages to fit final needs of the entire community. It also promotes harmonization by enabling data gathering to inform future standards, processes, procedures, and regulations. Data collection from policy and research offices within Federal agencies, regularly scheduled sharing sessions, and jointly planned research opportunities could result in faster policy development and eliminate redundancies in taxpayer-funded research projects.

NASA, DOW, DOE, and the FAA already take leading roles in advancing multiple AAM technology areas through direct government research, collaboration with industry, and funding of university-led initiatives. For example, the national laboratory ecosystem offers a unique opportunity to develop technologies on Federal lands with controlled airspace and spectrum. Primary government research areas include:

- Establishing robust simulating, testing, evaluation, and validation environments for identifying early requirement gaps, integration and operation issues;
- Improving the safety and performance of both aircraft and airspace;
- Developing advanced electrified propulsion and energy storage systems;
- Improving occupant safety and ride comfort;
- Reducing aircraft operations noise;
- Advancing high-rate composites manufacturing technology; and
- Developing digital engineering testing tools and processes that allow industry to identify early requirement gaps and integration and operational issues, including state-of-the-art simulation tools used by leading AAM companies.

Government advanced technology research should be augmented via collaborative agreements, grants, and funding to U.S. industry and academia. Technical interchange and collaboration with industry partners will ensure that agency funds are responsive to broad industry needs, enabling safe acceleration to market.

[80] See NAA Roadmap to Advanced Air Mobility Aircraft Type Certification at https://www.faa.gov/air-taxis/NAA-Network-Roadmap-Advanced-AirMobility-Aircraft-Type-Certification-Edition-April2025.pdf.
[81] See Executive Order Unleashing American Drone Dominance at https://www.whitehouse.gov/presidential-actions/2025/06/unleashing-american-drone-dominance/.
[82] See 90 Fed. Reg. 44751.

SUMMARY OF RECOMMENDATIONS

NO.	RECOMMENDATION
	PILLAR 1: AIRSPACE
1.1	Capitalize on existing modernization efforts to transform air traffic control systems and further enable all Federal air traffic controllers to provide services that ensure the safe, secure, and efficient use of dynamic and high-tempo airspace in the future.
1.2	Support research, development, testing, and implementation of new surveillance solutions for low-altitude, high-density operations.
1.3	Research new methods of communication between aircraft and air traffic management to enable air traffic to be more efficiently managed.
1.4	Establish information exchange protocols, technology requirements, and security requirements for integrated updates to facilitate free flows of information among providers of air traffic management services in cooperative environments and other areas.
1.5	Research and develop the requirements, roles, and responsibilities expected of third parties in complementary air traffic management and surveillance operations and the related regulatory framework.
	PILLAR 2: INFRASTRUCTURE
2.1	Use existing regulations, standards, policies, and processes, where applicable, to encourage and facilitate the use of existing or repurposed infrastructure for near- and medium-term AAM operations.
2.2	Engage with SLTT governments and industry on future models for planning and financing AAM infrastructure while funding existing programs for early operations.
2.3	Identify facility and equipment requirements specific to remotely piloted/supervised and autonomous AAM aircraft at airports, vertiports, and heliports and assist with demand/capacity balancing of low-altitude airspace.
2.4	Expand guidance on vertiport design.
2.5	Research energy infrastructure needs for AAM, plan joint demonstrations that establish best practices, and work with industry to plan for ample energy distribution.
2.6	Address aviation spectrum needs and spectrum bands for future airspace management transformation.
2.7	Develop Complementary Positioning, Navigation, and Timing (CPNT) options.
2.8	Develop enhanced weather detection, forecasting, and reporting network capabilities for AAM operations.
	PILLAR 3: SECURITY
3.1	Apply existing security regulatory frameworks to initial AAM operations, where applicable, and assess risks to inform future security policy decisions.
3.2	Monitor intelligence reports and conduct recurring security risk assessments, taking into account anticipated changes in AAM operations, to guide policy decisions on future security measures needed to address risks.
3.3	Utilize existing regulatory frameworks to ensure proper vetting of AAM pilots, ground crew, and anyone entering the sterile areas of federalized airports, while continuing risk analysis to assess future vetting needs.
3.4	For initial AAM operations, align physical screening requirements with existing TSA regulations and security programs, unless emergent risks dictate otherwise.
3.5	Expand and extend the current TSA Reimbursable Screening Services Program (RSSP) or establish it as a permanent program to improve access to screening for AAM operations entering the sterile areas of federalized airports.
3.6	Establish a working group to evaluate AAM cyber vulnerabilities, identify gaps, and develop recommendations for any required legislative, policy, or regulatory changes.
3.7	Ensure agency Privacy Impact Assessments (PIAs) are updated as the AAM industry evolves and leverage best practices for cybersecurity in accordance with the National Institute of Standards and Technology (NIST) framework for protecting Personally Identifiable Information (PII).
3.8	Leverage existing Department of Homeland Security (DHS), Department of War (DOW), and Department of Commerce (DOC) analyses on supply chain resilience in related sectors to help agencies understand AAM supply chain needs.
	PILLAR 4: COMMUNITY PLANNING AND ENGAGEMENT
4.1	Clearly communicate information and guidance on roles, responsibilities, and best practices for AAM planning to SLTT governments.
4.2	Develop and publish community involvement resources regarding AAM operations.

NO.	RECOMMENDATION
4.3	Research and develop tools to help communities, policymakers, and aircraft developers and operators evaluate noise impacts.
4.4	Identify mission-critical AAM use cases supporting public safety, disaster response, medical transportation, and other needs and publish case studies.
4.5	Promote accessibility for those with disabilities in the planning and design of AAM aircraft, vertiports, and other supporting infrastructure.
	PILLAR 5: WORKFORCE
5.1	To support the potential growth of AAM, develop an interagency action plan to determine future workforce impacts, address future workforce needs, and provide training and workforce development resources.
5.2	Update Standard Occupational Classification (SOC) codes to include occupational profiles for AAM-related careers.
5.3	Promote AAM and aviation in existing and emerging workforce development programs and plans at both the K–12 and post-secondary levels and engage with existing White House-level organizations to ensure AAM is considered in national strategies that promote technical innovation, excellence, and workforce development initiatives.
	PILLAR 6: AUTOMATION
6.1	Without deterring existing certification efforts, develop an aviation autonomy roadmap in consultation with the AAM industry.
6.2	Assess the feasibility and cost-effectiveness of virtual testing to provide data needed to understand widescale use of increasingly autonomous aircraft and scaled operations.
6.3	Research, develop, and implement processes to identify benefits as well as risks of automation technologies.
6.4	Maintain and coordinate government aircraft testing and evaluation efforts to accelerate safe AAM aircraft to market.
	PILLAR 7: OVERARCHING RECOMMENDATIONS
7.1	Develop an ongoing and consistent interagency coordination effort that ensures completion of the recommendations of this Strategy.
7.2	All agencies should plan to incorporate existing recommendations in this Strategy into their annual budget requests and spending plans beginning in Fiscal Year (FY) 2027.
7.3	Congress should examine existing aviation funding methods and, if necessary, update them.
7.4	Demonstrate global leadership in advanced aviation by removing regulatory barriers and adapting economic policies to secure investments, partnerships, and security assurances needed for a strong U.S. aviation industry.
7.5	Proactively review regulations regarding small commercial aircraft manufacturing, operations, and infrastructure to find ways to open safe, performance-based regional, charter, and flexible service markets for AAM and other small commercial air services.
7.6	Leverage Public-Private Partnerships and other appropriate structures to facilitate and accelerate investments in, and sustained adoption of, AAM technologies.
7.7	Enhance Federal Government research and development efforts, with a focus on pre-competitive work to advance technologies that will propel AAM (e.g., advanced batteries, airframe designs, and detect-and-avoid solutions).

SUMMARY OF THE AAM REQUEST FOR INFORMATION

Background

To implement the requirements of the *Advanced Air Mobility Coordination and Leadership Act* (the Act), the U.S. Department of Transportation (DOT), in consultation with all members of the Interagency Working Group (IWG), issued a Request for Information (RFI) on May 17, 2023, entitled *Request for Information on Advanced Air Mobility* (88 FR 31593). The Act required DOT to form an interagency working group tasked with developing an Advanced Air Mobility (AAM) National Strategy (Strategy). The Strategy would include recommendations regarding the safety, operations, security, infrastructure, air traffic concepts, and other Federal investment or actions necessary to enable AAM and a comprehensive plan detailing the roles and responsibilities of each Federal department, agency, and SLTT government necessary to facilitate or implement the recommendations.

RFI Solicitation and Response

DOT issued the RFI as part of the IWG's efforts to solicit public input, information, and recommendations on the critical issues of importance in drafting the Strategy, as required by the Act. The RFI solicited responses that focused on short-, medium-, and long-term steps to advance AAM and included 20 specific topics identified by the IWG. Responses were initially requested by July 17, 2023. The comment period was extended by a month to August 16, 2023, in response to commenter requests. DOT sought input on several topics, including what should be addressed in the Strategy, perceived existing barriers to successful AAM implementation, and how the Federal Government should maximize the potential for AAM implementation in the United States. The RFI welcomed comments from drone stakeholders insofar as the Strategy should be aligned to achieve positive and consistent outcomes for all users of the national airspace. This resulted in comments from stakeholders with interests in unmanned aircraft systems, regional air mobility, urban air mobility, and related industries.

In all, DOT received 469 comments to the RFI that reflected a wide array of interests and concerns with AAM adoption in the United States. Commenters included AAM operators, academics, airport, heliport and fixed-base operators, aviation training and maintenance providers, certified labor representatives, traditional operators, environmental groups, manufacturers, SLTT governments, and representatives from the telecommunications industry. Comments are publicly available.[83] An internal comment summary document was prepared and distributed to the IWG members to facilitate robust review and consideration of comments relevant to each agency and subgroup. A high-level overview of the topics covered in the comments follows. Discussion of specific comment topics are addressed throughout the Strategy.

Common Themes

One common theme from the comments received was ensuring the safe and reliable integration of AAM into the national airspace. Commenters identified specific research needs, such as including collision avoidance systems, communications, and navigation and surveillance technologies. There were comments referencing the need for air traffic management to support full integration of AAM and the need for government support and monitoring of the supply chain to enable AAM integration. Concerns were raised regarding integration of manned and unmanned aircraft.

Commenters presented issues related to existing regulatory schemes. They desired regulations and policies that support vertiport, heliport, and integrated airports to accommodate AAM, including determining vertiport design guidelines, establishing right-of-way procedures, and ensuring vertiports can support energy needs of different aircraft. Commenters

requested regulatory changes to support AAM operations, training, air traffic control, and certification methods and encouraged the FAA to work expeditiously to complete the certification process for AAM aircraft under review. They also identified that regulatory controls must ensure privacy, data protection, and cybersecurity. There were comments advocating regulatory harmonization across Federal and SLTT governments as well as international compatibility. Comments addressed a desire for the United States to maintain global leadership in aviation through AAM implementation.

The IWG received concerns regarding community impacts and community acceptance, ranging from lifetime environmental impacts to equitable implementation and use cases for AAM. Specific concerns involved battery storage, noise, and visual pollution, and charging sources. Commenters identified the need for appropriate assessments to determine environmental impacts, such as environmental impact statements, noise studies, visual impact analyses, ecological assessments, and mitigations to reduce environmental impacts. Commenters also desired community involvement in the implementation decision-making process.

Jurisdictional issues across Federal and SLTT governments was another common theme. Commenters requested that a single set of airspace regulations be established by the FAA. Commenters wanted a State and local role in infrastructure development, including vertiport placement and connectivity to transit networks, as well as a role in zoning, business permitting, workforce development, and other AAM enabling factors. In addition, commenters requested that SLTT interests acquire or maintain authority regarding noise and privacy issues.

Commenters expressed concerns and provided suggestions regarding workforce development. Some recommended establishing training programs through DOT, ED, K–12 schools, community colleges, and other vocational resources to support development of necessary skills and certifications for AAM. Commenters identified workforce and training needs across the full lifecycle of AAM development and utilization, including design, manufacturing, operations, and maintenance. Other comments suggested the need to maintain pilots for conventional aviation while developing the AAM workforce.

Many comments focused on safety and security. Safety issues included operational concerns, such as air traffic management and weather impacts, and manufacturing. Specific concerns involved validating safety claims, such as the relative safety of crewed and uncrewed aircraft, the need for safety management systems, and the means to develop positive safety cultures. Infrastructure requests pertained to vertiport management and design impacts, and national security concerns included airspace security, cybersecurity, and infrastructure vulnerabilities.

Commenters added suggestions to refine or improve TSA security requirements based on existing and new programs and policies. They discussed the need for strong cybersecurity protections and identified considerations for developing them. They also identified the safety and security need for systems to establish redundancy for positioning, navigation, and timing, including alternatives to GPS. Commenters stressed the need to assess adequate spectrum allocation and appropriate infrastructure accommodations and suggested that the FAA, the National Telecommunications and Information Administration (NITA), and the FCC coordinate to assess spectrum needs and identify available spectrum to support AAM integration. Related comments addressed the needs of other spectrum users, such as unmanned aircraft systems.

Conclusion

The IWG reviewed and considered all comments received from the RFI. The IWG response to the comments is reflected in the Strategy.

[83] https://www.federalregister.gov/documents/2023/05/17/2023-10448/request-for-information-on-advanced-air-mobility.

AGENCY EQUITIES

Agencies Assigned by the *AAM Coordination and Leadership Act*

The agencies that contributed to the composition of this Strategy identified their equities in the AAM industry as follows:

The Department of Transportation (DOT): DOT establishes policy, administers grants, and conducts research on multiple modes of transportation that will interact with AAM. Through the FAA, DOT is the primary safety regulator of AAM aircraft, operations and airports and the primary air navigation service provider. Several DOT programs, offices, and modes, including the Office of the Assistant Secretary for Aviation & International Affairs, have equities in the future of AAM.

The Department of War (DOW): The DOW operates as an airspace user, an air navigation service provider, and a regulatory agency holding its own authority to certify aircraft, airmen and airfields. DOW, through programs under the Air Force Research Laboratory (AFRL), has provided direct funding and test resources to various AAM small businesses and startups to both explore AAM for military use and develop viable AAM platforms for civil use.

The Department of Agriculture (USDA): USDA provides leadership on U.S. agriculture policy, use of natural resources, rural development, nutrition, and related issues. USDA participation was limited to observational roles given AAM's limited impact expected in these fields. Should AAM aircraft seek to use Sustainable Aviation Fuels (SAF) for future mission profiles, USDA works collaboratively with DOT and DOE to increase the viability and sustainability of the domestic SAF market.

The National Aeronautics and Space Administration (NASA): NASA's Aeronautics Research Mission Directorate (ARMD) includes the Airspace Operations and Safety Program (AOSP), the Advanced Air Vehicles Program (AAVP), the Integrated Aviation Systems Program (IASP), and the Transformative Aeronautics Concepts Program (TACP), which house research projects contributing to the AAM Mission. Beyond research projects, NASA ARMD supports AAM community engagement efforts, such as the AAM Ecosystem Working Groups (AEWGs).

The Department of Energy (DOE): As a non-regulatory agency, DOE works with SLTT power authorities to improve the U.S. energy supply and resiliency. Subject matter experts from DOE's Vehicle Technologies Office, Fuel Cell Technologies Office, and the National Renewable Energy Laboratory provided critical subject matter expertise to the IWG on the state of battery technology, hydrogen fuel cell research, energy needs at airports, and national efforts to plan strategically for transportation charging and refueling needs.

The Department of Labor (DOL): DOL, in coordination with Federal partners at the U.S. Departments of Education (ED) and Health and Human Services (HHS), collaborates to provide information and resources for SLTTs, non-profits, and other stakeholders regarding workforce development. DOL's Employment and Training Administration (ETA) administers core and discretionary programs authorized by the *Workforce Innovation and Opportunity Act* (WIOA). It also authorizes programs for specific vulnerable populations.

The Department of Commerce (DOC): The Department of Commerce (DOC) has a multi-faceted role in enabling AAM maturity. DOC's International Trade Administration (ITA) supports supply chain resiliency and U.S. trade policy, and the Bureau of Industry and Security (BIS) protects U.S. security through technology leadership and export controls. Through the National Telecommunications and Information Administration (NTIA), DOC manages the Federal use of spectrum, performs telecommunications research, and represents the executive branch in both domestic and international telecommunications and information policy activities. Through the National Oceanic and Atmospheric Administration (NOAA), DOC provides FAA weather expertise, research coordination, and forecasting services.

The Department of Homeland Security (DHS): DHS protects the United States from terrorism, secures U.S. borders, approaches, and cyberspace, safeguards critical infrastructure, and enhances economic security. While the Transportation Security Administration plays a key role in AAM security risk assessment and management, DHS may support AAM through subagencies such as the Federal Emergency Management Agency, the Coast Guard, and Customs and Border Protection. DHS strives to ensure the Nation's resilience and preparedness, playing a pivotal role in maintaining overall security and prosperity.

The Federal Communications Commission (FCC): FCC is responsible for the administration of non-Federal radio frequency (RF) spectrum. It develops and executes policies and procedures for licensing and regulation of wireless services, including aviation radio services and spectrum bands generally allocated for flexible use and typically used to deploy commercial broadband networks. FCC contributions to policy development aimed to ensure that communications, navigation, and surveillance systems, including those needed to support AAM, can reliably and resiliently operate on spectrum and accommodate future demand and technology changes.

Contributing Agencies

The Department of Education (ED): ED's mission is to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access. ED worked collaboratively with DOT, DOL, DOW and NASA to identify workforce development challenge, and available resources, and to develop corresponding recommendations.

The Department of State (State): State's mission is to create a more secure, democratic, and prosperous world for the benefit of the American people and the international community, primarily through foreign affairs programs and activities. State's observational role stressed the importance of international harmonization of AAM policy.

The National Security Council (NSC): NSC develops and coordinates national strategy to protect the United States from terrorist attacks. NSC also advises the President about national security and foreign policy and coordinates policies among government agencies. NSC participated in developing security requirements recommendations.

The Council of Economic Advisors (CEA): CEA provides the President objective economic advice on the formulation of domestic and international economic policy. Council members analyzed the expected economic outcomes of various recommendations and advised on scope of content appearing in this Strategy.

The Department of Veterans Affairs (VA): With a mission to care for those who have served in the United States' military and for their families, caregivers, and survivors, VA maintained an observational role with the intent to assess how AAM could impact its health care provision services.

The Office of the National Cyber Director (ONCD): ONCD's mission is to advance national security, economic prosperity, and technological innovation through cybersecurity policy leadership. ONCD participated in developing security requirements recommendations.

The Office of Science and Technology Policy (OSTP): OSTP's mission provides the President and his senior staff with accurate, relevant, and timely scientific and technical advice on all matters of consequence, ensures Executive Branch policies are informed by sound science, and ensures the scientific and technical work of the Executive Branch is properly coordinated so as to provide the greatest benefit to society. OSTP coordinated and issued the initial call for response on behalf of the DOT that gathered all of the departments, subagencies, and offices that contributed to this Strategy.

The Department of the Interior (DOI): DOI protects and manages the Nation's natural resources and cultural heritage, provides scientific and other information about those resources, and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, Native Hawaiians, and affiliated Island Communities. DOI contributed to the Community Roles area of interest and provided insight regarding Federal fleet management with drones for wildfire response.

The Office of Management and Budget (OMB): OMB supports presidential policy priorities through budget development and execution, as well as management of agency performance, Federal procurement, financial management, and information/IT. OMB guided budgetary discussions and inclusions and provided for final interagency coordination and review of this Strategy.

The Department of Justice (DOJ): DOJ upholds the rule of law to keep the United States safe and protect civil rights. DOJ participation served in an observational role, reviewing proposed content.

ADVANCED AIR MOBILITY INTERAGENCY WORKING GROUP

AGENCY	NAME
Department of Agriculture	Dr. Steven Thomson
Department of Commerce	Scott Harris
Department of War	James Taylor
Department of Education	Erin Berg
Department of Energy	Heather Croteau
Department of Homeland Security	Jay Carrigan
Department of Justice	Amy Nieman
Department of Labor	Jennifer Smith
Department of State	James Webster
Department of the Interior	Walker Craig
Department of Transportation	Peter Irvine
Department of Veterans Affairs	Dr. Lisa Kearney
Federal Aviation Administration	Paul Fontaine
Federal Aviation Administration	Wendy O'Connor
Federal Communications Commission	Kari Hicks
National Aeronautics & Space Administration	Akbar Sultan
Office of Management and Budget	Carl Barrick
SUBGROUP: AUTOMATION STRATEGY	
Lead – NASA	Parimal Kopardekar
DOT Project Manager	Sarasina Tuchen
DHS Subject Matter Expert	Jim Leydon
DHS Subject Matter Expert	Thomas "Ted" Fries
DHS Subject Matter Expert	Anna Maria Colom
DOW Subject Matter Expert	James Taylor
DOW Subject Matter Expert	Lt. Col. John "Wasp" Tekell
DOW Subject Matter Expert	Lt. Col. Bryan Ralston
DOW Subject Matter Expert	Thomas Meagher
DOT Subject Matter Expert	Alrik Svenson
FAA Subject Matter Expert	Noureddin Ghazavi
FAA Subject Matter Expert	Derek Morgan
FAA Subject Matter Expert	Arjuna "Tuna" Fields
FAA Subject Matter Expert	Brian Berglund
FAA Subject Matter Expert	Andras Kovacs
FAA Subject Matter Expert	Wayne Cummings
NASA Subject Matter Expert	Akbar Sultan

AGENCY	NAME
NASA Subject Matter Expert	Ken Goodrich
NASA Subject Matter Expert	Misty Davies
SUBGROUP: AIR TRAFFIC	
Lead – FAA	Shawn Kozica
DOT Project Manager	Christopher Loring
NASA Subject Matter Expert	Al Capps
OMB Subject Matter Expert	Carl Barrick
DOW Subject Matter Expert	James Taylor
DOW Subject Matter Expert	Lt. Col. John "Wasp" Tekell
FAA Subject Matter Expert	Noureddin Ghazavi
FAA Subject Matter Expert	Arjuna "Tuna" Fields
FAA Subject Matter Expert	Jon Stowe
DOW Subject Matter Expert	Shawn Maines
DOT Subject Matter Expert	Ryan Steinbach
DOT Subject Matter Expert	Chris Hillers
SUBGROUP: SECURITY REQUIREMENTS	
Lead – TSA	Jay Carrigan
Lead – FAA	Micah Campbell
DOT Project Manager	Michael Hardin
FAA Subject Matter Expert	Alison Allgood
FAA Subject Matter Expert	Kenneth Miller
FAA Subject Matter Expert	Mitchell Bernstein
FAA Subject Matter Expert	Marchal MaGee
FAA Subject Matter Expert	Paul Fontaine
FAA Subject Matter Expert	Phil Windust
FAA Subject Matter Expert	Tricia Fantinato
FAA Subject Matter Expert	Tom Hewitt
FAA Subject Matter Expert	Tim Dodge
TSA Subject Matter Expert	Alexis Dromgoole
TSA Subject Matter Expert	Sean Boldt
TSA Subject Matter Expert	Rebecca Ash
TSA Subject Matter Expert	Dianna Davis-Smalls
TSA Subject Matter Expert	Nicholas Cozzie
TSA Subject Matter Expert	Jackie Bester
TSA Subject Matter Expert	Robert Rottman
TSA Subject Matter Expert	Alan Paterno
TSA Subject Matter Expert	Walter Craig
TSA Subject Matter Expert	Jim Bamberger
TSA Subject Matter Expert	Doug MacIvor
TSA Subject Matter Expert	Rich Kraske

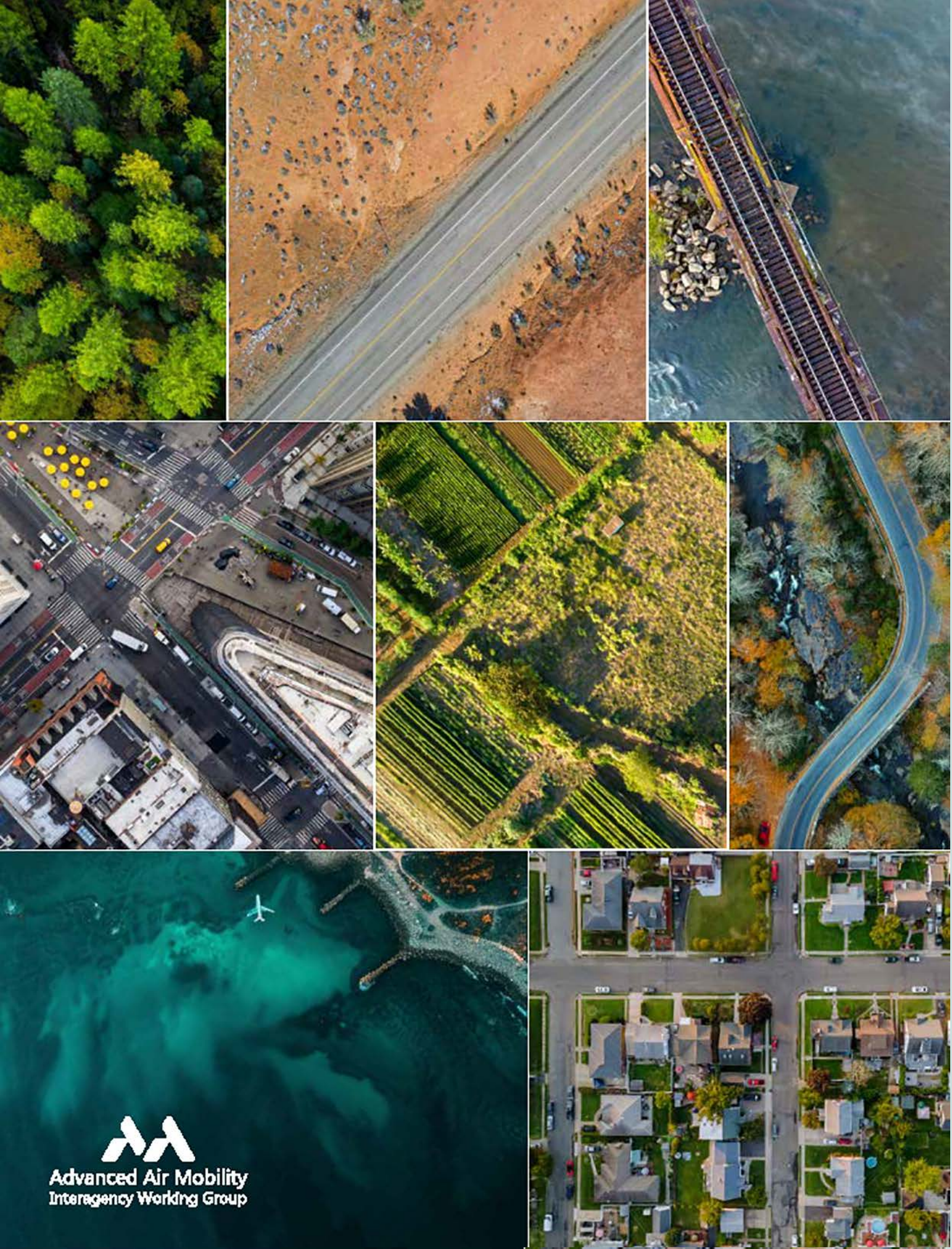
AGENCY	NAME
TSA Subject Matter Expert	Craig Mosford
TSA Subject Matter Expert	Jim Elmore
TSA Subject Matter Expert	Randy Talley
TSA Subject Matter Expert	Mark Sawyer
TSA Subject Matter Expert	Sarah Tauber
TSA Subject Matter Expert	Julian Williams
TSA CC	Jeff Palomino
TSA CC	Hans Kessler
DHS Subject Matter Expert	Michael Baliles
DHS Subject Matter Expert	Brent Cotton
NASA Subject Matter Expert	Paul Nelson
NASA Subject Matter Expert	Charles Sheehe
DOJ Subject Matter Expert	Joseph Heaps
SUBGROUP: COMMUNITY ROLES	
Lead – NASA	Nancy Mendonca
Lead – FAA	Colleen D'Alessandro
DOT Project Manager	Dave Perlman
FAA Subject Matter Expert	Beth White
NASA Subject Matter Expert	Carl Russell
DOT S Subject Matter Expert	Cindy Baraban
FAA Subject Matter Expert	Dipasis Bhadra
DOL Subject Matter Expert	Joey Heavner
VA Subject Matter Expert	Lisa Kearney
FAA Subject Matter Expert	Michael Hines
FAA Subject Matter Expert	Jean Wolfers-Lawrence
NASA Subject Matter Expert	Michael Patterson
FAA Subject Matter Expert	Mitchell Bernstein
DOT Subject Matter Expert	Reed Garfield
DOL Subject Matter Expert	Conor E. Freeley
SUBGROUP: INFRASTRUCTURE DEVELOPMENT	
Lead – FAA	Keri Lyons
Lead – FCC	Thomas Derenge
DOT Project Manager	Ryan Steinbach
DOE Subject Matter Expert	Pete Devlin
DOT Subject Matter Expert	David Rann
DOT Subject Matter Expert	Cindy Baraban
DOT Subject Matter Expert	A.J. Muldoon
FAA Subject Matter Expert	Sandra Wright
FAA Subject Matter Expert	Donald Nellis

AGENCY	NAME
FAA Subject Matter Expert	Chris Sweet
FAA Subject Matter Expert	Michael "Pat" Murphy
FAA Subject Matter Expert	Shawna Barry
FAA Subject Matter Expert	Jon Stowe
FAA Subject Matter Expert	Jonathan Torres
FAA Subject Matter Expert	Mitchell Bernstein
FCC Subject Matter Expert	Kambiz Rahnavardy
NASA Subject Matter Expert	Jeffrey Homola
NASA Subject Matter Expert	Jim Murphy
NASA Subject Matter Expert	Bryan Barmore
NOAA Subject Matter Expert	Bob Maxson
NOAA Subject Matter Expert	Bruce Entwistle
NOAA Subject Matter Expert	John Walker
NOAA Subject Matter Expert	Bryan Cole
NTIA Subject Matter Expert	Regina Harrison
NTIA Subject Matter Expert	Rick Orsulak
DOT FACILITATION TEAM	
DOT-Office of Research and Technology	Denise Bakar
DOT-FAA-Office of NextGen	Mitchell Bernstein
DOT-FAA-Office of NextGen	Noureddin Ghazavi
DOT-FAA-Air Traffic Organization	Arjuna "Tuna" Fields
DOT-FAA-Air Traffic Organization	Jon Stowe
DOT-Office of Aviation and International Affairs	Michael Hardin
DOT-Office of Aviation and International Affairs	Christopher Hillers
DOT-Office of Aviation and International Affairs	Peter Irvine
DOT-FAA-Office of NextGen	Shawn Kozica
DOT-FAA-Office of NextGen	Christopher Loring
DOT-Office of Regulation and Legislation	Ami Lovell
DOT-Office of Regulation and Legislation	Analiese Marchessault
DOT-Office of Transportation Policy	David Perlman
DOT-Office of Aviation and International Affairs	Ryan Steinbach
DOT- National Highway Traffic Safety Admin.	Alrik Svenson
DOT-Office of Aviation and International Affairs	Lauralyn Remo Temprosa
DOT-Office of Aviation and International Affairs	Shabu Thomas
DOT-FAA-Office of Airports	Jonathan Torres
DOT-Highly Automated Systems Safety COE	Sarasina Tuchen
DOT-Office of Aviation and International Affairs	Becki Hutchison

Acknowledgments:

Daniel J. Edwards, *Principal Deputy Secretary for Aviation and International Affairs*
Chris Rocheleau, *FAA Deputy Administrator*

Jared Smith, Sarasina Tuchen, Ami Lovell, Carlos Monje, Annie Petsonk, Carson Spence, Praveen Raju, Meg King, Adam Scholten, Noah Brown, Taylor Lochrane, Todd Homan, Darshan "Dash" Divakaran, Abigail Smith, Bonnie Dragotto, Jessica Sypniewski, Donald Hillebrand, Fahad Ahmad, Bradley Koeckeritz, Jennifer Corbett, and Anthony Chu


Advanced Air Mobility
Interagency Working Group