



FINAL REPORT: Preparing Appalachia for a Sustainable Electric Aviation Future (PASEAF)

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List of Abbreviations

AAM	Advanced Air Mobility
cTOL	Conventional Takeoff and Landing
DFR	Drone as a First Responder
EMS	Emergency Medical Services
eVTOL	Electric Vertical Takeoff and Landing
OEMs	Original Equipment Manufacturers
RAM	Regional Air Mobility
SAF	Sustainable Aviation Fuel
STOL	Short Takeoff and Landing
sUAS	Small Unmanned Aircraft System
VTOL	Vertical Takeoff and Landing

Foreword

This project was made possible by support from the Appalachian Regional Commission through an innovative program, the Appalachian Regional Initiative for Stronger Economies (ARISE). At the time of this study's conception, ARISE was a new ARC initiative that aimed to drive large-scale, regional economic transformation through multi-state collaborative projects across Appalachia. The project had earlier emerged from the findings of a 2023-24 ARC POWER grant project "Planning for Advanced Air Mobility in Ohio's Appalachian Region". In that project OU GVS, worked with four LDDs in the Appalachian region of Ohio to develop a strategy for preparing the Appalachian Ohio's 32 county region to benefit from applications of AAM, especially in those potential uses deemed priorities for the region by community stakeholders. That strategy identified a number of strategic elements premised on the prerequisite preparation of Appalachian general aviation airports as the region's fundamental aviation and AAM infrastructure.

Through the ARC ARISE program the findings of that previous study were described in a concept paper, "Achieving Appalachia's Electric Aviation Future - Preparing Appalachian General Aviation Airports for Electric Aviation," developed by OU GVS. This concept paper was circulated among a prospective multi-state partnership for their review and contribution.

The draft paper underwent several revisions that drew from insights offered by the expertise and experience of the five partners. A goal statement and workplan were developed into a scope of work specifying partner roles and responsibilities. This revised collaborative concept paper was submitted to ARC in October 2023 for ARISE consideration and was subsequently awarded ARISE funding in July 2024.

The contributing partners included:

1. Center for Economic Development and Community Resilience, Ohio University George Voinovich School of Leadership and Public Service (OU GVS) with lead responsibility for project management, economic and community development engagement, LDD and state-level economic strategy integration.
2. North Carolina State University Institute for Transportation Research and Education (ITRE), as co-lead in project management, with lead responsibility for airport AAM use case assessments, airport enhancement scenarios alignment, and economic impact estimation.
3. Kentucky Department of Aviation (KDOA), provider of Kentucky airport and aviation information, including identification and facilitation of interactions with state and local airport officials
4. North Carolina Department of Transportation Division of Aviation (NCDOA), provider of North Carolina airport and aviation information, including identification and facilitation of interactions with state and local airport officials
5. Ohio Department of Transportation Office of Aviation (ODOT-OA), provider of Ohio airport and aviation information, including identification and facilitation of interactions with state and local airport officials.

1. Executive Summary

This report discusses the results of research undertaken with support from the Appalachian Regional Commission (ARC) Appalachian Regional Initiative for Stronger Economies (ARISE) program. Entitled “Preparing Appalachia for a Sustainable Electric Aviation Future (PASEAF)”, this was a planning study led by the Center for Economic Development and Community Resilience at the Voinovich School of Leadership and Public Service of Ohio University, in collaboration with North Carolina State University’s Institute for Transportation Research and Education (ITRE), and state aviation partners in Kentucky, North Carolina, and Ohio.

1.1 Premise

Aviation already enables economic growth and vital public and commercial services across Appalachia. Nearly all of these current benefits occur through the region’s 232 small, public general aviation airports. Dramatic changes underway in the aviation industry will both challenge these airports’ continued ability to serve their communities while also creating new economic opportunities for them. A rapidly emerging generation of electric aircraft, collectively known as Advanced Air Mobility (AAM), has the potential to increase aviation benefits to Appalachia, but only if the region’s airports are updated to provide the required utility capacity, charging capability, and supportive infrastructure.

1.2 Goal

Therefore, the goal of this ARISE planning project was to expedite the preparation of Appalachia’s aviation infrastructure by identifying fundamental utility and infrastructure improvements needed at general aviation airports in Appalachia to serve a variety of existing and potential AAM aircraft in uses that addressed local economic and community development priorities. This goal was addressed through a three-state partnership of universities, state and local aviation officials, and Local Development Districts (LDDs). This partnership evaluated the “AAM Readiness” of a representative cohort of 37 general aviation airports located in counties designated by ARC as either economically distressed or at-risk counties across Kentucky, North Carolina, and Ohio (Figure 1).

This work involved extensive assessments of the feasibility of multiple potential uses of AAM aircraft at differing stages of technological and commercial development, the capabilities of the cohort airports to support those uses, and their potential to deliver economic and community development benefits identified as priorities by their host communities. This executive summary briefly highlights the electric aviation use cases, briefly documents the study methodology, presents the high-level results, and discusses the alignment of AAM readiness with community priorities.

1.3 Appalachian AAM Readiness Findings

The deployment of AAM aircraft will either sustainably expand current aviation activity in Appalachian regions, creating new growth through airports and infrastructure prepared to support electric aviation, or it will further leave behind those Appalachian communities whose general aviation airports lack the necessary infrastructure and services required. Paradoxically, forestalling preparation while awaiting AAM industry development, or making prematurely specific facility commitments to speculative AAM uses, both risk delaying the benefits AAM offers Appalachia. While the development of AAM aircraft and use cases is progressing rapidly, this study found that the apparent complexities involved in AAM readiness strategies can be resolved by recognizing the relevance of aviation in Appalachia and taking action to capitalize on the AAM applications that expand aviation's current role in serving community and economic development priorities.

1.3.1 Current aviation benefits are significant though under-recognized

The study region had an extensive aviation infrastructure and flight activity already generating significant economic and community service benefits, but the current role of aviation was most often unacknowledged and underemphasized in local economic development strategies. The study region is home to 37 general aviation airports with a total of more than 850 aircraft being based in the region. Collectively, these airports support nearly 600,000 flight operations annually. Yet, an extensive review of the Comprehensive Economic Development Strategies (CEDS) of each of the 15 LDDs found that despite those planning documents emphasis on the important role of transportation infrastructure in their regions' economic development efforts, aviation and enabling public airports were very rarely mentioned. This consistent near absence suggested under-recognition of the current role of aviation in regional economies

1.3.2 AAM "future" is already occurring

Most media and public attention have focused on more speculative AAM use cases such as on-demand air taxis and electric vertical take and landing (eVTOL) aircraft. The long-term nature of such developments has masked the rapid advancement of practical applications in drones, emergency services, air cargo, and flight instruction using established technologies and conventional aircraft configuration. It is important to recognize that AAM readiness has both near- and long-term requirements, especially as the more imminent AAM use cases may offer the most relevant benefits to Appalachia.

1.3.3 Imminent Appalachian AAM uses mirror existing general aviation activity

The uses cases found to be most feasible in Appalachian involve applications of AAM electric propulsion technologies to flight activities that the region's general aviation airports already support. Activities such as emergency services, military, air cargo, and flight instruction, which already account for most flights at Appalachian airports, are also among the earliest uses cases of AAM adoption.

1.3.4 AAM Feasibility Aligns with Appalachian Priorities

This study combined analysis AAM use case feasibility with their potential benefits as prioritized by host communities. It found a strong alignment between important community development goals – public safety, workforce development, economic growth – and the most imminent AAM applications. Comparisons of the cohort airports' current infrastructure with the AAM readiness requirements of these use cases found most would involve relatively minimal infrastructure updates, in sharp contrast with the extensive, dedicated requirements of higher profile eVTOL aircraft.

1.3.5 AAM advancement has revealed GA underinvestment, especially in utility capabilities

The deployment of AAM aircraft in both the near- and long-term term will require infrastructure updates to airports everywhere. While such requirements will vary significantly across individual airports, the accelerating electrification of ground and air transportation will require that all airports, large and small, to strengthen their electric utility capacity. Appalachia's airports currently lack the electrical charging infrastructure and necessary utility capability to support electric transportation. In particular, the great majority (30 of 37) of study cohort airports lacked three-phase electrical utility capacity required not only for potential future AAM activity, but for some important current airport operations.

1.4 Appalachian AAM Readiness Principles

The emergence of AAM presents both a significant opportunity and complex planning challenges for Appalachian communities. Any strategy should address the priorities and appropriate responsibilities particular to the region. It should also differentiate among the complex and varying levels of governmental policy responsibilities involved in the commercial advancement of AAM and focus on the issues appropriate for consideration and potential action by the regional and local governments of the Appalachian. In addition, it must recognize that public opinion regarding AAM is at an early but nonetheless critical juncture, with the AAM industry at risk of being stigmatized negatively before its benefits can be appreciated. This project therefore recommends Appalachian AAM Readiness Principles to navigate this complex environment which focus on maximizing the economic and community development potential of aviation in the region, while also preparing the region to capitalize on the additional aviation benefits of potential AM use cases that address communities' and residents' priorities. Elements of such a strategy could include:

1.4.1 Regional Aviation/AAM Public Information

The project's engagement activities found that while Appalachian public officials were generally unaware of the important role of aviation in the regional economy, they were eager and appreciative to learn of those impacts, and of the potential of AAM to accentuate those benefits. This public information engagement should be continued and expanded, especially to public entities with aviation asset management and governance responsibilities.

1.4.2 Local Development Districts (LDDs) Aviation Policy Integration

Appalachian LDDs play a critical role in educating and leading discussions among policy makers in local governments faced with land use and infrastructure decisions. In this project's engagement with LDDs in the region, they demonstrated both their interest in better integration of aviation in Comprehensive Economic Development Strategies (CEDS) and appropriate preparation for potential AAM uses cases and their uncertainty on when and how to address relevant policy issues. Planning guides should be developed specifically to provide policy guidance and templates for Appalachian communities, especially those that own and control most of the region's general aviation airports.

1.4.3 Aviation/AAM Workforce Development

Despite its extensive aviation activity and infrastructure, the Appalachian region has a lower pilot population ratio than the national average. Unmet aviation industry demand for pilots, combined with new employment opportunities emanating from emerging Advanced Air Mobility (AAM) electric aviation uses, creates employment opportunities aligned with Appalachian workforce characteristics. Communities should coordinate to create vertically integrated eco-systems of education, workforce development, and local public airports to reduce barriers - awareness, capacity, cost, and access - which limit current aviation industry employment training in the impact area.

1.4.4 General Aviation Airports AAM Readiness Preparation

Most AAM use cases in Appalachia will rely on the region's existing general aviation airports. While potential AAM use cases will vary in their electrical utility and charging infrastructure requirements, all of Appalachia's general aviation airports will require some upgrades to support AAM activity. In particular, the integration of three-phase power and charging infrastructure was identified as a critical step in positioning Appalachian airports for AAM competitiveness. Such infrastructure supports a range of electric aviation operations, reduces barriers to entry for new aircraft and operators, and signals readiness to manufacturers, training organizations, and service providers.

1.5 Optimal AAM Readiness Target Scenarios

To maximize Advanced Air Mobility (AAM) impact across Appalachia while protecting scarce capital, this study synthesized technical feasibility, economic benefits, and community priorities. Evaluating feasibility establishes baseline operational, utility, and charging needs at small general aviation (GA) airports. Mapping these against regional economics ensures high-impact multiplier effects like reduced supply chain friction, while integrating community priorities secures local buy-in. The analysis identified four target scenarios that offered the best combination of technical/commercial feasibility and significant priority community benefits to warrant emphasis over the next decade. Near-term opportunities include Emergency Medical Services, Flight Training, and Air Cargo. These rely on uncrewed or conventional aircraft already or soon to be commercially available, requiring fewer airport enhancements. Conversely, long-term scenarios like Regional Air Mobility and Business Aviation rely on crewed passenger aircraft with complex logistics and speculative timelines. Though requiring costly airfield upgrades, their massive economic potential warrants targeted regional planning.

1.5.1 Emergency and Medical Services (EMS)

EMS emerged as the unanimous top priority among Local Development Districts (LDDs) due to its direct lifesaving potential. Recent climate disasters, like Hurricane Helene, highlighted GA airfields as vital logistical staging hubs and demonstrated the utility of electric drones for disaster response. An AAM Readiness strategy focuses on equipping targeted GA airfields to serve as "community energy hubs" via National Renewable Energy Laboratory (NREL) frameworks. Integrating on-site distributed energy resources (DERs), like microgrids and battery storage, ensures sustainable aircraft charging while reinforcing local grid resilience during severe weather blackouts. Operational missions include evacuations, organ delivery, and public safety applications. These span small remote-controlled drones for time-critical medical deliveries to larger, sustainable eVTOL prototypes. Implementation demands 24/7 staffing, refrigerated storage, strict cybersecurity, and unmanned traffic management integration. Funding pathways include FEMA's BRIC program, FAA safety allocations, and USDA Rural Development grants.

1.5.2 Flight Training

The aviation industry faces a critical deficit of over 114,000 pilots, yet Appalachian counties lag behind national pilot density averages due to the steep \$20,000 entry cost for a license. The "Appalachian AAM Flight Training Network" strategy establishes decentralized training at GA airports near regional universities to lower these barriers. It addresses three core pillars: *Awareness* (K-12 STEM outreach), *Access* (coordinated adult training pipelines), and *Affordability* (integrating electric airplanes into fleets to discount instruction). AAM training utilizes electric Conventional Takeoff and Landing (eCTOL) airplanes, which slash energy costs to just \$2–\$3 per 40-minute flight (compared to \$45 for gas) and minimize maintenance. Airfields must upgrade to three-phase 380 VAC connections for sub-one-hour charging, though standard runway dimensions remain sufficient. Funding sources include FAA Section 625 grants, Department of Labor WIOA funds, and the ARC POWER Initiative.

1.5.3 Air Commerce (Air Cargo & Business Aviation)

Rural Appalachian firms frequently suffer from market isolation and a lack of traditional air cargo access, resulting in higher shipping costs and a loss of regional "economies of speed". Air commerce—spanning corporate business aviation and air cargo—enables local manufacturers to secure competitive advantages through expedited shipping of high-value, low-volume products. Notably, nine out of thirteen identified domestic cargo platforms operate as runway-free eVTOLs, with payload capacities ranging from 100 to 5,400 pounds. Building this ecosystem requires fast-charging vertiports, traditional runways of at least 2,750 feet for fixed-wing models, robust 5G or satellite networks for autonomous command loops, and proactive local policies that reward greenhouse gas emission reductions. Key funding includes the USDOT Multimodal Project Discretionary Grant program, ARC Area Development Grants, and State Industrial Park Logistics funds.

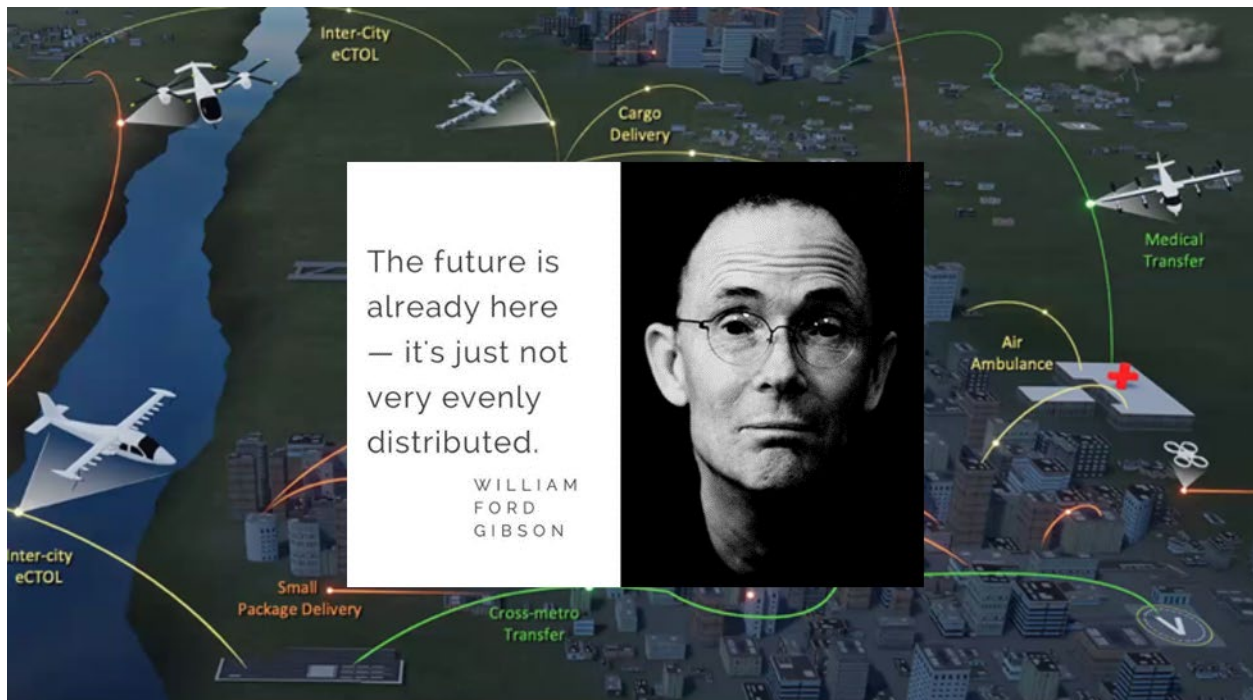
1.5.4 Regional Air Mobility

Regional Air Mobility (RAM) focuses on the regular or on-demand transport of passengers and goods over intermediate distances (100–500 miles), bridging the gap between short-range intra-city transit and long-haul commercial airlines. RAM provides a vital economic lifeline by connecting smaller

municipalities directly to larger commercial centers, allowing businesses to bypass urban hub congestion and lower total shipping costs. LDD leadership will serve as the strategic backbone, mapping regional export data to project market demand and unifying public airfields into cohesive networks that maximize low-emission transit grants. Unlike metropolitan air taxis, RAM relies heavily on fixed-wing aerodynamics and multi-modal propulsion to gain extended flight ranges. The fleet profile includes eCTOL and eSTOL aircraft engineered to access shorter, constrained runways in geographically challenging rural areas. Deploying a reliable RAM network requires high-voltage ground charging infrastructure and assuring the resilience of the local power grid. Digitally, ground facilities must integrate Unmanned Traffic Management (UTM) grids alongside traditional air traffic control, backed by secure 5G and satellite tracking. Funding pathways align with clean energy innovation and rural transit, utilizing the DOE GRIP program, DOT RAISE grants, and EPA Clean Air grants.

Conclusion

Despite rapid development in recent years, uncertainties remain about numerous aspects essential to the widespread deployment of AAM. These range from continued technical advancements to regulatory issues to the business viability of potential applications. But expanding our perspective on AAM to encompass developments around the globe calls to mind a quote often attributed to the science fiction author William Gibson - "The future is already here – it's just not evenly distributed." Indeed the inevitability of some AAM use cases being deployed is evidenced by the reality that the AAM is already in use in several forms - if not in Appalachia, then elsewhere in the world. The question facing Appalachia is not whether AAM will be deployed there, but whether the benefits it can offer the region will be delayed by a lack of preparation.



2. Introduction

Aviation is important in Appalachia, but aviation is changing. Aviation provides many jobs and vital public and commercial services across Appalachia. Nearly all of these current benefits occur through the region's 232 small, public general aviation airports, of which almost half (103) are in ARC Distressed or At-Risk counties. However, dramatic changes are underway in the aviation industry that will both challenge these airports' continued ability to serve their communities while potentially creating new economic opportunities for them. A new generation of sustainable electric aircraft known as Advanced Air Mobility (AAM) aircraft is emerging with numerous promising Appalachian applications ranging from delivering emergency medical supplies and cargo to passenger aircraft for public safety, business, and regional transportation. In Appalachia, the deployment of AAM aircraft will either sustainably expand current aviation activity in underserved regions, creating new economic growth through airports and infrastructure prepared to support electric aviation, or it will further leave behind those Appalachian communities whose general aviation airports lack the necessary infrastructure and services required in the electrified future of aviation.

The development of AAM electric aircraft is an on-going process, with many uncertainties remaining regarding the types and timeframes of their eventual commercial operation. Nonetheless, numerous examples of near-market ready prototype and introductory stage aircraft exist. The maturation of the operating characteristics of AAM aircraft has enabled the airport infrastructure enhancements required to support them to be defined and even to be addressed in select U.S. airports. A leader in this research (and an advisor in this project), the U.S. National Renewable Energy Laboratory (NREL), recently completed an assessment of the utility and infrastructure upgrades required to serve AAM aircraft. NREL researchers found that AAM aircraft had the potential to better serve rural communities by economically connecting smaller regional or local airports directly.

But the NREL study cautioned that small airports would have to upgrade their utility grid infrastructure to accommodate even a handful of electric planes. Most – and probably all - general aviation airports in Appalachia lack the infrastructure and services the NREL identified as necessary to support AAM aircraft. Therefore, reaping the benefits of the coming era of electrified aviation will require modernizing and expanding infrastructure at Appalachia's general aviation airports to meet the utility, infrastructure, maintenance, service, and personnel requirements of these next-generation AAM aircraft. All 232 Appalachian general aviation airports will eventually need to be updated to serve electric aviation. This project is designed to address this challenge by examining the electrical utility and charging infrastructure required to serve AAM electric aircraft at 37 general aviation airports located in Distressed and At-Risk Appalachian counties in Kentucky, North Carolina, and Ohio. The information derived in this project will provide a model for implementing infrastructure improvements at these airports and their peers across Appalachia.

2.1 Scope of Work and Goal

This project addressed the goal of expediting the preparation of Appalachia's aviation infrastructure to support emerging sustainable, electric aviation by focusing on the airport infrastructure requirements common to electric aviation, rather than those particular to specific AAM uses. Therefore, the scope of work focused on identifying fundamental utility and infrastructure improvements required for general aviation airports in Appalachia to serve a variety of potential, but inevitable, electric AAM aircraft and uses. The intended result is that these findings will provide clarity on the economic and community development rationale for these improvements, along with tested models for cost estimation and mobilizing identified financing sources for near-term implementation.

This planning project identified the improvements needed by airports in 37 Distressed and At-Risk counties of Kentucky, North Carolina, and Ohio to support AAM uses deemed most beneficial to their host communities. The identification of targeted airport upgrades that support local priority AAM uses was intended to provide motivation for timely, proactive efforts focused on attainable and significant economic and community development returns. The project's findings provide clarity on the public purpose rationale for these improvements, along with tested models for cost estimation and identifying financing sources for near-term implementation in the multi-state study area and throughout Appalachia.

2.2 Study Airport Cohort

The study included a cohort of 37 airports across three states (Figure 1) This cohort was selected for three reasons: 1) their economic status made them representative of a plurality of Appalachian general aviation airports, 2) achievable AAM benefits would have the highest relative impacts, and 3) their host states (KY, NC, OH) committed to provide informational support as partners in the project. These airports (Table 1) have demonstrated economic roles in supporting the creation, location, and growth of local businesses, as well as the training and employment of aviation professionals and technicians. By doing so, these airports currently account for an estimated total of 2,470 jobs and \$150 million in income in their communities. Preparing these airports to support AAM will increase flight activity, increase aviation workforce training, and help local entrepreneurs and existing businesses grow into new and larger markets across and beyond Appalachia.

Figure 1: Study Region

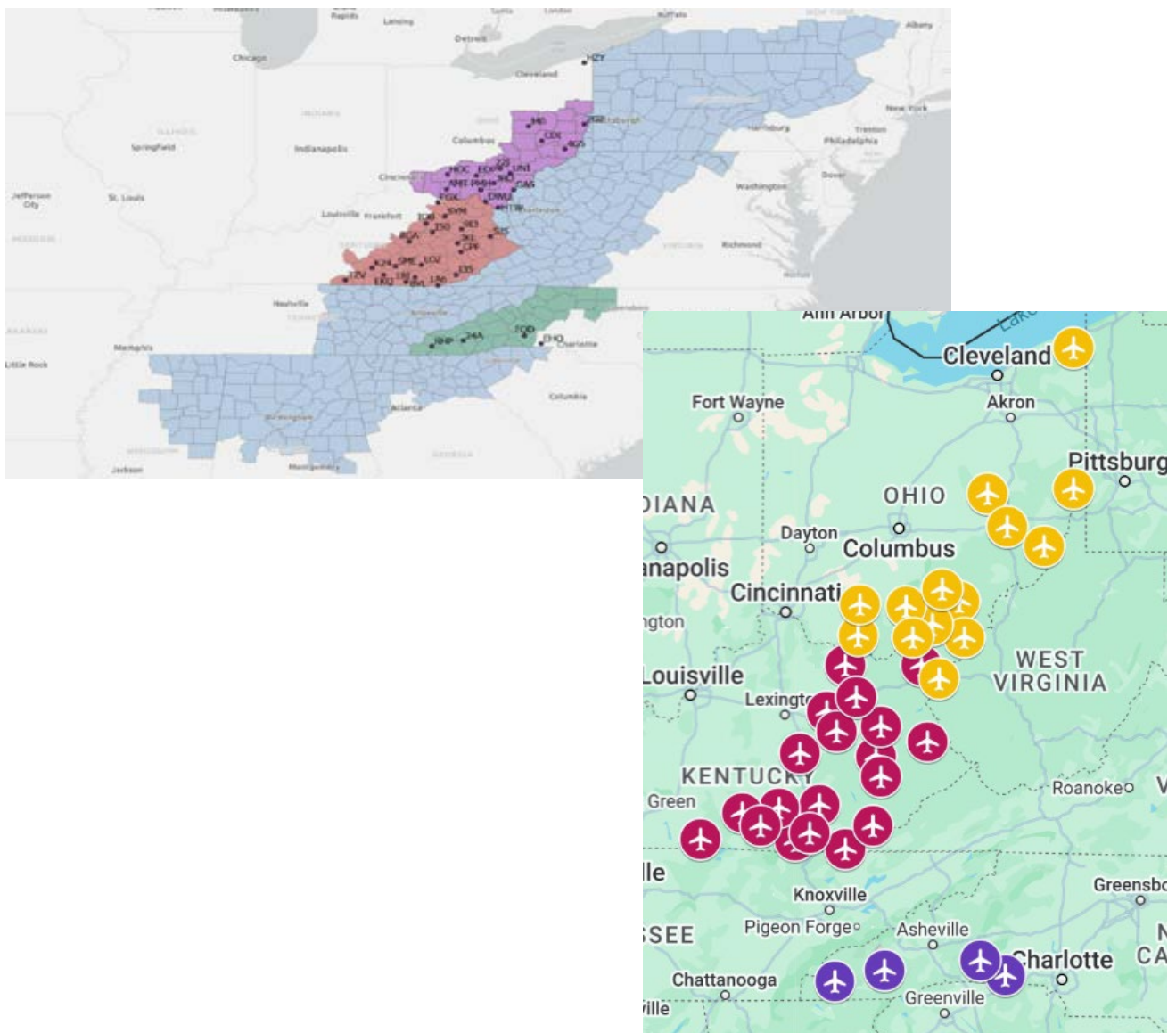


Table 1 Study Airport Cohort

Cohort Airports	County	City	State
Middlesboro/Bell County	Bell	Middlesboro	KY
Ashland Regional	Boyd	Worthington	KY
Julian Carroll	Breathitt	Jackson	KY
Fleming-Mason	Fleming	Maysville	KY
Big Sandy Regional	Floyd	Debord	KY
Tucker-Guthrie Memorial	Harlan	Harlan	KY
London/Corbin/Magee	Laurel	London	KY
Central Kentucky Regional	Madison	Richmond	KY
McCreary County	McCreary	Stearns	KY
Monroe County	Monroe	Tompkinsville	KY
Montgomery County	Montgomery	Mt. Sterling	KY
West Liberty	Morgan	West Liberty	KY
Wendell H Ford	Perry	Chavies	KY
Stanton	Powell	Stanton	KY
Lake Cumberland Regional	Pulaski	Somerset	KY
Morehead-Rowan County	Rowan	Morehead	KY
Russell County	Russell	Russell Springs	KY
Wayne County	Wayne	Monticello	KY
Whitley County	Whitley	Williamsburg	KY
Western Carolina Regional	Cherokee	Andrews	NC
Shelby-Cleveland County	Cleveland	Shelby	NC
Jackson County Airport	Jackson	Sylva	NC
Rutherford County	Rutherford	Rutherfordton	NC
Alexander Salamon	Adams	Winchester	OH
Northeast Ohio Regional	Ashtabula	Jefferson	OH
Ohio University	Athens	Albany	OH
Richard Downing	Coshocton	Coshocton	OH
Gallia-Meigs Regional	Gallia	Gallipolis	OH
Cambridge Municipal	Guernsey	Cambridge	OH
Highland County	Highland	Hillsboro	OH
James A Rhodes	Jackson	Jackson	OH
Jefferson County	Jefferson	Wintersville	OH
Lawrence County Airpark	Lawrence	South Point	OH
Monroe County	Monroe	Woodsfield	OH
Pike County	Pike	Waverly	OH
Greater Portsmouth	Scioto	Portsmouth	OH
Vinton County Airpark	Vinton	New Plymouth	OH

3. Project Work Plan

The study work plan involved three assessment phases, with associated goals, objectives, and tasks, to identify and describe the airport preparation that will support the most desirable, feasible, and beneficial AAM uses for the project communities to achieve the project goal of increased well-being of residents. Those phases include 1) assessing the feasibility and uses of AAM that address host communities' priorities, 2) identifying the local airport improvements required to support those use cases, 3) engaging with communities to prioritize AAM use cases in terms of their potential to deliver benefits addressing significant public purposes. These findings were then combined to identify AAM uses cases that most warranted preparation implementation strategies.

3.1 AAM Use Case Assessment

This phase involved evaluation of the feasibility and identified uses of AAM that might address airport host communities' priorities. The phase involved three projects tasks:

Task 1: Airport AAM Use Case Feasibility

Appalachia's general aviation airports vary significantly by characteristics – such as runway length, flight activity, location, etc. – that affect their expected rate of electric aircraft activity. Project emphasis was on identifying those airports with characteristics most favoring AAM use case feasibility, such as location factors, facility elements and capacities, the amount of current flight activity, and especially the nature of that activity most amenable to forecasted initial AAM uses, such as those by first responders, emergency medical, business aviation, and regional air transportation aircraft.

Project partner North Carolina State University's Institute of Transportation Research and Education (ITRE) had had lead responsibility in analyzing the characteristics of the subject airports and their alignment with AAM use case operation parameters to assess the feasibility of AAM use case activity at the individual airports. ITRE collaborated with the project state aviation division partners which provided support in identifying airport characteristics and flight activity.

For this task, ITRE analyzed airport characteristics that aligned with AAM use case operation parameters. The ITRE team used established parameters and characteristics based on the literature and state of the practice. Additionally, the project team investigated the potential for novel characteristic definitions that might be unique to the Appalachian Region, such as attributes that better describe economic or market conditions in the region.

Task 2: Economic Impact Significance

AAM use cases vary significantly in the nature and scale of their economic and community development impacts. And those impacts vary in terms of their potential significance given the economic context of the airport host communities to which such impacts might accrue. For example, the benefits achievable by expediting cargo delivery via AAM could be extraordinarily important to an isolated community with limited ground transportation while it could be of marginable incremental value to one located nearer a metropolitan area. In another case, AAM business aviation might be inconsequential in some communities but essential to those serving corporate air commerce needs.

Project lead OU GVS was responsible for assessing the nature and scale of AAM uses case benefits in the host communities' economic context to differentiate relative impacts both between the use cases at an individual airport and between use case relative impacts among airports. Study personnel met with airport management, local and regional economic developers, LLD staff, and local businesses and entrepreneurs to discuss AAM use cases and identify their relevance to regional economic activities. The ITRE team provided support by evaluating and assessing the economic context of each community in terms of potential AAM use case benefits. State aviation division partners supported this task by facilitating engagement with airport administrations through introductions and discussion participation.

Task 3: Community AAM Priorities

Appalachia general aviation airports comprise an extensive public asset and it is appropriate that the public be engaged to help determine which of the potential AAM uses they would prefer their communities' airports to emphasize. A recently completed ARC-supported public awareness project of AAM use priorities in Appalachian communities in Ohio had provided both insights on those priorities, and the importance of public engagement in aviation matters.

The methodology in that research used cooperation with Appalachian Ohio's four Local Development Districts (LDDs) in conducting public engagement activities within host communities. The project lead OU GVS similarly worked with the 15 LDDs of study subject airports to convene briefings on AAM use cases and potential benefits to elicit community stakeholders' discussions and informed prioritization of the applications of AAM at their local airport which aided in subsequent infrastructure needs assessment.

3.2 Airport AAM Needs Assessment

This phase examined the existing capabilities of the selected candidate airports and compared them to multiple scenarios of AAM implementation to assess required enhancement needs. The adoption of AAM technology will vary significantly for different uses and within different regions. Just as with conventional aviation, the potential levels and types of AAM flight activity will vary from airport to airport. Different levels and types of projected AAM flight activity will necessitate differing airport infrastructure and energy utility capabilities and capacities. This phase identified the local airport improvements required to support prioritized AAM use cases and involved three projects tasks:

Task 1: Airport Status Profiles

In this task, the ITRE team reviewed and documented the existing airport infrastructure and utility capabilities derived from airports' Master Plan documents, and direct inquiries with airport management. Airport operations, land use, and economic data were also used to document the existing capabilities and the growth potential for each of the airports within the assessment.

The resulting Status Profiles identified both the current conditions and planned redress of existing recognized deficiencies in essential elements such as control and safety management, runway and apron conditions, electrical and other energy/fuel utilities, and aircraft maintenance and storage hangar capacities

Task 2: AAM Scenarios Requirements

Airports' Status Profiles were compared with multiple scenarios of anticipated electric aviation needs to identify the nature, scope, and scale of potential improvements to prepare candidate airports to serve a range of evolving AAM activity. Information on AAM requirements were drawn from recent authoritative studies, including National Academy of Sciences research (2022) sponsored by the FAA and NASA research performed by the National Renewable Energy Laboratory (NREL - 2023), which performed detailed and comprehensive analysis of airport infrastructure requirements for electrified aviation.

The ITRE team identified multiple AAM use case scenarios and their corresponding airport utility and infrastructure requirements using industry information and assumptions, particularly from the National Renewable Energy Laboratory (NREL). NREL had contributed to the project by providing information on its recent and on-going its research into forecasting scenarios of AAM flight demand and requisite utility services and aircraft charging capacities.

Task 3: AAM Readiness Requirements

Building off preceding project tasks, the ITRE team examined existing airport capabilities and compared them to multiple scenarios of AAM implementation to assess required airport enhancement needs. ITRE described the enhancements required to existing infrastructure and utility airport capabilities to meet AAM use case and activity level scenarios. State aviation division partners supported this task through provision of information on relevant existing state- and airport-specific infrastructure plans.

3.3 AAM Readiness Preparation

The goal of this project was not simply to prepare general aviation airports in Appalachia to meet the needs of an electric aviation future. While such preparation is meritorious for its own sake, in this project such preparation was intentionally the means toward the end goal of enabling Appalachian communities to capitalize on emerging aviation capabilities for economic and public benefits. Therefore, this phase was designed to inform future AAM preparation planning through the performance of four projects tasks:

Task 1: AAM Scenario Targets

The ITRE team applied the information gained from previous tasks about community priorities, airport characteristics, and the feasibility of various use cases to define optimal AAM scenarios. Identified local priorities for AAM development and airport characteristics, including existing infrastructure, operations, and economic and land use context were used to identify the competitive advantages of each assessed airport and its surrounding community.

Task 2: Airport Upgrades and Budgets

NCSU ITRE and OU GVS developed a compilation of infrastructure requirements needed to execute a variety of AAM scenarios using industry information and assumptions and digital assessment “toolkits” produced by the Transportation Research Board Airport Cooperative Research Program (ACRP) and the National Renewable Energy Laboratory (NREL). ITRE used these and other tools to analyze infrastructure update needs by assessing airports’ surrounding electric grid and AAM use scenario impacts on grid infrastructure.

Task 3: AAM Economic Strategy Integration Opportunities

OU GVS assessed pre-existing levels of aviation infrastructure and activities incorporation in host communities economic development strategies through evaluations of the individual Comprehensive Economic Development Strategies (CEDS) reports of the 15 Local Development Districts (LDDs) encompassing the study airport cohort. They subsequently engaged with local officials from airport host communities, workforce development, economic developers, and LDDs in presentations and discussions of opportunities to integrate AAM uses in their economic development and community development strategies.

Task 4: Funding Source(s) Mobilization

OU GVS identified local, state, federal, and other sources of financial support, and communicated planning project findings in prospective source engagements. It was the intention of the project organizers to apply for an ARC ARISE implementation grant, as well as several other sources of support identified in the course of the study.

4. AAM Use Case Assessment

Advanced Air Mobility (AAM) offers a transformative opportunity for Appalachia by enabling a range of aerial services that are cleaner, faster, and more responsive than traditional aviation or surface transportation. As Appalachia prepares to engage with the emerging landscape of Advanced Air Mobility (AAM), it is essential to evaluate how these technologies might serve the distinct needs of local communities. AAM is not a one-size-fits-all solution; rather, it encompasses a variety of applications that range from emergency medical transport to on-demand passenger service and regional cargo delivery. This section outlines nine core AAM use cases, each reflecting a different mode of operation, end user, and potential benefit. (Table 2) Understanding these use cases, along with the conditions that make them viable in Appalachia, creates a framework for directing targeted investments in electric aviation—investments that can stimulate growth and strengthen the region’s economy.

Table 2 AAM Use Cases Studies

On-Demand Air Taxi services provide non-scheduled, point-to-point aerial transportation, ideal for short trips within or between rural and semi-urban communities. These services are most beneficial in geographically constrained regions, such as mountainous areas or those with limited highway access. Infrastructure requirements include small vertiports or landing zones integrated with local activity centers and access to high-capacity electric charging, such as three-phase power systems. Community acceptance, along with effective airspace management and clear zoning policies, is essential for adoption.
Regional Air Mobility refers to scheduled or on-demand flights over longer distances, typically 50 to 75 miles, connecting small towns to larger cities. This use case is particularly attractive where conventional air or rail services are lacking or inefficient. Upgrading regional airports with appropriate runway lengths, terminal facilities, and reliable electrical infrastructure is crucial. Supportive public policy, route subsidies, and economic development coordination can further facilitate implementation.
Airport Shuttle services connect Appalachian communities to nearby regional airports, closing the first-mile/ last-mile gap in intermodal travel. These services are particularly effective in dispersed rural areas with a single dominant airport hub. Infrastructure needs include electric aviation charging and seamless integration with other forms of public or shared mobility. Government coordination is needed to ensure scheduling, land use, and safety regulations align with shuttle operations.
Emergency Medical Services (EMS) is a critical use case, offering life-saving capabilities such as medevac transport, delivery of medical specimens, and emergency response in hard-to-reach areas. EMS AAM services are especially valuable in Appalachian regions with limited hospital access or poor road connectivity. Supporting infrastructure includes hospital-based vertipads, robust grid reliability (with backup power), and advanced navigation and weather-monitoring systems. Integration with state emergency response frameworks is necessary for operational effectiveness.
Corporate and Business Aviation allows Appalachian enterprises to access aerial transportation for market development, customer engagement, and inter-facility logistics. This use case benefits from proximity to industrial parks, research hubs, or clusters of small-to-medium enterprises. Airports must provide hangar space, secure landing zones, and fast, reliable charging infrastructure. Business uptake is more likely when supported by incentives, chambers of commerce, or economic development agencies.
Cargo and Freight Delivery through AAM offers fast, reliable logistics support for Appalachian businesses and consumers. This is especially useful for industries requiring just-in-time delivery, such as agriculture, pharmaceuticals, or e-commerce. Infrastructure needs include staging areas, cargo loading docks, and secure, well-connected landing zones. Success will depend on clear FAA guidance, investment in logistics software, and public acceptance of increased aerial activity.
Flight Training is essential for building a skilled AAM workforce, especially as the industry transitions to electric and autonomous aircraft. Training hubs can be based at airports with existing aviation programs or technical schools. Requirements include training aircraft, simulators, and safe, uncongested airspace. Program viability increases with federal workforce grants and collaboration between aviation regulators and educational institutions.

Tourism is a natural fit for Appalachia’s scenic and cultural assets. AAM can enable scheduled or chartered sightseeing experiences that connect visitors to remote locations otherwise difficult to access. Favorable conditions include established tourism infrastructure and scenic corridors. Airports should accommodate visitor amenities and promotional services, and partnerships with local tourism agencies can help build demand.

Leisure flying supports recreational aviation by individuals and hobbyists. This use case works well in communities with strong aviation cultures, favorable weather, and accessible personal aircraft ownership. Infrastructure such as community airfields and personal aircraft charging stations is key. Public perception of safety and affordability will influence growth in this sector, along with insurance and regulatory clarity for non-commercial pilots.

4.1 AAM Use Case Economic Benefit Significance

The assessment of the nature and scale of Advanced Air Mobility (AAM) use case benefits in Appalachian host communities was designed to differentiate relative economic impacts both among use cases at a single airport and across airports within the region. This approach recognized that Appalachian airports operate in distinct local economic contexts and serve different market functions, which influences how AAM applications may generate benefits. By evaluating use cases side by side at each airport and then comparing relative impacts across airports, the analysis captured both localized dynamics and broader regional patterns in AAM suitability and potential economic contribution.

Every airport community included in this study was either visited in person or reached through a coordinated process of survey distribution and follow-up engagement. This ensured that local perspectives, operational realities, and community contexts were incorporated consistently across the study area. Airport managers played a central role in this effort, providing qualitative and quantitative input on current operations, constraints, and opportunities. Their direct participation helped ground the analysis in on-the-ground conditions rather than relying solely on generalized assumptions about rural or Appalachian aviation markets.

Nine AAM-related use cases were evaluated as part of this assessment: On-Demand Air Taxi, Regional Air Mobility, Airport Shuttle, Emergency Medical Services, Corporate and Business Aviation, Cargo and Freight Delivery, Flight Training, Tourism, and Leisure. Airport managers were asked to characterize their airport’s level of importance for each of these use cases based on existing activity, demonstrated demand, and perceived future potential. This information was used to differentiate which use cases were most relevant at each airport and to understand how the mix of use cases varied across the Appalachian region.

To further understand each airport’s existing marketplace and user base, anonymized cell phone location data from Placer.ai was analyzed. This data was used to identify where visitors to an airport traveled from prior to their airport visit and where they went afterward, providing insight into travel patterns, trip purposes, and regional connectivity. These movement patterns helped contextualize the airport manager input by illustrating how airports currently function within local and regional economic systems, including links to employment centers, medical facilities, tourism destinations, and logistics corridors.

As part of this effort, each airport’s top three use cases were identified based on the combined manager input and data-driven analysis; **these results are documented in Appendix D**. Considerations for determining the suitability of the nine use cases in Appalachian communities included factors such as population density, proximity to medical facilities, regional business activity, tourism assets, workforce training capacity, and surface transportation limitations. For example, Emergency Medical Services and Cargo and Freight Delivery may be especially impactful in geographically isolated areas, while Tourism, Leisure, and On-Demand Air Taxi may be more viable near outdoor recreation destinations or seasonal travel hubs. Flight Training and Corporate and Business Aviation may align more closely with communities that have existing aviation infrastructure and workforce development needs. Together, these considerations allowed the study to differentiate where and how AAM use cases could most effectively support Appalachian economic contexts.

In sum, each AAM use case offers distinct advantages for Appalachian communities, but their successful

implementation depends on aligning infrastructure, market, and other electric aviation readiness variables. This phase of the report involved evaluating electric aviation use cases and determining electric aviation readiness variables for each use case. A literature review that assessed electric aircraft, charging requirements, flight range, and other readiness conditions can be found in *Appendix C: Literature Review*.

4.2 Relative Economic Benefits

In addition to these airport cohort results, an independent evaluation of the overall relative economic benefits of the studied AAM use cases was derived from recent research literature and numerous state-level AAM. This information provided a critical framework for identifying and benchmarking the relative economic benefits of different use cases to be used in qualifying the feasibility findings. Because AAM encompasses diverse applications—ranging from urban air taxis to regional cargo delivery and emergency medical services—academic and institutional analyses offer the rigorous modeling necessary to determine which scenarios are financially viable and socially impactful.

Advanced Air Mobility (AAM) use cases generate distinct economic benefits, drawing from both academic modeling and state-level planning frameworks:

- **Air Taxi (Urban Air Mobility):** Maximizes regional economic productivity through bypassing severe metropolitan traffic gridlock, capturing significant high-value travel time savings for business commuters, and shifting transportation demand away from over-saturated urban highway infrastructure.
- **Regional Air Mobility (RAM):** Revitalizes underutilized rural and community general aviation airports, generating powerful localized economic multiplier effects by establishing point-to-point connections that integrate isolated areas into major economic corridors.
- **Airport Shuttles:** Optimizes the efficiency of existing international hubs by offering predictable, high-speed transfers from urban centers, which drives airport revenue, attracts premium business travelers, and lowers the demand for expensive airport parking expansions.
- **Emergency Medical Services (EMS):** Lowers overall healthcare system expenditures by bypassing ground traffic to deliver rapid, life-saving transport for trauma patients and time-critical medical supplies (like organs or blood products), vastly improving survival outcomes.
- **Business Aviation:** Enhances corporate productivity and agile decision-making by allowing executives and specialized technical teams to rapidly visit multiple regional facilities or manufacturing plants in a single day, maximizing corporate operational efficiency.
- **Air Cargo (Logistics & Freight):** Drastically reduces middle- and last-mile delivery times, lowers logistics costs through remote or automated piloting, and allows e-commerce and manufacturing supply chains to operate on lean, real-time inventory strategies.
- **Flight Training:** Fosters high-skill job creation and high-wage engineering employment within the state by establishing specialized workforce development pipelines for the next generation of digital aviation pilots, mechanics, and vertiport operators.
- **Tourism:** Boosts regional visitor economies and hospitality sectors by opening up highly efficient, premium travel access to remote landmarks, national parks, or luxury resorts that are otherwise restricted by long, arduous ground journeys.
- **Leisure Flying (Private/Recreational):** Drives long-term aerospace industry growth and localized retail activity through personal aircraft ownership, flying club memberships, and ongoing private pilot spending on maintenance, hangar rentals, and localized fuel sales.

A primary method identified in the literature involves modeling of specific inputs such as capital, maintenance, crew, fuel/electricity, and infrastructure fees to evaluate the pricing and profitability of different use cases. State planning documents utilize economic impact analysis to contrast the value of different geographic use cases, applying academic theories to real-world transit corridors. Economic impact studies frequently leverage geographic information systems (GIS) alongside Input-Output models, such as IMPLAN, to simulate how localized AAM infrastructure investment ripples through regional economies. State-level studies reveal how regional infrastructure investments yield radically different macroeconomic returns depending on the chosen use case:

- **Ohio (DriveOhio / ODOT):** The *Advanced Air Mobility Economic Impact Study* forecasted that strategic investments could catalyze over \$13 billion in economic activity over 25 years (DriveOhio, 2021). The literature emphasizes that early economic viability is heavily driven by regional cargo, component manufacturing, and small Uncrewed Aircraft Systems (sUAS) integrated into agricultural and industrial supply chains rather than pure passenger transit.
- **Virginia (VIPC):** Virginia's comprehensive planning literature explicitly evaluates the Commonwealth's unique aerospace and military defense clusters (Dyment et al., 2023). This framework demonstrates that regional connectivity to general aviation airports provides high initial economic utility by bypassing ground-transit bottlenecks.
- **Texas (TxDOT):** Highlighting interstate and large-scale regional logistics, the *Texas Advanced Air Mobility Committee Report* prioritizes data-driven validation of immediate medical and cargo use cases over long-term passenger transit, noting that freight operations face fewer regulatory hurdles and lower initial infrastructure expenditures (Texas Department of Transportation, 2024).
- **California (Southern California):** Focused heavily on dense metropolitan challenges, studies conducted by organizations like the Long Beach Economic Partnership isolate the specific impacts of expanding UAM networks within the Southern California airspace (Steimetz et al., 2023). This literature shows that the economic benefits of passenger air taxis are strongly tied to alleviating extreme ground congestion and capturing high-income commuter time-savings, despite steep initial vertiport capital expenditures.

4.3 Deriving Relative AAM Use Case Benefit Values

By running regional parameters through these coordinated academic and state frameworks, policymakers can look past generic market excitement and strategically fund the specific AAM applications that promise the highest localized economic multiplier effects. Rather than focusing purely on highly speculative projects of total market size for the various AAM use cases, this study derived the relative benefits values by incorporating the feasibility assessments within a framework that heavily weighs localized impact, immediate infrastructure availability, and lower implementation barriers. The findings of this analysis (Figure 2) are for the relative economic benefit of AAM use cases for the overall impact area of the study area but may be expected to vary across the region.

The AAM use cases with the highest relative benefits (scores 60-95) were those that can deploy quickly by utilizing existing infrastructure while generating strong regional economic multipliers. (Figure 2)

- **Regional Air Mobility (Score: 95):** This emerges as the highest-benefit use case. It derives its value by breathing immediate economic life back into underused community and general aviation airports, requiring minimal new construction to connect rural areas to major economic corridors.
- **Flight Training (Score: 80):** Serves as a massive near-term economic booster. Its high score is derived from the immediate, tangible local spending on fuel, hangar rentals, and maintenance, alongside the creation of high-wage jobs and workforce pipelines.
- **Business Aviation (Score: 65):** Scores highly because it directly enhances corporate productivity, allowing specialized technical teams and executives to move efficiently between regional plants and facilities without relying on major hubs.
- **Air Cargo (Score: 60):** Achieves a strong rating because it operates on lower hurdles. By utilizing existing airports and facing simpler regulatory paths than passenger transit, it delivers instant supply chain velocity and logistics cost savings.

2. The Mid-Tier Framework (Scores 20–30)

A middle tier of AAM use cases (scores 20-30) were identified as providing clear, targeted value but are restricted by localized demand or expected flight activity levels.

- **EMS (Score: 30):** While the societal value of saving lives and delivering critical medical supplies is incredibly high, its relative *macroeconomic* score is more modest due to highly specialized, lower-frequency fleet operations.
- **Airport Shuttle (Score: 20) & Tourism (Score: 20):** Both are derived from niche, localized markets. Airport shuttles are highly efficient but bound tightly to specific metropolitan hubs, while

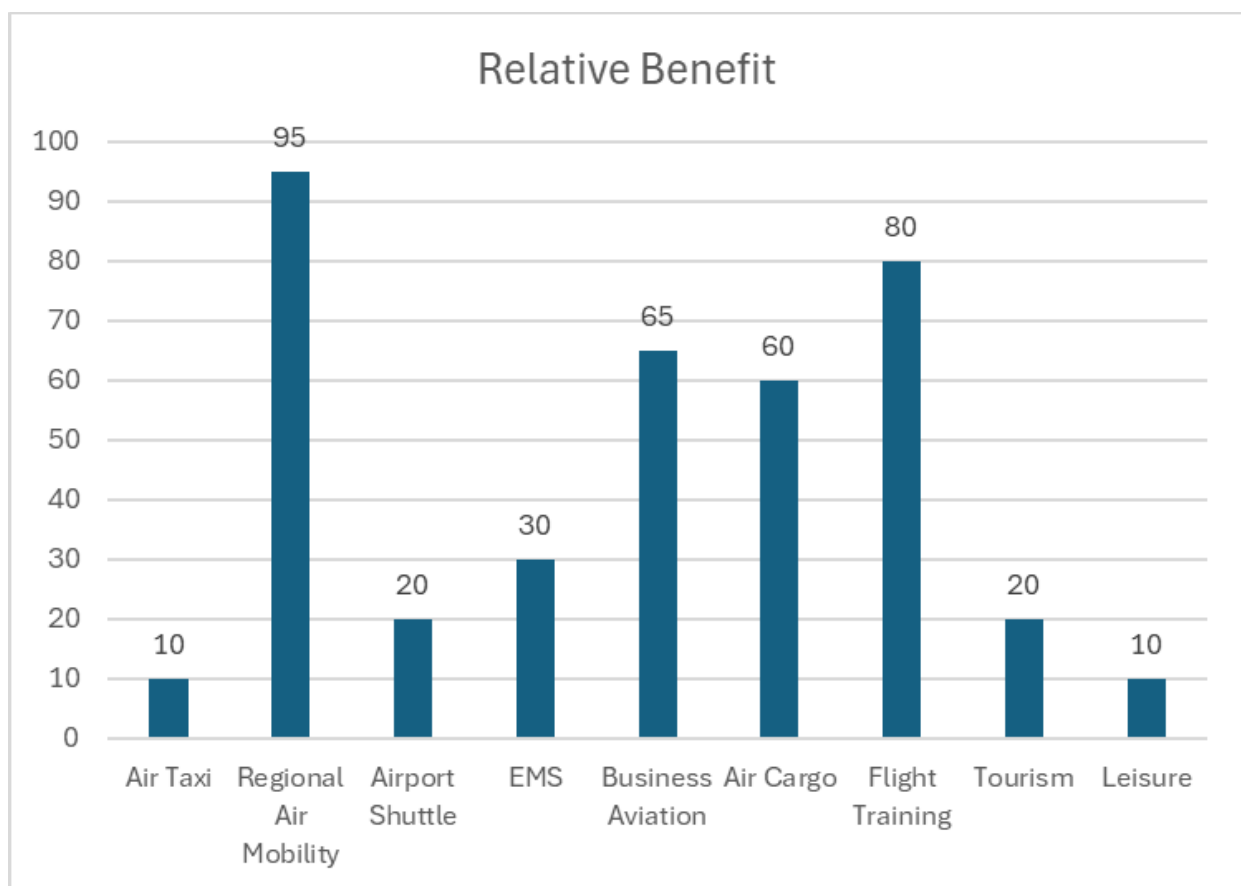
tourism provides a targeted lift to regional hospitality sectors without driving broad, everyday economic supply chains.

3. The Low-Value Framework (Score: 10)

The lower economic benefit use cases (score 10) were deemed relatively less impactful either by steep capital requirements or a lack of broader commercial relevance to Appalachian regional economies.

- **Air Taxi (Score: 10):** While urban air taxis dominate public and investor attention, their immediate relative benefit is scored lowest here because it is heavily offset by technological, regulatory, and infrastructure massive hurdles, along with limited Appalachian market relevance.
- **Leisure (Score: 10):** Personal and recreational flying provides steady local retail and hobbyist spending, but it lacks the broad, scalable economic multiplier effects seen in commercial freight or regional aviation networks.

Figure 2 Relative Economic Benefit



4.4 AAM Use Case Feasibility Assessment

Spatial data analysis provides a data-driven framework for assessing the feasibility of regional airports for electric aviation. By examining geographic information, such as airport infrastructure, proximity to population and employment centers, regional connectivity, environmental conditions, and local economic factors, this approach builds a comprehensive picture of where electric aviation is most viable. The result is a foundation for identifying airports best suited for adoption and for guiding targeted investments that maximize both transportation benefits and regional economic growth. This approach was applied to assess the feasibility of introducing electric aviation services across a cohort of 37 airports located in the Appalachian region.

The analysis focused on nine distinct electric aviation use cases. Each use case had a tailored set of geospatial variables based on the operational and infrastructure needs specific to that application. However, some variables were relevant across multiple use cases and were therefore applied more broadly where appropriate. In total, 16 geospatial variables and one additional variable provided by airport managers (the presence of existing 3-phase electrical power) were used to evaluate the feasibility of each airport.

Variables Selected for the Feasibility Analysis

The following variables were used to assess the feasibility of Appalachian regional airports for electric aviation. A description of these variables and how they were used in the analysis follows thereafter:

4.5 Airport Feasibility Analysis Variables

- Airspace confliction
- Jobs
- Population
- Average travel time to work
- Highway lane miles
- Per capita income
- Trauma centers
- Hotels
- Airport operations
- Nearby Airports
- Total population within the airport's service area
- Number of electrical substations
- Mean annual precipitation

Airspace Confliction as a Variable. Less conflicted airspace near a general aviation airport is better for Advanced Air Mobility (AAM) operations because it reduces complexity and enhances safety for these new aircraft. AAM aircraft, such as electric vertical takeoff and landing (eVTOL) vehicles, often operate at lower altitudes and may have different operational characteristics than traditional fixed-wing aircraft. General aviation airports, especially those in less congested airspace (like Class E or G), have less traffic from commercial airliners and high-performance aircraft. This reduces the number of conflicting flight paths, making it easier for AAM vehicles to integrate safely. In high-traffic environments, AAM aircraft would require constant monitoring and de-confliction by air traffic control, which could strain the existing system.

Operations in less-restricted airspace simplify the regulatory and procedural burden for AAM operators. Without the strict clearance requirements of Class B or C airspace, AAM vehicles can operate with more flexibility, making on-demand services more viable. It allows for the development of new, more efficient air traffic management systems specifically tailored for AAM, such as Unmanned Traffic Management (UTM), without disrupting existing infrastructure. General aviation airports are often located in less densely populated areas, which helps mitigate concerns about noise from AAM aircraft. A smoother, less-conflicted flight path reduces the need for frequent maneuvers, which can decrease noise levels, promoting greater public acceptance of new passenger and air cargo aircraft.

4.6 Airspace Classes

- **Class A:** Known as the “high-altitude” airspace, Class A generally extends from 18,000 feet Mean Sea Level (MSL) up to and including 60,000 feet MSL. It covers the entire continental U.S. and some areas offshore. All flights in Class A must operate under Instrument Flight Rules (IFR), meaning pilots rely solely on their instruments for navigation and must be in constant two-way radio communication with air traffic control (ATC).
- **Class B:** This airspace surrounds the nation’s busiest airports and is individually tailored to each location, often resembling an upside-down wedding cake with multiple tiers. Class B airspace typically extends from the surface to 10,000 feet MSL. To operate within or even fly through this airspace, a pilot must receive an explicit ATC clearance.
- **Class C:** Class C airspace is found around airports that are less busy than Class B airports but still have a control tower and a moderate amount of air traffic. It usually consists of two concentric rings: an inner circle extending from the surface to 4,000 feet above the airport and a larger outer circle from 1,200 to 4,000 feet above the airport. Pilots must establish two-way radio communication with ATC before entering and maintain it while inside.
- **Class D:** This is a cylindrical airspace that surrounds airports with an operating control tower but is less busy than Class C. It generally extends from the surface to 2,500 feet above the airport. To enter, pilots must establish and maintain two-way radio communication with the control tower.
- **Class E:** Class E airspace is essentially all controlled airspace that isn’t A, B, C, or D. It fills the gaps, extending from the surface, 700 feet, or 1,200 feet AGL (Above Ground Level) up to 18,000 feet MSL. While aircraft operating on IFR are provided with ATC services, aircraft flying under Visual Flight Rules (VFR) can operate freely without an explicit clearance.

Analyzing Airspace Confliction. Within proximity of each ARC cohort airport, the airspace classification was analyzed to assess potential conflicts for AAM operations. The presence of controlled airspace, which can complicate flight paths and require additional coordination, was considered a negative factor. A penalty was assigned to each airspace class based on its level of potential interference, with Class B receiving a penalty of -1, Class C a penalty of -0.75, Class D a penalty of -0.5, and Class E a penalty of -0.25. These penalty values were aggregated for each airport’s 80-mile radius, resulting in a total negative value. To create a standardized score, this total negative value was then normalized on a scale from 0 to -100, where 0 represents minimal conflict and -100 indicates the highest level of airspace conflict. This normalization allows for a consistent comparison of airspace complexity across all airports in the cohort.

Jobs as a Variable. The number of jobs in proximity to a general aviation airport is an important consideration for electric aviation. Electric aviation, which includes eVTOL aircraft, offers new use cases for transporting people and cargo to and from business locations. By leveraging general aviation airports, electric aviation can tap into existing infrastructure while serving business needs that are currently met by corporate aviation.

Corporate aviation is the use of non-commercial aircraft for business purposes, and it is a vital tool for companies of all sizes, not just Fortune 500 corporations. The majority of companies that use corporate aviation are small to medium-sized businesses, as well as non-profit organizations and government agencies. These businesses use corporate aircraft for a variety of strategic reasons:

- **Time Savings and Productivity:** Executives and key personnel can travel directly to multiple locations in a single day, saving time that would otherwise be spent on commercial airline security lines, layovers, and ground travel to remote destinations. Onboard, they can hold private meetings and work on sensitive information without interruption.
- **Access to Remote Locations:** Business aircraft can access thousands of smaller airports and airfields not served by commercial airlines, allowing companies to reach their clients, suppliers, and satellite offices more directly and efficiently.
- **Flexibility and On-Demand Travel:** Corporate aviation provides the flexibility to adjust travel schedules on short notice, a crucial advantage when responding to unexpected business opportunities or emergencies.
- **Cargo and Supply Chain:** Companies also use corporate aviation to transport critical parts, equipment, or sensitive cargo that cannot be shipped easily by other means.

In the future, electric aviation is poised to continue serving these needs with added benefits. The quiet, zero-emission nature of eVTOL aircraft will make them more socially acceptable for use in, or near, populated areas. This will allow AAM to serve as a sustainable and efficient extension of corporate travel, providing on-demand transportation for individuals and teams to and from business locations. AAM can also facilitate the movement of time-sensitive cargo, like medical supplies or manufacturing components, between business hubs. By utilizing existing general aviation airports, electric aviation will provide a new layer of mobility that enhances business productivity, expands access to a wider network of destinations, and supports the continued growth of a diverse range of companies.

Analyzing Jobs. The number of jobs within the proximity of each study airport was analyzed to assess the potential for electric aviation to serve business-related use cases, such as transporting people and cargo. To create a standardized score for comparison across all airports, the total number of jobs was normalized on a scale from 0 to 100. On this scale, a score of 0 represents a minimal number of jobs in an airport's proximate area, while a score of 100 indicates the highest level of jobs. This normalization allows for a consistent and comparable evaluation of the job market's potential to support electric aviation operations across all airports in the cohort.

Population as a Variable. The population surrounding a general aviation airport is a critical factor for the success of AAM operations, as it directly relates to the potential market for both passenger and cargo services. AAM, eVTOL aircraft, is designed to serve as a fast and efficient solution for short- to medium-range travel. Populated areas provide the necessary density of potential users to make AAM services economically viable and scalable.

Populated areas create a strong market for electric aviation by addressing several key transportation challenges:

- **Congestion Relief:** As urban and suburban populations grow, so does traffic congestion. This leads to longer commute times, decreased productivity, and increased stress. AAM offers a solution by bypassing ground traffic entirely, using the air as a new transportation layer. By providing a direct, point-to-point service, electric aviation can significantly reduce travel times

for commuters and travelers moving to and from locations within the 80-mile radius of a general aviation airport.

- **Time-Sensitive Missions:** A dense population creates a consistent demand for time-critical services. This includes not only business travel and personal errands but also the movement of high-value cargo like medical supplies, organs for transplant, or critical manufacturing components. The speed of AAM aircraft makes them ideal for these missions, providing a reliable and rapid alternative to ground-based delivery services, especially in areas where road traffic is a concern.
- **Connectivity to Underserved Areas:** While major commercial airports serve large cities, general aviation airports are often located in or near smaller communities and suburban areas. AAM can connect these populated but often underserved areas to larger hubs, business centers, and other regional destinations. This improves mobility for residents and businesses, fostering economic development and providing access to services that may not be available locally. The use of quiet, clean electric aircraft also makes this connectivity more acceptable to the communities they serve.

In essence, a higher population base provides the customer volume needed to sustain a network of AAM services. It indicates a clear market for on-demand travel, making the general aviation airport an attractive hub for electric aviation to get people and cargo to-and-from locations quickly and efficiently, when and where they are needed most.

Analyzing Population. The population within proximity of each study airport was analyzed to assess the potential for electric aviation use cases, which include the movement of both people and cargo. To determine the proximate population, population block groups were converted into centroids, which served as the basis for the analysis. To create a standardized score for consistent comparison, the total population for each airport's proximate area was then normalized on a scale from 0 to 100. On this scale, 0 represents a minimal population, while 100 indicates the highest population level. This normalization allows for a consistent and comparable evaluation of the market potential across all airports in the cohort.

Average Travel Time to Work as a Variable. The average drive time to work for the area surrounding a general aviation airport is an important electric aviation consideration. Electric aircraft are designed to offer a faster alternative to traditional ground transportation, and its value proposition is highest in areas with significant traffic congestion.

Congested areas are crucial for creating a market for electric aviation because they present a major pain point for commuters and businesses: wasted time. When drive times are consistently long due to traffic, the time-saving benefits of an air taxi or cargo drone become highly appealing. For commuters, an eVTOL flight can turn a stressful, hour-long drive into a quick, 15-minute trip. This provides a direct value proposition that makes AAM a viable alternative for those who prioritize efficiency and are willing to pay for it.

Moreover, congested urban and suburban areas have a high density of potential passengers and cargo. This concentration of demand allows AAM operators to establish a hub-and-spoke network from a general aviation airport, serving multiple destinations with a higher frequency of flights. The ability to bypass ground-based traffic jams makes AAM a reliable option for time-sensitive missions, like transporting business professionals to meetings or delivering critical medical supplies. This market for on-demand, time-saving travel is what will drive the initial adoption and growth of the electric aviation industry.

Analyzing Average Travel Time to Work. The average travel time to work for the area surrounding each study airport was analyzed to assess the potential for electric aviation use cases, particularly those that can substitute highway travel. To determine these drive times, travel time census tracts were converted into centroids, which served as the data points for the analysis. To create a standardized score, the drive times were then normalized on a scale from 0 to 100, where 0 represents the lowest average drive time

and 100 indicates the highest. In this instance, a high travel time is a good indicator for electric aviation success, that's why normalization occurs in this manner. This normalization allows for a consistent comparison of the potential for electric aviation to provide a time-saving alternative across all airports in the cohort.

Highway Lane Miles as a Variable. The extent of highway lane miles near a general aviation airport is an important consideration for AAM, as it highlights an airport's potential to serve as a hub for air cargo. While a dense network of highways is generally beneficial for the efficient movement of goods, there are specific scenarios where AAM can offer a superior solution. In areas with few roads and challenging terrain, such as mountains, dense forests, or regions prone to flooding or other natural disasters, AAM cargo operations become highly valuable. In these locations, ground-based logistics are often inefficient, slow, and unreliable. AAM aircraft, particularly unmanned aerial vehicles (UAVs) or cargo drones, can bypass these challenges entirely. They can fly direct, point-to-point routes over obstacles, enabling the rapid and reliable delivery of goods. This makes previously difficult-to-serve communities and industries viable marketplaces for air cargo. For example, a mining operation in a remote, mountainous region could receive critical equipment or supplies via an electric cargo drone, saving significant time and cost compared to traditional ground transport.

Analyzing Highway Lane Miles. The extent of highway lane miles near each study airport was analyzed to assess the potential for electric aviation use cases, particularly for air cargo. This analysis evaluated the linear feet of highway lane miles within a defined radius of each airport. To create a standardized score for comparison, the total number of lane miles was normalized on a scale from 0 to 100. On this scale, 0 represents the greatest extent of lane miles in an airport's proximate area, while 100 indicates the highest. In this instance, it's important to remember that a robust surface transportation network would compete with electric air cargo. This normalization allows for a consistent comparison of the ground transportation network's potential to be supplemented by air cargo delivery across all airports in the cohort.

Per Capita Income as a Variable. Per capita income is an important consideration for electric aviation, as it is a strong indicator of a potential market for passenger services. Electric aviation, which includes on-demand air taxis, is likely to be a premium service, at least in its early stages. Therefore, a higher concentration of individuals with high per capita income and, by extension, higher disposable income, is a key factor for market viability. Those with higher disposable incomes are more inclined to use electric aviation for several reasons:

- **Willingness to Pay for Convenience and Time Savings:** AAM's primary value proposition is the ability to bypass traffic and significantly reduce travel time. Individuals with higher disposable incomes often place a higher value on their time and are more willing to pay a premium to save it. For them, the cost of an AAM flight is offset by the productivity gains or personal time they reclaim by avoiding congested ground travel.
- **Demand for Premium Services:** Consumers with higher incomes are already the primary users of premium transportation services, such as ride-sharing services, first-class air travel, and corporate jets. Electric aviation is a natural extension of this market, offering a new level of on-demand, private, and efficient travel. This demographic is more likely to be early adopters of new, high-tech transportation modes.
- **Business Use Cases:** High per-capita income areas are often correlated with a strong business presence. This includes corporate headquarters, financial districts, and technology hubs. Companies in these sectors are likely to use AAM to transport executives and clients, further driving demand. The ability to travel quickly between business locations, even those not served by major commercial airports, is a compelling use case that higher-income businesses are willing to invest in.

In summary, a higher per capita income near a general aviation airport indicates a robust market of

potential customers who are both able and willing to pay for the benefits of AAM. This makes the airport an attractive location for AAM operators to launch and expand their passenger services.

Analyzing Per Capita Income. The per capita income in the area surrounding each study airport was analyzed to assess the potential for electric aviation passenger use cases. A higher per capita income is a key indicator of a potential market for on-demand air services, which are expected to be a premium form of transportation. To create a standardized score for consistent comparison, the per capita income data was normalized on a scale from 0 to 100. On this scale, 0 represents the lowest income levels, while 100 indicates the highest. This normalization allows for a consistent and comparable evaluation of the market's ability to support AAM operations across all airports in the cohort.

Trauma Centers as a Variable. The proximity of trauma centers to a general aviation airport is a critical consideration for the electric aviation air medical use case, specifically for emergency medical services (EMS). The primary mission of air medical transport is to get patients with severe, time-sensitive injuries to a specialized facility as quickly as possible. This is often referred to as the “golden hour,” the crucial period following a traumatic injury during which timely and definitive medical care can drastically improve a patient's chances of survival. Airports surrounded by more trauma centers can better serve EMS needs for several reasons:

- **Hub-and-Spoke Model:** A general aviation airport can function as a central hub for an AAM air medical network. With multiple trauma centers nearby, it can facilitate a hub-and-spoke model, where electric aircraft are dispatched to a scene and then transport the patient to the most appropriate and nearest trauma center. This flexibility is vital, as different levels of trauma centers (e.g., Level I, II, III) are equipped to handle varying severities of injuries. A network with more trauma centers ensures that a patient can be transported to a facility with the specific resources and specialists required for their condition, without the delay of a long-distance ground transfer.
- **Bypassing Congestion:** In densely populated areas, ground ambulances face significant challenges with traffic congestion, which can prolong transport times and negatively impact patient outcomes. Electric aviation can bypass this ground traffic entirely, flying direct routes to and from accident scenes and hospitals. For instance, an eVTOL air ambulance could transport a critical patient from a highway accident to a nearby trauma center in minutes, a trip that might take a ground ambulance significantly longer.
- **Complementing Existing EMS:** Electric aviation isn't meant to replace existing EMS, but to supplement it. It can enhance the overall system by providing a new tool for time-critical situations. For example, an AAM aircraft could transport a paramedic to the scene of a remote accident faster than a ground vehicle, allowing them to provide immediate, life-saving care while a ground ambulance is enroute.
- **Rural and Remote Access:** The air medical use case is particularly valuable for serving remote and rural areas that are geographically isolated from major trauma centers. These regions often have limited healthcare facilities, and a long-distance transfer to a specialized hospital can be a matter of life or death. By operating from a general aviation airport, electric aircraft can extend the reach of trauma centers, providing rapid access to care for a wider population and bridging the healthcare gap between urban and rural areas.

In essence, the presence of multiple trauma centers near a general aviation airport creates a more robust and efficient air medical ecosystem, maximizing the life-saving potential of electric aviation by ensuring fast, reliable, and appropriate transport for a wide range of medical emergencies.

Analyzing Trauma Centers. The number of trauma centers in the area surrounding each study airport was analyzed to assess the potential for the electric aviation air medical use case. The presence of trauma centers is a critical indicator of an airport's ability to serve emergency medical service needs. To

create a standardized score for consistent comparison, the number of trauma centers near each airport was then normalized on a scale from 0 to 100. On this scale, 0 represents the lowest number of trauma centers, while 100 indicates the highest. This normalization allows for a uniform evaluation of an airport's potential to support air medical transport across all airports in the cohort.

Hotels. The presence of hotels near a general aviation airport is a critical consideration for the electric aviation tourism use case. While a general aviation airport may not be a major tourism destination itself, its proximity to hotels indicates a demand for accommodations that can be leveraged by AAM operators. Airports surrounded by more hotels can better serve tourism needs by creating a synergistic ecosystem that combines travel with hospitality. This can be viewed in a few ways:

- **Hub-and-Spoke Model:** General aviation airports with a high density of nearby hotels can serve as a hub for AAM tourism. The hotels provide a ready-made customer base that can be served by electric aircraft. From this hub, AAM operators can launch flights to various spoke destinations, such as scenic landmarks, vineyards, or other tourist attractions that are otherwise difficult to access. This model allows AAM to unlock new tourism opportunities and create unique travel experiences that are not possible with traditional ground transportation.
- **Support for Niche Tourism:** Many general aviation airports are located near vacation destinations, resorts, or outdoor recreational areas. The presence of hotels in these areas indicates a market for tourism-related travel. Electric aviation can cater to this market by offering quiet, eco-friendly flights that align with the values of sustainable tourism. This makes AAM an attractive option for tourists who are environmentally conscious and want to minimize their carbon footprint while exploring a new area.

In summary, the number of hotels near a general aviation airport is a strong indicator of an existing tourism market. This market provides a customer base that can be served by electric aviation, allowing it to create new and efficient travel options for tourists, enhance their overall experience, and contribute to the local economy.

Analyzing Hotels. The number of hotels in the area surrounding each study airport was analyzed to assess the potential for the electric aviation tourism use case. A higher number of hotels is a key indicator of an existing travel market that can be served by on-demand air services. To create a standardized score for consistent comparison, the number of hotels near each airport was then normalized on a scale from 0 to 100. On this scale, 0 represents an airport with the lowest number of hotels in its proximity, while 100 indicates the highest. This normalization allows for a uniform evaluation of an airport's potential to support air tourism across all airports in the cohort.

Airport Operations. The volume of existing airport operations at a general aviation airport is an important consideration for the electric aviation tourism use case, as it serves as a powerful demonstration of existing demand. A general aviation airport that is already a busy hub for private, charter, and recreational flights has a proven track record of attracting a customer base that values speed, convenience, and direct travel. This established demand base provides a strong foundation for the introduction of new electric aviation services. A high number of operations at these general aviation airports indicates a few key things that are advantageous for advanced air mobility:

- **Established Market:** It shows that the airport is already a destination or departure point for a significant number of people, which translates directly to a ready-made market for AAM. These operations demonstrate that the airport is well-integrated into the local and regional transportation network.
- **Familiarity with Non-Commercial Travel:** The existing users of these airports are already accustomed to and willing to use non-commercial air travel. This makes them a prime demographic for adopting electric aviation services like air taxis, as the leap from a private propeller plane to an eVTOL is less significant than from a commercial airline flight.

- **Operational Readiness:** A busy general aviation airport has the existing infrastructure and operational procedures to handle a high volume of aircraft. This includes ground staff, air traffic control (if present), and other services that can be adapted to support electric aviation, reducing the need for costly new infrastructure.

While a high volume of operations can be a disadvantage at a large commercial service airport, where a high level of air traffic and complex airspace can create conflicts for AAM, this is not the case for most general aviation airports. In this instance, the airports being studied are not overly congested with large, commercial aircraft. Therefore, the more operations a general aviation airport has, the better the draw for electric aviation. It signifies a thriving air travel ecosystem that AAM can integrate into and expand upon, rather than having to build a market from scratch.

Analyzing Airport Operations. The number of existing airport operations at each study airport was analyzed to assess the potential for the electric aviation tourism use case. The volume of operations serves as a key indicator of existing demand for air travel at a given location. To create a standardized score for consistent comparison, the number of operations for each airport was normalized on a scale from 0 to 100. On this scale, 0 represents the lowest number of operations at a study airport, while 100 indicates the highest. This normalization allows for a consistent and comparable evaluation of the market potential to support new air services across all airports in the cohort.

Number of Nearby Airports as a Variable. The number of nearby airports to a general aviation airport is an important consideration for the electric aviation corporate use case, as it speaks directly to the potential for creating a robust and efficient air mobility network. For both corporate travel and regional air mobility, a dense network of airports generates a natural demand for travel and provides critical links for an electric aviation system.

In a corporate context, businesses often need to transport executives, clients, and key personnel between multiple locations. A network of nearby general aviation airports allows for a hub-and-spoke model, where electric aircraft can shuttle people between these smaller airports and larger commercial hubs. This is particularly valuable for regional air mobility and airport shuttle use cases:

- **Regional Air Mobility (RAM):** RAM focuses on connecting smaller, regional airports with one another, often bypassing the congestion and delays of major commercial hubs. For corporate travel, this means a team can fly directly from a general aviation airport near their office to another one closer to a client's location, saving significant time. The presence of multiple nearby airports creates a web of potential routes, making the entire system more flexible and resilient. If one airport is temporarily unavailable, there are other options to reroute the flight, a critical factor for business-related travel.
- **Airport Shuttle:** The proximity of multiple airports also supports the airport shuttle use case. An AAM service could efficiently transport passengers from a nearby general aviation airport to a major commercial airport. This service would be especially useful for corporate travelers connecting to longer-haul flights, as it allows them to avoid ground traffic and the associated stress and unpredictable travel times. It provides a "first-mile/last-mile" solution for air travel, seamlessly integrating AAM into the broader transportation network.

For AAM, a network of nearby airports creates a self-reinforcing ecosystem. As more airports become equipped for electric aviation, the demand for flights between them increases, justifying further investment in infrastructure and services. A network contrasts with a single, isolated airport, where the market for AAM would be limited to point-to-point travel, lacking the network effect that drives scale and efficiency. Therefore, the number of nearby airports is a strong indicator of a region's readiness to support a thriving electric aviation network for corporate, regional, and shuttle-based travel.

Analyzing Nearby Airports. The number of nearby airports to each study airport was analyzed to assess the potential for electric aviation. The presence of nearby airports is a key indicator for developing a robust regional air mobility and airport shuttle network. To create a standardized score for consistent

comparison, the number of nearby airports for each study airport was normalized on a scale from 0 to 100. On this scale, 0 represents the lowest number of nearby airports, while 100 indicates the highest. This normalization allows for a uniform evaluation of the potential to support a network-based AAM system across all airports in the cohort.

Population Closest to the Airport. In addition to the total raw population, the population within an airport's catchment area was also evaluated. The catchment area represents the population specifically closest to a particular airport—the market area that a general aviation airport is best situated to serve, assuming all other factors are constant. This variable was evaluated because it provides a more nuanced understanding of an airport's market potential than simply looking at overall population density.

In the context of electric aviation, understanding an airport's catchment area is crucial. AAM services, such as on-demand air taxis and cargo delivery, are designed to be convenient and time-saving alternatives to ground transportation. Therefore, the most viable markets are those where a significant number of people are located within an easy and direct travel distance to a specific airport. The catchment area helps to identify which airports are best situated to serve these large, concentrated target markets. By focusing on the population that is most likely to use a given airport, this variable helps to pinpoint the locations with the highest potential for AAM passenger and cargo demand, thereby informing decisions on where to prioritize the development of infrastructure and services.

Analyzing Population Closest to the Airport. The population within the catchment area of each study airport—the population specifically closest to that airport—was analyzed to better understand its potential as a market for electric aviation. To create a standardized score, the catchment area population for each airport was normalized on a scale from 0 to 100. On this scale, 0 represents the lowest catchment area population, while 100 indicates the highest. This normalization allows for a consistent and comparable evaluation of a general aviation airport's market potential across all airports in the cohort.

Number of Electric Substations. The number of electric substations near a general aviation airport is an important consideration for the development of electric aviation charging infrastructure. This is because electric aircraft, particularly those designed for passenger and cargo transport, will require a substantial amount of power to recharge their batteries quickly and efficiently. The standard power supply for high-demand applications, such as fast charging for aircraft, is three-phase power. This type of electrical power is the most common for industrial and commercial use because it is more efficient, reliable, and can deliver a constant flow of energy compared to the single-phase power typically found in residential homes.

A general aviation airport's ability to access or easily upgrade to three-phase power is directly tied to the proximity of electric substations. Substations are key components of the power grid that step down high-voltage electricity from a transmission network to a lower voltage for local distribution. Therefore, an airport located close to a substation is likely to have easier and more affordable access to the necessary power for charging electric aircraft. Conversely, an airport that is far from a substation may face significant challenges. The cost and complexity of extending three-phase power lines over a long distance can be prohibitive, potentially delaying or even preventing the deployment of electric aviation charging infrastructure. In such cases, the airport would need to explore alternative solutions, such as on-site microgrids with solar panels and battery storage, which can add to the overall cost and complexity.

In summary, the number of electric substations near an airport is a proxy for its electrical readiness. A higher number of nearby substations indicates a better opportunity to provide the essential three-phase power needed for rapid charging, making that airport a more viable location for the development of an electric aviation network.

Analyzing Number of Electric Substations. The number of substations within five miles of each study airport was analyzed to assess the potential for establishing robust electric aviation charging infrastructure. The number of substations serves as a proxy for the availability of three-phase power, which is essential for fast and efficient charging of electric aircraft. To create a standardized score, the

number of nearby substations for each airport was normalized on a scale from 0 to 100. On this scale, 0 represents the lowest number of nearby substations, while 100 indicates the highest. This normalization allows for a consistent and comparable evaluation of the electrical readiness of all airports in the cohort. Additionally, the distance to the closest substation was also measured.

Mean Annual Precipitation. Mean annual precipitation from the nearest weather station to a general aviation airport was evaluated. This is an important consideration for electric aviation, especially electric vertical takeoff and landing (eVTOL) vehicles, which are highly sensitive to weather conditions. Unlike large commercial airliners designed to operate in a wide range of weather conditions, these smaller, lighter aircraft have specific limitations that can prevent or disrupt operations. Challenging weather conditions, particularly heavy precipitation, can prevent AAM operations due to several factors:

- **Impact on Aerodynamics and Performance:** Rain, snow, and ice can significantly affect the aerodynamic performance of an aircraft. Heavy rain can degrade lift and increase drag, forcing the aircraft to use more power to maintain flight, which reduces its range and endurance. The accumulation of ice on wings and rotors is a major hazard, as it can disrupt airflow and lead to a loss of control. While electric aircraft may have de-icing systems, these systems consume valuable battery power, further limiting their operational range.
- **Reduced Visibility:** Heavy precipitation, fog, and low-lying clouds can severely reduce visibility, which is a critical factor for VFR (Visual Flight Rules) operations, the primary mode of flight for many early AAM services. Even if an AAM aircraft is certified for IFR (Instrument Flight Rules) flight, reduced visibility can still lead to delays, diversions, or cancellations, as it complicates landing procedures and air traffic management.
- **Battery and Electrical System Sensitivity:** Electric aircraft rely on advanced battery and electrical systems that can be susceptible to moisture. While aircraft are designed to be weather-resistant, intense precipitation or water accumulation on the ground can pose a risk to electrical components, particularly during takeoff and landing. The performance of lithium-ion batteries can also be impacted by extreme temperatures, which often accompany severe weather events.
- **Ground Operations:** Wet or icy runways and vertipads can pose a risk during takeoff and landing. Heavy rain can lead to hydroplaning, reducing the effectiveness of braking and making it difficult for the aircraft to stop. Icing on the ground can also create hazardous conditions for both the aircraft and ground personnel.

In summary, high annual precipitation indicates a climate where AAM operations are more frequently challenged by adverse weather conditions. While AAM technology is advancing rapidly to mitigate these issues, locations with more favorable weather conditions will likely experience a faster and more reliable rollout of electric aviation services. Therefore, less precipitation is a positive indicator for a location's suitability as a future AAM hub.

Analyzing Mean Annual Precipitation. The mean annual precipitation from the nearest weather station to each study airport was analyzed to assess a key environmental factor for electric aviation operations. Adverse weather conditions, particularly heavy precipitation, can negatively impact the performance and reliability of Advanced Air Mobility (AAM) aircraft. To create a standardized score for consistent comparison, the data was normalized on a scale from 0 to 100. On this scale, 0 represents the lowest mean annual precipitation, indicating more favorable conditions for AAM, while 100 indicates the highest precipitation level. This normalization allows for a uniform evaluation of the climate-related challenges across all airports in the cohort.

Creating a Flight Training Index. A Flight Training Index was developed to evaluate and compare an

airport's capacity to support flight training activities. The index integrates four core variables: existing flight training extent, local pilot density, local student-age population, and airspace confliction. Together, these variables capture both current training activity and the underlying conditions necessary for sustainable growth.

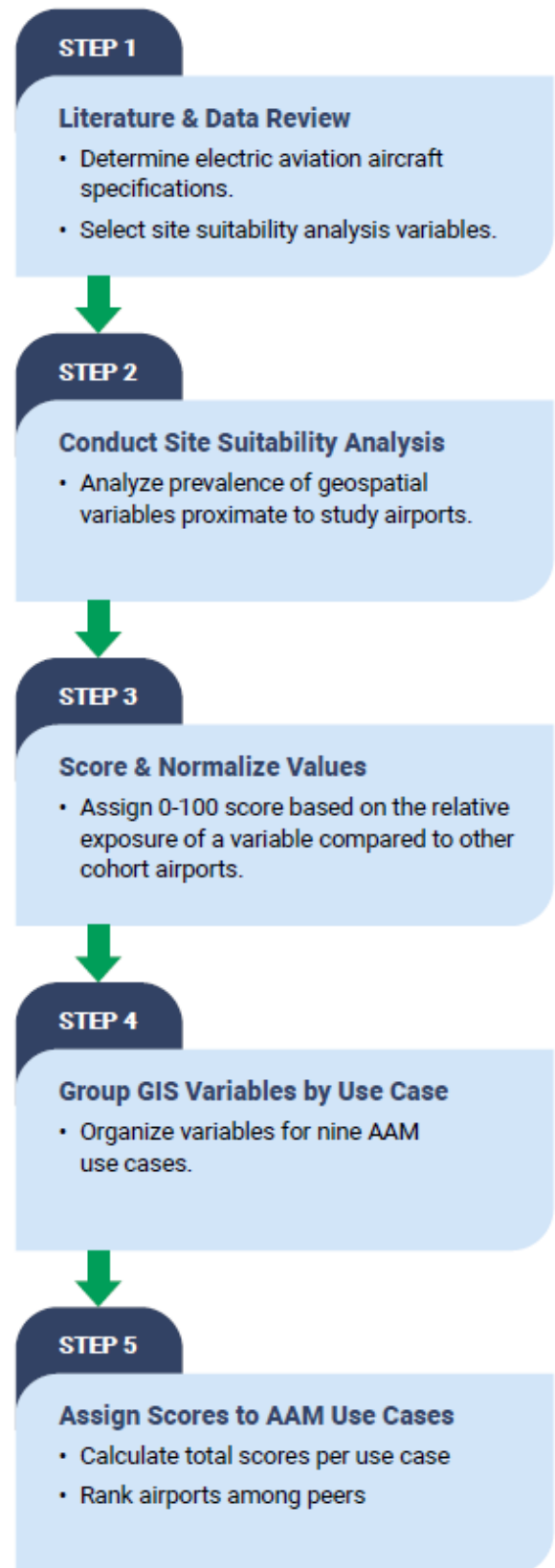
Existing flight training extent reflects the presence of instructors, aircraft, and training operations already in place, which is critical for near-term adoption of new training platforms such as electric aircraft. Local pilot density serves as a proxy for aviation culture, mentorship availability, and potential instructor pipelines, all of which are essential for scaling training programs in rural and Appalachian general aviation airports. The local student-age population represents the future demand for flight training and is particularly important in an electric aviation context, where lower operating costs and quieter aircraft may broaden access for younger and first-time pilots. Finally, airspace confliction accounts for operational constraints related to congested or complex airspace; airports with lower confliction are better suited for repetitive training operations and can more easily accommodate the unique performance and charging characteristics of electric training aircraft.

By combining these four variables, the Flight Training Index provides a practical, data-driven framework for identifying Appalachian general aviation airports that are well positioned to support flight training today while also serving as early adopters and testbeds for aviation.

4.7 Executing the Feasibility Analysis

A comprehensive site suitability analysis was conducted using ArcGIS Pro to evaluate the feasibility of electric aviation at a cohort of 37 general aviation airports across Appalachia. The analysis offers a data-driven methodology, utilizing a selection of sixteen key geospatial variables, to identify which airports possess characteristics that may predispose them to supporting electric aviation. The process involved analyzing the prevalence of each variable within the proximity of the airports, scoring and normalizing the data to create a quantifiable assessment. By grouping these geospatial variables according to nine distinct use cases, the analysis was able to provide a nuanced evaluation of the types of advanced air mobility operations each airport is best suited to support, offering a clear, evidence-based roadmap for future development and investment in the region.

The analysis consisted of five primary steps. The first step was a literature and data review. During this step, geospatial variables and airport operations data were selected. Altogether, a total of 16 variables were found to



be highly correlated with advanced air mobility suitability. The second step involves conducting a GIS site suitability analysis. As part of the second step the prevalence of a geospatial variable within proximity of an airport is analyzed. In the third step, each geospatial variable is scored and normalized (given a score from 0-100) based on its prevalence in comparison to the cohort airports. In the fourth step GIS variables that are pertinent to nine AAM use cases are grouped. In the fifth step, the scores for these groupings are aggregated together by use case and an airport is ranked and scored among its peers.

By analyzing the combination of variables relevant to each use case, the site suitability analysis identified which airports demonstrated the most favorable conditions for electric aviation. Airports that showed a strong alignment of variables with positive influence (such as high accessibility, demand, and supporting infrastructure), and minimal conflict from variables with negative influence (such as restricted airspace or limited power infrastructure), were deemed to have higher feasibility. Geospatial data and information obtained directly from airport managers were used for assessing electric aviation airport feasibility.

4.8 Accounting for Variable Proximity

The anticipated flight ranges of electric aircraft expected to enter service over the next decade were analyzed. Engineering specifications show that while a small number of aircraft may achieve ranges of up to 160 miles, most are projected to have maximum ranges of 100 miles or less.

Flight range is a critical factor because it defines the area that an aircraft can reliably serve. For instance, an aircraft with a 100-mile maximum range could not be deployed on a mission more than 50 miles away, since it would also need enough power to return to its base for recharging. Accordingly, flight ranges were used to establish the accessible areas considered in the feasibility analysis.

To reflect the differing capabilities of advanced air mobility (AAM) aircraft, a concentric circle model was applied around each general aviation airport. Circles were drawn in 10-mile increments, beginning at a 30-mile radius and extending to an 80-mile maximum.

- Areas closer to the airport were weighted more heavily. For example, variables within 0–30 miles were assigned a higher weight than those between 30–40 miles, which in turn were weighted more than those between 40–50 miles, and so on.
- This is because, as the radius increases toward 80 miles (a 160-mile round trip), fewer aircraft are capable of completing such missions.

This weighted approach, modeled as a decay function, accounts for the proportion of aircraft that can operate within each distance band. It ensures that areas closer to an airport—accessible to nearly all aircraft—are prioritized over those at the edge of the fleet's operational limits.

5. Feasibility Analysis Findings

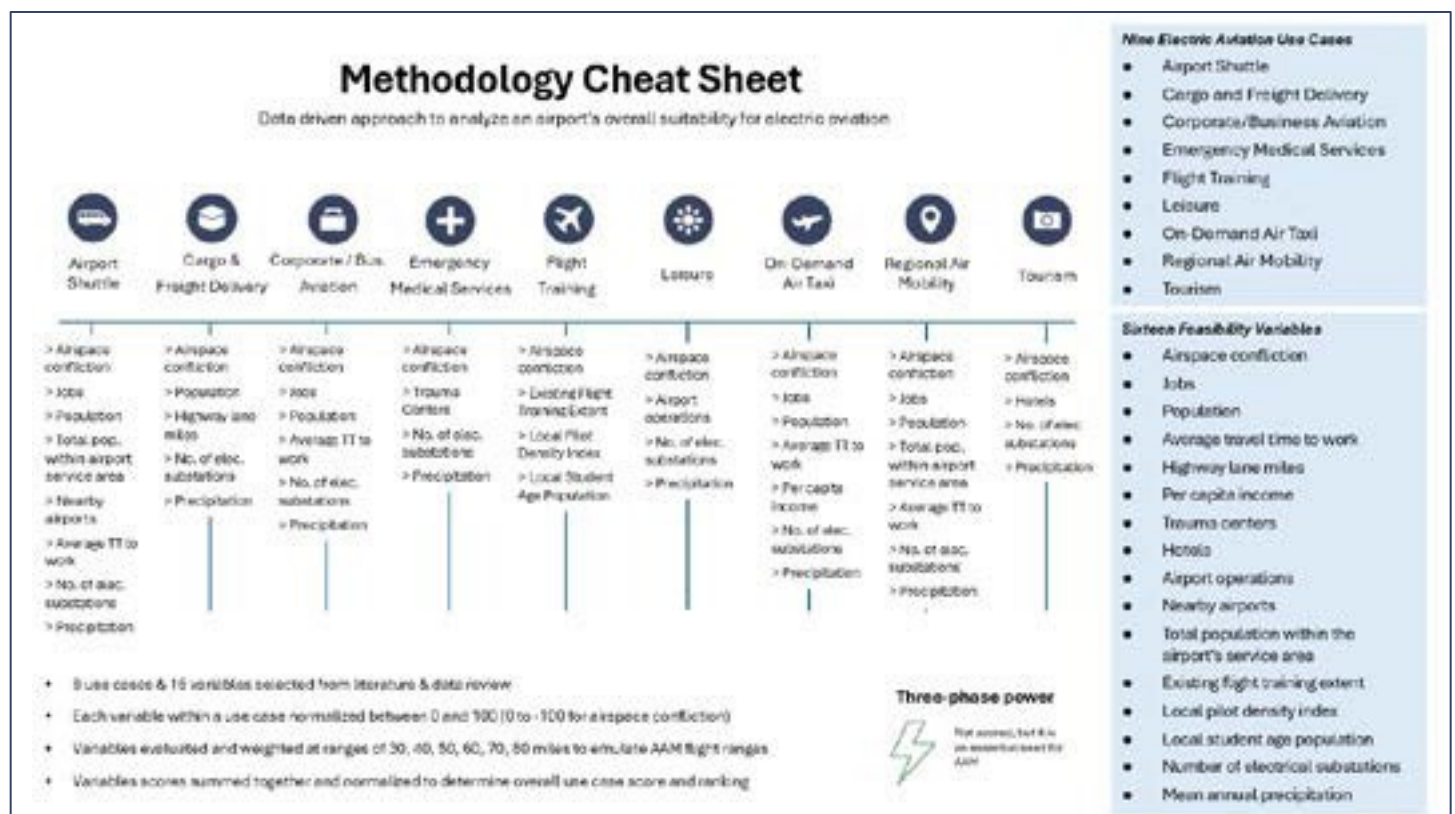
The cohort of 37 study airports were evaluated based on a total of nine use cases and 16 suitability variables (see **Figure 3**). For each use case, an airport could receive between zero and 100 points. Three-phase power was not included as a feasibility variable; however, it should be noted that three-phase power is widely agreed upon to be a foundational infrastructure requirement for electric aviation. In other words, without three phase power, it's highly unlikely that a cohort airport would be able to manage a successful transition to electric aviation. For this reason, all study airports with three-phase power are color coded in blue within the Feasibility Analysis Results (**Table 3**).

The top five cohort airports are listed below. Three of these airports have three-phase power.

- Shelby-Cleveland County Regional (EHO) Shelby, North Carolina | 776.8 points (three-phase power)
- Geary A Bates/Jefferson County (2G2), Wintersville, Ohio | 738.9 points
- Central Regional Airport (RGA), Richmond, Kentucky | 607.9 points (three-phase power)
- Richard Downing (I40), Coshocton, Ohio | 601.7 points (three-phase power)
- Highland County (HOC), Hillsboro, Ohio | 567.1 points

Appendix E: Feasibility Analysis provides the full list of cohort airports and their feasibility analysis results

Figure 3 Summary of the Feasibility Analysis Methodology (ITRE, 2025)



5.1 Feasibility Results Summary

The AAM use case feasibility analysis for the total 37 airport study cohort overall found two distinct groupings (Figure 4). Five of the AAM use cases had feasibility scores exceeding 45.0. This group included EMS (51.3), Leisure (50.6), Flight Training (49.6), Air Cargo (48.5), and Tourism (45.0). As a group these use cases were characterized by lower technological challenges with relevant AAM aircraft being further along in their development processes and with less specialized, broader prospective applications.

But more importantly, each study cohort airport was analyzed and scored based on specific use case needs and the associated geospatial variable. Due to the critical nature of three-phase power, all the airports with three-phase power are color coded in blue in Table 3 below. For more information, refer to Appendix E: Feasibility Analysis.

Figure 4 Feasibility Results Summary

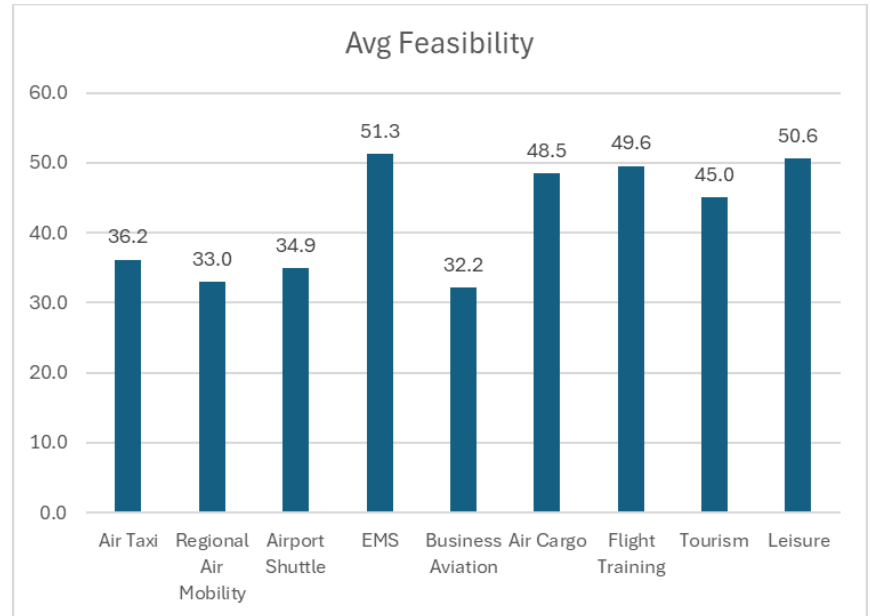


Table 3. Feasibility Analysis Results (ITRE, 2025).

Ranking	Airport	Code	County	City	State	Air Taxi	RAM	Airport Shuttle	EMS	Corporate Aviation	Air Cargo	Flight Training	Tourism	Leisure	Total Points
1	Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	94.4	100.0	100.0	75.9	50.5	100.0	90.4	81.7	84.0	776.8
2	Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	100.0	86.3	97.1	100.0	37.9	87.5	50.2	100.0	80.0	738.9
3	Central Regional Airport	RGA	Madison	Richmond	KY	52.4	53.2	49.2	73.3	41.4	73.3	100.0	84.6	80.5	607.9
4	Richard Downing	I40	Coshocton	Coshocton	OH	67.6	55.3	68.6	95.3	31.3	73.3	50.0	76.0	84.4	601.7
5	Highland County	HOC	Highland	Hillsboro	OH	69.0	53.1	65.4	57.2	100.0	88.3	51.5	36.9	45.7	567.1
6	Lake Cumberland Regional	SME	Pulaski	Somerset	KY	35.4	42.1	39.2	72.5	23.6	73.7	81.7	76.5	91.9	536.7
7	Cambridge Municipal	CDI	Guernsey	Cambridge	OH	58.2	48.0	54.9	89.0	20.4	74.3	29.7	76.2	84.8	535.4
8	Ashland Regional	DWU	Boyd	Worthington	KY	42.5	50.1	44.1	81.1	22.7	76.4	50.5	75.8	81.9	525.0
9	Lawrence County Airpark	HTW	Lawrence	South Point	OH	41.1	41.4	34.0	87.9	19.8	74.2	71.6	72.1	79.6	521.8
10	Ohio University	UNI	Athens	Albany	OH	37.8	33.1	34.4	64.9	31.6	45.4	92.7	46.8	100.0	486.7
11	Vinton County Airpark	22I	Vinton	New Plymouth	OH	54.9	43.2	45.9	74.0	38.3	64.3	16.2	61.7	64.8	463.4
12	Pike County	EOP	Pike	Waverly	OH	55.4	46.3	53.6	68.6	32.9	56.9	23.5	51.9	61.7	450.9
13	West Liberty	9I3	Morgan	West Liberty	KY	33.2	35.3	30.7	57.7	75.1	76.5	36.2	43.0	55.4	443.1
14	Alexander Salamon	AMT	Adams	Winchester	OH	60.3	46.4	55.1	48.3	39.9	42.6	41.1	36.5	45.5	415.7
15	Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	31.3	35.7	36.9	53.6	24.0	46.6	65.5	43.6	70.9	408.1
16	London/Corbin/Magee	LOZ	Laurel	London	KY	20.6	38.8	35.5	51.4	30.8	46.5	77.5	46.9	59.8	407.8
17	Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	51.3	48.1	53.2	34.0	29.5	43.4	68.8	43.7	31.1	403.0
18	Monroe County	4G5	Monroe	Woodsfield	OH	44.2	28.4	34.2	74.1	12.7	51.7	33.1	61.2	62.4	401.9
19	Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	31.8	23.7	20.3	70.9	22.8	53.8	62.0	47.5	62.6	395.3
20	Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	28.3	32.8	31.1	60.9	24.0	57.1	35.2	49.8	63.8	383.1

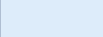
 Blue rows indicate airports with three-phase power.

Table 3. (Continued) Feasibility Analysis Results (ITRE, 2025).

Ranking	Airport	Code	County	City	State	Air Taxi	RAM	Airport Shuttle	EMS	Corporate Aviation	Air Cargo	Flight Training	Tourism	Leisure	Total Points
21	Stanton	I50	Powell	Stanton	KY	37.2	29.1	26.9	54.6	34.3	46.1	42.5	42.3	47.0	360.0
22	James A Rhodes	JRO	Jackson	Jackson	OH	31.0	26.4	28.7	58.9	23.6	43.7	42.8	38.5	48.0	341.5
23	Fleming-Mason	FGX	Fleming	Maysville	KY	47.2	35.1	41.8	34.3	38.9	25.1	54.2	23.1	35.8	335.3
24	Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	35.0	25.2	27.2	37.3	15.5	32.9	53.3	55.2	43.6	325.1
25	Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	27.7	24.7	36.4	37.3	54.4	51.6	47.3	11.1	2.5	293.1
26	Big Sandy Regional	SJS	Floyd	Debord	KY	22.4	22.0	15.7	53.3	27.9	36.6	40.9	31.7	42.0	292.5
27	Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	29.0	25.4	26.6	34.0	31.8	23.3	66.4	22.4	30.9	290.0
28	Wendell H Ford	CPF	Perry	Chavies	KY	13.0	21.7	18.9	35.0	33.7	24.5	63.3	19.3	31.7	261.1
29	McCreary County	18I	McCreary	Stearns	KY	8.2	7.2	9.2	24.6	62.5	55.3	16.7	27.5	25.2	236.4
30	Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	17.6	12.2	12.4	20.6	33.1	28.8	42.5	25.6	34.1	227.0
31	Russell County	K24	Russell	Russell Springs	KY	9.6	6.8	6.6	30.6	24.9	35.5	26.0	36.1	41.1	217.2
32	Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	5.3	9.2	10.4	24.6	26.3	24.6	49.7	27.0	22.5	199.5
33	Jackson County	24A	Jackson	Sylva	NC	19.9	17.3	22.8	12.8	0.0	14.8	41.2	45.0	15.7	189.4
34	Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	7.6	10.3	11.6	17.3	26.1	21.4	44.4	11.7	20.6	171.1
35	Wayne County	EKQ	Wayne	Monticello	KY	0.0	0.0	0.0	15.9	23.7	21.3	21.3	22.1	24.7	129.1
36	Western Carolina Regional	RHP	Cherokee	Andrews	NC	16.1	3.0	8.8	0.0	5.4	3.6	53.4	15.2	15.0	120.5
37	Julian Carroll	JKL	Breathitt	Jackson	KY	2.3	4.3	3.3	15.4	18.4	0.0	0.0	0.0	0.0	43.7

Blue rows indicate airports with three-phase power.

6. Airport AAM Needs Assessment

Airports intending to host electric aviation are investing in three-phase electrical infrastructure to support the higher power, balanced loading, and industrial-grade service that three-phase systems provide and quick-charging electric aircraft require. Companies at the forefront of electric aviation infrastructure have designed chargers that expect industrial inputs and have begun deploying them along major corridors. For example, BETA Technologies has expanded an airport-focused charging network along the Eastern Seaboard and adjacent regions as part of an effort to enable routine electric aircraft operations. This includes work supported by public-sector contracts to place chargers at distributed airfields for medical and disaster response (Stonor, 2024).

Though BETA is not the only solution, it is currently the leading market option. BETA's Charge Cube is a permanent, airport-grade unit, which was developed to charge their ALIA aircraft and interoperable ground vehicles. It specifies a 480 Vac, three-phase 60 Hz AC connection and draws several hundred amps of service to deliver roughly 320 kW of continuous DC charging power to the aircraft battery pack (BETA, n.d.).¹ (BETA also has a mobile solution called the Mini Cube, which offers tens of kilowatts for lower-power use cases.) These site-level electrical requirements (nominally 480 V three-phase feeders, large upstream breakers, and dedicated transformer capacity) determine whether an airport can support fast aircraft charging without extensive and costly utility upgrades.

6.1 Airport Status Profiles

The existing infrastructure and utility capabilities of the ARC study airports were derived primarily from each airport's Master Plan documents, as well as through direct communication with airport management. To supplement this, the research team issued a comprehensive survey to all 37 cohort airports and, with strong support from state aviation division partners, achieved a 100 percent completion rate. This survey was designed to capture detailed information on current airport infrastructure and utility capacities, while also gathering valuable data on which electric aviation use cases airports were beginning to plan for or actively implement.

In addition to the survey effort, each participating airport provided its Master Plan, which was carefully reviewed to assess its potential to support electric aviation. These documents offered a foundational understanding of each airport's development trajectory, facility investments, and long-term planning priorities. Throughout the process, state aviation division partners played a critical role by helping to identify relevant airport characteristics and facilitating direct engagement with both airport management and aviation planning oversight authorities, ensuring that the research captured the most accurate and comprehensive picture of readiness across the cohort airports.

6.2 Existing Utility Airport Capabilities

Among the cohort of 37 airports within Appalachia, seven airports have three-phase power (18.9 percent). These airports include:

- Julian Carroll (JKL), Jackson, Kentucky
- Middlesboro / Bell County (1A6), Middlesboro, Kentucky
- Russell County (K24), Russell Springs, Kentucky
- Wendell H Ford, Chavies, Kentucky
- Shelby-Cleveland County Regional (EHO), Shelby, North Carolina
- Richard Downing (I40), Coshocton, Ohio
- Central Regional Airport (RGA), Richmond, Kentucky

Three-phase power is a type of electrical power distribution that uses three alternating currents offset in phase to deliver electricity more efficiently and reliably than single-phase systems. It is capable of carrying larger loads, reducing power loss, and providing a steady flow of energy, which makes it essential for supporting high-demand applications such as electric aircraft charging infrastructure. For airports considering electric aviation, the availability of three-phase power is perhaps the most important infrastructure consideration, as it directly impacts the airport's ability to install and operate charging

stations for both small and large electric aircraft. Without sufficient three-phase power, airports may face significant barriers to scaling up electric aviation operations.

¹ As an important note, the BETA charger also accepts very high DC voltage (on the order of up to 1,000 Vdc), which means the on-site AC–DC power conversion must be robust and sized accordingly.

Table 3. ARC Cohort Airport Operations and Three-Phase Power Statistics (ITRE, 2025).

Airport Full	City	St	Elevation	Single Engine Aircraft	Multi Engine Aircraft	Jet Engine Aircraft	Helicopters	Air Taxi Operations	GA Local Operations	GA Itin Operations	Military Operations	Max Runway Length	Three-Phase Power
Ashland Regional (DWU)	Worthington	KY	546.7	23	1	2	0	550	3,795	2,970	275	5,402	0
Big Sandy Regional (SJS)	Debord	KY	1,221.5	14	0	1	1	900	3,630	2,800	250	5,051	0
Fleming-Mason (FGX)	Maysville	KY	913.3	20	0	0	1	0	6,320	10,500	250	5,002	0
Julian Carroll (JKL)	Jackson	KY	1,380.9	0	0	0	0	50	200	75	50	4,400	Yes
Lake Cumberland Regional (SME)	Somerset	KY	927.3	25	4	5	6	1,447	7,050	18,000	1,500	5,801	0
London/Corbin/Magee (LOZ)	London	KY	1,212.3	33	1	1	4	4,042	8,680	2,852	13,454	5,751	0
Central Regional Airport (RGA)	Richmond	KY	1,002.5	55	7	0	0	1,800	25,000	11,540	440	5,001	Yes
McCreary County (18I)	Stearns	KY	1,370.4	4	0	0	0	84	525	220	52	2,999	0
Middlesboro/Bell County (1A6)	Middlesboro	KY	1,154.3	24	4	0	0	500	9,350	7,500	200	3,633	Yes
Morehead-Rowan County Clyde A Thomas Regional (SYM)	Morehead	KY	1,028.4	23	1	0	2	50	4,000	2,950	300	5,500	0
Mount Sterling/ Montgomery County (IOB)	Mt. Sterling	KY	1,019.3	60	14	2	5	4,658	18,400	15,985	875	5,000	0
Russell County (K24)	Russell Springs	KY	1,010.3	9	3	1	0	220	5,250	3,300	220	5,010	Yes
Stanton (I50)	Stanton	KY	651.1	11	1	0	0	225	2,100	2,800	60	2,996	0
Tompkinsville/ Monroe County (TZV)	Tompkinsville	KY	1,036.2	42	10	0	0	840	8,720	1,600	300	4,000	0
Tucker-Guthrie Memorial (I35)	Harlan	KY	1,564.1	7	2	0	1	500	2,520	3,960	500	3,461	0
Wayne County (EKQ)	Monticello	KY	962.6	9	1	0	0	760	2,900	4,800	180	4,000	0
Wendell H Ford (CPF)	Chavies	KY	1,256.8	11	3	3	1	1,320	3,850	4,200	800	5,499	Yes
West Liberty (9I3)	West Liberty	KY	934.0	17	0	0	0	100	2,200	2,000	10	2,400	0
Williamsburg-Whitley County (BYL)	Williamsburg	KY	1,177.7	14	0	0	0	1,500	3,450	500	50	5,499	0
Jackson County (24A)	Sylva	NC	2,857.0	12	0	0	0	150	1,600	2,500	200	3,210	0
Rutherford County/ Marchman Field (FQD)	Rutherfordton	NC	1,077.3	41	8	3	3	0	3,650	8,000	500	5,000	0
Shelby-Cleveland County Regional (EHO)	Shelby	NC	846.6	67	7	1	0	0	10,000	8,000	200	5,001	Yes
Western Carolina Regional (RHP)	Andrews	NC	1,698.7	39	4	0	1	1,000	14,000	5,000	500	5,500	0
Alexander Salamon (AMT)	Winchester	OH	896.0	16	0	0	0	0	1,344	72	0	3,558	0
Cambridge Municipal (CDI)	Cambridge	OH	798.8	11	0	0	2	477	346	500	38	4,298	0
Gallia-Meigs Regional (GAS)	Gallipolis	OH	565.9	13	2	0	2	40	13,000	5,230	200	3,999	0
Geary A Bates/ Jefferson County (2G2)	Wintersville	OH	1,198.0	31	1	1	1	246	9,573	456	150	5,001	0
Greater Portsmouth Regional (PMH)	Portsmouth	OH	663.4	25	0	0	0	400	27,000	18,030	100	5,001	0
Highland County (HOC)	Hillsboro	OH	977.3	21	0	0	0	32	4,426	4,426	228	3,520	0
James A Rhodes (JRO)	Jackson	OH	726.2	18	0	1	1	728	4,500	550	275	5,201	0
Lawrence County Airpark (HTW)	South Point	OH	567.1	24	0	0	0	300	7,200	2,750	166	2,998	0
Monroe County (4G5)	Woodfield	OH	1,197.1	10	0	0	4	10	100	860	54	3,805	0
Northeast Ohio Regional (HZY)	Jefferson	OH	926.0	21	1	2	0	145	528	520	2	5,900	0
Ohio University (UNI)	Albany	OH	765.7	32	6	1	0	800	58,400	51,100	72	5,600	0
Pike County (EOP)	Waverly	OH	661.1	9	1	0	0	0	800	1,300	12	4,899	0
Richard Downing (I40)	Coshocton	OH	978.9	16	3	0	0	2,500	15,000	4,200	100	5,001	Yes
Vinton County Airpark (22I)	New Plymouth	OH	954.2	8	0	0	0	0	2,750	2,200	275	3,500	0

Understanding an airport's current operations also provides insight into its existing demand profile and potential readiness for electric aviation. The presence of single-engine aircraft often indicates a focus on smaller general aviation operations, which could represent early opportunities for electric aircraft adoption. Multi-engine aircraft, jet aircraft, and helicopters suggest progressively higher energy needs and more diverse operational use cases, including passenger transport, cargo, or specialized missions. Flight operations data, including the frequency and types of movements, helps quantify the scale of electricity demand that may arise with electrification.

This information was integrated into the study's feasibility analysis to evaluate which airports are best positioned to transition to electric aviation. While three-phase power availability stands out as the most critical enabling infrastructure, other factors—such as the types of aircraft currently served, the volume of operations, and the airport's overall demand profile—are also essential in determining readiness. Together, these considerations provide a comprehensive understanding of each airport's capacity to support electric aviation use cases and highlight the infrastructure upgrades that may be required for successful adoption.

6.3 AAM Scenarios Requirements

The rapid adoption of electric vehicles has driven significant advancements in charging technologies, which now serve as a foundation for the emerging electric aviation sector. Understanding the types of chargers, their capabilities, and their impact on vehicle operations is critical to evaluating airport readiness for Advanced Air Mobility (AAM). The following section outlines charger levels, aviation-specific adaptations, battery health considerations, and how charging feasibility aligns with different aviation use cases.

6.4 Electric Aircraft Charging Scenarios

With the growth of electric ground vehicles (EVs), charging infrastructure has developed around three charger levels. Level 1 chargers use standard 120V outlets, offering slow charging (2–4 miles of range per hour), suitable for home use. Level 2 chargers rely on 240V outlets, common for household appliances, and provide 12–32 miles of range per hour, making them widely used in public parking and increasingly in residential garages. Level 3 chargers (Fast Chargers) deliver 100–250 miles of range in 30–45 minutes and are critical for long-distance travel, generally located at dedicated charging stations. Companies such as EVgo and Electrify America use standard CCS connectors, while Tesla has built a nationwide proprietary Supercharger network.

In the Advanced Air Mobility (AAM) sector, manufacturers are adapting or designing new chargers. Beta Technologies' Charging Cube, built on CCS standards, is supported by several major industry players, while its Mini Cube offers portable charging options. Joby Aviation has introduced its proprietary Global Electric Aviation Charging System (GEACS). Both are comparable in power to Level 3 EV chargers. Representative chargers used in the study included Level 2, Level 3, and multichannel variants, with specifications ranging from 12 kW to 1,400 kW. Multichannel chargers are particularly important for aircraft requiring simultaneous charging of multiple batteries.

Battery health plays a critical role in determining charging methodology. To maximize longevity, charging follows a cycle of resting, fast charging at constant current, then slow charging at constant voltage, with another rest period for cooling. The proportion of charge delivered during constant current versus constant voltage depends on battery age, with newer batteries replenishing a higher share under constant current.

Charging times may widely vary. A baseline vehicle charged on a single Level 2 charger could require 19–36 hours, while multichannel Level 3 chargers reduced this to under an hour, even for older batteries. The feasibility of charging also depends on use case. Leisure flights, with low utilization, can rely on Level 2 charging. More demanding operations—such as regional air mobility, corporate flights, flight training, tourism, cargo delivery, and medical services—require faster turnaround and therefore depend on Level 3 multichannel charging. While cargo delivery requires the most energy, its scheduled operations allow for overnight charging. Conversely, medical services, though less energy-intensive, require immediate charging availability to maintain readiness.

In summary, while Level 2 chargers are sufficient for light or infrequent operations, multichannel Level 3 chargers are essential for high-frequency and mission-critical AAM applications, making them a cornerstone of airport electrification planning. **Table 4** shows representative flight missions for the nine electric aviation use cases evaluated in this study. The table illustrates the time required to charge an electric aircraft executing one of these missions, based on the type of charger.

Table 4. Use Case Missions and Associated Charging Scenarios (ITRE, 2025).

Use Case	Representative Mission	Energy (MJ)	Representative Charger	Charge Time (hr:min)
On-Demand Air Taxi	50-mile 4 Passenger	481.2	Level 2 (12kW)	13:06
			Level 2 MC (48kW)	03:42
			Level 3 (350kW)	01:01
			Level 3 MC (1400kW)	00:41
Regional Air Mobility	125-mile 6 Passenger	1592	Level 2 (12kW)	51:54
			Level 2 MC (48kW)	13:24
			Level 3 (350kW)	02:21
			Level 3 MC (1400kW)	01:00
Airport Shuttle	75-mile 4 Passenger	666.9	Level 2 (12kW)	19:48
			Level 2 MC (48kW)	05:24
			Level 3 (350kW)	01:15
			Level 3 MC (1400kW)	00:45
Emergency Medical Services	50-mile 2 Passenger	372.5	Level 2 (12kW)	10:12
			Level 2 MC (48kW)	03:00
			Level 3 (350kW)	00:50
			Level 3 MC (1400kW)	00:40
Corporate/Business Aviation	125-mile 4 Passenger	1245	Level 2 (12kW)	40:48
			Level 2 MC (48kW)	10:36
			Level 3 (350kW)	01:58
			Level 3 MC (1400kW)	00:56
Cargo/Freight Delivery	150-mile 6 Passenger	2646	Level 2 (12kW)	88:54
			Level 2 MC (48kW)	22:42
			Level 3 (350kW)	03:37
			Level 3 MC (1400kW)	01:20
Flight Training	125-mile 2 Passenger	985.9	Level 2 (12kW)	32:24
			Level 2 MC (48kW)	08:36
			Level 3 (350kW)	01:40
			Level 3 MC (1400kW)	00:51
Tourism	75-mile 6 Passenger	823.9	Level 2 (12kW)	24:18
			Level 2 MC (48kW)	06:30
			Level 3 (350kW)	01:24
			Level 3 MC (1400kW)	00:47
Leisure	100-mile 2 Passenger	711.4	Level 2 (12kW)	22:24
			Level 2 MC (48kW)	06:06
			Level 3 (350kW)	01:20
			Level 3 MC (1400kW)	00:46

Source: NCSU, 2025

7. AAM Readiness Preparation

Existing airport capabilities were examined and compared against multiple scenarios of advanced air mobility (AAM) implementation. This analysis was supported by state aviation division partners, who provided valuable information on state- and airport-specific electric aviation initiatives and planning efforts. By aligning this information with potential AAM deployment scenarios, the study was able to highlight where airports are well-positioned for early adoption and where additional investment or planning will be needed.

7.1 AAM Readiness Requirements

To assess readiness for electric aviation, the study relied on a combination of current aviation operations data, based aircraft inventories, and potential use cases. These factors helped determine the operational viability of electric aircraft at each airport, ensuring that recommendations were grounded in both demand potential and infrastructure capacity. An airport manager's survey further supplemented the analysis by capturing local perspectives on which use cases, such as regional mobility, flight training, or EMS, airports were most interested in pursuing.

As a deliverable for this task, each airport was assigned an electric aviation profile that synthesizes its unique capabilities and considerations. These profiles provide a concise yet comprehensive reference for decision-makers and stakeholders, ensuring that each airport's opportunities and challenges are clearly understood. Complete electric aviation profiles for all study airports are included in *Appendix D: Electric Aviation Readiness Profiles*.

In addition to the airport survey, the feasibility analysis results provided guiding insight into viable use cases for Appalachian cohort airports. Additionally, community outreach and engagement played a pivotal role in helping determine if airports were ready for electric aviation.

7.2 Airport AAM Readiness Scenarios

Each airport in Appalachia has its own set of unique capabilities, limitations, and opportunities that shape its readiness for electric aviation. Unlike conventional aviation, which can be supported almost universally by existing fuel infrastructure, electric aviation requires new forms of energy delivery, storage, and resilience. Factors such as available grid capacity, location within the regional airspace system, proximity to major population centers, and alignment with specific use cases all play critical roles. In this way, no two airports enter the transition from the same starting point. Some airports may have strong electrical capacity and a supportive community but lack regional demand, while others may have strong market demand but insufficient electrical infrastructure to support charging needs.

In the current phase of electric aviation network build-out, one of the most significant differentiators between airports is the presence of three-phase power. Without three-phase power, an airport risks being left behind as charging networks expand, because this capability is a baseline requirement for fast charging and for scaling infrastructure to multiple aircraft operations. BETA Technologies has recognized this need in its site selection, having already chosen more than 50 airports along the eastern seaboard and into the Midwest to host its chargers. Each of these airports demonstrated the ability to supply three-phase power, proving that readiness is not simply about physical runway length or location, but also about electrical resilience.

For airports with lower traffic volumes, a single charger may be sufficient to serve their role in the emerging network. These airports may focus on providing reliable access for corporate operators, EMS missions, or training flights. By contrast, larger airports or those located near major urban centers will be better positioned to deploy multiple charging stations, accommodating higher traffic volumes from regional air mobility providers, shuttle services, and cargo delivery operations. The scale of charging infrastructure deployment is thus tied not only to demand projections but also to the strength and adaptability of the local grid. Resilience measures such as backup generation, energy storage, and microgrids will be necessary to ensure reliability, especially during peak usage or disruptions.

Electric grid capabilities are central to this transition. A strong grid connection, supported by regional utilities, determines whether an airport can support even one charger, let alone a cluster of them. Resilience, redundancy, and forward planning are equally important, ensuring that electric aviation can continue to operate in the face of storms, outages, or high seasonal demand. Airports that demonstrate proactive planning with utility providers will be far more competitive in securing investments from manufacturers and operators alike.

Determining which airports are the most viable for electric aviation requires not just technical assessments of electrical capacity but also consideration of community buy-in. Local support is crucial for projects that involve upgrades to infrastructure, land use planning, or changes in operational patterns. Communities that see value in electric aviation—whether through improved connectivity, new business opportunities, or reduced environmental impact—will be more likely to support investments and integrate them into broader regional strategies. Conversely, airports lacking community engagement may find it difficult to secure the approvals and funding necessary to move forward.

For this study, each of the 37 cohort airports were evaluated amongst each other by nine primary use cases for electric aviation: on-demand air taxi, regional air mobility, airport shuttle, emergency medical services (EMS), corporate and business aviation, cargo and freight delivery, flight training, tourism, and leisure. The top 10 airports in the study cohort are by use case are shown in **Table 5** and their appearances in the top 10 are shown in **Table 6**. For the full set of rankings by use case see *Appendix B: Cohort Optimal Electric Aviation Scenarios*.

Ultimately, the future of electric aviation will not be determined by a one-size-fits-all model but by the unique interplay of infrastructure, demand, and community readiness at each airport. By recognizing the diversity of airport capabilities and aligning them with specific market use cases, stakeholders can ensure that investments in electric aviation infrastructure are targeted, resilient, and positioned for long-term success. This nuanced approach acknowledges that while three-phase power is the foundational requirement, broader considerations will shape which airports lead and which airports lag in the transition to electric aviation.

Table 5. Optimal Electric Aviation Use Case Scenarios based on the Feasibility Analysis – Top 10* (ITRE, 2025).

Rank	Air Taxi	RAM	Airport Shuttle	EMS	Corporate / Business Aviation	Air Cargo	Flight Training	Tourism	Leisure
1	2G2	EHO	EHO	2G2	HOC	EHO	RGA	2G2	UNI
2	EHO	2G2	2G2	I40	9I3	HOC	UNI	RGA	RGA
3	HOC	I40	I40	CDI	18I	2G2	EHO	EHO	EHO
4	I40	RGA	HOC	HTW	HZY	9I3	SME	SME	SME
5	AMT	HOC	AMT	DWU	EHO	DWU	LOZ	CDI	CDI
6	CDI	DWU	CDI	EHO	RGA	CDI	HTW	I40	I40
7	EOP	FQD	EOP	4G5	AMT	HTW	FQD	DWU	DWU
8	22I	CDI	FQD	22I	FGX	SME	SYM	HTW	HTW
9	RGA	AMT	RGA	RGA	22I	RGA	PMH	22I	22I
10	FQD	EOP	22I	SME	2G2	I40	CPF	4G5	4G5

*Airport names are as follows: 18I - McCreary County, 22I - Vinton County Airpark, 2G2 - Geary A Bates/ Jefferson County, 4G5 - Monroe County, 9I3 - West Liberty, AMT - Alexander Salamon, CDI - Cambridge Municipal, CPF - Wendell H Ford, DWU - Ashland Regional, EHO - Shelby-Cleveland County Regional, EOP - Pike County, FGX - Fleming-Mason, FQD - Rutherford County/ Marchman Field, HOC - Highland County, HTW - Lawrence County Airpark, HZY - Northeast Ohio Regional, I40 - Richard Downing, LOZ - London/Corbin/Magee, PMH - Greater Portsmouth Regional, RGA - Central Regional Airport, SME - Lake Cumberland Regional, SYM - Morehead-Rowan County Clyde A Thomas Regional, UNI - Ohio University.

Table 6. Airports Ranking in the Top 10 for One of the Nine Use Cases (ITRE, 2025).

Airport	Code	County	City	State	No. of Times Ranked in Top 10
Central Regional Airport	RGA	Madison	Richmond	KY	9
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	9
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	7
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	7
Richard Downing	I40	Coshocton	Coshocton	OH	7
Vinton County Airpark	22I	Vinton	New Plymouth	OH	6
Ashland Regional	DWU	Boyd	Worthington	KY	5
Highland County	HOC	Highland	Hillsboro	OH	5
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	5
Lawrence County Airpark	HTW	Lawrence	South Point	OH	5
Alexander Salamon	AMT	Adams	Winchester	OH	4
Rutherford County Airport	FQD	Rutherford	Rutherfordton	NC	4
Monroe County	4G5	Monroe	Woodsfield	OH	3
Pike County	EOP	Pike	Waverly	OH	3
West Liberty	9I3	Morgan	West Liberty	KY	2
Ohio University	UNI	Athens	Albany	OH	2

7.3 Funding Source Mobilization

Local, state, federal, and other potential sources of financial support were systematically identified as part of this study to ensure that planning recommendations were grounded in realistic implementation pathways. The project team reviewed applicable grant programs, incentive structures, and funding mechanisms that could support AAM-related infrastructure, workforce development, and airport improvements. Findings from this analysis were communicated during funding source engagements, where planning concepts were aligned with program eligibility requirements and policy objectives. This process helped clarify how different funding sources could be layered or sequenced to support near- and longer-term investments.

The project team held targeted project update meetings to share this information with key stakeholders, including airport sponsors, local governments, and state and regional partners. These meetings provided opportunities to present interim findings, discuss funding applicability, and gather feedback on implementation feasibility. By sharing funding insights alongside technical and market analysis, the team ensured that stakeholders understood not only what investments were recommended, but also how those investments could potentially be financed.

Ideal locations for investment were determined by integrating multiple lines of evidence, including airport readiness, community support, infrastructure needs, market demand, and alignment with identified funding opportunities. Airports that demonstrated strong potential for AAM use cases, availability of complementary assets such as utilities and training institutions, and clear economic development goals were prioritized. This approach helped focus limited financial resources on locations where investment was most likely to generate sustained benefits and attract follow-on public and private capital.

Ultimately, this study established a foundation for understanding how airports and their Appalachian host communities could benefit from targeted investment, particularly in pilot training. By connecting funding sources to infrastructure readiness and workforce development opportunities, the analysis highlighted pilot training as a use case with strong alignment across economic, educational, and funding objectives. This foundation equips communities and airport sponsors with the information needed to pursue

investment strategies that support job creation, skill development, and long-term economic resilience in the Appalachian region.

7.4 Airport Upgrades and Budgets

The shift to electric aviation requires a significant upgrade to an airport's infrastructure, a complex process that can take 1.5 to 2 years to complete. This transition is vital for airports, especially those in the Appalachian region, to remain competitive and support the new era of electric flight.

The installation of electric charging infrastructure is the foundation of a new business model for airports and a critical enabler for the entire electric aviation ecosystem. There are several phases involved in the full-scale installation of an electric charging system.

Project Initiation. This initial phase involves a detailed review of an airport's current layout and future development plans. The goal is to scout and evaluate potential locations for chargers, ensuring the chosen spot is not only accessible to aircraft but also meets all operational and regulatory requirements.

Site Design & Engineering. Once an on-airport location is selected, the project moves into the design stage. This involves developing comprehensive engineering blueprints, including civil and electrical plans, which are crucial for securing permits and guiding the construction team.

Utility Connection & Power Planning. This phase focuses on the essential task of coordinating with local power companies. The objective is to determine the necessary utility upgrades and new equipment, such as transformers and cabling, to handle the high-power demands of electric aircraft charging.

Equipment Sourcing & Logistics. This is the procurement phase where all necessary charging equipment is manufactured and acquired. A key focus is on managing the supply chain to ensure all components meet the project's specifications and are delivered on time for installation.

Regulatory Approval. Before any digging begins, all required construction permits—including electrical, building, and zoning—must be secured. This phase is about navigating the regulatory landscape and coordinating with all relevant authorities to ensure the project is fully compliant.

Construction & On-Site Installation. This is the hands-on phase where the physical charging infrastructure is built. It includes everything from excavating and laying underground wiring to installing support pads and transformer vaults. The construction is closely managed, with key inspections at every major milestone to ensure quality and safety.

System Activation & Final Commissioning. The final phase involves activating the new charging site. This begins with the utility provider connecting the system to the power grid, followed by on-site testing and commissioning to confirm that all equipment is functioning correctly and is ready for operational use.

This new infrastructure is designed to support all nine electric aviation use cases and their associated aircraft charging. It's important to note that charging times will vary by aircraft. For example, small eVTOLs or short-range aircraft, such as those used for pilot training, may take as little as 10–30 minutes to charge. Meanwhile, larger regional electric aircraft, like the ALIA-class with its 350-kWh battery, typically require 40–90 minutes.²

The cost of installing an aircraft charger at a general aviation airport depends largely on existing electrical infrastructure. Airports with three-phase power already in place may only require basic trenching and connections, keeping costs relatively low. In contrast, airports without sufficient service may face significant utility upgrades such as transformers, substations, or high-voltage line extensions—often the single largest driver of expense.

Other factors include site preparation, permitting, and regulatory compliance (see previous page for the discussion on the phases of installation). Airports may need to reconfigure pavement, taxiways, or drainage systems to ensure safe access, while also meeting building codes, FAA standards, and environmental requirements. Some airports also invest in resilience measures like battery storage or backup generation, which increase costs but improve reliability. Finally, local labor rates, contractor availability, and the level of support from utilities and the surrounding community can make a substantial difference—strong partnerships and incentive programs can bring costs down, while resistance or complex permitting can push them higher. With those cost variations in mind, BETA technologies provided a global estimate of installation costs for one electric aviation charging system. Altogether, costs are estimated to be approximately \$850,000 for a general aviation airport in Appalachia (see **Figure 5**).

² The ALIA is often quoted as charging in about an hour under ideal conditions.

Figure 5

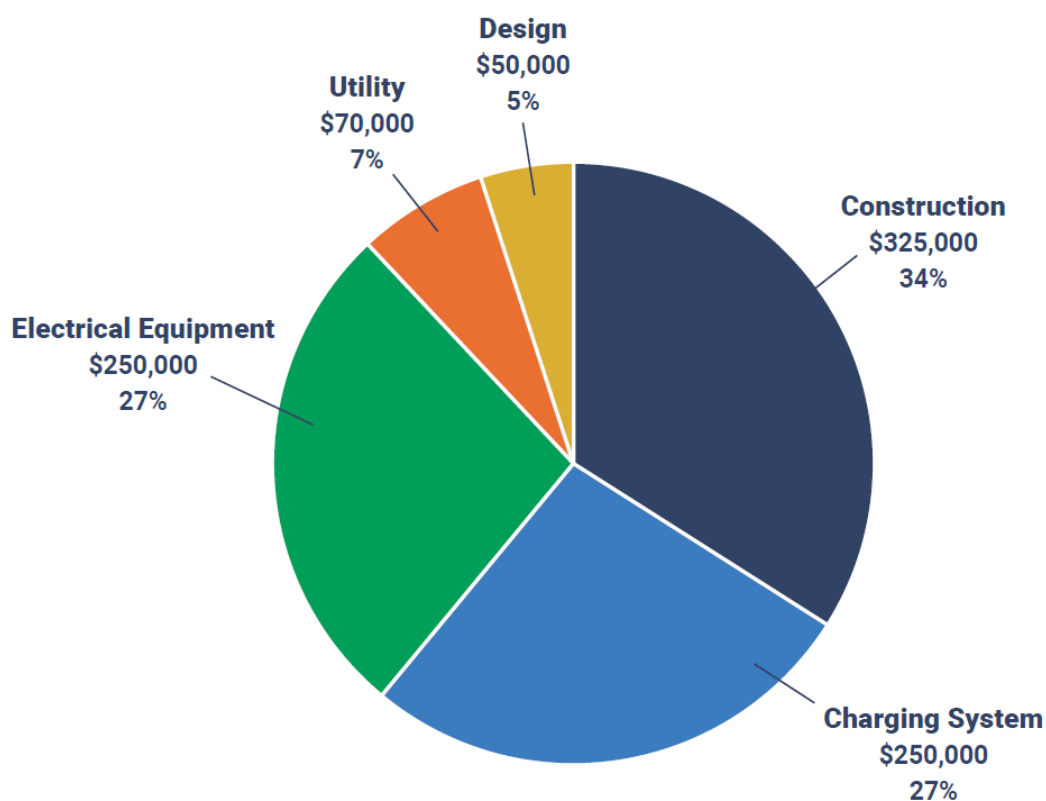


Figure 5. Electric Aviation Charging System Costs (Ballpark values; [BETA, 2025])

8. Prioritizing AAM Readiness

Appalachia general aviation airports comprise an extensive public asset. The 37 airports in the study cohort are all publicly-owned, typically by local or county governments, which provide both financial and administrative support for air[port operations and physical infrastructure requirements. The ARISE study feasibility analysis identified potential infrastructure improvement needs required to achieve AAM readiness for varying use cases. Such improvements will require the support of host communities' local governments. Justifying additional public investment to achieve AAM readiness will require that the needed improvements address community priorities.

8.1 Eliciting Public Priorities

This study was designed around the recognition that it was both appropriate and necessary that the public be engaged to help determine which of the potential AAM uses they would prefer their communities' airports to emphasize. A 2023 ARC-supported public awareness project of AAM use priorities in Appalachian communities in Ohio had provided insights on those priorities, and the importance of public engagement in aviation matters. The methodology in that research used cooperation with Appalachian Ohio's four Local Development Districts (LDDs) in conducting public engagement activities within host communities. That experience informed the methodology used in this ARISE PASEAF planning study.

Local input was treated as essential qualitative information and was integrated alongside technical and market analyses to help determine which AAM use cases were most viable across the Appalachian region. The project team engaged directly with Appalachian communities in Kentucky, Ohio, and North Carolina to discuss potential Advanced Air Mobility (AAM) use cases, associated benefits, and local priorities for their airports. Engagement activities included in-person visits, structured meetings with airport managers and local stakeholders, and follow-up coordination with community representatives.

These conversations focused on understanding local economic conditions, transportation needs, and community goals, as well as identifying which AAM applications residents and airport operators believed would be most beneficial for their areas. Community feedback helped contextualize differences in geography, workforce capacity, institutional presence, and economic development priorities among airports. By asking communities which uses they would prefer their local airports to emphasize, the project team was able to distinguish between theoretical applicability and practical, community-supported opportunities, strengthening the relevance and credibility of the resulting findings.

This engagement ensured that the assessment reflected local perspectives rather than relying solely on externally defined use case assumptions.

8.2 Regional AAM Briefings

The engagement process culminated with the project lead GVS working with the fifteen Appalachian local development districts (LDDs) encompassed by the PASEAF airport cohort to convene briefings on the current role of aviation and the prospective roles of AAM use cases and potential benefits. (Table 7)



Table 7 Local Development Districts (LDD) in Study Area

LDD
Barren River Area Development District
Big Sandy Area Development District
Bluegrass Area Development District
Buckeye Hills Regional Council
Buffalo Trace Area Development District
Cumberland Valley Area Development District
Eastgate Regional Council of Governments
FIVCO Area Development District
Foothills Regional Commission
Gateway Area Development District
Kentucky River Area Development District
Lake Cumberland Area Development District, Inc.
Ohio Mid-Eastern Governments Association
Ohio Valley Regional Development Commission
Southwestern Commission

GVS collaborated with the LDDs to conduct a series of regional briefings of local government officials and staff, along with members of regional economic development aviation organizations to elicit community stakeholders' discussions and informed prioritization of the applications of AAM at their local airport.

The purpose of these briefings was to engage a cross-section of public and private stakeholders to:

- 1) Inform audiences about the current role of aviation activity and infrastructure in their region
- 2) familiarize audiences with emerging AAM aircraft capabilities and requirements,
- 3) describe emerging AAM "Use Case" applications and potential benefits in the Appalachian region, and
- 4) engage with audiences in prioritizing prospective AAM applications based on the significance of their perceived benefits in their communities.

The briefings were designed to inform and discuss potential policy and program strategies to position Appalachian communities to benefit from near- and long-term opportunities presented by future Advanced Air Mobility applications. A key intended outcome of the engagement was to identify the public purpose value of expected economic development and community service benefits of the studied AAM use cases. Therefore, the briefings concluded with a polling of participants on the significance they assigned to the nine AAM Use Cases discussed.

8.3 AAM Briefings Outcomes

To adjust for the differing number of participants at the LDD briefings, the results of separate LDD polling of priorities for individual AAM use cases were indexed against the average of all uses cases from that specific LDD. The resulting index values ranged from 0.00 for AAM use cases that received no priority scores to as high as 4.26 (Table 8). In this example, the participants in the briefing at the FIVCO Area Development District (KY) had assigned a priority value (4.26) to Emergency Medical Services (EMS) that was 4.26 times the average value they had ascribed to all nine AAM use cases.

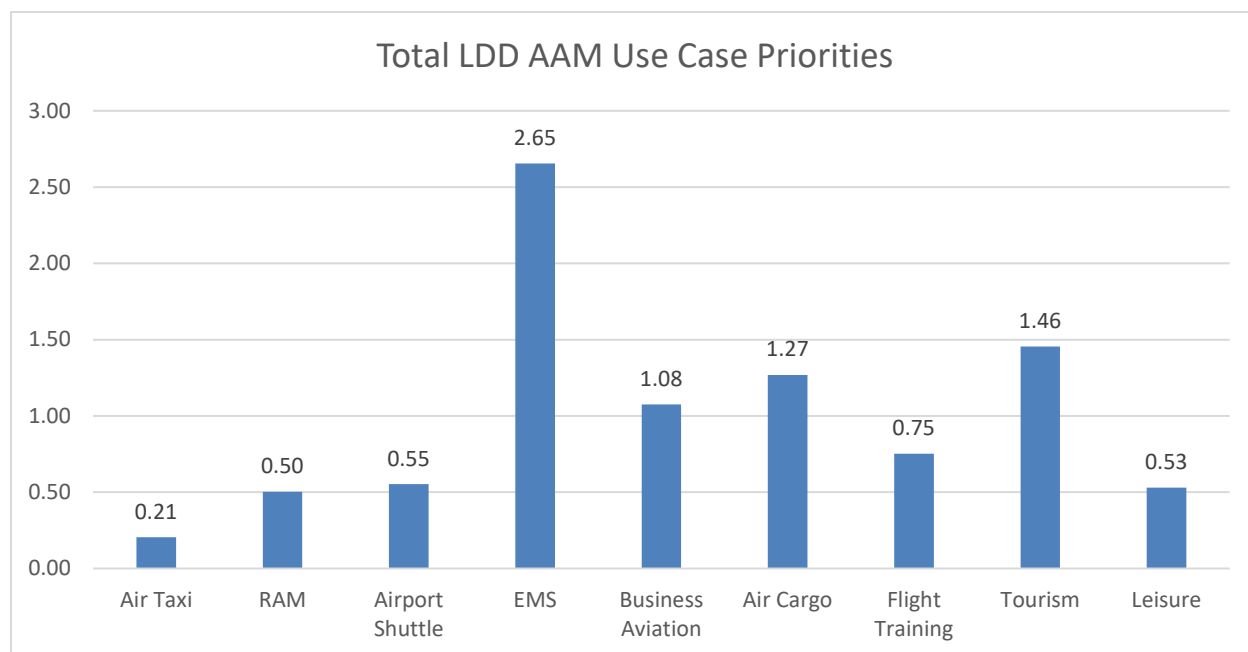
Table 8 AAM Use Case Priority Index

AAM Use Case Priority Index									
	Air Taxi	RAM	Airport Shuttle	EMS	Business Aviation	Air Cargo	Flight Training	Tourism	Leisure
LOCAL DEVELOPMENT DISTRICT									
Barren River Area Development District	0.00	0.00	0.00	3.67	2.00	1.00	0.00	2.00	0.33
Big Sandy Area Development District	0.00	1.35	0.00	2.70	0.90	1.80	0.00	1.80	0.45
Bluegrass Area Development District	0.36	0.54	0.36	3.06	1.62	1.08	0.36	1.62	0.00
Buckeye Hills Regional Council	1.13	1.13	1.31	1.69	0.75	1.31	1.13	0.56	0.00
Buffalo Trace Area Development District	0.00	0.00	0.44	2.21	1.48	1.18	1.62	1.62	0.44
Cumberland Valley Area Development District	0.00	0.00	0.00	2.35	1.17	2.35	0.78	1.96	0.39
Eastgate Regional Council of Governments	0.21	1.07	0.54	2.57	0.54	2.25	0.75	0.64	0.43
FIVCO Area Development District	0.00	0.00	0.00	4.26	1.42	0.95	0.00	1.42	0.95
Foothills Regional Commission	0.70	1.30	1.03	1.63	0.98	0.87	0.92	0.81	0.76
Gateway Area Development District	0.00	0.39	0.00	3.91	1.96	0.00	1.17	0.78	0.78
Kentucky River Area Development District	0.00	0.00	0.91	2.96	0.23	0.23	1.25	2.73	0.68
Lake Cumberland Area Development District	0.00	0.00	1.14	3.14	1.00	1.43	0.14	2.00	0.14
Ohio Mid-Eastern Governments Association	0.32	0.54	1.50	2.57	1.39	1.29	0.43	0.75	0.21
Ohio Valley Regional Development Commission	0.00	0.00	0.00	1.50	0.00	2.25	1.50	2.25	1.50
Southwestern Commission	0.35	1.24	1.06	1.59	0.71	1.06	1.24	0.88	0.88
AVG LDD INDEX VALUE	0.21	0.50	0.55	2.65	1.08	1.27	0.75	1.46	0.53

As indicated in Table 8, the engagements with the 15 different LDDs found that AAM use cases priorities varied by LDD. Nonetheless, averaging the AAM use case priorities values across all of the LDDs revealed a strong consensus (Figure 6) exists on the significance of certain AAM applications.

- Emergency and Medical Services (EMS): The unanimous top priority across all LDDs was the potential benefits of AAM in applications serving communities' Emergency and Medical Services (2.65). As Appalachian residents, many of the participants were acutely familiar with the challenges of emergency medical poses in the region. Many expressed personal experiences of family members which they hoped might be mediated by the deployment of AAM EMS aircraft. Moreover, several communities among the LDDs had recently experienced weather-related emergencies in which their local general aviation airports had played vital roles as logistical emergency response centers and in which electric drones – a currently available form of AAM – had played important disaster assessment and delivery roles.
- Tourism: A distant, but nevertheless significant, second priority (1.46) was assigned to potential tourism AAM applications. Tourism was recognized as an important source of current and future economic opportunity by many participants. Tourism AAM use case would be a natural fit in enabling scheduled or chartered sightseeing experiences that connect visitors to Appalachia's scenic and cultural attractions, particularly in remote locations otherwise difficult to access. It was also expressed that AAM aerial touring, being electric, would provide a more inexpensive, quieter, and less intrusive alternative to conventional aircraft such as helicopters.
- Air Commerce: Collectively, AAM applications in the Air Cargo (1.27) and Business Aviation (1.08) were valued for their potential to enable more Appalachian businesses to use air commerce transportation strategies for market development, customer engagement, and expediting supply chain logistics. This case was especially valued as beneficial where local airports were already recognized economic development contributors through their proximity to industrial parks and usage by corporate aviation clients.
- Flight Training: The priority assigned to AAM use in flight instruction (0.75) presented an interesting and informative dichotomy between pilots and non-pilots among participants. Non-pilots, who constitute the great majority of both the Appalachian public-at-large and the attendees of the LDD briefings, were largely unaware of their local airports' roles in aviation workforce development and therefore of the relevance of potential AAM applications in that regard. However, the relatively few pilots engaged were highly responsive to the prospect of increasing pilot training through the potential cost savings of electric aviation. And those involved in airport management recognized that electric AAM aircraft in flight training could reduce noise issues concerning nearby residents. Such aviation stakeholders noted that AAM training operations would align well with existing airport infrastructure and could provide tangible local workforce development benefits.

Figure 6



8.4 AAM Economic Strategy Integration

Advanced Air Mobility (AAM) competitive capabilities were integrated into local economic development strategies by explicitly linking emerging aviation technologies to job creation and business growth opportunities at and around Appalachian airports. The project team evaluated how AAM could support direct airport employment, including operations, maintenance, and energy management, while also enabling co-located aerospace and aviation services such as aircraft maintenance, avionics, flight schools, and training providers. In addition, the analysis considered how AAM could strengthen regional air commerce by attracting new businesses, supporting expansion of existing firms, and fostering entrepreneurship that benefits from improved air access and next-generation aviation infrastructure.

Leading airports and their surrounding communities were evaluated as priority economic development locations based on their ability to support these AAM-related activities. Particular attention was given to foundational infrastructure that enables electric aviation, especially the availability or feasibility of developing three-phase power and electric aircraft charging stations. Airports with favorable siting, existing utility access, available land, and community support were identified as having a higher potential to leverage AAM as a catalyst for economic development. This evaluation framed airports not only as transportation assets, but also as strategic employment centers and platforms for long-term regional investment.

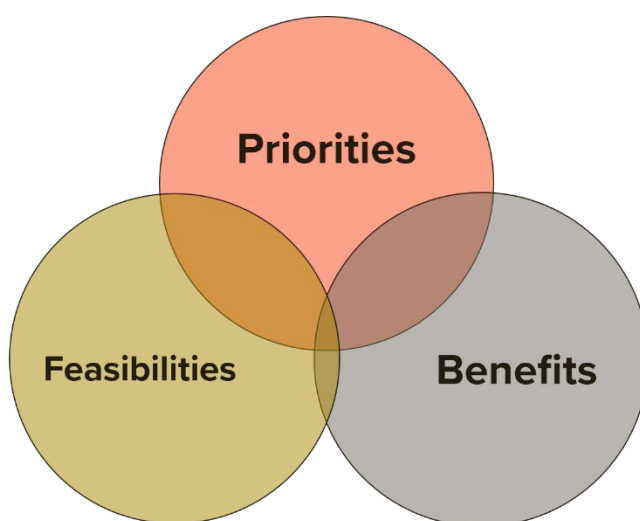
The integration of three-phase power and charging infrastructure was identified as a critical step in positioning these airports for AAM competitiveness. Such infrastructure supports a range of electric aviation operations, reduces barriers to entry for new aircraft and operators, and signals readiness to manufacturers, training organizations, and service providers. From an economic development perspective, these investments create immediate construction and utility-related jobs while also enabling sustained operational employment tied to aviation activity and associated services. By providing three-phase power and electric charging stations, airports can lay the groundwork to become hubs for pilot training and other high-value AAM use cases. Pilot training, in particular, benefits from reliable electric infrastructure due to its repetitive flight cycles and predictable energy needs, making it well suited for early electric aircraft adoption. As training activity grows, it can anchor additional uses such as maintenance training, flight instruction, and aviation education partnerships, reinforcing the airport's role

as a regional center for workforce development, innovation, and air-enabled economic growth.

9. Optimizing AAM Readiness

To capture the true potential of next-generation aviation, Appalachian regional planning must thoroughly evaluate operational feasibility, align with community priorities, and establish a clear public purpose economic rationale. Currently, most—if not all—general aviation airports across Appalachia lack the foundational electrical utility grids, maintenance capabilities, and charging services required to support even basic electric flight operations. This represents a stark challenge because all 232 general aviation airports across the region will eventually need comprehensive modernization to participate in the electrified future of aviation. Neglecting these infrastructure gaps risks cutting off underserved rural communities from modern logistics, healthcare networks, and commerce. Therefore, establishing a balanced readiness strategy is a critical necessity to ensure infrastructure capital is deployed effectively.

Figure 7



The study's work plan was structured into three distinct assessment phases – feasibility, benefits, and local priorities - to ensure that airport preparations maximize the well-being of local residents by identifying and focusing on those AAM use cases most likely to provide important benefits to Appalachian host communities.(Figure 7) Ultimately, combining these three assessment dimensions allows regional leaders to look past generic industry excitement and isolate the exact AAM applications that most heavily warrant immediate implementation.

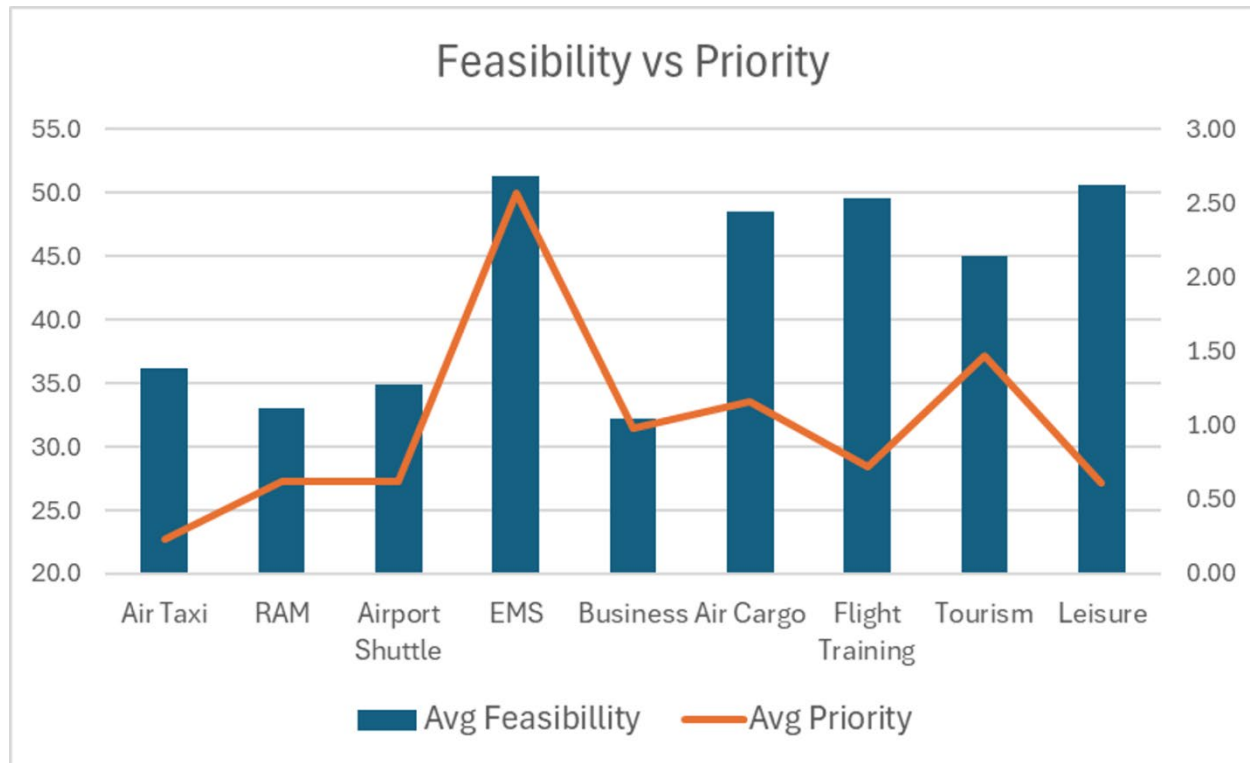
9.1 Integrating Feasibility with Community Priorities

The initial phase focused heavily on evaluating the technical and operational feasibility of various AAM applications while making sure they directly addressed the explicit desires and priorities of host communities. The second phase shifted to identifying the precise, localized physical airport improvements and grid capabilities needed to ground those prospective use cases in reality. The final phase engaged deeply with community stakeholders to rank and prioritize these applications based on their capacity to deliver meaningful public benefits and serve vital local purposes

Combining the results of the feasibility assessment with the articulated community priorities presented examples of significant and potentially fortuitous convergence. (Figure 8) In the Emergency Medical Services (EMS) use case there is a strong alignment of both feasibility and priority suggesting a use case that is likely an AAM application Appalachian communities may realistically expect to address an important public purpose. Indeed, some forms of EMS AAM are already doing so, such as drone usage in

recent public safety and emergency response events. It is also informative that there are use cases, such as Leisure and Air Taxi, for which community priorities are so slow that they likely do not warrant public support regardless of their feasibility. But for the majority of use cases, the simple comparison of feasibility and priority are not sufficiently informative to provide clarity on appropriate AAM readiness emphasis.

Figure 8 AAM Use Cases Feasibility vs Priority



9.2 Optimal AAM Readiness Opportunities

In order to optimize opportunities for airport Advanced Air Mobility (AAM) readiness this study was designed to combine evaluations of technical feasibility, economic benefits, and community priorities. Evaluating any of these dimensions in isolation risks misallocating scarce capital—either by building expensive infrastructure for a highly beneficial use case that is technologically unfeasible, or by funding a highly feasible application that lacks local public purpose or economic utility. Synthesizing these three assessment layers provides policy making clarity and isolates the specific AAM use cases that most warrant potential investment through focusing on the fundamental utility and infrastructure improvements common to electric aviation while targeting the exact applications deemed most valuable by host communities.

The identification of AAM Readiness opportunities is further optimized by integrating the assessed economic benefits of the AAM with the feasibility findings and the articulated community priorities. (Table 9) First, evaluating technical feasibility establishes the baseline operational requirements, detailing the precise electrical utility upgrades and charging infrastructure needed at small general aviation airports. Next, mapping these configurations against localized economic benefits ensures that the proposed applications—such as regional cargo networks or emergency medical services—deliver high-impact multiplier effects, such as reduced supply chain friction or saved travel time. Finally, integrating community priorities provides the vital public-purpose rationale needed to secure local buy-in and mobilize financing.

Table 9

Use Cases	Feasibility	Priority	Benefit
Air Taxi	0.9	0.2	10
RAM	0.8	0.6	95
Airport Shuttle	0.8	0.6	20
EMS	1.2	2.6	30
Business Aviation	0.8	1.0	65
Air Cargo	1.1	1.2	60
Flight Training	1.2	0.7	80
Tourism	1.1	1.5	20
Leisure	1.2	0.6	10

9.3 Distinguishing Near-Term and Long-Term AAM Readiness Opportunities

The presentation of this data combination in table format obscures a dichotomy of AAM Readiness opportunities made dramatically apparent in the “bubble chart” depiction (Figure 9). A bubble chart is a type of chart that visualizes relationships between three or more numeric variables using bubbles, where position and size encode data values. Bubble charts are particularly useful for identifying patterns, clusters, and outliers in datasets where multiple variables interact.

In Figure 9, the feasibility evaluation findings for each AAM Use Case is shown on the X-axis and their articulated Community Priority values are shown on the Y-axis. Lastly, the assessed relative economic Benefit is represented in the size of the resulting AAM Use Case “bubble”. The individual colors used in that depiction are for distinctiveness.

This graphic presentation illustrates a clear differentiation between the feasibilities of those AAM Cases, effectively a distinction between Near-Term opportunities on the right half of the figure with Long-Term opportunities on the left half.

9.3.1 Near Term Opportunities

The Near-Term AAM opportunities included uses cases that principally rely on, or will rely on, uncrewed

AAM aircraft already or soon to become commercially available primarily for current aviation applications. Moreover, the conventional nature of their flight activities, combined with lesser technological performance challenges, led to these use cases imposing lesser infrastructure requirements and therefore fewer airport enhancement needs to achieve AAM Readiness. Of the nine AAM Use Cases assessed in this study, for the overall Appalachian study region five were found to constitute near-term opportunities:

- **Emergency Medical Services (EMS)**
- **Air Cargo**
- **Flight Training**
- Tourism
- Leisure

As depicted in Figure 9, qualifying these five AAM Use Cases by their relative levels of economic benefit finds that **Flight Training, Air Cargo, and EMS** presented the most beneficially significant, near-term AAM Use Case opportunities.

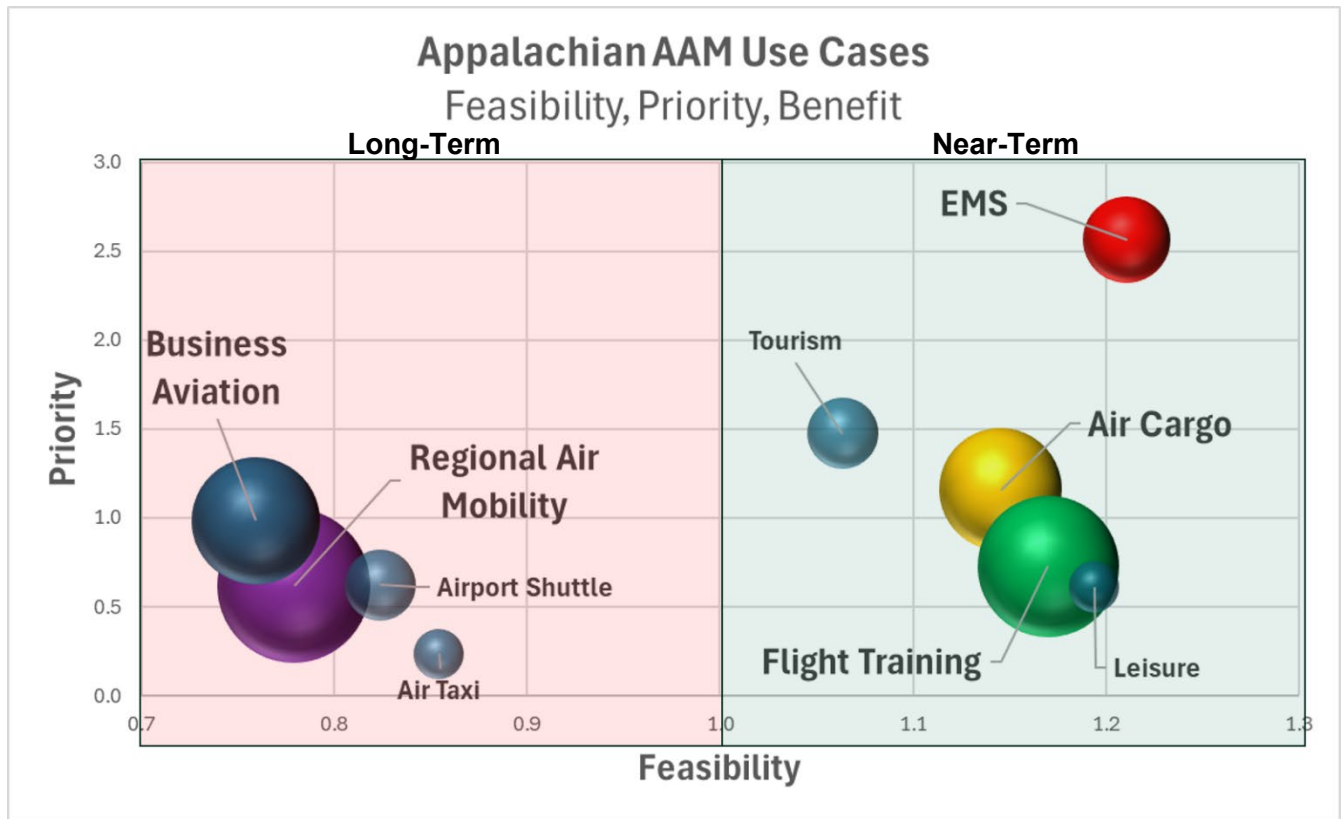
9.3.2 Long-Term Opportunities

The Long-term AAM opportunities - in contrast to the Near-Term - included use cases that are expected to rely on crewed aircraft with uncertain timelines to commercial availability and may address combinations of existing and novel aviation applications. Much of that uncertainty is the result of the more complex technological, logistical, and regulatory issues presented by aircraft of any nature that use pilots and/or transport passengers. Moreover, the unconventional nature of their flight activities, combined with the speculative higher technological performance challenges, led to these use cases being expected to impose significant new infrastructure requirements and therefore substantial costly airport enhancement needs to achieve AAM Readiness. The Long-Term opportunities identified included:

- **Regional Air Mobility (RAM)**
- **Business Aviation**
- Airport Shuttle
- Air Taxis

As depicted in Figure 9, qualifying these four AAM Use Cases by their relative levels of economic benefit found **Regional Air Mobility**, despite its long-term and speculative nature, offers a higher potential economic impact that warrants targeting in cohort airport host community planning. A second use case, Business Aviation, was found to be somewhat less speculative and less economically significant. Nonetheless, **Business Aviation** should be considered as an evolutionary next step, following nearer-term Air Cargo, in AAM applications in air commerce. In that context it also warrants planning consideration.

Figure 9



10. Appalachian AAM Readiness Findings

The deployment of AAM aircraft will either sustainably expand current aviation activity in Appalachian regions, creating new growth through airports and infrastructure prepared to support electric aviation, or it will further leave behind those Appalachian communities whose general aviation airports lack the necessary infrastructure and services required. Paradoxically, forestalling preparation while awaiting AAM industry development, or making prematurely specific facility commitments to speculative AAM uses, both risk delaying the benefits AAM offers Appalachia. While the development of AAM aircraft and use cases is progressing rapidly, this study found that the apparent complexities involved in AAM readiness strategies can be resolved by recognizing the relevance of aviation in Appalachia and taking action to capitalize on the AAM applications that expand aviation's current role in serving community and economic development priorities.

10.1 Current aviation benefits are significant though under-recognized

The study region had an extensive aviation infrastructure and flight activity already generating significant economic and community service benefits, but the current role of aviation was most often unacknowledged and underemphasized in local economic development strategies. The study region is home to 37 general aviation airports with a total of more than 850 aircraft being based in the region.

Collectively, these airports support nearly 600,000 flight operations annually. Yet, an extensive review of the Comprehensive Economic Development Strategies (CEDS) of each of the 15 LDDs found that despite those planning documents' emphasis on the important role of transportation infrastructure in their regions' economic development efforts, aviation and the enabling public airports were very rarely mentioned. This consistent near total absence suggested an under-recognition of the current role of aviation in regional economies, a finding that was echoed in the discussion generated during the subsequent LDD engagement briefings.

The outcome of those discussions suggest this absence results from an understandable systemic but non-deliberate omission. Public officials and local planners often conflate "aviation" exclusively with the scheduled service available through commercial airports. Because general aviation airports handle private, corporate, and emergency flights rather than scheduled commercial airlines, their economic footprint remains invisible to the public. Moreover, other transportation infrastructure - highways, freight rail, and ports - have a highly visible nature and obvious economic connectivity roles that receive priority in planning consideration. Regional economic developers frequently lack access to localized aviation metrics, such as corporate transit values or medical flight impacts. Without clear data linking general aviation to local jobs, aviation is easily overlooked in broader infrastructure strategies.

10.2 AAM "future" is already occurring

While general public attention remains fixed on highly speculative, distant-future visions of urban air taxis, the Advanced Air Mobility (AAM) "future" is already actively occurring. The long-term certification timelines for revolutionary Electric Vertical Takeoff and Landing (eVTOL) concepts have masked the rapid, practical advancement of near-term applications like cargo logistics, medical emergency services, and flight instruction. These deployments leverage established technologies and conventional fixed-wing configurations that bypass the steep regulatory and societal bottlenecks facing urban passenger transport.

This operational evolution is driven by leading-edge manufacturers transitioning next-generation power systems into immediate, real-world utility. For primary pilot training, the shift is already commercially available via the Pipistrel Velis Electro. As the world's first type-certified all-electric airplane, the Velis Electro operates with an FAA light-sport aircraft airworthiness exemption, enabling flight schools to train student pilots with lower noise and emissions, and potentially at much lower costs, thus significantly reducing barriers to pilot training in Appalachia. Well advanced developments are poised to expand the role of air commerce in Appalachia. BETA Technologies has adopted a dual, pragmatic approach with its ALIA platform. Alongside its vertical-lift design, BETA developed a

conventional takeoff and landing (eCTOL) variant tailored strictly for cargo and regional delivery. By prioritizing logistics and installing dedicated charging networks at existing regional airports, BETA is activating practical AAM infrastructure before urban regulations are fully written. Meanwhile, Joby Aviation aggressively pushes the boundary for the long-term passenger market, actively executing rigorous FAA type-certification flights and partnering with major airlines to integrate zero-emission eVTOL air taxis into bustling metropolitan hubs.

Recognizing that AAM readiness requires both near- and long-term milestones ensures that regional planners can capitalize on immediate benefits. Pragmatic, fixed-wing cargo carriers and quiet electric trainers do not require entirely new urban "vertiports." Instead, they can utilize existing regional infrastructure. For geographically isolated areas like Appalachia, these imminent use cases offer the most relevant and immediate solutions for localized pilot recruitment, medical transport, and economic revitalization.

10.3 Imminent Appalachian AAM uses mirror existing general aviation activity

General aviation (GA) encompasses a vast and diverse sector of the aviation industry, strictly defining all civil flights that are not operated by scheduled commercial airlines or the military. Far from being limited to hobbyists, GA serves as a critical economic engine and a flexible transportation network that reaches thousands of communities lacking commercial airline service. This is particularly true in regions with challenging geography, where municipal airports act as vital infrastructure lifelines. The imminent integration of Advanced Air Mobility (AAM) in the Appalachian region is poised to heavily mirror this existing general aviation activity. The uses cases this study found to be most feasible in Appalachian involve applications of AAM electric propulsion technologies to flight activities that the region's general aviation airports already support. Activities such as emergency services, military, air cargo, and flight instruction, which already account for most flights at Appalachian airports, are also among the earliest uses cases of AAM adoption.

Currently, general aviation flight activity in the region spans several critical sectors:

- **Emergency and Medical Services:** Critical Medevac flights, search and rescue, and disaster relief operations that navigate rugged terrain.
- **Air Cargo and Logistics:** Time-sensitive freight delivery connecting isolated communities to regional supply chains.
- **Flight Instruction:** The essential training of the next generation of pilots using local infrastructure.
- **Military Support Operations:** Joint training exercises and logistics utilizing regional airspace.

Because these specific activities already account for the vast majority of operations at Appalachian airports, they represent the most natural entry points for AAM adoption. By leveraging clean, quiet electric propulsion within these established frameworks, AAM will seamlessly enhance general aviation, expanding its capacity to provide rapid connectivity and indispensable public services across the region.

10.4 AAM Feasibility Aligns with Appalachian Priorities

This study integrated a rigorous analysis of Advanced Air Mobility (AAM) use-case feasibility with the specific community benefits prioritized by regional stakeholders. The findings reveal a powerful, organic alignment between core Appalachian community development goals—such as elevating public safety, driving local workforce development, and stimulating regional economic growth—and the most imminent, practical applications of AAM technology. Rather than imposing an external tech framework onto the region, imminent AAM use cases naturally reinforce existing local objectives. For instance, utilizing uncrewed aircraft for emergency medical deliveries or infrastructure inspection

directly supports community resilience while creating high-tech, localized jobs.

Furthermore, the study evaluated the infrastructure gap by comparing the current capabilities of regional cohort airports against the technical readiness requirements of these near-term use cases. The results are highly encouraging: adapting these facilities for early-stage AAM operations would require relatively minimal infrastructure updates. This low-barrier entry stands in sharp contrast to the extensive, capital-intensive, and dedicated infrastructure demands typically associated with high-profile electric vertical takeoff and landing (eVTOL) passenger aircraft.

By focusing on realistic, cargo- and service-oriented aircraft in the near term, Appalachian communities can leverage their existing aviation assets. This allows the region to anchor itself in the emerging aviation economy incrementally, avoiding prohibitive upfront capital investments while securing immediate, tangible benefits for local residents. Ultimately, the study demonstrates that the path to AAM integration in Appalachia is not only technologically viable but economically justifiable and socially impactful.

10.5 AAM advancement has revealed GA underinvestment, especially in utility capabilities

Recent national research has concluded that the deployment of AAM aircraft in both the near- and long-term term will require infrastructure updates to airports everywhere. While such requirements will vary significantly across individual airports, the accelerating electrification of ground and air transportation will require that all airports, large and small, to strengthen their electric utility capacity. Similarly, this study found that the rapid advancement of AAM has revealed systemic underinvestment in general aviation (GA) airports, particularly regarding core utility capabilities, and that Appalachia's airports currently lack the electrical charging infrastructure and necessary utility capability to support electric transportation. In particular, the great majority (30 of 37) of study cohort airports lacked three-phase electrical utility capacity required not only for potential future AAM activity, but for some important current airport operations.

Rather than presenting a daunting barrier, this revelation highlights a practical opportunity to address underinvestment through near-term utility enhancements. While long-term AAM concepts like electric vertical takeoff and landing (eVTOL) aircraft present complex infrastructure demands, airports can achieve early AAM readiness through simpler, incremental upgrades tailored to more imminent use cases, such as hybrid-electric regional air mobility. Addressing the lack of three-phase power represents a highly manageable starting point. Introducing this standard utility serves a dual purpose: it stabilizes existing, underfunded airport operations today while establishing the groundwork necessary for low-tier charging infrastructure tomorrow.

By focusing on these immediate, scalable upgrades rather than the massive power requirements of speculative aircraft, GA airports can capture early AAM benefits without overextending resources. Incremental utility investments enable legacy airfields to support first-generation electric and hybrid aircraft, capturing early regional cargo and passenger traffic. This steady integration secures new revenue streams that can progressively fund ongoing airfield maintenance, allowing GA airports to avoid obsolescence and adapt at a sustainable pace.

11. Appalachian AAM Readiness Principles

The emergence of AAM presents both a significant opportunity and complex planning challenges for Appalachian communities. Any AAM Readiness planning should address the priorities and appropriate responsibilities particular to the region. It should also differentiate among the complex and varying levels of governmental policy responsibilities involved in the commercial advancement of AAM and focus on the issues appropriate for consideration and potential action by the regional and local governments of the Appalachian. In addition, it must recognize that public opinion regarding AAM is at an early but nonetheless critical juncture, with the AAM industry at risk of being stigmatized negatively before its benefits can be appreciated. This project therefore recommends Appalachian AAM Readiness planning navigate this complex environment by focusing on maximizing the economic and community development potential of aviation in the region, while also preparing the region to capitalize on the additional aviation benefits of potential AM use cases that address communities' and residents' priorities.

11.1 Regional Aviation/AAM Public Information

This study's engagement activities found that while Appalachian public officials were generally unaware of the critical role aviation plays in their local economies, they were highly receptive to learning about these impacts and the potential of AAM to accentuate those benefits. To translate this enthusiasm into actionable progress, planning for AAM readiness must expand public sector engagement through the framework of Local Development Districts (LDDs)—particularly targeting LDD leadership and the municipal entities with aviation asset management and governance responsibilities.

A targeted public information effort led by LDDs is required to align infrastructure preparations with both current aviation demands and prospective AAM applications. Today's GA airports require stable funding for basic pavement maintenance, instrument approach upgrades, and baseline utility installations. Integrating AAM introduces progressive layers of infrastructure needs that LDDs can integrate into their Comprehensive Economic Development Strategies (CEDS), beginning with the manageable addition of three-phase electrical power for early hybrid-electric regional aircraft, and scaling up to robust grid capacities for future electric vertical takeoff and landing (eVTOL) operations.

Securing these upgrades unlocks substantial economic development benefits, including faster localized cargo distribution, enhanced medical transport connectivity, and high-tech job creation in traditionally underserved areas. However, because Appalachia's considerable array of aviation assets is separately and individually managed, individual counties currently lack structured coordination. Mitigating this fragmentation requires establishing LDD-level working groups composed of airport managers, airport authorities, and county or city overseers within each district. By institutionalizing information sharing and collaborative policy planning at the LDD level, these districts can unify disjointed municipal efforts into a cohesive, sub-regional network. Empowering public officials with this collaborative LDD framework ensures communities can sustainably modernize their aging infrastructure, safeguarding current aviation assets while capturing the scalable economic rewards of early AAM adoption.

11.2 Local Development Districts (LDDs) Aviation Policy Integration

Appalachian LDDs play a critical role in educating and leading discussions among policy makers in local governments faced with land use and infrastructure decisions. In this project's engagement with LDDs in the region, they demonstrated both their interest in better integration of aviation in Comprehensive Economic Development Strategies (CEDS) and appropriate preparation for potential AAM uses cases and their uncertainty on when and how to address relevant policy issues in proactively preparing for potential Advanced Air Mobility (AAM) integration. However, they also expressed significant uncertainty regarding the precise timing and methodologies required to address underlying policy and regulatory challenges.

During the course of this study new information from several sources have developed to help bridge this knowledge gap. The American Planning Association (APA) released a landmark report, *Planning*

for Advanced Air Mobility (PAS Report 606). This comprehensive resource examines the multi-faceted implications of AAM for regional and local governments to equip planners, policymakers, and industry leaders with actionable insights capable of informing strategic decisions, fostering cross-sector collaboration, and guiding next-generation aviation. Given these recent guidelines, a specialized adaptation of this framework—or a similar tailored planning index—would provide direct policy templates for Appalachian LDDs and communities. This is particularly critical for the municipalities that own and operate the vast majority of Appalachian aviation infrastructure and general aviation airports.

One approach would be to establish structured collaborations between Appalachian university public administration programs and local LDDs to develop a codified, localized set of planning protocols. Crucially, these localized efforts must not exist in a vacuum; they should be vertically integrated with state- and federal-level AAM planning architecture. Most notably, local frameworks must align with policy directives such as the December 2025 U.S. Advanced Air Mobility National Strategy which explicitly identified "Community Planning and Engagement" as one of its core structural pillars and emphasizing coordination between federal airspace authority and local land-use control. On the state level, LDD and local government policies should incorporate recent state-level efforts, such as Ohio's AAM Framework, ensuring a unified approach to local infrastructure and regional logistics. Embedding these multi-tiered guidelines directly into local transportation plans, economic development strategies, and land-use frameworks, communities can ensure compliance with federal safety metrics while actively positioning Appalachia's airport infrastructure to capture emerging economic opportunities.

11.3 Aviation/AAM Workforce Development Focus

Despite its extensive aviation infrastructure, the Appalachian region lags in pilots per capita and broader aerospace job opportunities. Historically, a lack of visibility around this local aviation footprint has limited targeted workforce development. Expanding focus to this sector presents an exceptional economic upside, offering residents access to rapidly growing, high-paying careers. Bureau of Labor Statistics data highlights this potential, projecting a 6% growth rate for aerospace engineers—who earn a median annual wage over \$122,000—and substantial expansion among aircraft mechanics and avionics technicians, where median wages comfortably exceed \$73,000.

Concurrently, global market forecasts emphasize an urgent talent deficit, predicting a worldwide need for 1.3 million new aviation professionals, including hundreds of thousands of maintenance technicians and engineers to counter retirement attrition and industry expansion. The emergence of Advanced Air Mobility (AAM)—including electric vertical takeoff and landing (eVTOL) aircraft and automated logistics corridors—amplifies these high-wage opportunities. Driven by the federal government's National AAM Strategy, the sector is rapidly scaling toward regional commercial integration, generating immense demand for technical talent well beyond traditional flight crews.

For Appalachia, this represents an exceptional path to sustainable economic modernization and renewed upward mobility employment opportunities. Capitalizing on this shift requires a collaborative strategy led by Local Development Districts (LDDs) and regional Workforce Development Boards (WDBs). By working together, these entities can combine their strengths: WDBs direct specialized occupational training and certification pipelines for next-generation mechanics, composite manufacturers, and software engineers, while LDDs provide the multi-county planning, local government coordination, and grant-writing infrastructure needed to scale operations. Together, they can build vertically integrated ecosystems connecting educational institutions and public airports to dismantle barriers to career awareness, training costs, and geographic access, positioning the Appalachian workforce to thrive.

11.4 General Aviation Airports AAM Readiness Emphasis

Most AAM uses cases in Appalachia will rely on the region's existing general aviation airports. While potential AAM use cases will vary in their electrical utility and charging infrastructure requirements, all of Appalachia's general aviation airports will require some upgrades to support AAM activity. A core infrastructure planning principle for Appalachian Local Development Districts (LDDs) is to prioritize

incremental utility upgrades at regional general aviation (GA) airports. This study revealed a systemic underinvestment in rural airport utility capabilities. Specifically, a baseline study of 37 regional airfields found that a vast majority (30 of 37) currently lack three-phase electrical utility capacity. This deficit restricts basic current operations and presents a critical barrier to future electric aviation technologies, including localized cargo transit and emergency service operations.

Importantly, infrastructure improvements like upgrading to three-phase power deliver substantial regional value regardless of the ultimate velocity or direction of commercial AAM deployment. These utility modernizations inherently enhance an airport's foundational value proposition to its host community. Beyond stabilizing existing flight operations and supporting aviation activity expansion, improved power capacity catalyzes the economic development of surrounding corporate parks and industrial properties, offering immediate value to local business users. Furthermore, it strengthens critical public purpose roles, directly enhancing regional medical response, public safety, and emergency disaster services in rugged, hard-to-reach terrain.

Thus, public purpose-driven AAM Readiness, rather than presenting a daunting financial obligation with uncertain return, instead highlights an opportunity for Appalachian leadership in capturing important emerging aviation benefits. LDDs can coordinate multi-county planning and leverage federal development grants to fund these manageable, standard utility upgrades. By focusing on immediate grid enhancements rather than massive, unproven power configurations for speculative aircraft, LDDs protect rural airfields from obsolescence. This phased infrastructure strategy directly serves local residents and business users today while establishing a flexible, resilient foundation that ensures the Appalachian economy is positioned to capture tomorrow's next-generation aerospace commerce.

12. Optimal AAM Readiness Target Scenarios

In addition to planning principles, the study identified specific target scenarios for AAM Readiness implementation based on combined evaluations of technical feasibility, economic benefits, and community priorities. This purpose was driven by the objective to help Appalachian communities pursue AAM readiness while avoiding the misallocation of scarce capital—either by building expensive infrastructure for high profile, attractive use cases that are technologically or economically infeasible, or by funding a highly feasible application that lacks local public purpose or economic utility. This was achieved by synthesizing these three assessment layers to highlight the specific use cases that most warrant potential investment, focusing on the fundamental utility and infrastructure improvements common to electric aviation while targeting the applications deemed most valuable by host communities.

This optimization process entailed integrating the assessed economic benefits with feasibility findings and articulated community priorities. First, evaluating technical feasibility establishes baseline operational requirements, detailing the precise electrical utility upgrades and charging infrastructure needed at small general aviation airports. Next, mapping these configurations against localized economic benefits ensures that proposed applications—such as regional cargo networks or emergency medical services—deliver high-impact multiplier effects, including reduced supply chain friction or saved travel time. Finally, integrating community priorities provides the vital public-purpose rationale needed to secure local buy-in required to motivate public support and investment advocacy.

The analysis identified and differentiated a total of four near- and longer-term target scenarios that satisfied these conditions. The three Near-Term opportunities presented the most significant opportunities: Emergency Medical Services, Flight Training, and Air Cargo. These use cases principally rely on either crewed or uncrewed aircraft that are already, or are soon to become, commercially available primarily for current aviation applications. They are characterized by the conventional nature of their flight activities, combined with lesser technological performance challenges and infrastructure requirements, resulting in fewer airport enhancement needs to achieve AAM Readiness.

The one Long-term target scenario identified—Regional Air Mobility—is expected to rely on crewed

aircraft with uncertain timelines to commercial availability and may address combinations of existing and novel applications. Much of that uncertainty results from the more complex technological, logistical, and regulatory issues presented by aircraft that use pilots and transport passengers. Moreover, the unconventional nature of their flight activities, combined with speculative higher technological performance challenges, is expected to impose significant new infrastructure requirements and substantial, costly airport enhancement needs. Weighing these negative factors against relative levels of economic benefit found that Regional Air Mobility, despite its speculative nature, offered a sufficiently high potential economic impact and prioritized public purpose that warrants targeting in cohort airport host community planning. A second Long-term use case, Business Aviation, was found to be somewhat less speculative and less economically significant. Nonetheless, Business Aviation should be considered as an evolutionary next step following near-term Air Cargo, and warrants planning consideration in the context of air commerce.

12.1 AAM Use Case Scenario: Emergency and Medical Services (EMS) (Near-Term)

12.1.1 Regional Context & Community Need

There are more than 230 general aviation airports across the 13-state Appalachian region. While, unlike commercial airports, these general aviation airports do not offer scheduled airline travel, they nonetheless play a variety of important roles in their host communities. In particular, as has been demonstrated numerous times in recent years, they serve as essential infrastructure for emergency response and recovery operations, especially in times of regional disasters such as the current recovery efforts in Appalachian communities affected by Hurricane Helene.

Perhaps mindful of this, Emergency and Medical Services was the unanimous top priority across all Local Development Districts (LDDs) in its potential benefits of AAM in applications serving communities' needs. As Appalachian residents, many of the participants were acutely familiar with the challenges that emergency medical services pose in the region. Many expressed personal experiences of family members which they hoped might be mediated by the deployment of AAM EMS aircraft. Moreover, several communities among the LDDs had recently experienced weather-related emergencies in which their local general aviation airports had played vital roles as logistical emergency response centers and in which electric drones—a currently available form of AAM—had played important disaster assessment and delivery roles.

12.1.2 Implementation Scenario

These disasters have highlighted not only these airports as logistical and flight staging sites but in particular, during regional electrical outages, their need to continue to serve the increasing electrical service requirements of both flight operations and residents of their host communities. In both cases, these activities are increasingly dependent on resilient electrical service, whether it be for the charging of search and rescue drones or the communication devices of emergency response personnel and local residents.

An AAM Readiness implementation strategy could address equipping targeted Appalachian general aviation airports to serve as “community energy hubs”. As conceived by the National Renewable Energy Laboratory (NREL), such hubs utilize the development of on-site and adjacent distributed energy resources (DERs)—such as microgrids and utility-scale battery storage. This not only assures the airports' ability to support emergency response and community electricity needs in times of crisis, but also sustainably supports the airports' own growing electricity requirements while reinforcing the grid resilience of their host communities.

12.1.3 Definition

Emergency Medical Services (EMS) flight operations encompass emergency evacuations, patient and equipment transportation, and specimen delivery. There are other public safety centric missions related to law enforcement, fire rescue, emergency management, humanitarian assistance, and disaster relief. Each of these services exists today with traditional crewed operations, including both fixed-wing and rotary aircraft. Still, these applications are generally not as widely implemented as ground-based EMS.

Some providers both in the US and abroad have begun implementation of sUAS through pilot programs, regulatory exemptions, and other temporary approvals.

Given the general propensity for faster response times via the air as opposed to the ground, the lifesaving potential is substantial. Many Law Enforcement Agencies across the country, including two in North Carolina, have begun to implement programs known as Drone as a First Responder (DFR) in which 911 calls have immediate sUAS deployment, improving officer safety and situational awareness of developing scenes by getting on the scene before the arrival of the first officer. While these missions are currently only for photo and video surveillance, they set the stage for emergency medical deliveries that could arrive faster than traditional ambulance response.

12.1.4 Aircraft & Technical Framework

Existing EMS missions are carried out by all manner of aircraft. The space has already seen moderate implementation of uncrewed aircraft from the smallest reconnaissance drones to large-scale platforms designed for prolonged missions or package delivery. At the small end of the spectrum, emergency deliveries with time-critical payloads show significant promise of improved treatment in the event of an overdose, cardiac arrest, and other remedies that can be administered via bystanders. These sUAS are currently Remote Controlled (RC) via a pilot on the ground and have significant regulatory limitations on where they can be flown.

Further development of AAM operations through advancing technology like larger eVTOL aircraft could increase the scale of air-based EMS services. The passenger-carrying prototypes generally follow the same design as other AAM use cases like Air Taxi and Regional flights, though there are a few unique examples. Many companies that are pursuing aircraft certification have begun looking into EMS operations as another line of business, including Volocopter, a prominent European manufacturer which has partnered with the German air rescue organization ADAC Luftrettung. As in the other missions, these newer aircraft are being designed toward sustainability and greater economic feasibility with lower emissions and operating costs than existing air assets.

12.1.5 Enabling Infrastructure & Operational Requirements

Emergency response and transport teams have 24/7 staffing needs in addition to onsite medical supplies storage (some medicines may need refrigeration). Some are co-located with a hospital campus whereas others are stationed more regionally at nearby airports. In the event of real-world emergencies, having the ability to prioritize operations both in-air and at the airport is critical. The transition to remotely piloted or autonomous vehicles will necessitate similar implementation into the associated traffic management systems. Cybersecurity is especially of concern in EMS use cases for the protection of sensitive data. Public support for EMS operations may be greater than other use cases given the direct benefit and lifesaving opportunities.

12.1.6 Potential Funding Sources

- Because this use case focuses heavily on disaster response, regional safety, and turning airports into resilient "community energy hubs," funding should target emergency management and public safety grids.
- **FEMA Building Resilient Infrastructure and Communities (BRIC):** Funds pre-disaster hazard mitigation projects. This is a primary source for establishing airport-based microgrids, distributed energy resources (DERs), and backup power facilities to ensure continuity of operations during weather crises.
- **FAA Airport Improvement Program (AIP) – Safety & Emergency Allocations:** Traditional airport grants that can be directed toward infrastructure enabling 24/7 medical staging, runway lighting upgrades, and dedicated rotary/eVTOL pads for emergency evacuations.
- **USDA Rural Development – Community Facilities Direct Loan & Grant Program:** Provides funding to develop or improve essential community facilities in rural areas, making it highly applicable for constructing on-site refrigerated medical supply storage and EMS personnel staging facilities at general aviation airfields.

12.2 AAM Use Case Template: Air Commerce (Near-Term & Long-Term)

12.2.1 Regional Context & Community Need

Air commerce—the strategic use of business aviation, air cargo, and emerging aviation technologies—has become a critical growth lever for rural and non-metropolitan firms. In regions like Appalachia, where distance to major markets can constrain competitiveness, air commerce enables firms to capture "economies of speed" by reducing travel time, accelerating supply chains, and improving customer responsiveness. Economies of speed arise when firms convert time savings into economic value. For manufacturers, wholesalers, and retailers in rural areas, access to local general aviation airports enables same-day travel to customers, rapid delivery of high-value inputs, and faster decision-making cycles.

Scarcity of rural air cargo activity at Appalachian general aviation airports hampers the ability to access time sensitive markets. This deficit may either increase the cost of existing Appalachian shipping due to higher multimodal total costs or retard it due to a loss of the economies of speed advantage for Appalachian firms. Incorporating Advanced Air Mobility (AAM) applications in air cargo and business aviation is highly valued for its potential to expand air commerce transportation strategies, enabling market development, customer engagement, and expedited supply chain logistics. This case is especially beneficial where local airports are already recognized economic development contributors through their proximity to industrial parks and usage by corporate aviation clients.

12.2.2 Implementation Scenario

An AAM Readiness implementation strategy options framework focuses on expanding the air cargo and business aviation potential within the region to plausibly expedite or increase commerce. Because baseline establishment-level data for rural air cargo is scarce, Phase One of this planning initiative involves utilizing projected business shipping increases from future expanded AAM air cargo activity. By identifying specific North American Industry Classification System (NAICS) codes that are the most active exporters via air cargo, planners can target the corresponding cohort of Appalachian establishments to build operational assumptions. This approach aims to back up existing research on the importance of local general aviation airports to high-growth rural companies with better measures of regional air commerce activity, focusing explicitly on the export of high-value, low-volume products.

To ensure regional adoption and institutionalize air commerce strategies, Appalachian universities will serve as educational platforms. The optimal candidates would be universities that possess a combination of 1) aviation programs, 2) business schools, and 3) public policy applied research entities. As an example, Ohio University would develop an Air Commerce initiative through collaboration between the College of Business, Voinovich School of Leadership and Public Service, and the Russ College of Engineering Aviation department. Such an initiative would provide a collaborative executive education curriculum targeting Ohio entrepreneurs and owners of growth-positioned firms. Such a program would cover air commerce strategy, business aviation economics, supply chain design, regulatory considerations, airport infrastructure planning, and the integration of emerging AAM technologies to support regional job creation and long-term competitiveness.

12.2.3 Definition

Within this use case, air commerce would be conducted on a scheduled or on-demand point-to-point basis directly between facility-owned or leased sites, or smaller regional airports, bypassing the congestion of commercial hubs to enhance urban, suburban, and remote connectivity. Air commerce is divided into two primary categories:

- **Corporate/Business Aviation:** Air transportation service designed to move materials, products, employees, executives, and customers of a company between locations—such as offices, manufacturing sites, or business hubs—in a fast and efficient manner.
- **Cargo and Freight Delivery:** Crewed and uncrewed (potentially autonomous electric aircraft capable of carrying cargo), designed primarily for short-haul distances.

12.2.4 Aircraft & Technical Framework

Advanced Air Mobility platforms and electric aircraft are expected to significantly lower the cost of air commerce by reducing fuel, maintenance, and operating expenses, thereby expanding access to short-

haul aviation for rural firms. The technical profile of the projected fleet includes:

- **Corporate Shuttles:** These utilize electrically powered aircraft such as electric Vertical Takeoff and Landing (eVTOL) or hybrid-electric planes to lower emissions, reduce noise, and align with corporate sustainability goals. Specific aircraft identified for service within the decade include the Eviation Alice, a Conventional Takeoff and Landing (CTOL) aircraft, and the Lilium jet, a Vertical Takeoff and Landing (VTOL) platform, both featuring electric propulsion.
- **Cargo and Freight Aircraft:** The domestic market features various configurations; notably, nine out of thirteen identified domestic AAM cargo aircraft are eVTOLs that do not require a runway. The remaining four platforms require traditional runway space. Payload capacities vary drastically depending on the design, ranging from MightyFly's Cento (up to 100 lbs.) to Sabrewing Aircraft Company's Rhaegal RG-1 (up to 5,400 lbs.).

12.2.5 Enabling Infrastructure & Operational Requirements

To build out a functional air commerce ecosystem, local general aviation airports must meet specific physical and digital infrastructure metrics:

- **Physical and Charging Infrastructure:** Standard corporate eVTOL shuttles and short-haul cargo drones require dedicated vertiport infrastructure equipped with fast-charging capabilities. For fixed-wing electric aircraft, traditional runway assets must meet specific manufacturer requirements; for example, the Eviation Alice requires a runway spanning at least 2,750 feet for safe takeoff and landing operations.
- **Digital and Communications Grid:** Due to the data-intensive nature of autonomous freight platforms, regions must feature robust 5G networks and satellite-based communication systems to support advanced aircraft tracking and command-and-control loops.
- **Macro-Environmental Factors:** The development of this market stands to benefit from areas characterized by high population density, shipping routes, local/state grant programs that reward greenhouse gas (GHG) emission reductions, strict regional GHG regulations, and engagement from emissions-mindful county economic development teams.

12.2.6 Potential Funding Sources

This use case targets regional business connectivity, supply chain logistics, and high-value, low-volume product exports, meaning funding should align with industrial expansion and freight infrastructure.

- **USDOT Multimodal Project Discretionary Grant (MPDG) Program:** Focuses on nation-building freight and highway projects. LDDs can leverage this to fund regional air-cargo hub logistics facilities and digital tracking infrastructure connecting local GA airports to industrial parks.
- **Appalachian Regional Commission (ARC) Area Development Grants:** Highly targetable for projects that directly support local business retention and expansion. This funding can be used to integrate local general aviation airports into regional economic development corridors.
- **State-Level Industrial Park and Economic Development Logistics Grants:** Programs (such as the Ohio Department of Development infrastructure funds) that incentivize the proximity of high-growth manufacturing firms to regional transportation networks, helping fund physical airport access improvements.

12.3 AAM Use Case Template: Flight Training (Near-Term)

12.3.1 Regional Context & Community Need

Aviation is an important contributor to the Appalachian economy, and a new generation of electric aircraft known as Advanced Air Mobility (AAM) will increase its uses and benefits across the region. There is a growing unmet domestic and global demand for pilots, with the Boeing Company projecting a need for more than 114,000 new pilots over the next 20 years. These represent high-paying career paths, as the U.S. Bureau of Labor Statistics reports that airline and commercial pilots command the highest aviation wages at \$280,570 and \$142,960, respectively.

Despite growing national demand, the Appalachian region currently lags behind in its pilot workforce, particularly within its Distressed and At-Risk counties. Across the study area, the Federal Aviation

Administration (FAA) reports a density of fewer than one pilot for every 1,000 residents, compared to the national average of 1.5 pilots per 1,000 people. To reach national parity and introduce residents to a broad range of attainable aviation jobs, the region must add hundreds of new pilots.

The primary barrier to entry is cost, as earning a Private Pilot License (PPL)—the first rung on the aviation career ladder—typically costs nearly \$20,000. However, this study found that integrating electric aircraft into flight instruction fleets could drastically cut the cost of becoming a pilot, bringing flight training within reach for more Appalachian workers. While flight instruction is not typically among the use cases highlighted in recent state and national AAM strategic plans, in this study's assessment of Appalachian AAM Readiness it emerged as one of the most immediately feasible applications due to an alignment between current aircraft performance capabilities, regulatory frameworks, and operational requirements.

This lack of broader appreciation of the AAM flight training use case may be attributable to the general informative dichotomy that exists regarding public aviation awareness. While the majority of non-pilot residents are largely unaware of local airports' roles in workforce development, aviation stakeholders, pilots, and airport managers are very familiar with their essential role in support of flight instruction and are preceptive of the potential benefits of electric aviation in that activity. Airport managers specifically recognize that electric AAM aircraft in flight training can reduce noise issues for nearby residents while aligning well with existing infrastructure and delivering tangible local workforce benefits.

12.3.2 Implementation Scenario

Appalachian AAM Readiness implementation strategies centered on introducing electric aircraft into flight training fleet would benefit from establishing a decentralized "AAM Flight Training Network" across regional general aviation airports in collaboration with university-based aviation training programs. The operational capabilities of currently available electric airplanes can serve some, but not yet all, of the flight requirements of pilot training curricula. By equipping selected general aviation airports in the vicinity of participating regional universities with appropriate charging systems, such networks would serve as a pioneering platform for expanding both conventional and electric aviation flight instruction.

The missions and capabilities of university aviation programs make them appropriate candidates for initiating such networks to support the combination of curriculum development and performance assessment needed to validate electric aviation-inclusive flight training, thus facilitating their adoption and mediate existing barriers to Appalachian aviation employment.

12.3.3 Definition

The overall purpose of primary and intermediate flight training is the acquisition and honing of basic airmanship skills. Airmanship encompasses a sound knowledge of and experience with the principles of flight; the knowledge, experience, and ability to operate an aircraft with competence and precision both on the ground and in the air; and the application of sound judgment to maximize operational safety and efficiency. In the context of AAM, this includes training student pilots on commercial electric airplanes, introducing them to unique propulsion, energy management, and operational profiles distinct from legacy internal combustion aircraft.

12.3.4 Aircraft & Technical Framework

In the future, flight training may incorporate multiple AAM electric aircraft classes, including electric Vertical Takeoff and Landing (eVTOL) platforms, Short Takeoff and Landing (STOL) aircraft, and electric Conventional Takeoff and Landing (eCTOL) airplanes. However, for the present and near-term, flight schools globally have already begun introducing commercial models of electric eCTOL planes into their instructional fleets; notably, a student pilot in the United States successfully earned a private pilot certificate using an electric aircraft for the first time in 2022.

Electric training aircraft offer substantial operational advantages over traditional trainers like the Cessna 172 (utilizing a traditional gas engine). The operational energy cost for a 40-minute flight in an electric airplane ranges between \$2 and \$3 of renewable electricity, compared to approximately \$45 of aviation gasoline for the same flight duration in a traditional single-engine aircraft. Furthermore, maintenance requirements for electric aircraft are minimal, as their propulsion systems eliminate the need for oil, spark plugs, and other

complex moving components inherent to internal combustion gas engines.

12.3.5 Enabling Infrastructure & Operational Requirements

To support electric aviation-inclusive flight training operations, most Appalachian general aviation airports must update their physical and electrical infrastructure:

- **Electrical and Charging Systems:** While a standard single-phase 240 VAC wall socket can support slow, overnight charging, primary flight training environments require three-phase 380 VAC connections to enable fast charging. For instance, the Pipistrel Velis Electro requires a three-phase connection to fully charge in about an hour, utilizing a DC GB/T 20234 connector coupled with a manufacturer-approved portable or dedicated sky charging system. Advanced aircraft like the ALIA A250 VTOL and ALIA CX300 eCTOL are similarly designed to achieve full charges in less than one hour.
- **Safety and Cybersecurity:** Charging electric aircraft introduces unique operational specifics that demand enhanced levels of safety and robust cybersecurity protocols compared to automotive-class charging infrastructure to safeguard electrical power transfer. Flight training facilities must coordinate directly with local electrical service providers to determine grid capacity and explore supplementary distributed energy sources like solar, wind, or wall-mounted battery storage.
- **Runway, Heliport, and Vertiport Dimensions:** Flight training operations can be accommodated via traditional runways, heliports, or dedicated vertiports depending on the aircraft's VTOL or fixed-wing configuration. Runway lengths are dictated by aircraft operating weights and performance characteristics; traditional runways at least 6,000 feet long are sufficient for aircraft weighing under 200,000 pounds. For small training aircraft, FAA guidance specifies runway widths of 300 feet for approaches with visibility minimums under 3/4-statute mile, 250 feet for approach speeds of 50 knots or more, and 120 feet for small aircraft with approach speeds under 50 knots.

12.3.6 Potential Funding Sources

Because this use case centers entirely on pilot supply, youth awareness, and adult upskilling to capture high-wage employment, funding may be available from workforce development and educational sources such as:

- **FAA Aviation Workforce Development Grants (Section 625):** Specifically designed to support the education and recruitment of aviation pilots and maintenance technicians, directly funding curriculum development and pilot-track accessibility programs.
- **Department of Labor (DOL) Workforce Innovation and Opportunity Act (WIOA) Funds:** Disbursed through state and local workforce development boards to support the training of adult, youth, and displaced workers for high-demand, high-wage occupations like commercial aviation.
- **ARC Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative:** Specifically targets federal resources to communities affected by job losses in coal and heavy legacy industries, making it an ideal candidate to fund the equipment and simulator technology required for a regional AAM flight training network.

12.4 AAM Use Case Template: Regional Air Mobility (RAM) (Long-Term)

12.4.1 Regional Context & Community Need

Despite an abundance of general aviation airports, much of Appalachia lacks a nearby commercial airport through which to access passenger air transportation. Historically, rural and non-metropolitan firms have faced isolation because affordable, rapid transportation is concentrated around major urban commercial centers. Unless a destination is near a primary hub, travelers must endure lengthy ground transit, non-direct flight paths, and road congestion.

While, unlike commercial hubs, the region's general airports do not currently offer scheduled airline travel, the eventual availability of more efficient passenger AAM aircraft will address this deficiency through Regional Air Mobility (RAM) using local airports to provide direct, point-to-point transportation for passengers and cargo. By connecting smaller municipalities and rural areas directly to larger economic centers, RAM spreads capital, supports regional supply chains, and lowers the multimodal total cost of shipping. This application allows non-metropolitan businesses to operate with the same high-efficiency "economies of speed" enjoyed by metropolitan firms, accelerating decision-making cycles and improving access to distant markets.

12.4.2 Implementation Scenario

Local Development Districts (LDDs) are uniquely positioned to serve as the strategic backbone for Regional Air Mobility (RAM) deployment across Appalachian general aviation airports. An AAM Readiness implementation strategy for RAM focuses on transforming quiet, decentralized public airports into active regional transit and logistic centers.

To establish a data-driven business case for Regional Air Mobility (RAM), Local Development District (LDD) leadership must systematically characterize market demand, quantify economic benefits, and execute deployment planning. To overcome the historic scarcity of rural shipping data at smaller airfields, LDDs should analyze regional export data to identify specific North American Industry Classification System (NAICS) codes representing industries that export high-value, low-volume products. By mapping this specific cohort of local establishments and applying projected shipping increases from future Advanced Air Mobility (AAM) capabilities, planners can build robust demand models that prove how RAM can secure critical "economies of speed" for rural firms.

Documenting these community benefits allows LDDs to build broad political consensus and unlock localized economic incentives. Point-to-point regional air commerce enhances rural competitiveness by lowering multimodal total costs and bypassing major commercial hub congestion. Furthermore, aligning RAM deployment with localized flight training networks captures high-paying aviation jobs. By utilizing National Renewable Energy Laboratory (NREL) frameworks, LDDs can plan to transform local general aviation airfields into "community energy hubs" equipped with microgrids and battery storage to power electric aircraft while reinforcing host-community grid resilience during disaster outages.

Finally, LDD leadership can drive deployment by unifying public airports into cohesive networks that accommodate emerging electric aircraft technical profiles. LDDs should maximize state and local grants that reward greenhouse gas emission reductions while institutionalizing air commerce executive education through regional universities to train local entrepreneurs and workforce boards.

Furthermore, LDDs can drive physical infrastructure development by coordinating with utility providers and utilizing National Renewable Energy Laboratory (NREL) frameworks. This coordination transforms local airfields into "community energy hubs" equipped with distributed energy resources, microgrids, and fast-charging capabilities to sustainably power electric aircraft fleets while reinforcing host-community grid resilience during weather blackouts.

Finally, LDDs can unite regional workforce development boards and educational platforms, such as Ohio University's Voinovich School, to establish collaborative pipelines. By connecting K-12 STEM programs, aerospace executive education, and a multi-state airport training network, LDDs can scale up regional pilot supply, capture high-paying aviation jobs, and advance state and local low-emission transit grant

utilization.

12.4.3 Definition

Regional Air Mobility is an ecosystem within Advanced Air Mobility (AAM) that focuses on the regular or on-demand transport of passengers and goods over interregional distances, typically between 100 and 500 miles. It acts as an essential intermediate layer of aviation: it provides connectivity that is too extensive for short-range intra-city Urban Air Mobility (UAM) yet is underserved by traditional long-haul commercial airlines. RAM operational models vary based on community requirements, utilizing semi-scheduled air-pooling, on-demand charters, or scheduled point-to-point regional commuter routes directly connecting secondary airfields.

12.4.4 Aircraft & Technical Framework

The RAM market is enabled by a diverse class of emerging aircraft designed for short-to-medium-range operations, generally configured to carry between 5 and 50 passengers or an equivalent weight in cargo. Unlike the purely helicopter-like vertical takeoff aircraft that dominate metropolitan air taxis, RAM relies heavily on multi-modal propulsion and fixed-wing aerodynamics to gain greater flight ranges. The regional technical fleet framework includes three distinct aircraft profiles:

- **Electric Conventional Takeoff and Landing (eCTOL):** Aircraft that utilize standard runway infrastructure but feature fully electric or hybrid-electric power systems to significantly reduce operating and maintenance costs.
- **Electric Short Takeoff and Landing (eSTOL):** Aircraft engineered with advanced, lift-enhancing devices that generate high torque, allowing them to safely access shorter, constrained runways in geographically challenging rural areas.
- **Hybrid and Alternative Propulsion Systems:** While battery-electric systems are highly efficient for short-distance routes under 300 kilometers, long-distance RAM applications are rapidly driving the adoption of hybrid-electric powertrains and hydrogen fuel cell technologies to hit extended ranges beyond 300 kilometers without sacrificing heavy cargo capabilities.

12.4.5 Enabling Infrastructure & Operational Requirements

Deploying a reliable RAM network requires targeted upgrades to existing small airport infrastructure, focusing heavily on power availability, digital control systems, and community integration:

- **Physical Infrastructure and Runways:** RAM aircraft maximize compatibility by utilizing existing runway assets. Because electric and hybrid propulsion architectures generate higher torque and utilize short-field capabilities, standard regional runways are fully sufficient to host these aircraft weights without requiring massive expansions or new urban landing sites.
- **Energy Systems and Community Hubs:** A primary enabler for RAM is the installation of robust, high-voltage electrical charging stations on the ground. Airports must transition into "community energy hubs" by developing adjacent distributed energy resources (DERs), such as on-site microgrids, solar arrays, and utility-scale battery banks. This infrastructure satisfies the intense electrical requirements of fast-charging commercial flight fleets while simultaneously providing resilient backup power to the local community grid during severe weather blackouts.
- **Digital Traffic Management and Communications:** Managing an increased volume of automated and piloted regional aircraft requires integrating advanced Unmanned Traffic Management (UTM) grids alongside traditional air traffic control. Ground facilities must incorporate robust, secure digital communications—including 5G networks and satellite tracking—to manage the complex command-and-control data generated by autonomous operations.
- **Social and Policy Drivers:** RAM development is highly accelerated in areas with progressive county economic development teams, strict local greenhouse gas emission regulations, and targeted grants that reward businesses for adopting low-emission transport. Because RAM utilizes existing regional airports, it features minimal local noise impact and carries high public acceptance due to the visible economic, educational, and connectivity lifelines it brings to non-metropolitan communities.

12.4.6 Potential Funding Sources

This use case bridges the gap between regional transit and green aviation technology, opening up

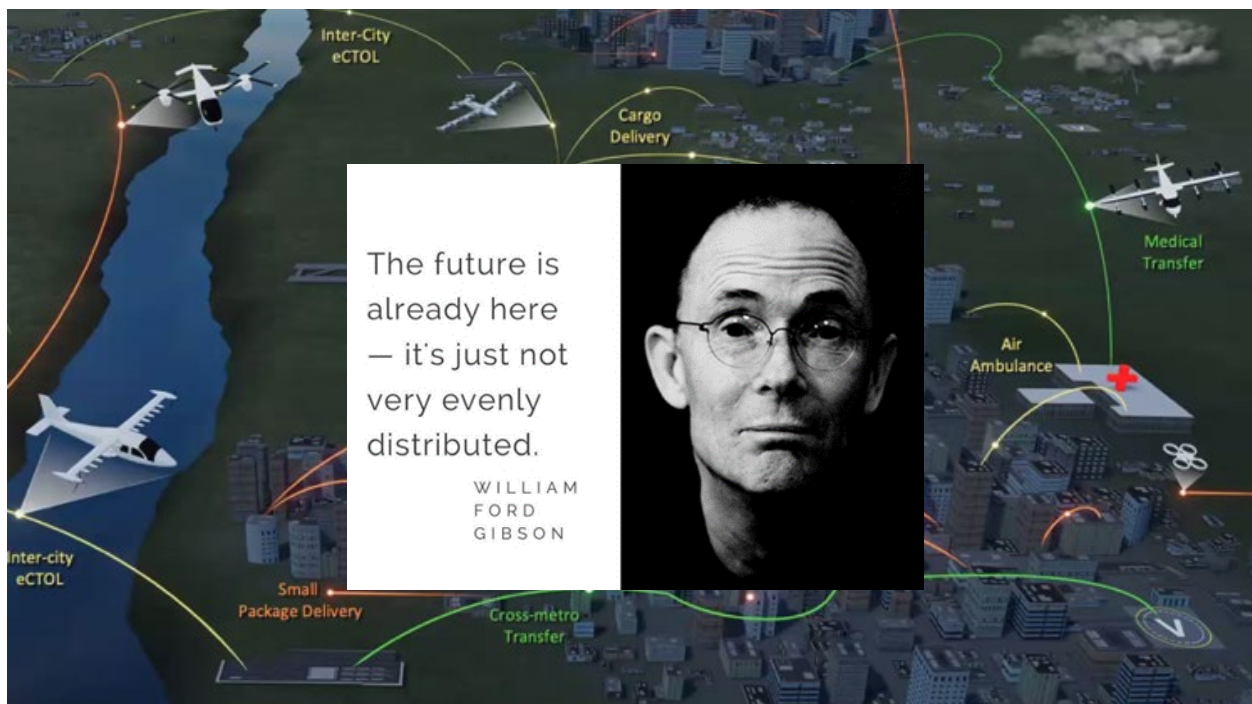
funding pathways tied to clean energy innovation, grid modernization, and rural infrastructure.

- **DOE Grid Resilience and Innovation Partnerships (GRIP) Program:** Aimed at expanding grid capacity and integrating clean energy. This source can fund utility-scale battery storage and fast-charging systems at airports designated as regional RAM hubs.
- **DOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants:** Invests in surface and air transportation projects that offer significant local or regional impacts, specifically prioritizing projects that achieve point-to-point regional connectivity and greenhouse gas emission reductions.
- **State and EPA Green Transportation/Clean Air Grants:** Financial incentives and carbon-reduction grants designed to reward regional businesses and local authorities for adopting low-emission transportation networks and upgrading to hybrid-electric/hydrogen compatible ground infrastructure.

Conclusion

Despite rapid development in recent years, uncertainties remain about numerous aspects essential to the widespread deployment of AAM. These range from continued technical advancements to regulatory issues to the business viability of potential applications. But expanding our perspective on AAM to encompass developments around the globe calls to mind a quote often attributed to the science fiction author William Gibson - "The future is already here – it's just not evenly distributed." Indeed the inevitability of some AAM use cases being deployed is evidenced by the reality that the AAM is already in use in several forms - if not in Appalachia then elsewhere in the world. The question facing Appalachia is not whether AAM will be deployed there, but whether the benefits it can offer the region will be delayed by a lack of preparation.

END



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Appendix A: Supplemental Documentation

Airport Master Plan Summary

Reviewing airport master plans can provide valuable insight into the types of aviation use cases that an airport is currently designed to support—and what future roles it may be positioned to play. These documents typically outline the existing infrastructure, forecast demand, and recommend improvements based on anticipated aviation activity. By examining factors such as runway length, available facilities, and planned expansions, stakeholders can assess whether an airport is optimized for general aviation, corporate travel, cargo operations, or commercial service.

One particularly telling element is the type and mix of hangars on the airport. For example, a predominance of T-hangars often signals a strong base of recreational or leisure-oriented general aviation, as these hangars are typically used by individual owners of small, single-engine aircraft. In contrast, the presence of larger box hangars or corporate hangars may indicate the airport supports business aviation, with aircraft that require more space and enhanced services. Some airports may also feature specialized maintenance hangars, community-use hangars, or cargo facilities, each pointing to distinct aviation roles. In this way, hangar types serve as physical evidence of the airport’s operational focus and can help guide planning for infrastructure, policy, and economic development aligned with likely or desired aviation use cases.

Out of a total of 37 study airports (19 in Kentucky, 14 in Ohio, and four in North Carolina), the research team acquired 34 master plans. The research team then used the master plans to conduct a summary analysis of the hangar infrastructure at each airport. 30 airports had plans to expand hangar capacity with a focus on new 60-foot by 60-foot and 80-foot by 80-foot hangars, T-hangars and corporate hangars, while four airports did not include any plans to do so in their respective master plans.³ Based on the airport master plan sample, conventional hangars and T-hangars were the most prevalent hangar types across states.

Existing Hangars

While most of the study airports have T-hangars, not every airport specified their unit configuration. Out of 19 study airports in Kentucky, five feature 8, 9, 10, 12, and 16-unit t-hangars,⁴ and four airports feature corporate hangars. Out of the four study airports in North Carolina, three have corporate hangars, with Rutherford County airport boasting with 30 corporate hangars. Shelby-Cleveland County Regional was the only NC airport that did not have a corporate hangar. Meanwhile out of the 14 study airports in Ohio only one has existing corporate hangars.

Future Hangars

Out of 19 airports in Kentucky, McCreary County and Big Sandy Regional were the only ones that did not have stated plans for expansion. The Kentucky study airports that do plan to expand primarily focus on building new box and T-hangars, with a focus on 10-unit T-hangars in airports such as Mount Sterling, Russell, and Jackson County. In Ohio, there is an overwhelming focus on new T-hangar construction. Lawrence County Airpark and James A Rhodes airports were the only ones out of 14 airports in Ohio that did not mention plans to expand. Meanwhile, all the four study airports in North Carolina have plans to expand their hangar capacity, with a focus on new corporate hangars and T-hangars. Overall, as of 2025, most airports have plans to expand their hangar capacities with new T-hangars, box hangars, and corporate hangars as seen on **Table 6**.

Table 6. Summary of Hangar and Runway Characteristics (ITRE, 2025).

Airport	State	Existing Hangars	Future Hangars	Max Runway Length
Ashland Regional (DWU)	Kentucky	• 1x T-hangar • 7x Hangars	• 2 Nested T-hangars	5,402
Big Sandy Regional (SJS)	Kentucky	• 5x T-hangars • 6x Hangars	—	5,051

³ Big Sandy Regional (KY), McCreary County (KY), James A Rhodes (OH), Lawrence County Airpark (OH).
⁴ Fleming-Mason (KY), Lake Cumberland Regional (KY), Morehead-Rowan County Clyde A Thomas Regional (KY), Mount Sterling/Montgomery County (KY), and Tucker-Guthrie Memorial (KY).

Airport	State	Existing Hangars	Future Hangars	Max Runway Length
Fleming-Mason (FGX)	Kentucky	3x 10-unit T-hangars	3x 10-unit t-hangar 3x 60-foot by 60-foot hangars	5,002
Julian Carroll (JKL)	Kentucky	—	—	4,400
Lake Cumberland Regional (SME)	Kentucky	1x 48-foot by 40 box hangar 1x 5-unit t-hangar with office 1x 125-foot by 80-foot corporate hangar 2x 80-foot by 80-foot box hangar 1x 8-unit t-hangar 1x 60-foot by 60-foot box hangar 1x 60-foot by 80-foot box hangar 1x 60-foot by 40-foot box hangar 2x 10-unit t-hangars, corporate hangar, 1x 100-foot by 150-foot hangar		5,801
London/Corbin/Magee (LOZ)	Kentucky	—	—	5,751
Central Regional Airport (RGA)	Kentucky	3x Hangar types 3x T-hangar 1x T-hangar to be demolished	1x T-hangar 1x Maintenance hangar 4x Hangar	5,001
McCreary County (18I)	Kentucky	1x T-Hangar	—	2,999
Middlesboro/Bell County (1A6)	Kentucky	4x Private hangars 3x Drivethru hangars 3x Nested t-hangars	4x 60-foot by 60-foot hangars 22x T-hangars 1x 45-foot by 45-foot hangar 1x 50-foot by 80-foot hangar 1x 50-foot by 50-foot hangar	3,633
Morehead-Rowan County Clyde A Thomas Regional (SYM)	Kentucky	1x 12-unit t-hangar	3x 12-unit t-hangars 1x 100-foot by 100-foot hangar 10x 60-foot by 60-foot hangars 4x 80-foot by 80-foot hangars	5,500
Mount Sterling/ Montgomery County (IOB)	Kentucky	1x 120-foot by 100-foot storage hangar 1x 100-foot by 100-foot storage hangar 1x 100-foot by 80-foot maintenance hangar 1x 50-foot by 50-foot storage hangar 1x 60-foot by 60-foot corporate hangar 3x 80-foot by 60-foot corporate hangar 1x 8-unit t-hangar 2x 10-unit t-hangar 1x 16-unit t-hangar	2x 5-unit box hangar 1x 10-unit t-hangar 5x 80-foot by 80-foot hangar 2x 10-unit t-hangars	5,000

Airport	State	Existing Hangars	Future Hangars	Max Runway Length
Russell County (K24)	Kentucky	• 2x T-hangar • 2x Corporate hangars	• 1x 80-foot by 80-foot corporate hangar • 3x 10-unit t-hangars • 3x 60-foot by 60-foot corporate hangars	5,010
Stanton (I50)	Kentucky	—	—	2,996
Tompkinsville/Monroe County (TZV)	Kentucky	• 2x Hangar • 1x T-hangar	• 2x T-hangar • 3x 60-foot by 60-foot hangar	4,000
Tucker-Guthrie Memorial (I35)	Kentucky	• 1x 80-foot by 80-foot hangar • 1x 9-unit t-hangar	• 1x T-hangar	3,461
Wayne County (EKQ)	Kentucky	• 1x Hangar • 4x T-hangar	• 2x T-hangar • 1x 80-foot by 80-foot hangar • 1x 60-foot by 60-foot hangar • 2x 52-foot by 232-foot hangar • 1x 110-foot by 120-foot terminal hangar • 1x 80-foot by 80-foot t-hangar • 1x 60-foot by 60-foot t-hangar	4,000
Wendell H Ford (CPF)	Kentucky	• 2x T-hangar • 1x 60-foot by 40-foot hangar • 1x 40-foot by 40-foot hangar • 3x 60-foot by 50-foot hangar • 1x 50-foot by 60-foot hangar • 1x 50-foot by 50-foot hangar • 1x 100-foot by 50-foot hangar • 1x 100-foot by 60-foot hangar • 2x 60-foot by 60-foot hangar • 2x 100-foot by 100-foot hangar • 2x 110-foot by 100-foot hangar • 1x 100-foot by 80-foot hangar • 1x 100-foot by 40-foot hangar	• 1x 100-foot by 100 hangar • 4x 80-foot by 80-foot hangar • 1x 3-unit box hangar • 5x 60-foot by 60-foot hangar • 2x 6-unit t-hangar	5,499
West Liberty (9I3)	Kentucky	• 2x 40-foot by 30-foot hangar	• 1x 50-foot by 40-foot hangar	2,400
Williamsburg-Whitley County (BYL)	Kentucky	• 1x Corporate hangar • 1x T-hangar	• 3x 10-unit t-hangar • 1x 8-unit t-hangar • 4x 80-foot by 80-foot corporate hangar • 1x 120-foot by 120-foot corporate hangar	5,499
Jackson County (24A)	North Carolina	• 1x Corporate hangar • 1x T-hangar	• 1x 8-unit t-hangar • 1x Corporate hangar • 1x 3-unit hangar	3,210
Rutherford County/ Marchman Field (FQD)	North Carolina	• 2x FBO maintenance hangar • 30x Corporate hangars	• 1x T-hangar • 23x Corporate hangars	5,000

Airport	State	Existing Hangars	Future Hangars	Max Runway Length
Shelby-Cleveland County Regional (EHO)	North Carolina	• 1x Maintenance hangar • 2x Box hangars • 3x 10-unit t-hangar • 8x 2-unit hangars	• 4x 10-unit t-hangar • 16x Corporate hangar • 1x 4-unit one sided hangar	5,001
Western Carolina Regional (RHP)	North Carolina	• 1x Maintenance hangar • 3x T-hangar • 1x Storage hangar • 6x Corporate hangars	• 6x Corporate hangar • 1x 10-unit t-hangar • 1x 8-unit t-hangar	5,500
Alexander Salamon (AMT)	Ohio	• 4 Hangars	• 1x Corporate hangar • 3x 8-unit nested t-hangars	3,558
Cambridge Municipal (CBG)	Ohio	• 1x Hangar • 1x T-hangar	• 2x 12-unit full nested t-hangar • 1x 6-unit hangar • 3x 80-foot by 80-foot hangar • 1x 80-foot by 100-foot hangar • 5x 10-unit t-hangars	4,001
Gallia-Meigs Regional (GAS)	Ohio	• 3x Hangar • 1x 2-unit box hangar	• 1x Hangar	3,999
Geary A Bates/Jefferson County (2G2)	Ohio	• 4x T-hangars • 3x Corporate hangar • 3x Hangars	• 3x Corporate hangars • 1x T-hangar	5,001
Greater Portsmouth Regional (PMH)	Ohio	• 4x Hangar • 1x FBO hangar • 2x T-hangar	• 1x 6-unit t-hangar • 1x 10-unit t-hangar • 1x 100-foot by 100-foot corporate hangar • 1x 100-foot by 75-foot corporate hangar • 1x 5 unit t-hangar	5,001
Highland County (HOC)	Ohio	• 2x Hangar • 1x 12-unit t-hangar • 1x 6-unit t-hangar • 1x 8-unit t-hangar	• 3x Hangars • 4x 8-unit t-hangars	3,520
James A Rhodes (JRO)	Ohio	• 3x T-hangars • 1x Executive hangar	—	5,201
Lawrence County Airpark (HTW)	Ohio	• 1x 3-unit hangar • 1x 6-unit hangar • 1x 10-unit t-hangar • 1x Maintenance hangar	—	2,998
Monroe County (4G5)	Ohio	• 1x FBO hangar • 2x T-hangars	• 3x T-hangars	3,805
Northeast Ohio Regional (HZY)	Ohio	• 5x hangars • 5x t-hangars	• 1x box hangar • 2x T-hangars • 8x Hangars	5,900

Airport	State	Existing Hangars	Future Hangars	Max Runway Length
Ohio University (UNI)	Ohio	• 1x Maintenance hangar • 1x Avionics hangar • 1x 10-unit t-hangar • 1x 12-unit t-hangar • 1x Hangar zero	• 3x Corporate hangar • 1x 6-unit t-hangar • 1x 6-unit t-hangar • 1x Aviation hangar	5,600
Pike County (EOP)	Ohio	—	• 2x Corporate hangars	4,899
Richard Downing (I40)	Ohio	• 3x Hangar • 2x Maintenance hangars • 4x T-hangars	• 13x Hangars • 2x T-hangars • 1x FBO hangar	5,001
Vinton County Airpark (22I)	Ohio	• 1x T-hangar (to be demolished)	• 1x 10-unit t-hangar • 4x T-hangars • 6x 50-foot by 50-foot box hangars • 3x 60-foot by 60-foot hangar • 1x 50-foot by 50-foot hangar • 1x 100-foot by 100-foot hangar	3,500

Sources: Retrieved from Individual Airport Master Plans and FAA 5010 Data.

Process to Summarize FAA 5010 Data

Using FAA 5010 Airport Master Record data, the airport overview presented in this study is designed to provide a snapshot of each airport and its current flight operations, based aircraft, runway lengths, and captured the range of flights with a filed flight plan.

AIRPORT OVERVIEW METHODOLOGY

Every year airport managers are required to file a FAA Form 5010. This Airport Master Record contains keys details about the airport, including number of operations counts by category, physical characteristics, based aircraft, and other organizational details, such as facility type ownership status. The airport overview analysis for this study used 2024 FAA 5010 Airport Master Record data to establish total operations, number of aircraft housed, runway length, military operations and air taxi operations. 5010 data is available for all general aviation airports, providing the research team with a full coverage dataset for all airports in the study. Total operations and total aircraft were aggregated from the subcategories of flight operations and house aircraft included in the 5010 data. Although presented a discrete number in the 5010 data, the annual air taxi operations were put into classes into classes of to better accommodate the potential annual variation.

Total operations include air taxi operations, local operations, itinerary operations, and military operations. Although included in the total operations category, the military and air taxi operations are also independently highlighted as operations that could potentially benefit from electrification. Total housed aircraft includes all fixed wing aircraft (single engine, multi-engine, and jet engine) and helicopters housed at the airport. The runway length of each airport is provided within 5010 data.

To determine the number of flights that are within the ideal 80-mile range of electric aircraft, the research team reviewed the filed flight plans from all the airports with available flight plan data. This analysis included 34 of the 37 airports in the study and yielded the flight distance graph (see [Table 2](#)). The number of flights within 80 miles is highlighted to show the flights within the ideal electric aircraft range that are currently occurring at the airport.

SUMMARY

The results allow the research team to present a consistent airport overview for each airport summary sheet. The airport overview snapshot was combined with other electric infrastructure readiness and site suitability factors to determine the level of readiness for electric aviation infrastructure. [Table 7](#) shows a snapshot of flight operations metrics by ARC airport. Meanwhile, *Appendix B: Electric Aviation Readiness Profiles* contains a more comprehensive of airport metrics that can be used to gauge AAM readiness for all 37 airports in the study.

Table 7. Airport Operations Metrics Sourced from FAA 5010 & Filed Flight Plan Data (ITRE, 2025).

Airport	City	State	Total Based Aircraft	Air Taxi Operations	GA Local Operations	GA Itinerant Operations	Military Operations	Total Operations
Ashland Regional (DWU)	Worthington	KY	26	550	3,795	2,970	275	7,590
Big Sandy Regional (SJS)	Debord	KY	16	900	3,630	2,800	250	7,580
Fleming-Mason (FGX)	Maysville	KY	21	0	6,320	10,500	250	17,070
Julian Carroll (JKL)	Jackson	KY	0	50	200	75	50	375
Lake Cumberland Regional (SME)	Somerset	KY	40	1,447	7,050	18,000	1,500	27,997
London/Corbin/Magee (LOZ)	London	KY	39	4,042	8,680	2,852	13,454	29,028
Central Regional Airport (RGA)	Richmond	KY	62	1,800	25,000	11,540	440	38,780
McCreary County (18I)	Stearns	KY	4	84	525	220	52	881
Middlesboro/Bell County (1A6)	Middlesboro	KY	28	500	9,350	7,500	200	17,550
Morehead-Rowan County Clyde A Thomas Regional (SYM)	Morehead	KY	26	50	4,000	2,950	300	7,300
Mount Sterling/ Montgomery County (IOB)	Mt. Sterling	KY	81	4,658	18,400	15,985	875	39,918
Russell County (K24)	Russell Springs	KY	13	220	5,250	3,300	220	8,990
Stanton (I50)	Stanton	KY	12	225	2,100	2,800	60	5,185
Tompkinsville/ Monroe County (TZV)	Tompkinsville	KY	52	840	8,720	1,600	300	11,460
Tucker-Guthrie Memorial (I35)	Harlan	KY	10	500	2,520	3,960	500	7,480
Wayne County (EKQ)	Monticello	KY	10	760	2,900	4,800	180	8,640
Wendell H Ford (CPF)	Chavies	KY	18	1,320	3,850	4,200	800	10,170
West Liberty (9I3)	West Liberty	KY	17	100	2,200	2,000	10	4,310
Williamsburg-Whitley County (BYL)	Williamsburg	KY	14	1,500	3,450	500	50	5,500
Jackson County (24A)	Sylva	NC	12	150	1,600	2,500	200	4,450
Rutherford County/ Marchman Field (FQD)	Rutherfordton	NC	55	0	3,650	8,000	500	12,150
Shelby-Cleveland County Regional (EHO)	Shelby	NC	75	0	10,000	8,000	200	18,200
Western Carolina Regional (RHP)	Andrews	NC	44	1,000	14,000	5,000	500	20,500
Alexander Salamon (AMT)	Winchester	OH	16	0	1,344	72	0	1,416
Cambridge Municipal (CDI)	Cambridge	OH	13	477	346	500	38	1,361
Gallia-Meigs Regional (GAS)	Gallipolis	OH	17	40	13,000	5,230	200	18,470
Geary A Bates/ Jefferson County (2G2)	Wintersville	OH	34	246	9,573	456	150	10,425
Greater Portsmouth Regional (PMH)	Portsmouth	OH	25	400	27,000	18,030	100	45,530
Highland County (HOC)	Hillsboro	OH	21	32	4,426	4,426	228	9,112
James A Rhodes (JRO)	Jackson	OH	20	728	4,500	550	275	6,053
Lawrence County Airpark (HTW)	South Point	OH	24	300	7,200	2,750	166	10,416
Monroe County (4G5)	Woodsfield	OH	14	10	100	860	54	1,024
Northeast Ohio Regional (HZY)	Jefferson	OH	24	145	528	520	2	1,195
Ohio University (UNI)	Albany	OH	39	800	58,400	51,100	72	110,372
Pike County (EOP)	Waverly	OH	10	0	800	1,300	12	2,112
Richard Downing (I40)	Coshocton	OH	19	2,500	15,000	4,200	100	21,800
Vinton County Airpark (22I)	New Plymouth	OH	8	0	2,750	2,200	275	5,225

USING PLACER.AI TO DETERMINE AIRPORT-FACILITATED BUSINESS ACTIVITY IN APPALACHIA

Placer.AI (Placer) is a valuable application for assessing the market area of a general aviation airport by providing detailed insights into visitor patterns and travel behavior. By leveraging mobile device location data, Placer enables analysts to identify where airport users are coming from and where they are heading immediately before and after their airport visit. This information can help define the airport's effective catchment area and uncover connections to key destinations, such as business centers, recreational sites, or residential areas. Additionally, Placer can be further queried to determine the proportion of foot traffic to nearby or associated locations that can be attributed specifically to airport activity, helping to quantify the airport's role in regional mobility and its influence on surrounding economic activity relative to total yearly visits. For the analysis of the airports, the team used Placer to examine how often people visit a specific point of interest (POI), from where, and what time of the year. For this analysis, the research team evaluated the last full 12 months.⁵

DATA EXTRACTION METHODOLOGY

The team used Prior/Post Compare to see the immediate business traffic flow with the chosen airports. Prior data shows how many visitors came from a business to the POI, while Post data shows how many visitors came from POI to a business (see [Figure 6](#)).

Property		County	Category	Area Explorer
Jackson County Airport (26A) ...		Location	All Categories	Slide
Prior		Post		
Rank	Name	Foot Traffic	Rank	Name
1	Exxon / Little Savannah Rd, Cullowhee, NC	14.9%	1	Exxon / Little Savannah Rd, Cullowhee, NC
2	COOR Out / E Main St, Sylva, NC	5.9%	2	COOR Out / E Main St, Sylva, NC
3	Walmart / Walmart Plaza, Sylva, NC	3.5%	3	Walmart / Walmart Plaza, Sylva, NC
4	SONIC Drive In / E Main St, Sylva, NC	2.1%	4	McDonald's / Skyland Drive, Sylva, NC
5	McDonald's / Skyland Drive, Sylva, NC	2%	5	Henson Stadium / Speedway Rd, Cullowhee, NC

Figure 6. Prior/Post Compare Table within Placer.AI (ITRE, 2025).

Downloading the file as a CSV, the output table displays ID (location's assigned code); name; sub category (e.g. airport facility, bars and pubs, beauty and spa, etc.); address, zip code, city, location (e.g. latitude and longitude), prior percentage, prior visits, post percentage, and post visits (see [Figure 7](#)). The number of businesses connected to each airport varied greatly based on how busy and how accessible the airport is, from 538 for London-Corbin airport in London, Kentucky to 92 for Julian Carroll airport in Jackson, Kentucky. Out of 37 airports, the team was able to process 33 using the Placer application.⁶ With these files, the team accounted for the total visits to a location.

Name	Category	Sub Category	Address	Zip Code	City	Location	Prior %	Prior Visits	Post %	Post Visits	Prior Post Visits
McDonald's	Dining	Fast Food & QSR	300 Patton Ave	28906	Asheville	35.346408866751E1	<0.5%	0	0	0	0
McDonald's	Dining	Fast Food & QSR	800 Fairview Rd	28909	Asheville	35.549543743849E1	<0.5%	0	0	0	0
Walmart	Supercenters	Supercenters	115 Town Center	28786	Waynesville	35.486724285751E1	<0.5%	38	<0.5%	31	408
Warrior's Cherokee Casino	Hotels & Casinos	Hotels & Casinos	777 Casino Dr	28759	Cherokee	35.489783823362E1	<0.5%	49	<0.5%	31	3382
Ingles	Groceries	Groceries	300 Barber Blvd	28786	Waynesville	35.504497528036E1	<0.5%	9	<0.5%	34	433
Bojangles' Famous Chicken	Dining	Fast Food & QSR	40 Veterans Blvd	28713	Bryson City	35.425283339304E1	<0.5%	24	N/A	0	24
Taco Bell	Dining	Fast Food & QSR	530 NC Highway 7	28711	Black Mountain	35.608203887939E1	N/A	0	<0.5%	31	33
Jeremiah's Italian Ice	Dining	Breakfast, Coffee, &	705 Mammoth Ave	28804	Asheville	35.627589313338E1	<0.5%	34	N/A	0	24
Oconalufee Visitor Center	Shops & Services	Shops & Services	1394 Newfound G	28759	Cherokee	35.513093485732E1	<0.5%	64	<0.5%	8	72
Lowie's	Home Improvement	Home Improvement	1716 E Main St	28779	Sylva	35.334134494340E1	<0.5%	194	<0.5%	64	258
Hardie's	Dining	Fast Food & QSR	475 E Main St	28779	Sylva	35.374631622194E1	<0.5%	38	<0.5%	20	58
Dollar General	Shops & Services	Discount & Dollar St	142 E Sylva Cir Bc	28779	Sylva	35.379553930664E1	<0.5%	9	<0.5%	31	40
Mountain Credit Union	Shops & Services	Banks & Financial St	30 Highway 107	28779	Sylva	35.352719710812E1	<0.5%	41	<0.5%	8	49
Exxon	Shops & Services	Gas Stations & Conv	3275 US Highway	28779-8340	Sylva	35.336040494826E1	<0.5%	123	<0.5%	19	142
Asheboro Regional Airport	Travel	Airport Facilities	2222 Pilots View I	27205	Asheboro	35.65275049338E1	<0.5%	20	N/A	0	20
Innovation Brewing	Lounges	Bars & Pubs	414 W Main St	28779	Sylva	35.373976824356E1	<0.5%	65	<0.5%	20	75

Figure 7. Prior-Post Export Example in CSV format (ITRE, 2025).

⁵ The team downloaded files between August and December of 2024, so the time periods would be anywhere between entire year of 2024, and fall 2023 to fall 2024.

⁶ Alexander Salamon (AMT), Monroe County (4G5), Wayne County (EKG), and West Liberty (9I3) had "Insufficient Data" on Placer.

Appendix B:

Cohort Optimal Electric Aviation Scenarios

Rankings by use case, for each of the 37 cohort airports, are included in the tables within this appendix.

Table 8. On-Demand Air Taxi Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Jobs within 80 miles of Airport (Normalized)	Population within 80 miles (Normalized)	Average Time to Work (Normalized)	Per Capita Income within 80 miles (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.5	100.0	84.8	26.6	100.0	44.4	100.0	408.3	100.0	1
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.7	87.2	100.0	27.0	77.2	66.7	63.4	388.6	94.4	2
Highland County	HOC	Highland	Hillsboro	OH	-26.5	92.2	49.3	44.5	79.9	5.6	54.9	299.8	69.0	3
Richard Downing	I40	Coshocton	Coshocton	OH	-13.4	72.2	44.2	15.9	67.8	22.2	86.0	294.8	67.6	4
Alexander Salamon	AMT	Adams	Winchester	OH	-31.0	59.1	25.5	77.8	66.4	16.7	54.9	269.2	60.3	5
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5	36.6	18.5	36.6	56.4	50.0	88.6	262.2	58.2	6
Pike County	EOP	Pike	Waverly	OH	-24.0	53.5	25.6	52.3	50.5	5.6	88.6	252.2	55.4	7
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.5	46.5	30.0	46.8	54.1	0.0	88.6	250.5	54.9	8
Central Regional Airport	RGA	Madison	Richmond	KY	0.0	22.6	38.1	32.0	77.0	44.4	27.6	241.8	52.4	9
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.2	72.8	72.5	15.1	73.6	27.8	20.2	237.8	51.3	10
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5	48.8	17.7	86.8	62.2	11.1	27.6	223.6	47.2	11
Monroe County	4G5	Monroe	Woodsfield	OH	-33.1	29.6	12.7	35.9	62.5	5.6	100.0	213.3	44.2	12
Ashland Regional	DWU	Boyd	Worthington	KY	-24.4	10.1	19.4	40.0	34.5	72.2	55.2	207.0	42.5	13
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.2	10.5	21.3	34.9	39.3	72.2	55.2	202.2	41.1	14
Ohio University	UNI	Athens	Albany	OH	-17.3	35.8	18.1	47.7	45.6	5.6	55.2	190.6	37.8	15
Stanton	I50	Powell	Stanton	KY	-9.7	15.9	17.4	58.0	57.3	22.2	27.6	188.7	37.2	16
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.4	8.6	6.9	43.8	19.7	100.0	27.6	182.2	35.4	17
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.4	27.6	32.8	38.1	80.2	38.9	27.6	180.8	35.0	18
West Liberty	9I3	Morgan	West Liberty	KY	-21.0	6.4	1.8	94.5	15.3	22.2	55.2	174.5	33.2	19
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.4	14.5	16.9	34.1	47.1	22.2	55.2	169.6	31.8	20
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-24.0	19.2	16.0	48.6	36.3	16.7	55.2	168.0	31.3	21
James A Rhodes	JRO	Jackson	Jackson	OH	-25.2	28.1	17.8	40.5	39.4	11.1	55.2	166.8	31.0	22
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.1	19.4	6.4	84.8	41.2	5.6	27.6	159.8	29.0	23
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.1	12.0	7.6	63.4	5.2	38.9	72.4	157.5	28.3	24
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100.0	72.0	44.7	0.0	78.4	5.6	54.9	155.5	27.7	25
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.8	2.7	5.5	84.7	15.6	11.1	55.2	136.9	22.4	26
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.2	9.8	8.0	60.6	10.0	38.9	27.6	130.7	20.6	27
Jackson County	24A	Jackson	Sylva	NC	-65.9	38.0	23.1	8.0	76.9	27.8	20.2	128.0	19.9	28
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.1	15.7	5.6	55.6	32.7	5.6	12.8	119.9	17.6	29
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.6	31.9	14.8	34.8	67.1	27.8	0.0	114.9	16.1	30
Wendell H Ford	CPF	Perry	Chavies	KY	-26.3	0.0	0.0	97.2	0.0	5.6	27.6	104.0	13.0	31
Russell County	K24	Russell	Russell Springs	KY	-7.6	5.1	1.8	37.9	21.8	5.6	27.6	92.2	9.6	32
McCreary County	18I	McCreary	Stearns	KY	-24.7	13.6	9.8	43.0	17.5	27.8	0.0	87.0	8.2	33
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.8	16.6	18.0	49.4	21.8	22.2	0.0	85.2	7.6	34
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.3	11.6	10.6	48.8	12.2	22.2	0.0	77.1	5.3	35
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6	3.7	0.0	100.0	6.4	5.6	27.6	66.6	2.3	36
Wayne County	EKQ	Wayne	Monticello	KY	-15.9	3.7	1.3	43.6	14.7	11.1	0.0	58.5	0.0	37

Table 9. Regional Air Mobility Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Jobs within 80 miles of Airport (Normalized)	Population within 80 miles (Normalized)	Total Population Closest to this Airport	Average Time to Work (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.72	87.17	100.00	100.00	26.97	66.67	63.40	411.5	100.00	1
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.54	100.00	84.79	53.24	26.56	44.44	100.00	361.5	86.27	2
Richard Downing	I40	Coshocton	Coshocton	OH	-13.42	72.20	44.18	21.60	15.88	22.22	85.96	248.6	55.26	3
Central Regional Airport	RGA	Madison	Richmond	KY	0.00	22.65	38.09	76.50	31.98	44.44	27.55	241.2	53.22	4
Highland County	HOC	Highland	Hillsboro	OH	-26.49	92.20	49.31	20.68	44.50	5.56	54.89	240.7	53.07	5
Ashland Regional	DWU	Boyd	Worthington	KY	-24.38	10.13	19.36	57.19	40.00	72.22	55.21	229.7	50.06	6
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.16	72.79	72.53	58.36	15.05	27.78	20.21	222.6	48.10	7
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.54	36.61	18.47	16.34	36.63	50.00	88.62	222.1	47.97	8
Alexander Salamon	AMT	Adams	Winchester	OH	-31.02	59.08	25.47	13.46	77.77	16.67	54.89	216.3	46.38	9
Pike County	EOP	Pike	Waverly	OH	-23.99	53.50	25.63	14.46	52.35	5.56	88.62	216.1	46.33	10
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.48	46.48	30.05	8.42	46.80	0.00	88.62	204.9	43.24	11
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.38	8.55	6.94	38.38	43.85	100.00	27.55	200.9	42.14	12
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.19	10.52	21.28	35.14	34.86	72.22	55.21	198.0	41.36	13
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.20	9.83	7.96	68.01	60.59	38.89	27.55	188.6	38.77	14
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-23.99	19.21	15.96	45.94	48.58	16.67	55.21	177.6	35.74	15
West Liberty	9I3	Morgan	West Liberty	KY	-20.99	6.42	1.83	16.69	94.47	22.22	55.21	175.9	35.27	16
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.51	48.75	17.68	13.78	86.79	11.11	27.55	175.2	35.07	17
Ohio University	UNI	Athens	Albany	OH	-17.34	35.77	18.11	23.05	47.70	5.56	55.21	168.1	33.12	18
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.09	12.02	7.64	14.55	63.39	38.89	72.45	166.8	32.79	19
Stanton	I50	Powell	Stanton	KY	-9.71	15.91	17.43	21.94	58.00	22.22	27.55	153.4	29.08	20
Monroe County	4G5	Monroe	Woodsfield	OH	-33.08	29.63	12.69	0.00	35.93	5.56	100.00	150.7	28.36	21
James A Rhodes	JRO	Jackson	Jackson	OH	-25.22	28.14	17.75	15.98	40.46	11.11	55.21	143.4	26.36	22
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.07	19.36	6.41	21.52	84.76	5.56	27.55	140.1	25.44	23
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.37	27.57	32.85	38.55	38.11	38.89	27.55	139.1	25.18	24
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100.00	71.96	44.72	60.41	0.00	5.56	54.89	137.5	24.74	25
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.45	14.54	16.87	11.38	34.07	22.22	55.21	133.8	23.72	26
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.84	2.66	5.49	6.19	84.67	11.11	55.21	127.5	21.98	27
Wendell H Ford	CPF	Perry	Chavies	KY	-26.35	0.00	0.03	22.51	97.17	5.56	27.55	126.5	21.70	28
Jackson County	24A	Jackson	Sylva	NC	-65.92	37.98	23.08	59.19	8.00	27.78	20.21	110.3	17.26	29
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.13	15.73	5.63	4.62	55.65	5.56	12.77	91.8	12.18	30
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.84	16.61	17.96	21.69	49.44	22.22	0.00	85.1	10.32	31
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.33	11.64	10.63	16.03	48.76	22.22	0.00	81.0	9.19	32
McCreary County	18I	McCreary	Stearns	KY	-24.67	13.58	9.79	4.08	43.05	27.78	0.00	73.6	7.17	33
Russell County	K24	Russell	Russell Springs	KY	-7.59	5.14	1.84	1.72	37.94	5.56	27.55	72.2	6.77	34
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.62	3.72	0.00	3.05	100.00	5.56	27.55	63.3	4.33	35
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.56	31.92	14.83	10.49	34.81	27.78	0.00	58.3	2.96	36
Wayne County	EKQ	Wayne	Monticello	KY	-15.92	3.69	1.29	3.76	43.57	11.11	0.00	47.5	0.00	37

Table 10. Airport Shuttle Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Jobs within 80 miles of Airport (Normalized)	Airports within 80 miles (Normalized)	Population within 80 miles (Normalized)	Total Population Closest to this Airport	Average Time to Work (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.7	87.2	62.0	100.0	100.0	27.0	66.7	63.4	473.5	100.0	1
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.5	100.0	100.0	84.8	53.2	26.6	44.4	100.0	461.5	97.1	2
Richard Downing	I40	Coshocton	Coshocton	OH	-13.4	72.2	95.9	44.2	21.6	15.9	22.2	86.0	344.6	68.6	3
Highland County	HOC	Highland	Hillsboro	OH	-26.5	92.2	91.0	49.3	20.7	44.5	5.6	54.9	331.6	65.4	4
Alexander Salamon	AMT	Adams	Winchester	OH	-31.0	59.1	72.9	25.5	13.5	77.8	16.7	54.9	289.2	55.1	5
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5	36.6	66.1	18.5	16.3	36.6	50.0	88.6	288.2	54.9	6
Pike County	EOP	Pike	Waverly	OH	-24.0	53.5	67.0	25.6	14.5	52.3	5.6	88.6	283.1	53.6	7
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.2	72.8	58.8	72.5	58.4	15.1	27.8	20.2	281.4	53.2	8
Central Regional Airport	RGA	Madison	Richmond	KY	0.0	22.6	23.5	38.1	76.5	32.0	44.4	27.6	264.7	49.2	9
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.5	46.5	46.6	30.0	8.4	46.8	0.0	88.6	251.5	45.9	10
Ashland Regional	DWU	Boyd	Worthington	KY	-24.4	10.1	14.0	19.4	57.2	40.0	72.2	55.2	243.8	44.1	11
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5	48.8	59.3	17.7	13.8	86.8	11.1	27.6	234.4	41.8	12
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.4	8.6	23.1	6.9	38.4	43.8	100.0	27.6	224.0	39.2	13
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-24.0	19.2	36.7	16.0	45.9	48.6	16.7	55.2	214.2	36.9	14
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100.0	72.0	74.7	44.7	60.4	0.0	5.6	54.9	212.2	36.4	15
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.2	9.8	19.9	8.0	68.0	60.6	38.9	27.6	208.5	35.5	16
Ohio University	UNI	Athens	Albany	OH	-17.3	35.8	36.2	18.1	23.1	47.7	5.6	55.2	204.3	34.4	17
Monroe County	4G5	Monroe	Woodsfield	OH	-33.1	29.6	52.5	12.7	0.0	35.9	5.6	100.0	203.2	34.2	18
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.2	10.5	4.5	21.3	35.1	34.9	72.2	55.2	202.6	34.0	19
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.1	12.0	23.5	7.6	14.6	63.4	38.9	72.4	190.4	31.1	20
West Liberty	9I3	Morgan	West Liberty	KY	-21.0	6.4	13.1	1.8	16.7	94.5	22.2	55.2	189.0	30.7	21
James A Rhodes	JRO	Jackson	Jackson	OH	-25.2	28.1	37.1	17.8	16.0	40.5	11.1	55.2	180.5	28.7	22
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.4	27.6	35.3	32.8	38.6	38.1	38.9	27.6	174.4	27.2	23
Stanton	I50	Powell	Stanton	KY	-9.7	15.9	19.9	17.4	21.9	58.0	22.2	27.6	173.3	26.9	24
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.1	19.4	32.1	6.4	21.5	84.8	5.6	27.6	172.2	26.6	25
Jackson County	24A	Jackson	Sylva	NC	-65.9	38.0	46.2	23.1	59.2	8.0	27.8	20.2	156.5	22.8	26
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.4	14.5	12.2	16.9	11.4	34.1	22.2	55.2	146.1	20.3	27
Wendell H Ford	CPF	Perry	Chavies	KY	-26.3	0.0	14.0	0.0	22.5	97.2	5.6	27.6	140.5	18.9	28
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.8	2.7	0.0	5.5	6.2	84.7	11.1	55.2	127.5	15.7	29
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.1	15.7	22.2	5.6	4.6	55.6	5.6	12.8	114.0	12.4	30
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.8	16.6	25.3	18.0	21.7	49.4	22.2	0.0	110.4	11.6	31
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.3	11.6	24.4	10.6	16.0	48.8	22.2	0.0	105.4	10.4	32
McCreary County	18I	McCreary	Stearns	KY	-24.7	13.6	27.2	9.8	4.1	43.0	27.8	0.0	100.8	9.2	33
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.6	31.9	40.7	14.8	10.5	34.8	27.8	0.0	99.0	8.8	34
Russell County	K24	Russell	Russell Springs	KY	-7.6	5.1	17.7	1.8	1.7	37.9	5.6	27.6	89.8	6.6	35
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6	3.7	13.1	0.0	3.1	100.0	5.6	27.6	76.4	3.3	36
Wayne County	EKQ	Wayne	Monticello	KY	-15.9	3.7	15.4	1.3	3.8	43.6	11.1	0.0	62.9	0.0	37

Table 11. Emergency Medical Service Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	No. of Trauma Centers within 80 miles (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.53913733	100.00	44.44	100.00	196.9	100.00	1
Richard Downing	I40	Coshocton	Coshocton	OH	-13.41650121	91.40	22.22	85.96	186.2	95.34	2
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5447052	57.47	50.00	88.62	171.5	89.00	3
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.1897244	72.85	72.22	55.21	169.1	87.95	4
Ashland Regional	DWU	Boyd	Worthington	KY	-24.38094827	50.23	72.22	55.21	153.3	81.09	5
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.72247225	43.89	66.67	63.40	141.2	75.87	6
Monroe County	4G5	Monroe	Woodsfield	OH	-33.08055853	64.71	5.56	100.00	137.2	74.11	7
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.47532058	63.80	0.00	88.62	136.9	74.01	8
Central Regional Airport	RGA	Madison	Richmond	KY	0	63.35	44.44	27.55	135.3	73.32	9
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.38130408	30.32	100.00	27.55	133.5	72.51	10
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.44525437	72.85	22.22	55.21	129.8	70.93	11
Pike County	EOP	Pike	Waverly	OH	-23.98579446	54.30	5.56	88.62	124.5	68.61	12
Ohio University	UNI	Athens	Albany	OH	-17.33753481	72.40	5.56	55.21	115.8	64.85	13
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.09117967	37.56	38.89	72.45	106.8	60.94	14
James A Rhodes	JRO	Jackson	Jackson	OH	-25.22183952	61.09	11.11	55.21	102.2	58.94	15
West Liberty	9I3	Morgan	West Liberty	KY	-20.98803345	42.99	22.22	55.21	99.4	57.75	16
Highland County	HOC	Highland	Hillsboro	OH	-26.49324367	64.25	5.56	54.89	98.2	57.22	17
Stanton	I50	Powell	Stanton	KY	-9.713976442	52.04	22.22	27.55	92.1	54.57	18
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-23.98619917	42.08	16.67	55.21	90.0	53.65	19
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.84411425	60.63	11.11	55.21	89.1	53.27	20
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.20103046	42.53	38.89	27.55	84.8	51.39	21
Alexander Salamon	AMT	Adams	Winchester	OH	-31.02195179	37.10	16.67	54.89	77.6	48.30	22
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100	91.86	5.56	54.89	52.3	37.32	23
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.36881666	50.23	38.89	27.55	52.3	37.32	24
Wendell H Ford	CPF	Perry	Chavies	KY	-26.34618623	40.27	5.56	27.55	47.0	35.03	25
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5071675	37.10	11.11	27.55	45.3	34.26	26
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.06519489	36.65	5.56	27.55	44.7	34.02	27
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.15931883	40.72	27.78	20.21	44.6	33.96	28
Russell County	K24	Russell	Russell Springs	KY	-7.594213927	11.31	5.56	27.55	36.8	30.61	29
McCreary County	18I	McCreary	Stearns	KY	-24.66955466	19.91	27.78	0.00	23.0	24.62	30
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.33053553	28.96	22.22	0.00	22.9	24.55	31
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.125694042	3.62	5.56	12.77	13.8	20.63	32
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.83985846	26.70	22.22	0.00	6.1	17.28	33
Wayne County	EKQ	Wayne	Monticello	KY	-15.92162045	7.69	11.11	0.00	2.9	15.89	34
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6212561	45.25	5.56	27.55	1.7	15.40	35
Jackson County	24A	Jackson	Sylva	NC	-65.91614263	13.57	27.78	20.21	-4.4	12.76	36
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.561147	0.00	27.78	0.00	-33.8	0.00	37

Table 12. Corporate Shuttle Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Jobs within 80 miles of Airport (Normalized)	Population within 80 miles (Normalized)	Average Time to Work (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Highland County	HOC	Highland	Hillsboro	OH	-26.49324367	92.20	49.31	44.50	100.00	100.00	359.5	100.00	1
West Liberty	9I3	Morgan	West Liberty	KY	-20.98803345	6.42	1.83	94.47	99.76	99.76	281.2	75.15	2
McCreary County	18I	McCreary	Stearns	KY	-24.66955466	13.58	9.79	43.05	99.82	99.82	241.4	62.49	3
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100	71.96	44.72	0.00	99.64	99.64	216.0	54.42	4
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.72247225	87.17	100.00	26.97	11.07	11.07	203.6	50.48	5
Central Regional Airport	RGA	Madison	Richmond	KY	0	22.65	38.09	31.98	41.15	41.15	175.0	41.42	6
Alexander Salamon	AMT	Adams	Winchester	OH	-31.02195179	59.08	25.47	77.77	19.48	19.48	170.3	39.91	7
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5071675	48.75	17.68	86.79	22.14	22.14	167.0	38.87	8
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.47532058	46.48	30.05	46.80	28.74	28.74	165.3	38.35	9
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.53913733	100.00	84.79	26.56	0.00	0.00	163.8	37.86	10
Stanton	I50	Powell	Stanton	KY	-9.713976442	15.91	17.43	58.00	35.51	35.51	152.6	34.32	11
Wendell H Ford	CPF	Perry	Chavies	KY	-26.34618623	0.00	0.03	97.17	39.94	39.94	150.7	33.71	12
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.125694042	15.73	5.63	55.65	40.01	40.01	148.9	33.13	13
Pike County	EOP	Pike	Waverly	OH	-23.98579446	53.50	25.63	52.35	20.34	20.34	148.2	32.90	14
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.06519489	19.36	6.41	84.76	29.68	29.68	144.8	31.83	15
Ohio University	UNI	Athens	Albany	OH	-17.33753481	35.77	18.11	47.70	29.93	29.93	144.1	31.61	16
Richard Downing	I40	Coshocton	Coshocton	OH	-13.41650121	72.20	44.18	15.88	12.19	12.19	143.2	31.33	17
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.20103046	9.83	7.96	60.59	43.62	43.62	141.4	30.75	18
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.15931883	72.79	72.53	15.05	10.70	10.70	137.6	29.55	19
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.84411425	2.66	5.49	84.67	38.66	38.66	132.3	27.86	20
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.33053553	11.64	10.63	48.76	42.40	42.40	127.5	26.34	21
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.83985846	16.61	17.96	49.44	42.79	42.79	126.7	26.09	22
Russell County	K24	Russell	Russell Springs	KY	-7.594213927	5.14	1.84	37.94	42.81	42.81	123.0	24.89	23
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.09117967	12.02	7.64	63.39	39.66	39.66	120.3	24.04	24
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-23.98619917	19.21	15.96	48.58	30.12	30.12	120.0	23.95	25
Wayne County	EKQ	Wayne	Monticello	KY	-15.92162045	3.69	1.29	43.57	43.36	43.36	119.3	23.74	26
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.38130408	8.55	6.94	43.85	41.99	41.99	118.9	23.62	27
James A Rhodes	JRO	Jackson	Jackson	OH	-25.22183952	28.14	17.75	40.46	28.90	28.90	118.9	23.61	28
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.44525437	14.54	16.87	34.07	35.60	35.60	116.2	22.75	29
Ashland Regional	DWU	Boyd	Worthington	KY	-24.38094827	10.13	19.36	40.00	35.46	35.46	116.0	22.69	30
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5447052	36.61	18.47	36.63	20.77	20.77	108.7	20.36	31
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.1897244	10.52	21.28	34.86	35.69	35.69	106.8	19.78	32
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6212561	3.72	0.00	100.00	37.69	37.69	102.5	18.39	33
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.36881666	27.57	32.85	38.11	29.68	29.68	93.5	15.55	34
Monroe County	4G5	Monroe	Woodsfield	OH	-33.08055853	29.63	12.69	35.93	19.72	19.72	84.6	12.71	35
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.561147	31.92	14.83	34.81	20.82	20.82	61.6	5.43	36
Jackson County	24A	Jackson	Sylva	NC	-65.91614263	37.98	23.08	8.00	20.70	20.70	44.6	0.00	37

Table 13. Air Cargo Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Population within 80 miles (Normalized)	Highway Lane Miles within 80 miles (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.72247225	100.00	11.07	66.67	63.40	208.4	100.00	1
Highland County	HOC	Highland	Hillsboro	OH	-26.49324367	49.31	100.00	5.56	54.89	183.3	88.26	2
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.53913733	84.79	0.00	44.44	100.00	181.7	87.53	3
West Liberty	9I3	Morgan	West Liberty	KY	-20.98803345	1.83	99.76	22.22	55.21	158.0	76.48	4
Ashland Regional	DWU	Boyd	Worthington	KY	-24.38094827	19.36	35.46	72.22	55.21	157.9	76.40	5
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5447052	18.47	20.77	50.00	88.62	153.3	74.28	6
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.1897244	21.28	35.69	72.22	55.21	153.2	74.23	7
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.38130408	6.94	41.99	100.00	27.55	152.1	73.71	8
Central Regional Airport	RGA	Madison	Richmond	KY	0	38.09	41.15	44.44	27.55	151.2	73.31	9
Richard Downing	I40	Coshocton	Coshocton	OH	-13.41650121	44.18	12.19	22.22	85.96	151.1	73.26	10
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.47532058	30.05	28.74	0.00	88.62	131.9	64.30	11
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.09117967	7.64	39.66	38.89	72.45	116.5	57.11	12
Pike County	EOP	Pike	Waverly	OH	-23.98579446	25.63	20.34	5.56	88.62	116.2	56.94	13
McCreary County	18I	McCreary	Stearns	KY	-24.66955466	9.79	99.82	27.78	0.00	112.7	55.33	14
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.44525437	16.87	35.60	22.22	55.21	109.5	53.81	15
Monroe County	4G5	Monroe	Woodsfield	OH	-33.08055853	12.69	19.72	5.56	100.00	104.9	51.67	16
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100	44.72	99.64	5.56	54.89	104.8	51.64	17
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-23.98619917	15.96	30.12	16.67	55.21	94.0	46.58	18
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.20103046	7.96	43.62	38.89	27.55	93.8	46.51	19
Stanton	I50	Powell	Stanton	KY	-9.713976442	17.43	35.51	22.22	27.55	93.0	46.13	20
Ohio University	UNI	Athens	Albany	OH	-17.33753481	18.11	29.93	5.56	55.21	91.5	45.41	21
James A Rhodes	JRO	Jackson	Jackson	OH	-25.22183952	17.75	28.90	11.11	55.21	87.8	43.68	22
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.15931883	72.53	10.70	27.78	20.21	87.1	43.35	23
Alexander Salamon	AMT	Adams	Winchester	OH	-31.02195179	25.47	19.48	16.67	54.89	85.5	42.62	24
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.84411425	5.49	38.66	11.11	55.21	72.6	36.62	25
Russell County	K24	Russell	Russell Springs	KY	-7.594213927	1.84	42.81	5.56	27.55	70.2	35.47	26
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.36881666	32.85	29.68	38.89	27.55	64.6	32.87	27
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.125694042	5.63	40.01	5.56	12.77	55.8	28.78	28
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5071675	17.68	22.14	11.11	27.55	48.0	25.11	29
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.33053553	10.63	42.40	22.22	0.00	46.9	24.62	30
Wendell H Ford	CPF	Perry	Chavies	KY	-26.34618623	0.03	39.94	5.56	27.55	46.7	24.53	31
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.06519489	6.41	29.68	5.56	27.55	44.1	23.32	32
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.83985846	17.96	42.79	22.22	0.00	40.1	21.45	33
Wayne County	EKQ	Wayne	Monticello	KY	-15.92162045	1.29	43.36	11.11	0.00	39.8	21.31	34
Jackson County	24A	Jackson	Sylva	NC	-65.91614263	23.08	20.70	27.78	20.21	25.9	14.79	35
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.561147	14.83	20.82	27.78	0.00	1.9	3.59	36
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6212561	0.00	37.69	5.56	27.55	-5.8	0.00	37

Table 14. Flight Training Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Existing Flight Training Extent	Local Pilot Density Index	Local Student Age Population Index	Airspace Penalty (Normalized)	Index Score	Normalized Score	Rank
Central Regional Airport	RGA	Madison	Richmond	KY	100.0	100.00	8.96	0.00	300.00	100.0	1
Ohio University	UNI	Athens	Albany	OH	100.0	10.02	91.88	-17.34	272.51	92.7	2
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	100.0	6.57	100.00	-32.72	263.84	90.4	3
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	100.0	10.93	67.16	-24.38	231.29	81.7	4
London/Corbin/Magee	LOZ	Laurel	London	KY	100.0	9.67	57.17	-24.20	215.31	77.5	5
Lawrence County Airpark	HTW	Lawrence	South Point	OH	100.0	7.50	48.88	-31.19	193.28	71.6	6
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	100.0	10.45	47.58	-44.16	182.69	68.8	7
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	100.0	12.51	25.86	-25.07	173.55	66.4	8
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	50.0	5.66	79.68	-23.99	170.27	65.5	9
Wendell H Ford	CPF	Perry	Chavies	KY	100.0	9.34	21.71	-26.35	161.74	63.3	10
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	100.0	4.48	19.17	-20.45	157.02	62.0	11
Fleming-Mason	FGX	Fleming	Maysville	KY	100.0	7.11	3.08	-30.51	127.63	54.2	12
Western Carolina Regional	RHP	Cherokee	Andrews	NC	100.0	14.44	15.23	-61.56	124.56	53.4	13
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	100.0	12.29	19.04	-64.37	124.13	53.3	14
Highland County	HOC	Highland	Hillsboro	OH	50.0	6.71	43.64	-26.49	117.53	51.5	15
Ashland Regional	DWU	Boyd	Worthington	KY	50.0	6.24	40.00	-24.38	113.73	50.5	16
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	50.0	3.66	57.78	-47.54	112.39	50.2	17
Richard Downing	I40	Coshocton	Coshocton	OH	50.0	5.64	31.52	-13.42	111.66	50.0	18
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	50.0	4.76	42.06	-28.33	110.61	49.7	19
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	50.0	5.26	85.27	-100.00	101.71	47.3	20
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	50.0	3.52	12.74	-4.28	90.76	44.4	21
James A Rhodes	JRO	Jackson	Jackson	OH	50.0	3.17	23.40	-25.22	84.64	42.8	22
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	50.0	13.33	0.65	-8.13	83.66	42.5	23
Stanton	I50	Powell	Stanton	KY	50.0	10.97	3.95	-9.71	83.42	42.5	24
Jackson County	24A	Jackson	Sylva	NC	50.0	5.23	45.57	-65.92	78.73	41.2	25
Alexander Salamon	AMT	Adams	Winchester	OH	50.0	3.38	22.92	-31.02	78.43	41.1	26
Big Sandy Regional	SJS	Floyd	Debord	KY	50.0	5.16	25.40	-37.84	77.73	40.9	27
West Liberty	9I3	Morgan	West Liberty	KY	50.0	5.98	0.46	-20.99	59.96	36.2	28
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	50.0	1.30	17.24	-42.09	56.24	35.2	29
Monroe County	4G5	Monroe	Woodsfield	OH	50.0	6.15	0.51	-33.08	48.19	33.1	30
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	0.0	8.80	32.97	-24.54	35.33	29.7	31
Russell County	K24	Russell	Russell Springs	KY	0.0	9.25	11.06	-7.59	21.46	26.0	32
Pike County	EOP	Pike	Waverly	OH	0.0	3.16	22.14	-23.99	12.23	23.5	33
Wayne County	EKQ	Wayne	Monticello	KY	0.0	4.83	8.96	-15.92	3.77	21.3	34
McCreary County	18I	McCreary	Stearns	KY	0.0	2.06	5.87	-24.67	-13.39	16.7	35
Vinton County Airpark	22I	Vinton	New Plymouth	OH	0.0	0.08	0.00	-15.48	-15.48	16.2	36
Julian Carroll	JKL	Breathitt	Jackson	KY	0.0	0.00	0.26	-76.62	-76.36	0.0	37

Table 15. Tourism Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Hotels within 30 miles (normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.53913733	100.00	44.44	100.00	196.9	100.00	1
Central Regional Airport	RGA	Madison	Richmond	KY	0	88.59	44.44	27.55	160.6	84.59	2
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.72247225	56.38	66.67	63.40	153.7	81.68	3
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.38130408	38.26	100.00	27.55	141.4	76.46	4
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5447052	26.85	50.00	88.62	140.9	76.25	5
Richard Downing	I40	Coshocton	Coshocton	OH	-13.41650121	45.64	22.22	85.96	140.4	76.03	6
Ashland Regional	DWU	Boyd	Worthington	KY	-24.38094827	36.91	72.22	55.21	140.0	75.84	7
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.1897244	34.90	72.22	55.21	131.1	72.10	8
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.47532058	33.56	0.00	88.62	106.7	61.73	9
Monroe County	4G5	Monroe	Woodsfield	OH	-33.08055853	32.89	5.56	100.00	105.4	61.16	10
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.36881666	89.26	38.89	27.55	91.3	55.21	11
Pike County	EOP	Pike	Waverly	OH	-23.98579446	13.42	5.56	88.62	83.6	51.94	12
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.09117967	9.40	38.89	72.45	78.6	49.83	13
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.44525437	16.11	22.22	55.21	73.1	47.48	14
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.20103046	29.53	38.89	27.55	71.8	46.91	15
Ohio University	UNI	Athens	Albany	OH	-17.33753481	28.19	5.56	55.21	71.6	46.85	16
Jackson County	24A	Jackson	Sylva	NC	-65.91614263	85.23	27.78	20.21	67.3	45.02	17
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.15931883	60.40	27.78	20.21	64.2	43.72	18
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-23.98619917	16.11	16.67	55.21	64.0	43.62	19
West Liberty	9I3	Morgan	West Liberty	KY	-20.98803345	6.04	22.22	55.21	62.5	42.98	20
Stanton	I50	Powell	Stanton	KY	-9.713976442	20.81	22.22	27.55	60.9	42.29	21
James A Rhodes	JRO	Jackson	Jackson	OH	-25.22183952	10.74	11.11	55.21	51.8	38.46	22
Highland County	HOC	Highland	Hillsboro	OH	-26.49324367	14.09	5.56	54.89	48.0	36.85	23
Alexander Salamon	AMT	Adams	Winchester	OH	-31.02195179	6.71	16.67	54.89	47.2	36.51	24
Russell County	K24	Russell	Russell Springs	KY	-7.594213927	20.81	5.56	27.55	46.3	36.12	25
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.84411425	7.38	11.11	55.21	35.9	31.68	26
McCreary County	18I	McCreary	Stearns	KY	-24.66955466	22.82	27.78	0.00	25.9	27.47	27
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.33053553	30.87	22.22	0.00	24.8	26.97	28
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.125694042	11.41	5.56	12.77	21.6	25.63	29
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5071675	7.38	11.11	27.55	15.5	23.06	30
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.06519489	6.04	5.56	27.55	14.1	22.44	31
Wayne County	EKQ	Wayne	Monticello	KY	-15.92162045	18.12	11.11	0.00	13.3	22.11	32
Wendell H Ford	CPF	Perry	Chavies	KY	-26.34618623	0.00	5.56	27.55	6.8	19.34	33
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.561147	30.87	27.78	0.00	-2.9	15.23	34
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.83985846	9.40	22.22	0.00	-11.2	11.71	35
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100	26.85	5.56	54.89	-12.7	11.08	36
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6212561	4.70	5.56	27.55	-38.8	0.00	37

Table 16. Leisure Cohort Rankings (ITRE, 2025).

Airport	Code	County	City	State	Airspace Penalty (Normalized)	Airport Operations (Normalized)	Number of Substations within 5 miles (Normalized)	Low Mean Precipitation (Normalized)	Total	Normalized Score	Rank
Ohio University	UNI	Athens	Albany	OH	-17.33753481	100.00	5.56	55.21	143.4	100.00	1
Lake Cumberland Regional	SME	Pulaski	Somerset	KY	-24.38130408	25.11	100.00	27.55	128.3	91.90	2
Cambridge Municipal	CDI	Guernsey	Cambridge	OH	-24.5447052	0.90	50.00	88.62	115.0	84.78	3
Richard Downing	I40	Coshocton	Coshocton	OH	-13.41650121	19.48	22.22	85.96	114.2	84.39	4
Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	-32.72247225	16.20	66.67	63.40	113.6	84.02	5
Ashland Regional	DWU	Boyd	Worthington	KY	-24.38094827	6.56	72.22	55.21	109.6	81.91	6
Central Regional Airport	RGA	Madison	Richmond	KY	0	34.91	44.44	27.55	106.9	80.47	7
Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	-47.53913733	9.14	44.44	100.00	106.0	80.00	8
Lawrence County Airpark	HTW	Lawrence	South Point	OH	-31.1897244	9.13	72.22	55.21	105.4	79.64	9
Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	-23.98619917	41.05	16.67	55.21	88.9	70.85	10
Vinton County Airpark	22I	Vinton	New Plymouth	OH	-15.47532058	4.41	0.00	88.62	77.6	64.76	11
Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	-42.09117967	6.46	38.89	72.45	75.7	63.77	12
Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	-20.44525437	16.45	22.22	55.21	73.4	62.56	13
Monroe County	4G5	Monroe	Woodsfield	OH	-33.08055853	0.59	5.56	100.00	73.1	62.36	14
Pike County	EOP	Pike	Waverly	OH	-23.98579446	1.58	5.56	88.62	71.8	61.66	15
London/Corbin/Magee	LOZ	Laurel	London	KY	-24.20103046	26.05	38.89	27.55	68.3	59.81	16
West Liberty	9I3	Morgan	West Liberty	KY	-20.98803345	3.58	22.22	55.21	60.0	55.38	17
James A Rhodes	JRO	Jackson	Jackson	OH	-25.22183952	5.16	11.11	55.21	46.3	48.02	18
Stanton	I50	Powell	Stanton	KY	-9.713976442	4.37	22.22	27.55	44.4	47.04	19
Highland County	HOC	Highland	Hillsboro	OH	-26.49324367	7.94	5.56	54.89	41.9	45.69	20
Alexander Salamon	AMT	Adams	Winchester	OH	-31.02195179	0.95	16.67	54.89	41.5	45.47	21
Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	-64.36881666	35.95	38.89	27.55	38.0	43.61	22
Big Sandy Regional	SJS	Floyd	Debord	KY	-37.84411425	6.55	11.11	55.21	35.0	42.01	23
Russell County	K24	Russell	Russell Springs	KY	-7.594213927	7.83	5.56	27.55	33.3	41.11	24
Fleming-Mason	FGX	Fleming	Maysville	KY	-30.5071675	15.18	11.11	27.55	23.3	35.76	25
Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	-8.125694042	10.08	5.56	12.77	20.3	34.12	26
Wendell H Ford	CPF	Perry	Chavies	KY	-26.34618623	8.90	5.56	27.55	15.7	31.66	27
Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	-44.15931883	10.70	27.78	20.21	14.5	31.05	28
Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	-25.06519489	6.30	5.56	27.55	14.3	30.95	29
McCreary County	18I	McCreary	Stearns	KY	-24.66955466	0.46	27.78	0.00	3.6	25.18	30
Wayne County	EKQ	Wayne	Monticello	KY	-15.92162045	7.51	11.11	0.00	2.7	24.72	31
Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	-28.33053553	4.66	22.22	0.00	-1.4	22.50	32
Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	-42.83985846	15.61	22.22	0.00	-5.0	20.60	33
Jackson County	24A	Jackson	Sylva	NC	-65.91614263	3.70	27.78	20.21	-14.2	15.67	34
Western Carolina Regional	RHP	Cherokee	Andrews	NC	-61.561147	18.30	27.78	0.00	-15.5	14.99	35
Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	-100	0.75	5.56	54.89	-38.8	2.52	36
Julian Carroll	JKL	Breathitt	Jackson	KY	-76.6212561	0.00	5.56	27.55	-43.5	0.00	37

Appendix C: Literature Review

The emergence of new aviation technologies and the development of Advanced Air Mobility (AAM)—a new generation of less expensive, more flexible electric aircraft—is expected to create economic growth opportunities and expand the availability of different aviation services.

As part of an ongoing research study, AAM aircraft is foreseen to provide new air transportation options, both within Appalachia and between the region and adjacent urban centers in regional airports, impacting thirty-six airports in Kentucky, North Carolina, and Ohio. For this purpose, the research team has identified nine use cases to support this ongoing research effort.

This white paper aims to assess the feasibility of these nine use cases. The research team identified On-Demand Air Taxi, Regional Air Mobility, Airport Shuttle, Emergency Medical Services, Corporate and Business Aviation, Cargo and Freight Delivery, Flight Training, Tourism and Leisure as use cases relevant to the purpose of this research. By identifying types of aircraft that support each use case (VTOL, CTOL, STOL), types of infrastructure that support the aircraft in that use case, enabling infrastructure and characteristics data, the feasibility of each use case can be determined. Moreover, a conclusion can be made as to which use case has the highest probable applicability in the thirty-six airports subject of this study and to further examine the suitability and readiness of these airports to meet the requirements of AAM technology.

On-Demand Air Taxi

Definition. In the context of Advanced Air Mobility (AAM), an air taxi refers to a small, highly automated, or even autonomous aircraft designed for short-distance travel within urban, suburban, or rural areas. These vehicles are often vertical takeoff and landing (VTOL) aircraft, meaning they can take off and land vertically like helicopters, which allows them to operate in crowded urban environments without the need for runways. They are envisioned to offer a new form of on-demand transportation, like ground-based ride-sharing services but in the air.

Air taxis exhibit several key characteristics. Many of these aircraft are designed to be electrically powered, known as eVTOL (electric vertical takeoff and landing), which contributes to sustainability by reducing both emissions and noise pollution. They are intended for short-haul flights, typically covering distances from a few miles to a few hundred miles, providing an alternative to congested ground transportation systems.

Operating primarily within low-altitude urban airspace, air taxis are expected to transport passengers between specific hubs or vertiports, which are specialized landing pads. Advanced automation technologies play a crucial role, with many air taxis incorporating autonomous or semi-autonomous control systems, thereby reducing the need for human pilots and potentially lowering operational costs. The passenger experience is designed to mirror that of traditional taxis, allowing users to book rides through apps, like ride-hailing services such as Uber or Lyft, but with a focus on air travel (Joby, 2021).

Aircraft. Eight original equipment manufacturers (OEMs) are anticipated to develop air taxis with entry into service dates within the next decade.⁷ These OEMs are in the process of developing nine unique aircraft with EIS dates from 2025-2030. Five will be vectored thrust with electric propulsion and VTOL capabilities,⁸ one will be an electric CTOL aircraft that will require a runway of 2,200 feet (Beta Technologies' CX300), two will be lift and cruise aircraft,⁹ and Alaka'I Technologies is designing a multicopter with hydrogen fuel cell propulsion.

Enabling Infrastructure. Most of these aircraft will require fast-electric charging and minimal landing space. Eight out of the nine air taxi aircraft can take off and land vertically, with the exception being a maximum runway length of 2,200 feet for the Beta Technologies' CX300. An example of charging requirements for Joby, an air taxi original aircraft manufacturer, is shown in **Table 17**.

Other Characteristics that Support Air Taxi Development. In addition to landing and charging infrastructure, the air taxi market stands to benefit from areas with (1) high population density, (2) the existence of well-defined urban cores that generate travel demand (polycentrism), (3) Fortune 1,000 or high presence of firms that employ people in the area, (4) areas with high gross regional products per capita, (5) areas with long commute times to work, (6) and areas with minimal class B airspace interference (commercial service airspace).

⁷ Beta Technologies' CX300 (conventional takeoff and landing [CTOL]) and its Alia-250 (VTOL with CTOL capabilities to preserve battery) are anticipated to arrive in 2025 and 2026, respectively (SMG Consulting, 2024). Joby, Archer, Wisk, Alaka'I, Overair, eAviation(Textron), and Jaunt Air Mobility have entry-into-service (EIS) dates ranging from 2025 to 2030 (SMG Consulting, 2024).

⁸ The five vector thrust aircraft include (1) Joby Aviation, (2) Archer's Midnight aircraft, (3) Wisk's Generation 6 aircraft, (4) Overair's Butterfly aircraft, and (5) eAviation's Nexus aircraft (formerly known as Pipistrel).

⁹ The two lift and cruise aircraft include Beta Technologies' Alia-250 and Janut Air Mobility's Journey aircraft.

Table 17. Joby Charging Specifications (ITRE, 2025).

Specification	Value
Power Conversion Modes	Charge (grid to aircraft) Discharge (aircraft to grid)
Battery Charging Power	440 kW
AC Input Power	543 kVA per aircraft with demand factor modification depending on site size
AC Output (discharge as needed)	Max power: 473 kVA Min power: 40kVA (limited by 8% THD) Min duration: 0.3 hours Max duration: 5 hours
Cooling Power (for aircraft powertrain)	87.9 kW (25 tons)
Coolant Capacity	400 liters
Data Offload Capacity	Minimum 200 Mbps uplink required
Cooling Power (for cabin conditioning)	17.75 kW (5 tons)
Operating Temperatures	-12 to 50 deg C (11 to 122 deg F)
Regulatory Approvals	UL and IEC standard compliance pending

Table 18. Enabling Infrastructure and Suitable Characteristics Data for On-Demand Air Taxi (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Population – U.S. Census	Block Group	Yearly
Presence of Large Employers – ESRI Business Analyst	Point	Yearly
Gross Regional Product – Bureau of Economic Analysis	MSA	Yearly
Long Commute Times – Google / Texas Transportation Inst.	Corridors	Yearly
Minimal Class B Interference – ASSURE A36	MSA	Ad Hoc
Minimal Class G Congestion – ASSURE A36	MSA	Ad Hoc

Regional Air Mobility

Definition. Regional Air Mobility (RAM) is designed for short to medium-distance flights, focusing on inter-city travel between smaller regional airports or airstrips. This approach often bypasses larger, more congested international airports, offering a more direct and efficient travel solution for passengers moving between regional areas. A key component of RAM development is the use of electrically powered aircraft, such as eVTOLs and hybrid-electric planes. These aircraft help reduce operational costs, carbon emissions, and noise, promoting more sustainable aviation practices and aligning with the global push for greener transportation solutions.

RAM also aims to improve regional hub connectivity by offering faster alternatives to long car journeys or complex multi-modal transportation systems that involve transfers between buses, trains, and cars. This enhanced connectivity is particularly important for regions that lack direct air service, providing a more convenient option for travelers.

In addition to scheduled flights, RAM services often feature flexible and on-demand options for passengers, like air taxis in urban settings. This creates a more personalized and efficient travel experience, allowing travelers to book flights as needed. Additionally, RAM is designed to reduce travel times by eliminating the long security lines, delays, and road traffic typically associated with larger airports. This results in faster point-to-point services between regional destinations, offering a more streamlined travel experience.

Aircraft. Four OEMs are anticipated to develop five RAM aircraft with EIS dates within the next decade.¹⁰ All of these will have electric propulsion with the exception that the Electra EL-2 Goldfinch will require Jet A or sustainable aviation fuel (SAF) (Ausman, 2024).

Enabling Infrastructure. The Eviation Alice will require 2,750 feet of runway, the Electra EL-2 Goldfinch will require 170 feet of runway, and the three other aircraft are anticipated to be able to take off and land vertically (SMG Consulting, 2024).

Other Characteristics that Support Regional Air Mobility Development. In addition to landing and charging infrastructure, the RAM stands to benefit from many characteristics like the air taxi market. Perhaps the one essential difference is the benefit of having existing aviation short-haul demand (origins and destinations 150 miles or less), as RAM is expected to be highly competitive with this market and potentially offer lower price points due to aircraft lifecycle cost savings stemming from electric propulsion.

Table 19. Enabling Infrastructure and Suitable Characteristics Data for Regional Air Mobility (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Airport Short-Haul Markets – Bureau of Transportation Statistics	Corridors	Yearly
Population – U.S. Census	Block Group	Yearly
Presence of Large Employers – ESRI Business Analyst	Point	Yearly
Gross Regional Product – Bureau of Economic Analysis	MSA	Yearly
Long Commute Times – Google / Texas Transportation Inst.	Corridors	Yearly
Minimal Class B Interference – ASSURE A36	MSA	Ad Hoc
Minimal Class G Congestion – ASSURE A36	MSA	Ad Hoc

Airport Shuttle

Definition. An airport shuttle refers to an advanced air transportation service designed to transport passengers quickly and efficiently between airports or between airports and other nearby locations, such as city centers, suburban areas, or business hubs. Unlike traditional ground-based airport shuttles (buses, vans, or cars), AAM airport shuttles typically use eVTOL aircraft or other small, advanced aircraft to provide rapid and convenient air transportation.

Sustainability and noise reduction are also key features of AAM airport shuttles, offering wider public acceptance than existing airport shuttle services relying on helicopters. Airport shuttles are being designed to be powered by electric propulsion, leading to substantially lower emissions profile than existing helicopters.

Operating within low-altitude urban airspace, airport shuttles are anticipated to utilize vertiports or designated landing areas near airports and key urban hubs. Airport shuttles are expected to offer on-demand services, allowing passengers to book flights as needed, similar to current ride-hailing apps. This flexibility will minimize waiting times and enhance overall travel efficiency, catering to the specific needs of travelers. Additionally, AAM airport shuttles are anticipated to significantly reduce travel time by bypassing congested roads and covering shorter distances between critical points. This makes them especially appealing for business travelers and those needing quick transfers between airports or connections.

Aircraft. It is anticipated that airport shuttles, which will transport people to and from airports, will become the entry point for AAM passenger market activities (Goyal et al., 2021). Blade currently offers traditional helicopter charter services that connect people from John F. Kennedy International Airport (JFK) and Newark Airport (EWR) to select locations in Manhattan for \$195 (Blade, 2024). It is anticipated that Blade will transition into an AAM paradigm within the next decade (SMG Consulting, 2024).

Enabling Infrastructure. It is anticipated that vertical takeoff and landing ground infrastructure and fast-charging infrastructure will be needed to meet the needs of AAM airport shuttles.

Other Characteristics that Support Airport Shuttle Development. In addition to landing and charging infrastructure, airport shuttles stand to benefit from many characteristics like the RAM use case.

¹⁰ Beta Technologies' CX300 and its Alia-250 have both air taxi and RAM capabilities, and are anticipated to arrive in 2025 and 2026, respectively (SMG Consulting, 2024). The Eviation Alice, the Regent Viceroy, the Electra EL-2 Goldfinch, and the Lilium aircraft are anticipated to arrive from 2025 to 2030 (SMG Consulting, 2024).

Table 20. Enabling Infrastructure and Suitable Characteristics Data for Airport Shuttles (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Airport Short-Haul Markets – Bureau of Transportation Statistics	Corridors	Yearly
Population – U.S. Census	Block Group	Yearly
Presence of Large Employers – ESRI Business Analyst	Point	Yearly
Gross Regional Product – Bureau of Economic Analysis	MSA	Yearly
Long Commute Times – Google / Texas Transportation Inst.	Corridors	Yearly
Minimal Class B Interference – ASSURE A36	MSA	Ad Hoc
Minimal Class G Congestion – ASSURE A36	MSA	Ad Hoc

Note, items in blue denote overlap with the air taxi use case.

Emergency Medical Services

Definition. Emergency Medical Services (EMS) flight operations encompass emergency evacuations, patient and equipment transportation, specimen delivery. There are other public safety centric missions related to law enforcement, fire rescue, emergency management, humanitarian assistance, and disaster relief (AIRT, 2024). Each of these services exist today with traditional crewed operations, including both fixed wing and rotary aircraft. Still, these applications are generally not as widely implemented as ground-based EMS. Some providers both in the US and abroad have begun implementation of sUAS through pilot programs, regulatory exemptions and other temporary approvals.

Given the general propensity for faster response times via the air opposed to the ground, the lifesaving potential is substantial. Many Law Enforcement Agencies across the country, including two in North Carolina, have begun to implement programs known as Drone as a First Responder (DFR) in which 911 calls have immediate sUAS deployment, improving officer safety and situational awareness of developing scenes by getting on the scene before the arrival of the first officer (Kreuger, 2024). While these missions are currently only for photo and video surveillance, they set the stage for emergency medical deliveries that could arrive faster than traditional ambulance response.

Aircraft. Existing EMS missions are carried out by all manner of aircraft. The space has already seen moderate implementation of uncrewed aircraft from the smallest reconnaissance drones to large scale platforms designed for prolonged missions or package delivery. At the small end of the spectrum, emergency deliveries with time-critical payloads show significant promise of improved treatment in the event of an overdose, cardiac arrest, and other remedies that can be administered via bystanders. These sUAS are currently Remote Controlled (RC) via a pilot on the ground and have significant regulatory limitations on where they can be flown.

Further development of AAM operations through advancing technology like larger eVTOL aircraft could increase the scale of air-based EMS services. The passenger carrying prototypes generally follow the same design as other AAM use cases like Air Taxi and Regional flights, though there are a few unique examples. Many companies that are pursuing aircraft certification have begun looking into EMS operations as another line of business including Volocopter, a prominent European manufacturer which has partnered with the German air rescue organization ADAC Luftrettung (Volocopter, 2023). As in the other missions, these newer aircraft are being designed toward sustainability and greater economic feasibility with lower emissions and operating costs than existing air assets.

Enabling Infrastructure. Emergency response and transport teams have 24/7 staffing needs in addition to onsite medical supplies storage (some medicines may need refrigeration). Some are co-located with a hospital campus whereas others are stationed more regionally at nearby airports. In the event of real-world emergencies, having the ability to prioritize operations both in-air and at the airport is critical. The transition to remotely piloted or autonomous vehicles will necessitate similar implementation into the associated traffic management systems.

Other. Cyber Security is especially of concern in EMS use cases for protection of sensitive data. Public support for EMS operations may be greater than other use cases given the direct benefit and lifesaving opportunities.

Table 21. Enabling Infrastructure and Suitable Characteristics Data for EMS (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Proximity to Hospitals – ESRI Business Analyst	Point	Annual

Corporate/Business Aviation

Definition. In the context of AAM, a corporate shuttle refers to a specialized air transportation service designed to move employees or executives of a company between locations, such as offices, manufacturing sites, or business hubs, in a fast and efficient manner. AAM corporate shuttles are anticipated to operate with point-to-point travel, flying directly between company-owned or leased facilities. This means they can use private landing sites or smaller regional airports, bypassing the congestion of larger commercial airports, and further speeding up the travel process.

Corporate shuttles can operate on either a scheduled or on-demand basis, depending on the company’s requirements. This flexibility allows businesses to cater to the varying needs of employees and executives, ensuring quick, timely travel as needed. Business aviation will continue to enhance both urban and regional connectivity. It can connect city centers, suburban offices, and even remote locations, reducing travel times in congested areas and improving accessibility for business operations across diverse locations.

Aircraft. Corporate shuttles are expected to utilize electrically powered aircraft, such as eVTOL or hybrid-electric planes. These advanced aircraft will likely contribute to lower emissions, reduce noise pollution, and lower operational costs, aligning with corporate sustainability goals and the broader push for greener transportation solutions. It is anticipated that these aircraft will facilitate short- to medium-distance travel, especially between cities or regions.

Two AAM aircraft serving business aviation purposes were identified by SMG Consulting (2024) to have entry into service dates within the decade. These include the Eviation Alice (CTOL) and Lilium aircraft (VTOL). Both aircraft have electric propulsions.

Enabling Infrastructure. Fast charging infrastructure will be needed to service AAM corporate shuttles. Additionally, runways spanning 2,750 feet will be required to meet Eviation Alice’s takeoff and landing requirements.

Other Characteristics that Support Business Aviation Development. In addition to landing and charging infrastructure, the Corporate Shuttle market stands to benefit from many characteristics like the air taxi use case.

Table 22. Enabling Infrastructure and Suitable Characteristics Data for Business Aviation (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Population – U.S. Census	Block Group	Yearly
Presence of Large Employers – ESRI Business Analyst	Point	Yearly
Gross Regional Product – Bureau of Economic Analysis	MSA	Yearly
Minimal Class B Interference – ASSURE A36	MSA	Ad Hoc
Minimal Class G Congestion – ASSURE A36	MSA	Ad Hoc

Cargo and Freight Delivery

Definition. In the context of AAM, cargo and freight delivery refer to aircraft that are typically autonomous and electric with vertical takeoff and landing, with the capability of carrying cargo. Nine out of 13 domestic AAM aircraft capable of carrying cargo described in Table 7 are eVTOLs that do not need a runway for takeoff and landing.¹¹ Most AAM cargo and freight aircraft are intended for short-haul distances. Because these aircraft generate massive amounts of data, they rely on advanced communication technologies such as 5G networks and satellite-based communication systems to function properly (Al-Rubaye et al., 2023).

Payload. As shown in Table 23, Payload capacities vary greatly from aircraft to aircraft. For example, Sabrewing Aircraft Company’s Rhaegal RG-1 can carry a payload of up to 5,400 lbs., while MightyFly’s Cento can carry up to 100 lbs.

¹¹ The other four aircraft require a runway.

Table 23. Domestic AAM Aircraft Capable of Carrying Cargo (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Alaka'i Technologies	Skai	1,000
Beta Technologies	Alia-250	1,400
Beta Technologies	CX 300	N/A
eAviation	Nexus	N/A
Electra	EL-2 Goldfinch	2,500
Elroy Air	Chaparral	300
Eviation	Alice	2,500*
Jaunt Air Mobility	Journey	N/A
MightyFly	Cento	100
Odys Aviation	VTOL **	2,500
Overair	Butterfly	1,100
Pyka	Pelican Cargo	400
Sabrewing Aircraft Company	Rhaegal RG-1	5,400

*Eviation Alice can carry a payload of up to 2,500 pounds if used for commuting purposes.

** Referred to as Odys Aviation VTOL.

Characteristics that Support Cargo and Freight Delivery. The market for AAM aircraft, capable of carrying cargo, stands to benefit from areas with:

- Vertiport infrastructure (if eVTOL) equipped with sufficient charging capabilities (Al-Rubaye et al., 2023) (Goyal et al., 2021).
- High population density.
- Local and state grants that reward companies for reducing overall Greenhouse Gas (GHG) emissions.
- Intense GHG emission regulation.
- Numerous domestic and international shipping routes.
- 5G networks and satellite-based communication systems (Al-Rubaye et al., 2023).
- An active and emissions-mindful county economic development team.

Flight Training

Definition. The overall purpose of primary and intermediate flight training is the acquisition and honing of basic airmanship skills. Airmanship is a broad term that includes a sound knowledge of and experience with the principles of flight; the knowledge, experience, and ability to operate an aircraft with competence and precision both on the ground and in the air; and the application of sound judgment that results in optimal operational safety and efficiency. (Administration, March 2022).

Aircraft. AAM Flight training requires eVTOL aircraft (Hardee, 2023) as well as STOL (Administration, July 2023), in addition to eCTOL (Beta, n.d.).

Enabling Infrastructure. While a single-phase 240 VAC regular wall socket can be used for overnight charges, companies like Pipistrel recommend for its Electric Velis Electro a three-phase 380 VAC connection, to enable quick charging. The Velis Electro takes about an hour to fully charge. (Deener, 2024). While the ALIA A250 VTOL Vertical takeoff & landing all-electric aircraft and ALIA CX300 CTOL Conventional takeoff & landing all-electric aircraft take less than one hour to fully charge. (Beta, n.d.). The Velis Electro has a DC GB/T 20234 connector. Even if this standard connector is also used on cars, Velis Electro charging is allowed only with a Pipistrel portable charger or a Pipistrel Sky Charge™ charger. Charging electric aircraft has its specifics which not only require addressing the technical feasibility of electrical power transfer but also matters related to cybersecurity and enhanced levels of safety when compared to automotive class charging. Pipistrel has recently announced a partnership with Green Motion, a leader in the vehicle charging industry, to work towards enabling dual-use chargers. The charger requires a connection to a single-phase or, ideally, to a three-phase wall socket.

Whether the electrical power comes straight from the grid or from other sources (solar, wall-mounted batteries, wind, etc.), this does not depend on Pipistrel and should be consulted with the local electrical service provider. (Pipistrel, Pipistrel, n.d.).

Operational energy cost estimates for a 40-minute flight in an electric airplane can range between \$2 to \$3 of renewable electricity, compared to \$45 of aviation gasoline for the same flight in a traditional single-engine training aircraft, like a Cessna 172, using a Lycoming O-360 engine. (Page, 2022). Additionally, maintenance on the electric craft is minimal because they require no oil, or spark plugs, or other components of gas engines. (Fraser, 2024).

As for runway length and width, The FAA recommends that the length of a runway depends on the performance characteristics and operating weight of the aircraft that will be using it. (FAA, 2004). Runways that are at least 6,000 ft long are usually sufficient for aircraft that weigh less than about 200,000 lb. (Airplanning, 2024). According to the FAA, runways for small aircraft should be 300 ft wide for runways with approach visibility minimums of less than 3/4-statute mile. For other runways serving small aircraft with approach speeds of 50 knots or more, the width should be 250 ft. For other runways serving small aircraft with approach speeds of less than 50 knots, the width should be 120 ft. (FAA, 2004). Additionally, heliports and vertiports can be used. (CAE, 2021).

Other Characteristics that Support Business Aviation Development. Simulations and virtual training environments play a critical role in training pilots in a safe and immersive platform. An example is the CAR 700MXR mixed reality flight simulator. “The 700MXR series leverages CAE’s advancements in extended reality technologies to deliver a high fidelity, physics-based mixed reality flight simulator tailor for the AAM market. The latest eVTOL technologies will be used in a blended learning environment containing a mix of classroom, distant, online, virtual reality and other training tools” (Robins, 2024). Specialized airfields or designated training areas for hands-on flight training. Should accommodate for specific operational requirements, like VTOL capabilities.

Table 24. Enabling Infrastructure and Suitable Characteristics Data for Flight Training (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Aircraft Owners and Pilots Association (AOPA)	Block Group	Ad Hoc
FAA Pilot Records Database (PRD)	Block Group	NA

Tourism and Leisure

Definition. Tourism and Leisure flight services transport visitors and provisions for aerial touring on a scheduled and non-scheduled basis. This service can be used to replace helicopter-based aerial sight-seeing tours. Tourism services can also provide convenient transportation between more accessible trip origin and more remote tourist hotspots.

The tourism and leisure use cases are primed to be successful early commercial use for electric v eVTOL aircraft. Some industry commentators make the case that tourism services are ideally situated for early adoption for eVTOL technology (Head, 2024). Commercial tourism can serve as meaningful proving ground, as aerial touring services are uniquely situated for the current eVTOL market and provide an opportunity to build consumer confidence in the innovative technology. Tourism and leisure flight operations do not have to account for luggage; they can accommodate more flexible scheduling and have a consistent planned route. The increased use of eVTOL aircraft in tourism can increase consumer exposure to eVTOLs and serve to build confidence in technology with the public and increase demand for passenger operations.

Additional benefits include reducing environmental impacts, including noise impacts and carbon emissions. Electric-powered aircraft lead to lower emissions compared to traditional helicopter or aircraft tours as well as reducing noise pollution and associated community impacts. eVTOLs also help reduce the carbon footprint of tourism, particularly in eco-sensitive areas, such as national parks, coastal regions, or other protected natural sites. These aircraft are quieter, minimizing noise pollution, which is critical for wildlife and residential areas near tourist sites (Pascioni et al., 2022).

Aircraft. eVTOL aircraft would be used in most tourism and leisure flights. They offer an efficient means of accessing hard-to-reach tourist destinations and do not require large runways or extensive infrastructure (Li et al., 2024). Some of the leading eVTOL manufactures include EHang, BETA Technologies, and Joby.

OEMs are developing eVTOL aircraft to include pre-programed tour flights that are ‘pilot-less’, using both ground-based remote piloting technology and autonomous flight technology. Outside of the US, eVTOL manufacturers are demonstrating tourism use cases. EHang, a Chinese manufacturer, completed several passenger demos over the mountains and lakes of Wencheng County (Weiss, “Autonomous EHang eVTOL jumpstarts nascent pilotless air tourism industry”). Thirty units of the pilotless EH216-S eVTOL were delivered to the Wencheng government as part of its “low-altitude tourism initiative.”

Xishan Tourism, a district in Yunnan Province in the Southwest of China known as for its tourism industry, has signed a contract for 50 EHang autonomous eVTOL aircraft (Martin, 2024). EH216-S is a ‘pilot-less’ electric aircraft that will be used to support low-altitude tourism by taking tourists on planned routes to local scenic sites (Yuquan Mountain, Paddy Field Park, and Juewei Mountain). The first aircraft were delivered to the District in July 2024 (Global Newswire, 2024). Commercial operations have not started yet, but local planners point to the first passenger flight demonstrations being conducted in the Taiyuan City national civil unmanned aviation demonstration zones to highlight the aircraft’s viability. Local tourism officials are anticipating this commercial service will rapidly expand and have a purchase agreement to acquire an additional 450 EHang EH216-S electric eVOLS.

In Greece, Aria Hotels plans to build and operate four vertiports and lease ten ALIA eVTOL units developed by BETA Technologies which have a 250 nautical mile range and recharge in under an hour (“Aria Hotels to Construct eVTOL Vertiports”). Aria Hotels plans to utilize the eVTOLs to offer unique travel experiences.

Enabling Infrastructure. Necessary infrastructure for eVTOL tourism operations includes a vertical landing area and electric charging infrastructure. Vertical landing areas can include a simple heliport or a full vertiport facility designed to handle many eVTOLs and their infrastructure support needs.

While the minimum space requirements for a vertical takeoff and landing site is fifty square feet, additional needs for ground operations and charging infrastructure will likely require larger buffers for each eVTOL (Solanki, NREL, Veriport). Charging facilities can be stationary charging facilities or mobile charging infrastructure that are moved to the aircraft. As taxing for takeoff is unnecessary for eVTOL aircraft, they are not designed with wheels making ground operations such as reposition or relocated eVTOLs more difficult. Site design and charging infrastructure design should consider this limited ground mobility.

Electrical demand could increase sharply if use of eVTOLs for tourism were implemented. Researchers have found that eVTOL charging ranges between 300kw and 1mw, recommending that a full vertiport facility would need to have at least 1-megawatt of capacity (which is enough energy to power 800 homes). Utility providers would need to be consulted early in the planning process as site demand could increase to six to seven times the current daily electrical load (Solanki et al., 2023).

The FAA notes that vertiport designs should consider operational characteristics and design needs that can be adapted to future capacity needs and more novel charging and battery systems. Due to the rapidly developing state of the technology, eVTOL manufactures offer varying approaches to battery design, charging infrastructure and ground operations. These include high-capacity battery systems, stationary/mobile charging systems, battery swapping operations, cord management needs, and battery/cord cooling systems. (FAA, Design). Additionally, eVTOL charging port connections do not have a current design standard, although the industry is beginning to advocate for a universal connection design.

Other Characteristics that Support Tourism and Leisure Service Development. Environmentally conscious consumers can be a driving force for supporting the adoption of eVTOL tourism and leisure services. Research suggests that as travelers become more environmentally aware, they are more likely to adopt new electric technologies that offer unique aerial experiences and reduce the environmental impact compared to traditional modes of transport (Suo et al., 2024).

Research has also found demographic indicators that suggest that younger, married, middle-class urban consumers are more willing to pay for tourism services such as sight-seeing tours (Ison 2024). The increased use of eVTOL aircraft in tourism can also serve to build confidence in technology with the public and increase demand for regional passenger or commuter operations (Head, 2024). Building this consumer confidence can overcome documented consumer concerns with personal safety community impacts (Lee et al., 2022).

The helicopter tourism market is growing, with an estimated increase of over \$240 million between now and 2028 (Technavio, 2024). The industry is expected to reach \$1.6 billion globally in 2030 with North America having the largest market share (IndustryARC, 2024; Fortune Business Sights, 2023). Challenges to the helicopter tourism businesses include high fuel prices, high helicopter maintenance prices and higher risk of malfunctioning due to the complicated nature of helicopter design (Technavio, 2024). The use of eVTOL aircraft can overcome these challenges and thrive in the growing aerial tourism market.

Table 25. Enabling Infrastructure and Suitable Characteristics Data for Tourism and Leisure (ITRE, 2025).

Dataset / Source	Geospatial Extent	Release Frequency
Population – U.S. Census	Block Group	Yearly
Minimal Class B Interference – ASSURE A36	MSA	Ad Hoc
Minimal Class G Congestion – ASSURE A36	MSA	Ad Hoc

Conclusions

This white paper aims to explore the feasibility of nine use cases that can support AAM technology, as part of an ongoing research study that explores the feasibility and suitability of these use cases in thirty-six Appalachian airports within the states of Ohio, Kentucky, and North Carolina. Research findings show that electrically powered aircraft or hybrid-electric planes such as VTOLs and CTOLs can be used to support such use cases. They can be crewed or uncrewed, autonomous or semi-autonomous. Furthermore, they can operate on a scheduled, unscheduled, or on-demand basis. Enabling infrastructure consists of fast-charging electric stations, runways with specific lengths and widths, and the existence of heliports and vertiports. The demand and usage of AAM aircraft is expected to increase due to population growth, the presence of Fortune 1,000 companies that employ many people in the area, the need for short commute times to work, and the desire for more sustainable and eco-friendly solutions for mobility. These aircraft are designed with greater economic feasibility and with lower emissions and operating costs than existing air assets.

The literature review brought to light several conclusions for each electric aviation use case:

1. On-Demand Air Taxi can be electrical VTOLs and CTOLs, which incorporate autonomous or semi-autonomous control systems. These aircraft, which are designed to mirror the experience of traditional taxis, are expected to enter service within the next decade. They will require fast-electric charging and minimal landing space. The on-demand Air Taxi market stands to benefit from factors such as high population density, the presence of Fortune 1,000 companies that employ people in the area and long areas with long commute times to work, just to name a few.
2. Regional Air Mobility utilizes electrically powered VTOLs or hybrid-electric planes. They can offer faster and more sustainable alternatives for long car journeys or complex multi-modal transportation systems that involve transfers between buses, trains, and cars. RAM services can feature flexible and on-demand options for passengers, like air taxis in urban settings. These services aim to reduce travel times, which can result in faster point-to-point services between regions. RAM aircraft are expected to enter service within the next decade.
3. Airport Shuttle can be electrically powered VTOLs or other advanced small aircraft that provide air transportation services designed to transport passengers quickly and efficiently between airports or other nearby locations. Airport shuttles are expected to become the entry point for AAM passenger market activities.
4. Emergency Medical Services flight operations encompass emergency evacuations, patient and equipment transportation and specimen delivery. They include using remote-controlled sUAS through pilot programs, and regulatory exemptions. Law Enforcement Agencies have begun to implement programs such as DFR in which 911 calls have immediate sUAS deployment, improving officer safety and situational awareness of developing scenes by getting on the scene before the arrival of the first officer. EMS missions are conducted by all aircraft, either manned or unmanned such as drones or eVTOLs.
5. Corporate / Business Aviation are electrically powered VTOL or hybrid-electric planes designed to move employees or executives of a company between locations, such as offices, sites or business hubs in a fast and efficient and environmentally sustainable manner. They can operate on a scheduled or on-demand basis, a feature that can ensure quick and timely travel as needed. This case market stands to benefit from factors such as the presence of Fortune 1,000 companies that employ people in the area, high population density, and areas with long commute times to work.
6. Cargo and Freight Delivery uses autonomous and electric VTOLs with the capability of carrying cargo. Most AAM cargo and freight aircraft are intended for short-haul distances. Because these aircraft generate massive amounts of data, they rely on advanced communication technologies such as 5G networks and satellite-based communication systems to function properly. Payload capacities vary depending on the aircraft used.
7. Flight Training requires eVTOL as well as STOL in addition to eCTOL aircraft. AAM aircraft designed for flight training usually take less than an hour to be fully charged. The existence of simulation and virtual training environments play a critical role in training pilots in a safe and immersive platform. The existence of these training facilities is part of the critical infrastructure for this use case. Additionally, AAM training aircraft cost less to operate and maintain compared to traditional aircraft.

8. Tourism can use manned or unmanned eVTOLs to transport visitors and provisions for aerial touring on a scheduled or non-scheduled basis and offer an efficient means of accessing hard-to-reach tourist destinations. They can be used to replace helicopter-based aerial sightseeing tours.
9. For Leisure, please refer to Tourism.

Future research will be conducted to determine the suitability of the nine use cases in each of the thirty-six airports in Appalachia. A site suitability analysis will be conducted for this purpose.

Appendix D:

Electric Aviation Readiness Profiles

Airport	State	Page
McCreary County	KY	110
Middlesboro/Bell County	KY	112
Vinton County Airpark	OH	114
Jackson County	NC	116
Geary A Bates/ Jefferson County	OH	118
Monroe County	OH	120
West Liberty	KY	122
Alexander Salamon	OH	124
Williamsburg-Whitley County	KY	126
Cambridge Municipal	OH	128
Wendell H Ford	KY	130
Ashland Regional	KY	132
Shelby-Cleveland County Regional	NC	134
Wayne County	KY	136
Pike County	OH	138
Fleming-Mason	KY	140
Rutherford County/ Marchman Field	NC	142
Gallia-Meigs Regional	OH	144
Highland County	OH	146
Lawrence County Airpark	OH	148
Northeast Ohio Regional	OH	150
Tucker-Guthrie Memorial	KY	152
Richard Downing	OH	154
Stanton	OH	156
Mount Sterling/ Montgomery County	KY	158
Julian Carroll	KY	160
James A Rhodes	OH	162
Russell County	KY	164
London/Corbin/Magee	KY	166
Greater Portsmouth Regional	OH	168
Central Regional Airport	KY	170
Western Carolina Regional	NC	172
Big Sandy Regional	KY	174
Lake Cumberland Regional	KY	176
Morehead-Rowan County Clyde A Thomas Regional	KY	178
Tompkinsville/ Monroe County	KY	180
Ohio University	OH	182

McCreary County Airport (18I)

Stearns, Kentucky

Airport Overview



881

Total Operations



4

Based Aircraft



2,999

Max Runway Length



52

Military Operations



Up to 250

Annual Air Taxi Operations



1

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



5

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



136

Aerodromes
within 80 miles¹



South Kentucky RECC (Rural
Electric Cooperative Corporation)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	H	8
Regional Air Mobility	L	M	9
Airport Shuttle	L	M	7
Emergency Medical Services	M	H	5
Business Aviation	L	M	1
Transport of Cargo and Freight	L	M	2
Flight Training	L	H	6
Tourism	L	H	3
Leisure	M	H	4

TOP 3 USE CASES



Business Aviation



Transport of Cargo and Freight



Tourism



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



18,843

Airport Service
Area Population ¹



7.9%

Percent of population
with 60+ minute commute
times to work ²



893,500

Jobs
within 80 miles



73,100

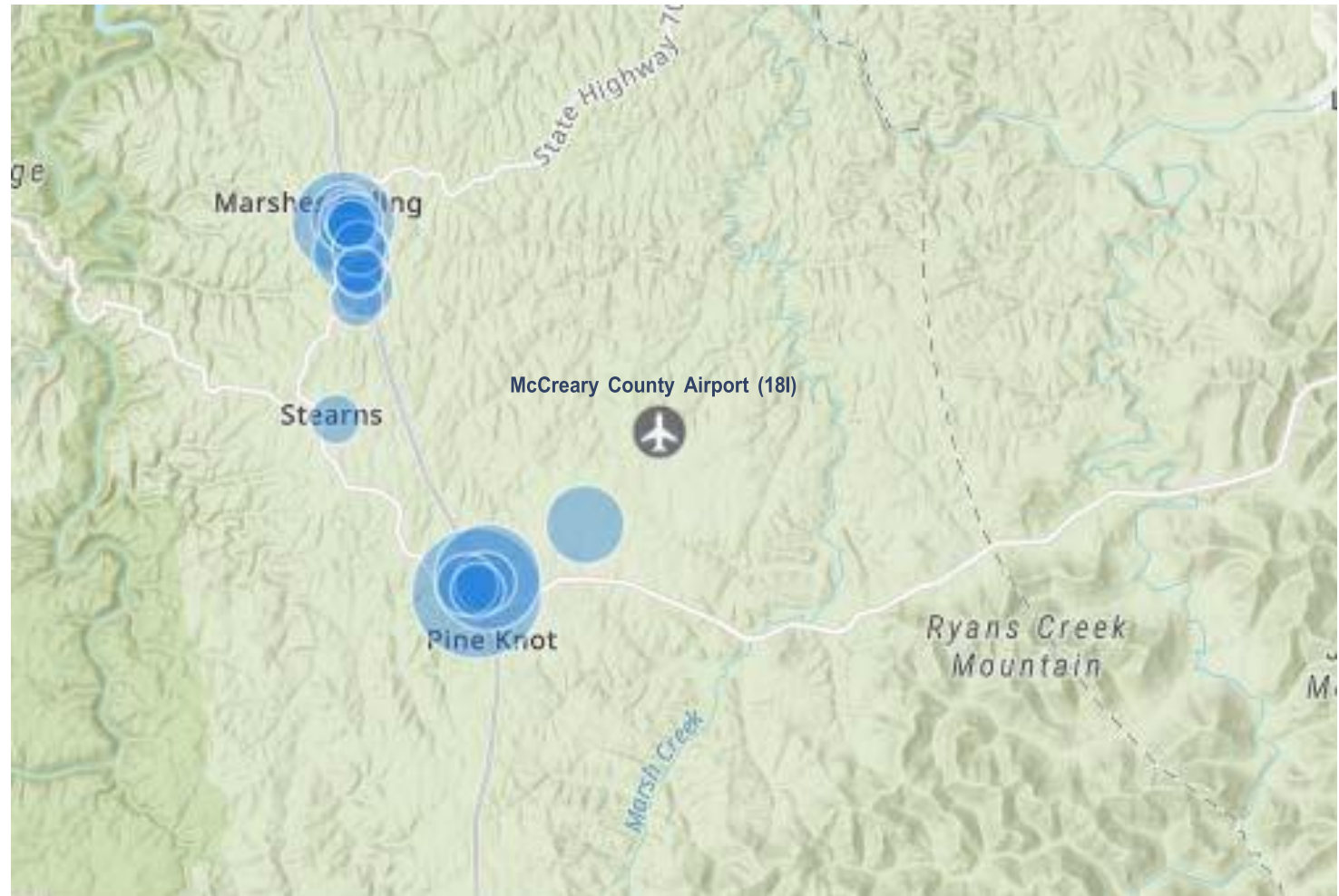
Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³

Map of Airport-Related Visits



1,088

Airport-Facilitated
Business Visits ⁴

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Middlesboro/Bell County Airport (1A6)

Middlesboro, Kentucky

Airport Overview



17,550

Total Operations



28

Based Aircraft



3,633

Max Runway Length



200

Military Operations



250-500

Annual Air Taxi Operations



13

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



5

Substations
within 5 Miles



Yes

3 Phase, 240v
On-site



132

Aerodromes
within 80 miles¹



Louisville Gas & Electric
Kentucky Utilities (LG&E - KU)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	9
Regional Air Mobility	L	L	8
Airport Shuttle	L	L	7
Emergency Medical Services	M	M	5
Business Aviation	M	M	2
Transport of Cargo and Freight	L	L	3
Flight Training	M	M	1
Tourism	L	M	6
Leisure	H	H	4

TOP 3 USE CASES



Flight Training



Business Aviation



Transport of Cargo and Freight



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



43,636

Airport Service
Area Population ¹



7.7%

Percent of population
with 60+ minute commute
times to work ²



941,600

Jobs
within 80 miles



73,600

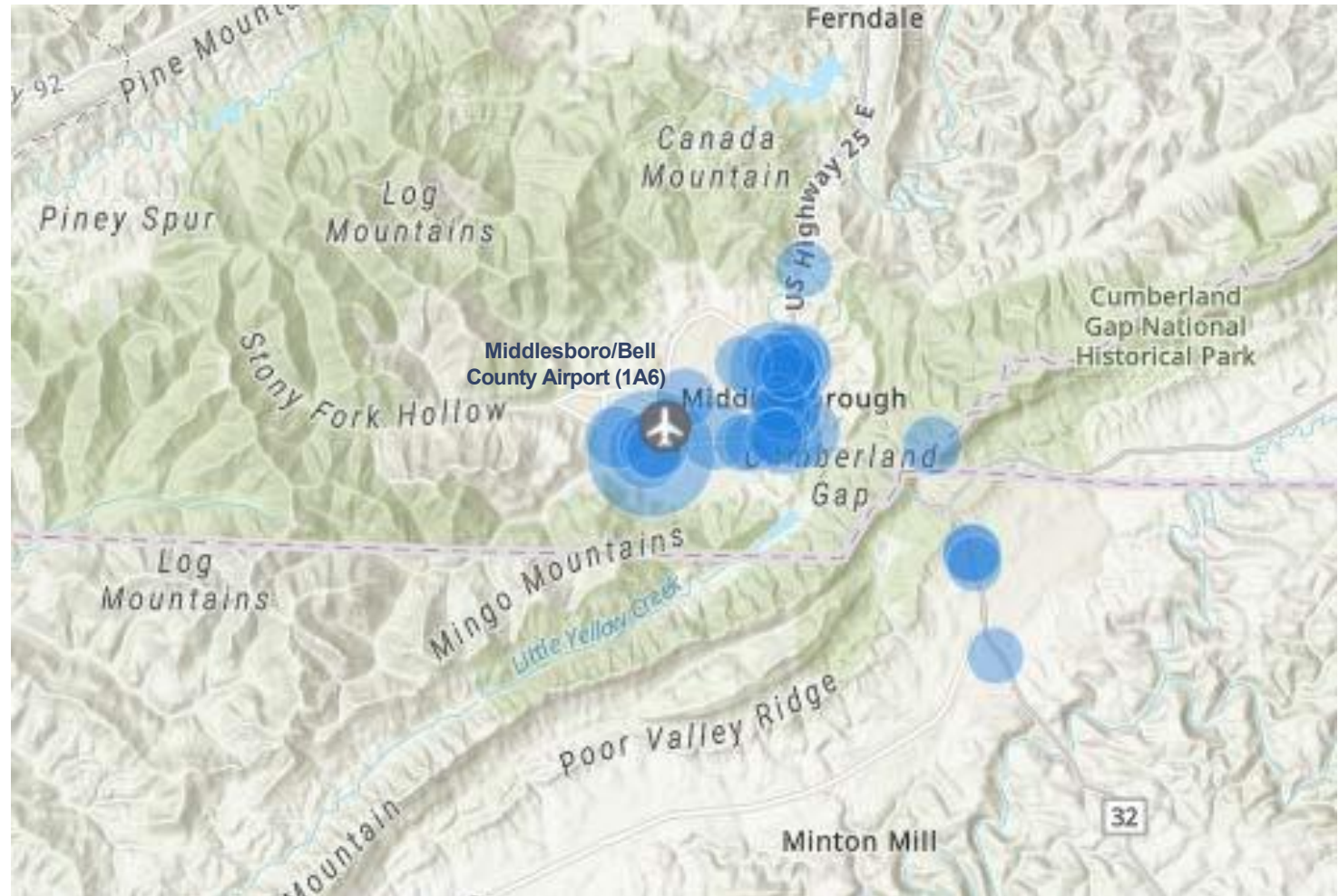
Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³

Map of Airport-Related Visits



1,810

Airport-Facilitated
Business Visits ⁴

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Vinton County Airpark (22I)

New Plymouth, Ohio

Airport Overview



5,225

Total Operations



8

Based Aircraft



3,500

Max Runway Length



275

Military Operations

Electric Infrastructure Readiness



N/A

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



179

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	L	5
Regional Air Mobility	L	L	7
Airport Shuttle	L	L	6
Emergency Medical Services	L	L	1
Business Aviation	M	L	8
Transport of Cargo and Freight	L	L	3
Flight Training	M	L	9
Tourism	M	M	4
Leisure	H	M	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Transport of Cargo and Freight

H

High

M

Medium

L

Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



24,951

Airport Service
Area Population ¹



6.4%

Percent of population
with 60+ minute commute
times to work ²



1,698,329

Jobs
within 80 miles



119,190

Businesses
within 80 miles



#

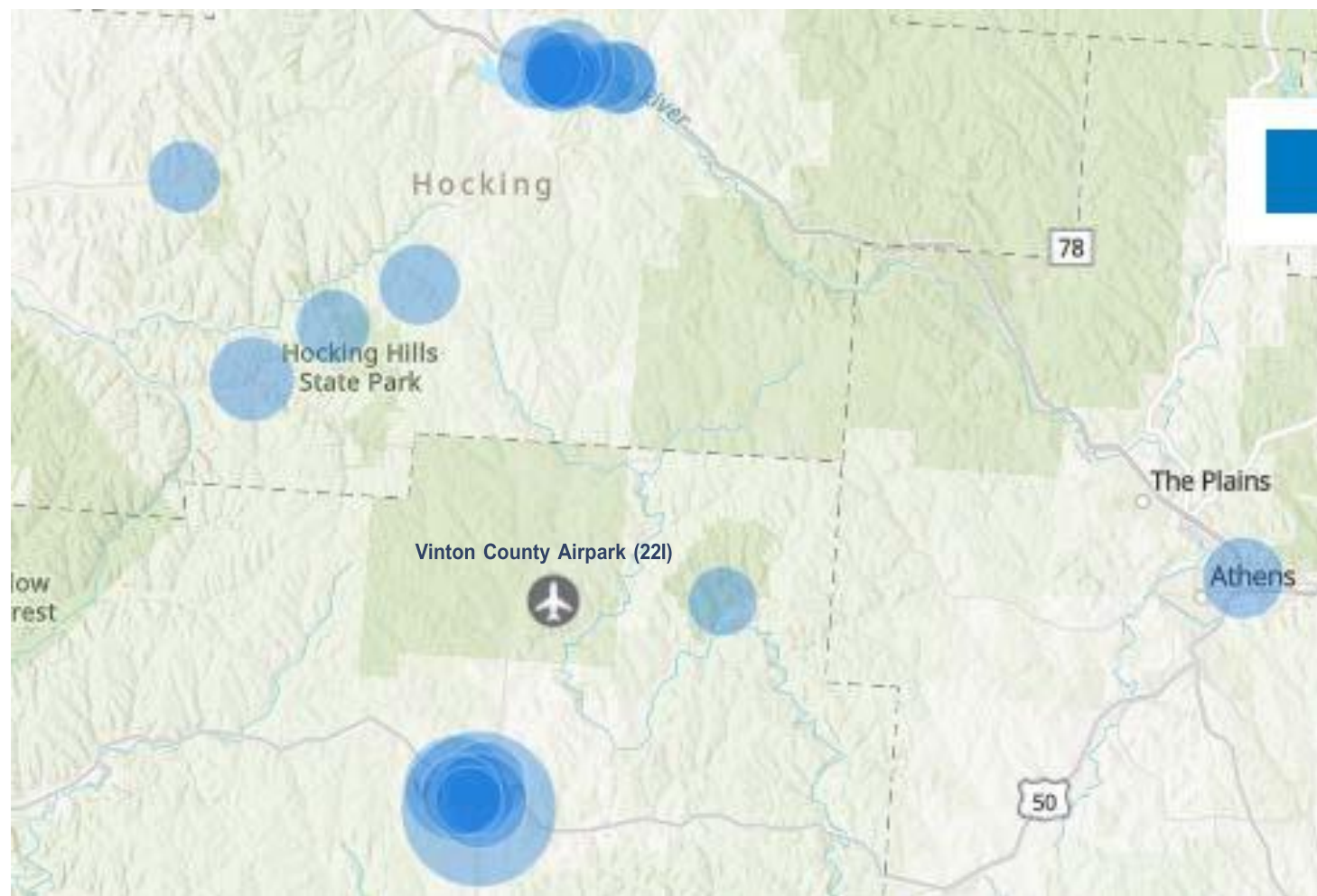
Airport Facilitated
Airport Expenditure ³



1,118

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Jackson County Airport (24A)

Sylva, North Carolina

Airport Overview



4,450

Total Operations



12

Based Aircraft



3,210

Max Runway Length



200

Military Operations



Up to 250

Annual Air Taxi Operations



17

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



5

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



178

Aerodromes
within 80 miles¹



Duke Energy and
Western Carolina University

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	4
Regional Air Mobility	L	M	5
Airport Shuttle	L	M	3
Emergency Medical Services	M	M	8
Business Aviation	H	H	9
Transport of Cargo and Freight	M	M	7
Flight Training	M	M	2
Tourism	H	H	1
Leisure	H	H	6

TOP 3 USE CASES



Tourism



Flight Training



Airport Shuttle

H High

M Medium

L Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



96,461

Airport Service
Area Population ¹



6.2%

Percent of population
with 60+ minute commute
times to work ²



1,637,800

Jobs
within 80 miles



137,800

Businesses
within 80 miles



#

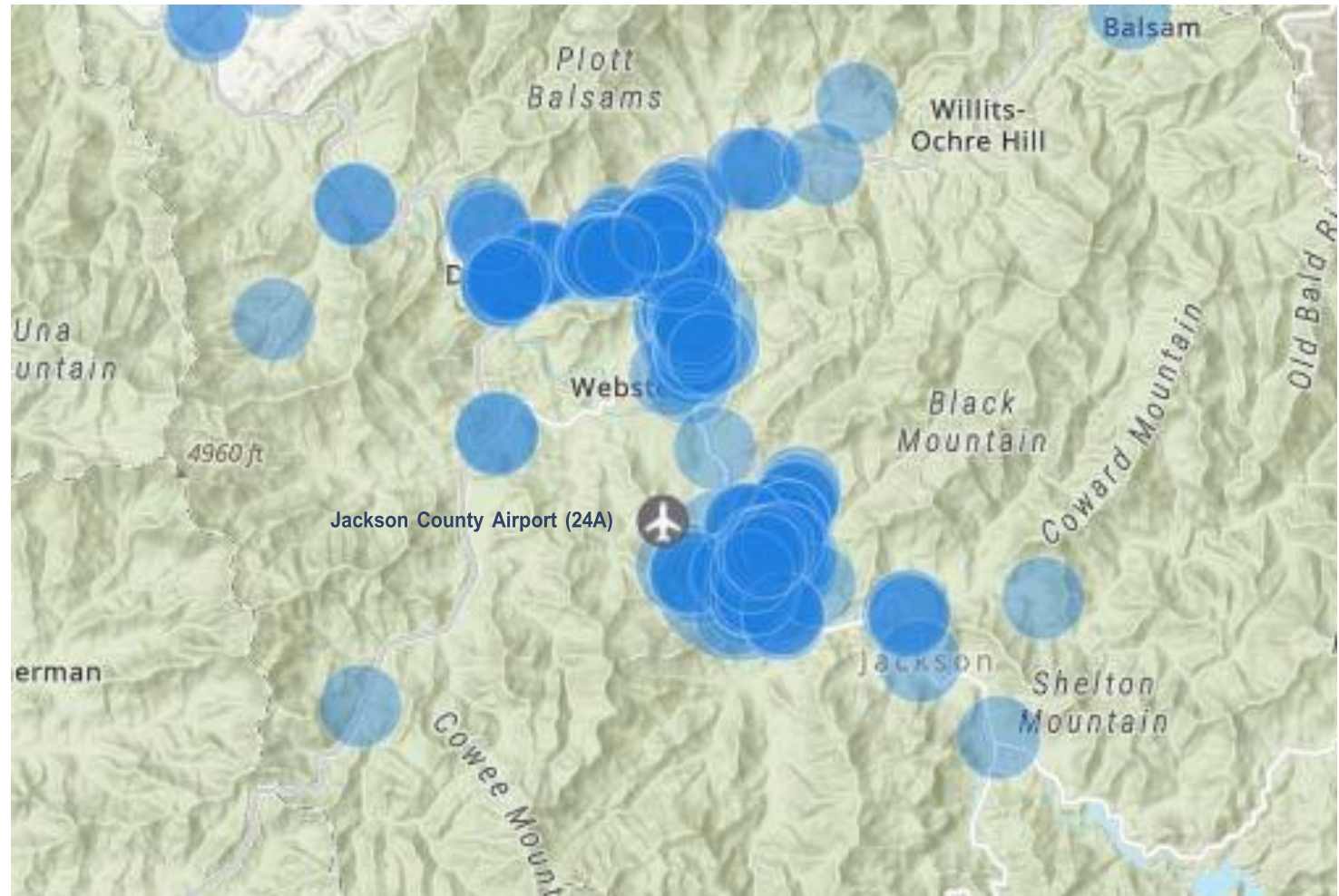
Airport Facilitated
Airport Expenditure ³



64,282

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Geary A Bates/Jefferson County Airport (2G2)

Wintersville, Ohio

Airport Overview


10,425
Total Operations


34
Based Aircraft


5,001
Max Runway Length


150
Military Operations


Up to 250
Annual Air Taxi Operations


49
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


8
Substations
within 5 Miles


N/A
3 Phase, 240v
On-site


297
Aerodromes
within 80 miles¹


American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	1
Regional Air Mobility	L	M	6
Airport Shuttle	L	M	4
Emergency Medical Services	H	H	1
Business Aviation	M	M	9
Transport of Cargo and Freight	L	M	5
Flight Training	M	M	8
Tourism	M	M	1
Leisure	H	H	7

TOP 3 USE CASES

-  Air Taxi Operations
-  Emergency Medical Services
-  Tourism

Legend: H High M Medium L Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



88,079

Airport Service
Area Population ¹



6.8%

Percent of population
with 60+ minute commute
times to work ²



2,774,700

Jobs
within 80 miles



204,400

Businesses
within 80 miles



#

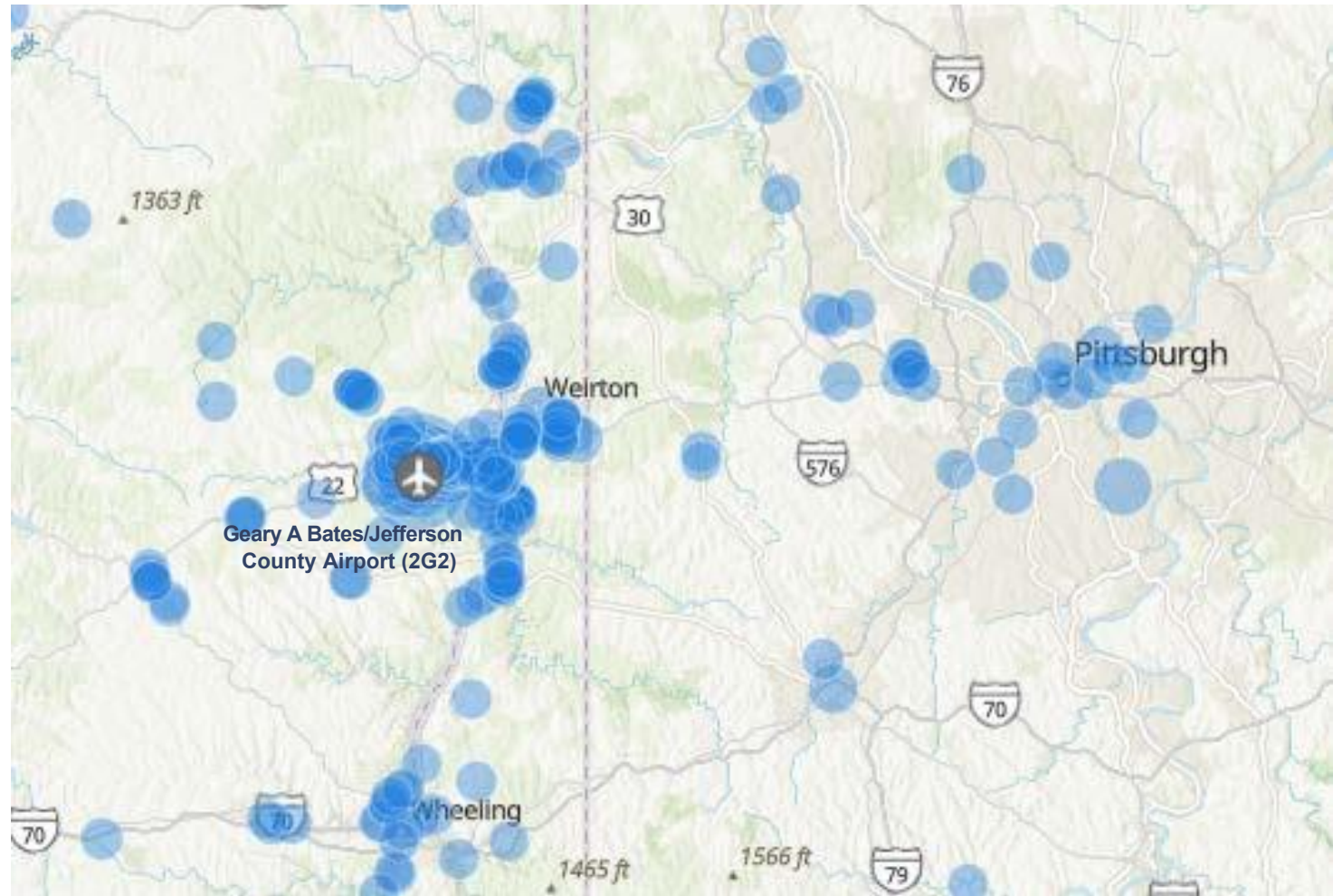
Airport Facilitated
Airport Expenditure ³



35,215

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Monroe County Airport (4G5)

Woodsfield, Ohio

Airport Overview



1,024

Total Operations



14

Based Aircraft



3,805

Max Runway Length



54

Military Operations



Up to 250

Annual Air Taxi Operations



1

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



192

Aerodromes
within 80 miles¹



South Central Power

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	5
Regional Air Mobility	L	L	8
Airport Shuttle	L	M	6
Emergency Medical Services	M	M	1
Business Aviation	M	L	9
Transport of Cargo and Freight	L	L	4
Flight Training	M	M	7
Tourism	M	M	3
Leisure	M	M	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Tourism



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



13,091
Airport Service
Area Population ¹



7.4%
Percent of population
with 60+ minute commute
times to work ²



1,756,200
Jobs
within 80 miles



129,800
Businesses
within 80 miles



#
Airport Facilitated
Airport Expenditure ³

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

West Liberty Airport (9I3)

West Liberty, Kentucky

Airport Overview


4,310
Total Operations


17
Based Aircraft


2,400
Max Runway Length


10
Military Operations


Up to 250
Annual Air Taxi Operations


N/A
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


4
Substations
within 5 Miles


N/A
3 Phase, 240v
On-site


105
Aerodromes
within 80 miles¹


American Electric Power (AEP),
Kentucky Power

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	L	8
Regional Air Mobility	L	L	7
Airport Shuttle	L	L	9
Emergency Medical Services	H	H	3
Business Aviation	L	M	2
Transport of Cargo and Freight	L	M	1
Flight Training	M	M	6
Tourism	M	H	5
Leisure	H	H	4

TOP 3 USE CASES	
	Transport of Cargo and Freight
	Business Aviation
	Emergency Medical Services

H High **M** Medium **L** Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



36,599
Airport Service
Area Population ¹



9.5%
Percent of population
with 60+ minute commute
times to work ²



761,700
Jobs
within 80 miles



64,700
Businesses
within 80 miles



#
Airport Facilitated
Airport Expenditure ³

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

Alexander Salamon Airport (AMT)

Winchester, Ohio

Airport Overview



1,416

Total Operations



16

Based Aircraft



3,558

Max Runway Length



0

Military Operations



0

Annual Air Taxi Operations



0

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



3

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



237

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	1
Regional Air Mobility	M	H	4
Airport Shuttle	M	H	2
Emergency Medical Services	L	H	3
Business Aviation	M	H	8
Transport of Cargo and Freight	L	M	6
Flight Training	M	H	7
Tourism	M	H	9
Leisure	H	H	5

TOP 3 USE CASES



Air Taxi Operations



Airport Shuttle



Emergency Medical Services



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



32,046

Airport Service
Area Population ¹



6.1%

Percent of population
with 60+ minute commute
times to work ²



2,431,500

Jobs
within 80 miles ²



166,800

Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

Williamsburg-Whitley County Airport (BYL)

Williamsburg, Kentucky

Airport Overview



5,500

Total Operations



14

Based Aircraft



5,499

Max Runway Length



50

Military Operations



1,000-1,500

Annual Air Taxi Operations



8

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



4

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



130

Aerodromes
within 80 miles¹



Cumberland Valley
Electric, Inc.

Cumberland Valley Electric

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	9
Regional Air Mobility	L	L	8
Airport Shuttle	M	M	7
Emergency Medical Services	H	H	5
Business Aviation	M	M	3
Transport of Cargo and Freight	L	M	4
Flight Training	M	H	1
Tourism	M	H	2
Leisure	H	H	6

TOP 3 USE CASES



Flight Training



Tourism



Business Aviation

H

High

M

Medium

L

Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



35,671

Airport Service
Area Population ¹



7.9%

Percent of population
with 60+ minute commute
times to work ²



873,000

Jobs
within 80 miles



72,300

Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³



8,640

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Cambridge Municipal Airport (CDI)

Cambridge, Ohio

Airport Overview



1,361

Total Operations



13

Based Aircraft



4,298

Max Runway Length



38

Military Operations



0

Annual Air Taxi Operations



4

Flights within Ideal Electric Vehicle Range (80 miles)

Electric Infrastructure Readiness



9

Substations within 5 Miles



Yes

3 Phase, 240v On-site



222

Aerodromes within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	L	5
Regional Air Mobility	L	M	7
Airport Shuttle	L	M	6
Emergency Medical Services	M	L	1
Business Aviation	L	L	9
Transport of Cargo and Freight	L	M	4
Flight Training	L	L	8
Tourism	L	M	3
Leisure	M	M	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Tourism



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



36,104

Airport Service
Area Population ¹



6.2%

Percent of population
with 60+ minute commute
times to work ²



1,959,600

Jobs
within 80 miles



141,500

Businesses
within 80 miles



#

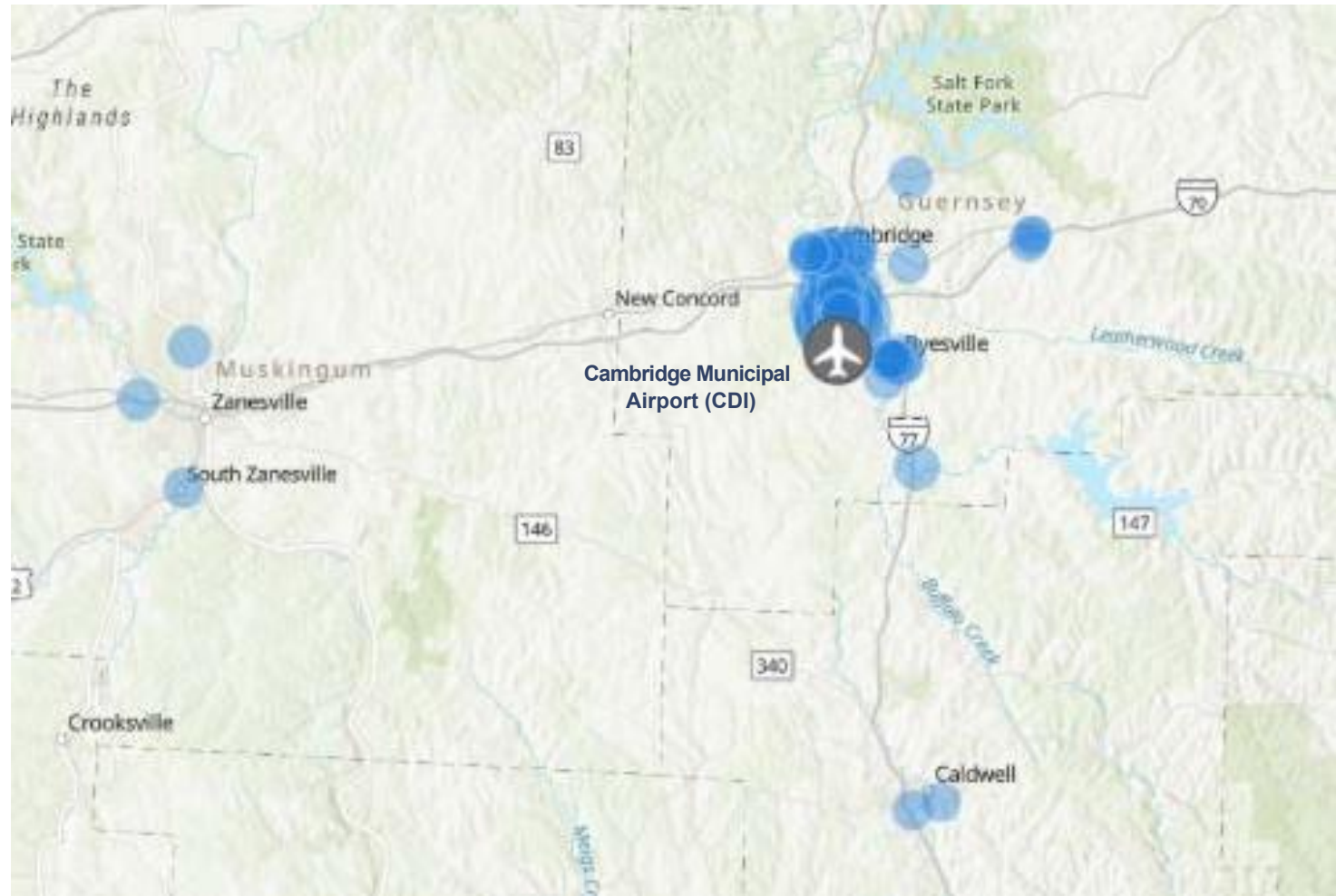
Airport Facilitated
Airport Expenditure ³



2,754

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Wendell H Ford Airport (CPF)

Chavies, Kentucky

Airport Overview


10,170
Total Operations


18
Based Aircraft


5,499
Max Runway Length


800
Military Operations


1,200-2,000
Annual Air Taxi Operations


48
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


1
Substations
within 5 Miles


Yes
3 Phase, 240v
On-site


107
Aerodromes
within 80 miles¹


American Electric Power (AEP),
Kentucky Power

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	H	H	9
Regional Air Mobility	H	H	6
Airport Shuttle	H	H	8
Emergency Medical Services	H	H	2
Business Aviation	H	H	3
Transport of Cargo and Freight	M	H	5
Flight Training	H	H	1
Tourism	L	H	7
Leisure	M	H	4

TOP 3 USE CASES	
	Flight Training
	Emergency Medical Services
	Business Aviation

 High
  Medium
  Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



44,789

Airport Service
Area Population ¹



10%

Percent of population
with 60+ minute commute
times to work ²



557,200

Jobs
within 80 miles



50,800

Businesses
within 80 miles



#

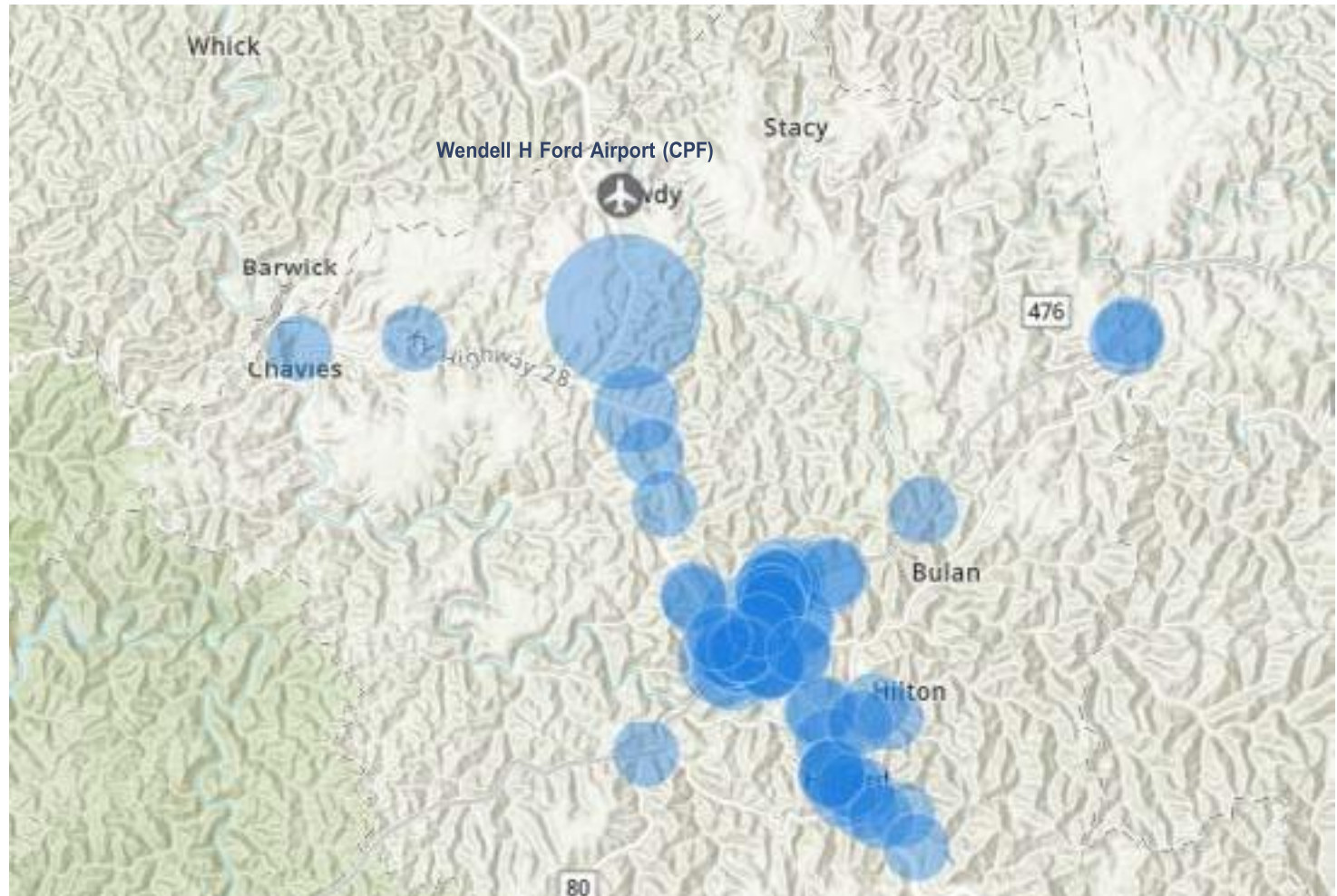
Airport Facilitated
Airport Expenditure ³



9,236

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Ashland Regional Airport (DWU)

Worthington, Kentucky

Airport Overview



7,590

Total Operations



26

Based Aircraft



5,402

Max Runway Length



275

Military Operations



500-1,000

Annual Air Taxi Operations



7

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



13

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



107

Aerodromes
within 80 miles¹



American Electric Power (AEP),
Kentucky Power

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	8
Regional Air Mobility	L	M	6
Airport Shuttle	L	M	7
Emergency Medical Services	M	H	2
Business Aviation	H	H	9
Transport of Cargo and Freight	M	M	3
Flight Training	M	M	5
Tourism	L	M	4
Leisure	H	H	1

TOP 3 USE CASES



Leisure



Emergency Medical Services



Transport of Cargo Freight

H High

M Medium

L Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



93,639

Airport Service
Area Population ¹



10.2%

Percent of population
with 60+ minute commute
times to work ²



696,600

Jobs
within 80 miles



53,600

Businesses
within 80 miles



#

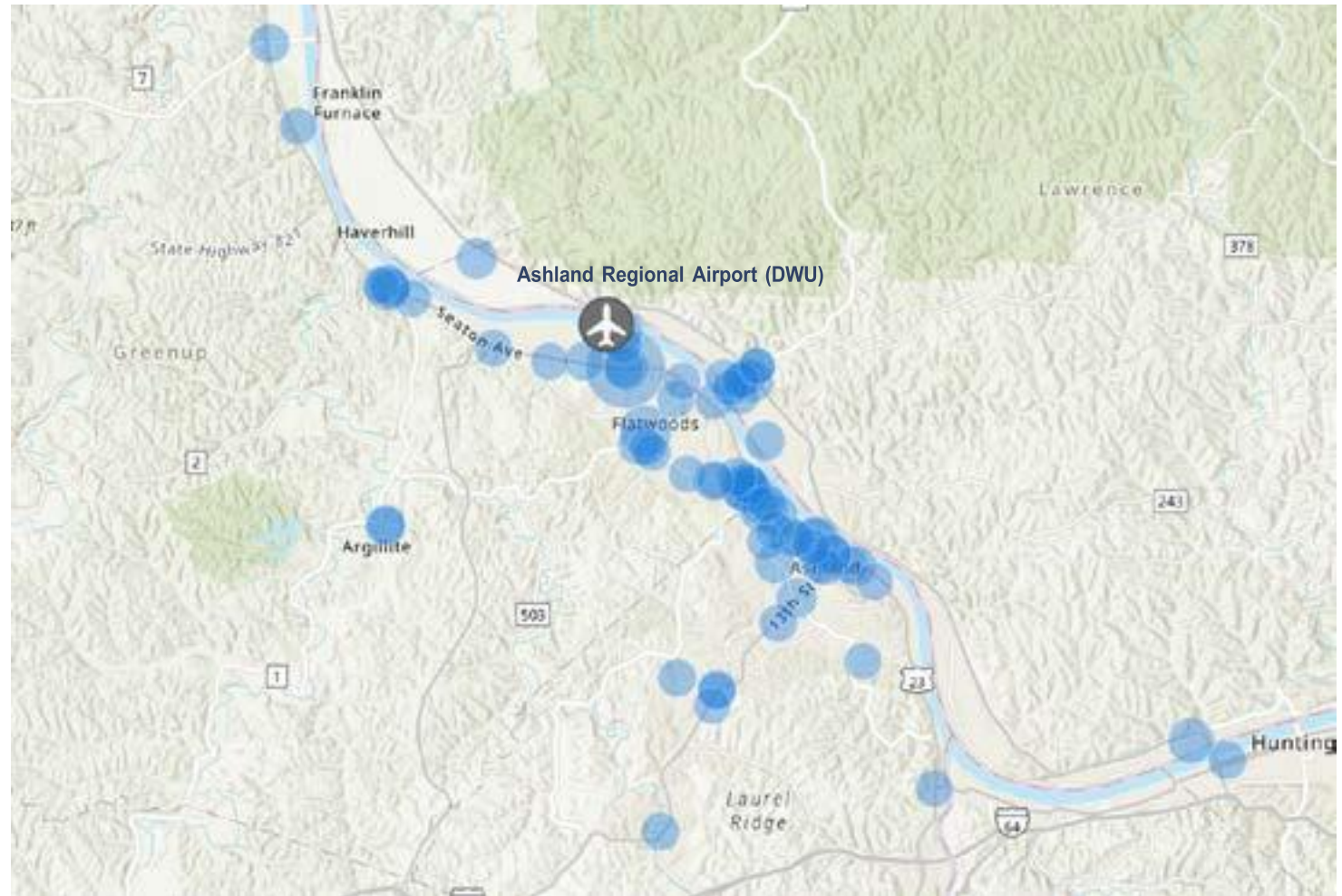
Airport Facilitated
Airport Expenditure ³



5,467

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Shelby-Cleveland County Regional Airport (EHO)

Shelby, North Carolina

Airport Overview


18,200
Total Operations


75
Based Aircraft


5,001
Max Runway Length


200
Military Operations


0
Annual Air Taxi Operations


146
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


12
Substations
within 5 Miles


Yes
3 Phase, 240v
On-site


213
Aerodromes
within 80 miles¹


City of Shelby and Duke Energy

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	4
Regional Air Mobility	L	M	1
Airport Shuttle	L	M	1
Emergency Medical Services	M	M	8
Business Aviation	H	H	9
Transport of Cargo and Freight	M	M	1
Flight Training	H	H	5
Tourism	L	M	7
Leisure	H	H	6

TOP 3 USE CASES	
	Regional Air Mobility
	Airport Shuttle
	Transport of Cargo and Freight

H High **M** Medium **L** Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



153,939

Airport Service
Area Population ¹



6.3%

Percent of population
with 60+ minute commute
times to work ²



2,367,300

Jobs
within 80 miles



206,800

Businesses
within 80 miles



#

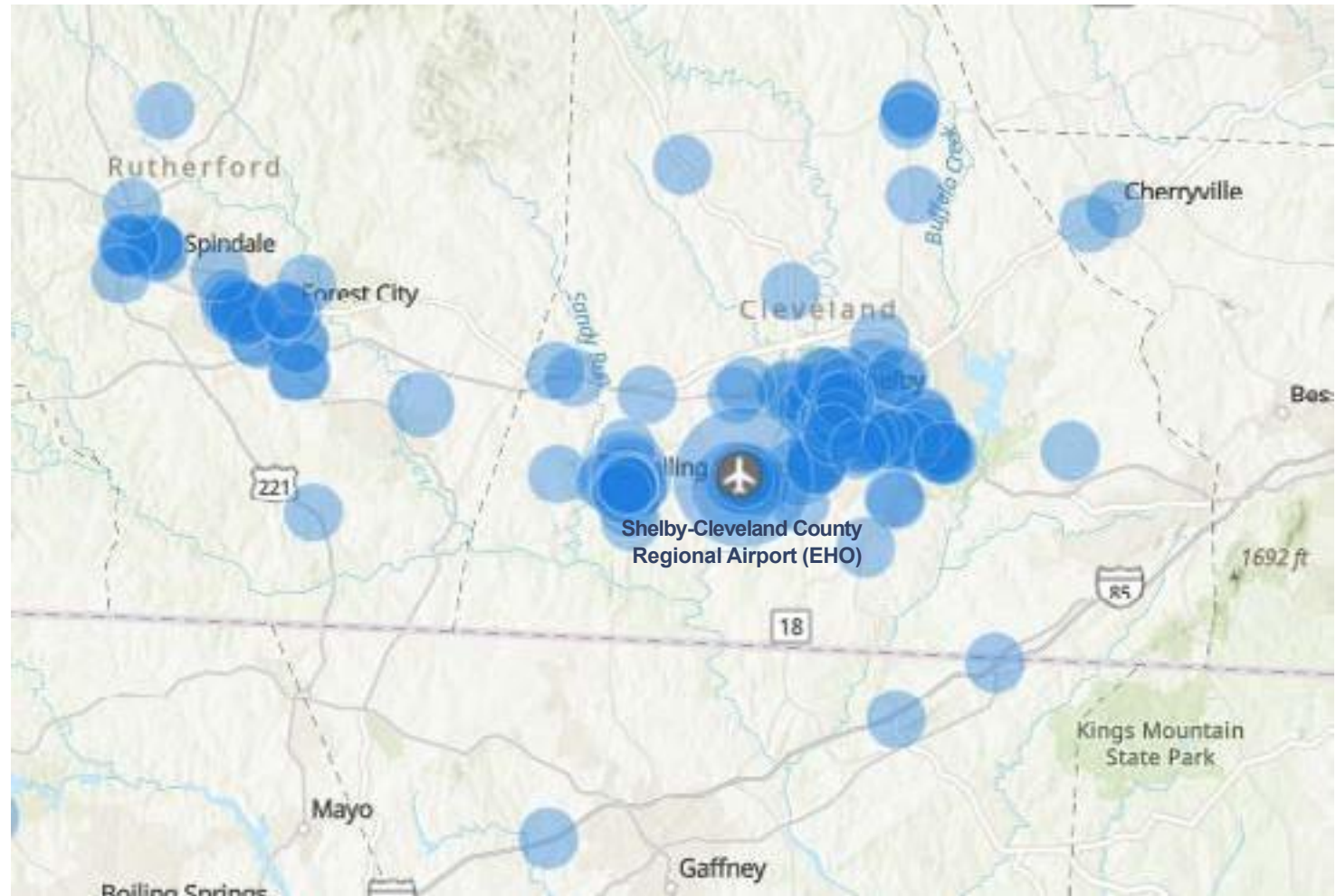
Airport Facilitated
Airport Expenditure ³



10,311

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Wayne County Airport (EKQ)

Monticello, Kentucky

Airport Overview



8,640

Total Operations



10

Based Aircraft



4,000

Max Runway Length



180

Military Operations



500-1,000

Annual Air Taxi Operations



13

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



2

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



110

Aerodromes
within 80 miles¹



South Kentucky RECC (Rural
Electric Cooperative Corporation)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	H	7
Regional Air Mobility	L	M	7
Airport Shuttle	L	M	7
Emergency Medical Services	H	H	6
Business Aviation	H	H	2
Transport of Cargo and Freight	M	H	4
Flight Training	H	H	5
Tourism	H	H	3
Leisure	H	H	1

TOP 3 USE CASES



Leisure



Business Aviation



Tourism

H

High

M

Medium

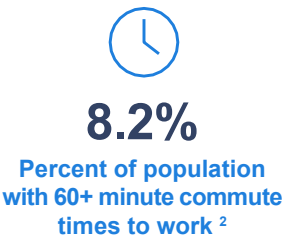
L

Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

Pike County Regional Airport (EOP)

Waverly, Ohio

Airport Overview



2,112

Total Operations



10

Based Aircraft



4,899

Max Runway Length



12

Military Operations



0

Annual Air Taxi Operations



7

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



224

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	L	4
Regional Air Mobility	L	L	7
Airport Shuttle	L	L	5
Emergency Medical Services	M	M	1
Business Aviation	H	H	8
Transport of Cargo and Freight	L	L	3
Flight Training	L	L	9
Tourism	L	L	6
Leisure	H	H	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Transport of Cargo and Freight



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



33,457

Airport Service
Area Population ¹



6%

Percent of population
with 60+ minute commute
times to work ²



2,313,800

Jobs
within 80 miles



161,400

Businesses
within 80 miles



#

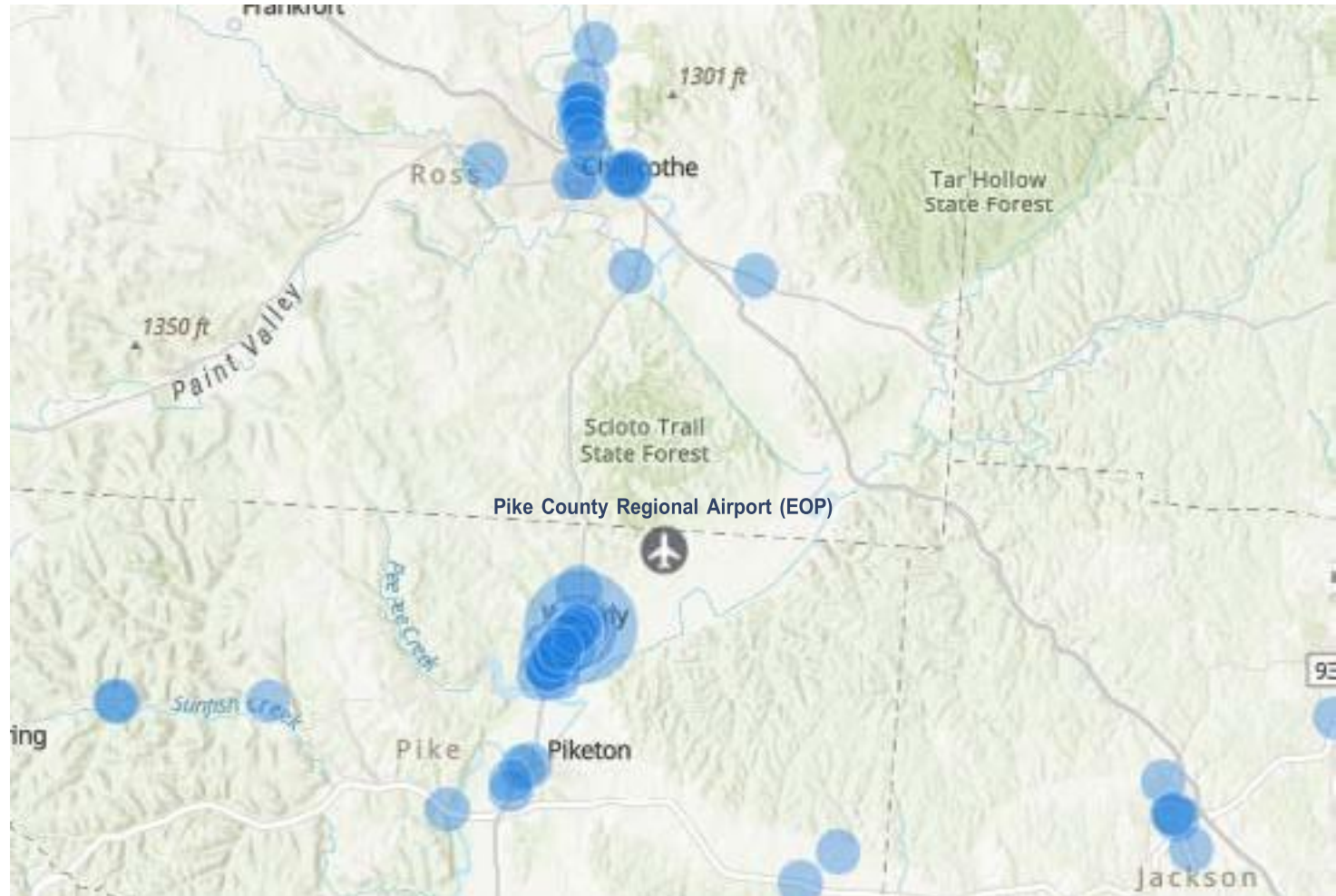
Airport Facilitated
Airport Expenditure ³



3,703

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

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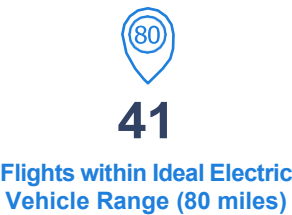
³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Fleming-Mason Airport (FGX)

Maysville, Kentucky

Airport Overview



Electric Infrastructure Readiness



Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	2
Regional Air Mobility	L	M	6
Airport Shuttle	L	L	3
Emergency Medical Services	M	M	7
Business Aviation	M	M	4
Transport of Cargo and Freight	M	L	8
Flight Training	H	H	1
Tourism	L	M	9
Leisure	H	H	5

TOP 3 USE CASES

- Flight Training
- Air Taxi Operations
- Airport Shuttle

H High M Medium L Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



32,496

Airport Service
Area Population ¹



6.8%

Percent of population
with 60+ minute commute
times to work ²



2,055,200

Jobs
within 80 miles



144,400

Businesses
within 80 miles



#

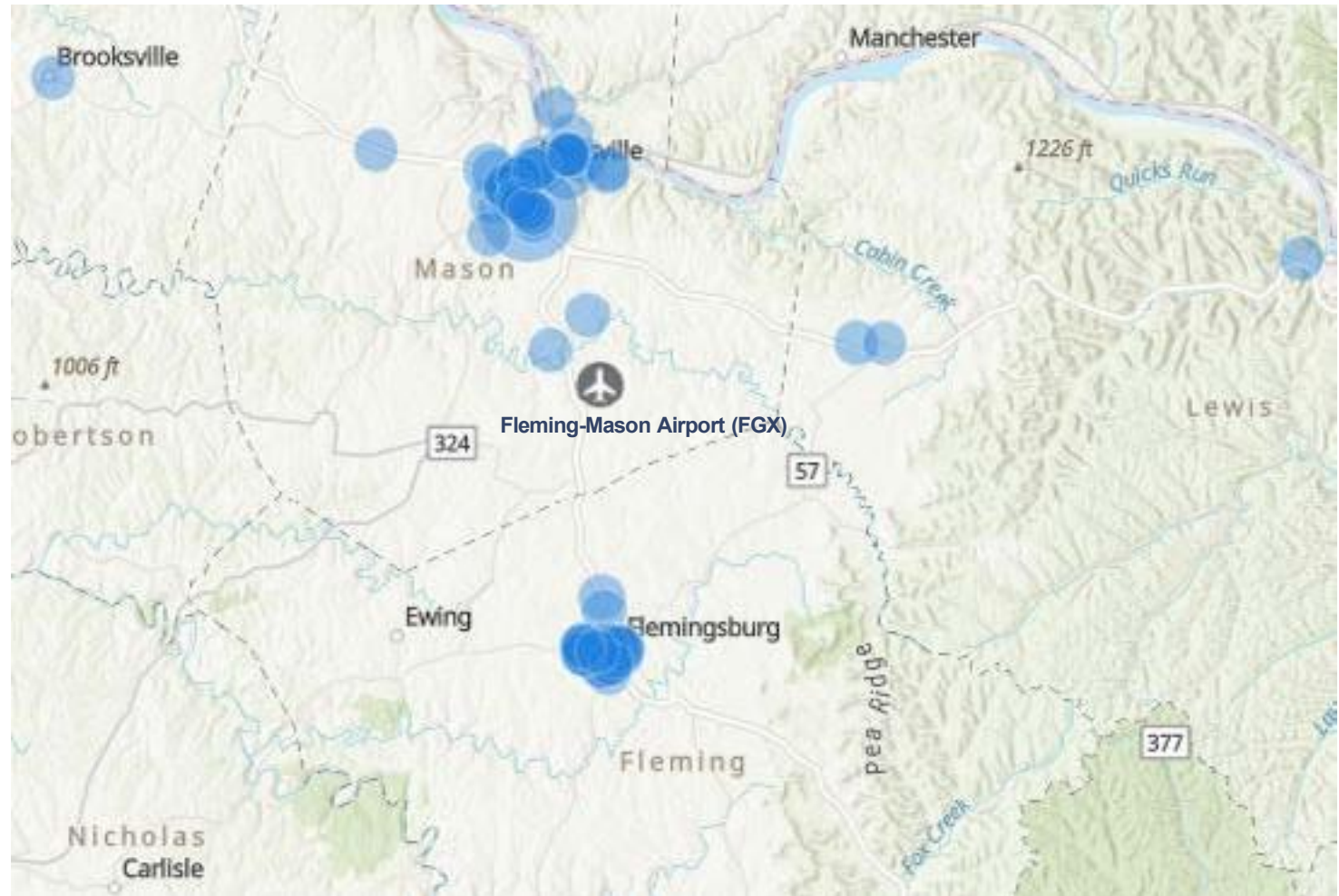
Airport Facilitated
Airport Expenditure ³



2,847

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Rutherford County/Marchman Field Airport (FQD)

Rutherfordton, North Carolina

Airport Overview


12,150
Total Operations


55
Based Aircraft


5,000
Max Runway Length


500
Military Operations


0
Annual Air Taxi Operations


160
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


5
Substations
within 5 Miles


N/A
3 Phase, 240v
On-site


206
Aerodromes
within 80 miles¹


Duke Energy

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	3
Regional Air Mobility	L	M	4
Airport Shuttle	L	M	2
Emergency Medical Services	M	M	7
Business Aviation	M	M	9
Transport of Cargo and Freight	M	M	6
Flight Training	H	H	1
Tourism	M	M	5
Leisure	H	H	8

TOP 3 USE CASES

-  Flight Training
-  Airport Shuttle
-  Air Taxi Operations

H High **M** Medium **L** Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



95,294

Airport Service
Area Population ¹



6%

Percent of population
with 60+ minute commute
times to work ²



2,416,400

Jobs
within 80 miles



208,400

Businesses
within 80 miles



#

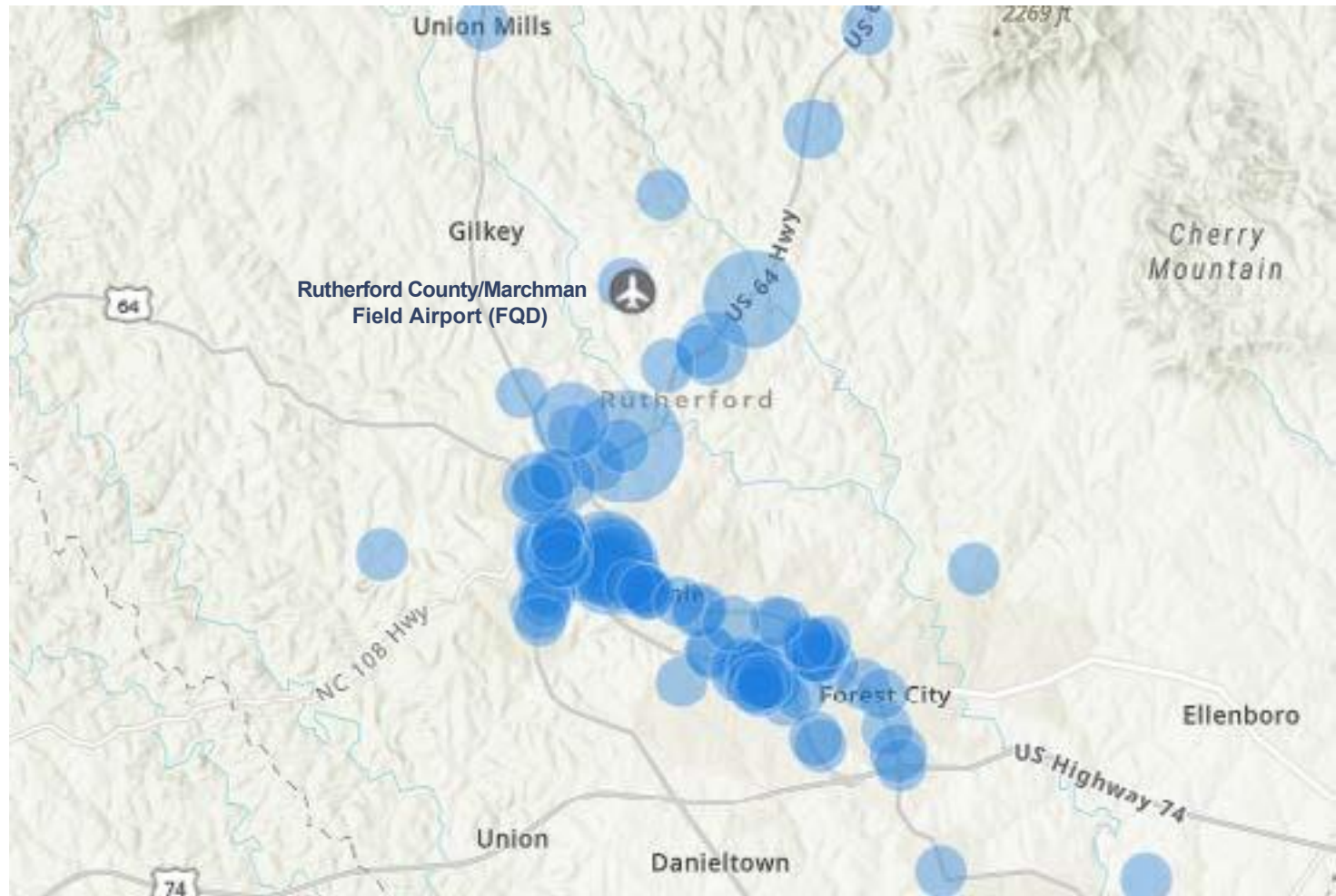
Airport Facilitated
Airport Expenditure ³



9,698

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Gallia-Meigs Regional Airport (GAS)

Gallipolis, Ohio

Airport Overview



12,150

Total Operations



55

Based Aircraft



5,000

Max Runway Length



500

Military Operations



0

Annual Air Taxi Operations



160

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



4

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



103

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	H	6
Regional Air Mobility	M	H	7
Airport Shuttle	H	H	9
Emergency Medical Services	M	H	1
Business Aviation	H	H	8
Transport of Cargo and Freight	M	M	4
Flight Training	H	H	3
Tourism	H	H	5
Leisure	H	M	2

TOP 3 USE CASES

- Emergency Medical Services
- Leisure
- Flight Training

H High **M** Medium **L** Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



29,118

Airport Service
Area Population ¹



9.4%

Percent of population
with 60+ minute commute
times to work ²



738,100

Jobs
within 80 miles



56,100

Businesses
within 80 miles



#

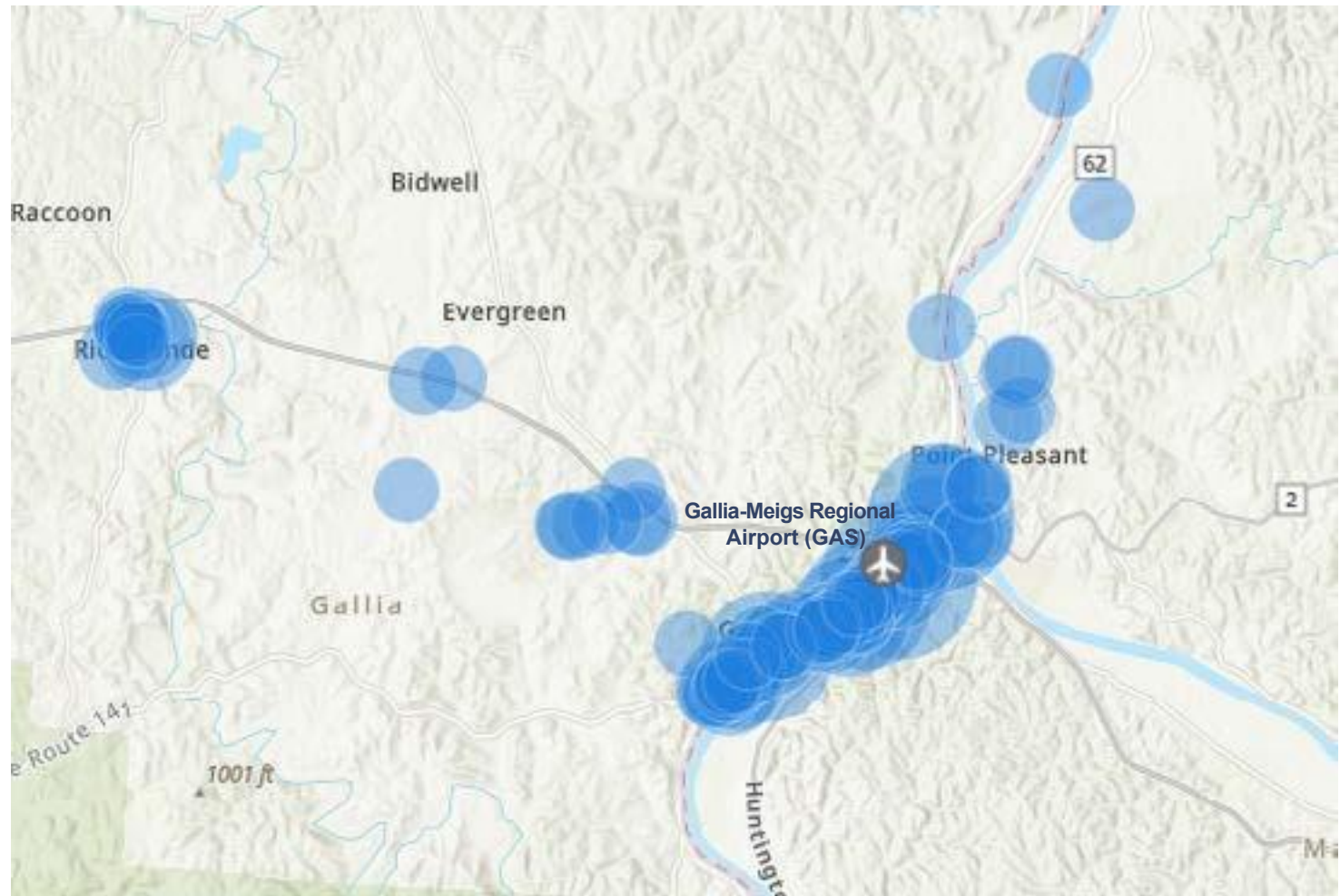
Airport Facilitated
Airport Expenditure ³



6,633

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Highland County Airport (HOC)

Hillsboro, Ohio

Airport Overview



9,112

Total Operations



21

Based Aircraft



3,520

Max Runway Length



228

Military Operations



Up to 250

Annual Air Taxi Operations



19

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



277

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	3
Regional Air Mobility	L	M	6
Airport Shuttle	L	M	4
Emergency Medical Services	M	M	5
Business Aviation	M	M	1
Transport of Cargo and Freight	L	M	2
Flight Training	M	H	7
Tourism	L	M	9
Leisure	H	H	8

TOP 3 USE CASES

- Business Aviation
- Transport of Cargo and Freight
- Air Taxi Operations

High Medium Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



42,215

Airport Service
Area Population ¹



5.5%

Percent of population
with 60+ minute commute
times to work ²



3,060,900

Jobs
within 80 miles



205,300

Businesses
within 80 miles



#

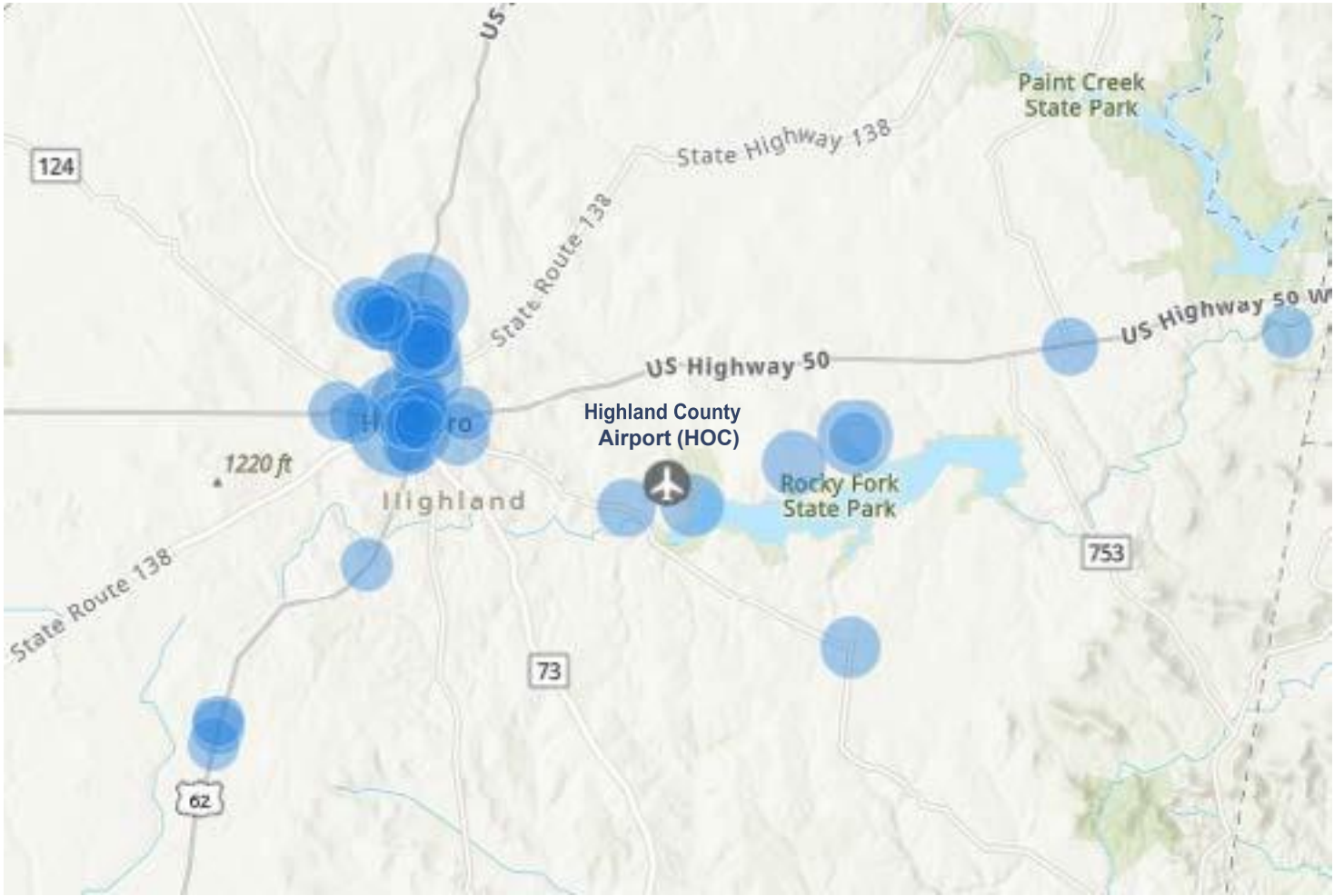
Airport Facilitated
Airport Expenditure ³



2,691

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Lawrence County Airpark (HTW)

South Point, Ohio

Airport Overview


10,416
Total Operations


24
Based Aircraft


2,998
Max Runway Length


166
Military Operations


250-500
Annual Air Taxi Operations


0
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


13
Substations
within 5 Miles


N/A
3 Phase, 240v
On-site


86
Aerodromes
within 80 miles¹


American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	7
Regional Air Mobility	L	M	6
Airport Shuttle	L	M	8
Emergency Medical Services	M	M	1
Business Aviation	M	M	9
Transport of Cargo and Freight	M	M	3
Flight Training	H	H	5
Tourism	L	M	4
Leisure	H	H	2

TOP 3 USE CASES

-  Emergency Medical Services
-  Leisure
-  Transport of Cargo and Freight

 High  Medium  Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



62,588

Airport Service
Area Population ¹



10.1%

Percent of population
with 60+ minute commute
times to work ²



669,800

Jobs
within 80 miles



51,800

Businesses
within 80 miles



#

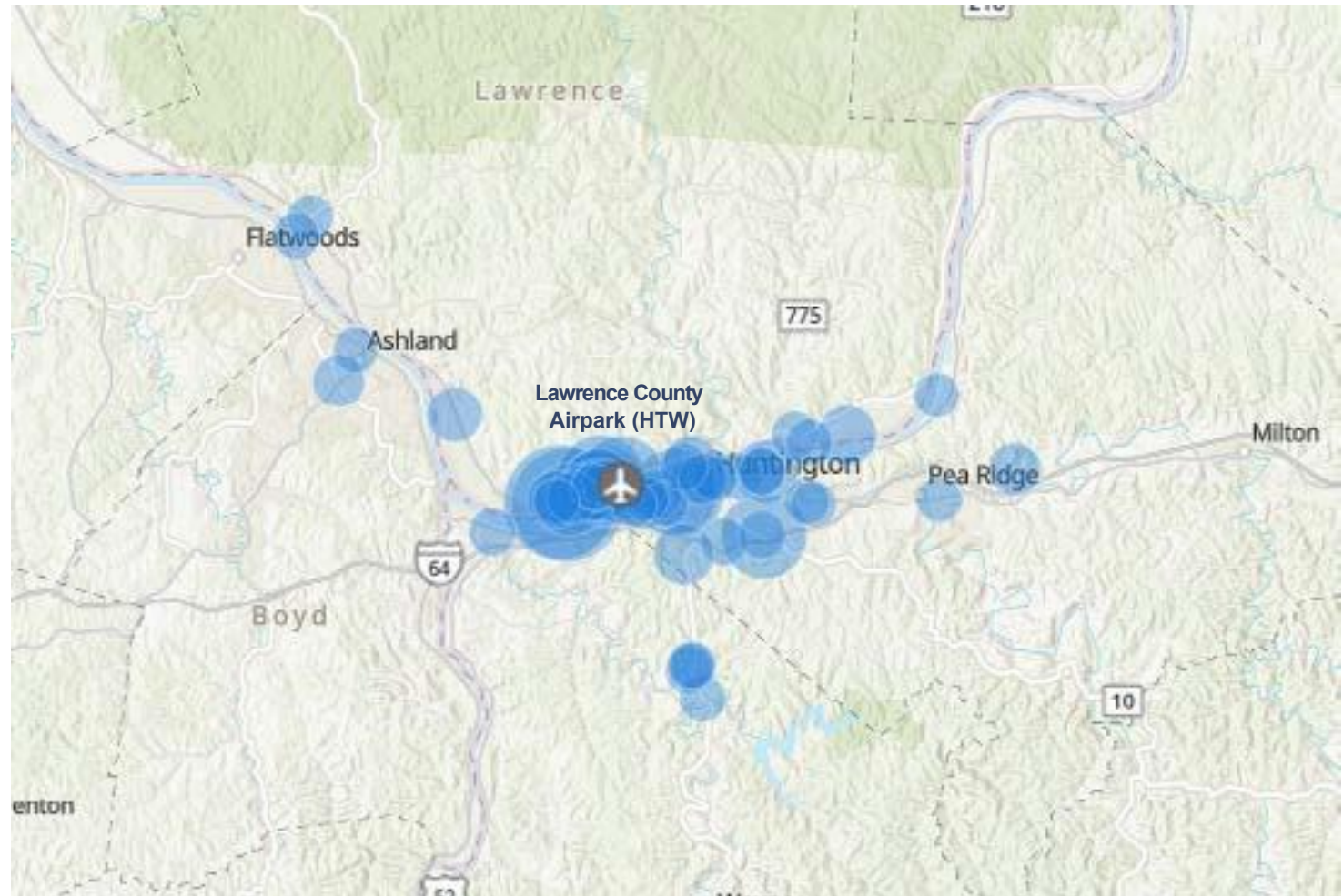
Airport Facilitated
Airport Expenditure ³



2,561

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Northeast Ohio Regional Airport (HZY)

Jefferson, Ohio

Airport Overview



1,195

Total Operations



24

Based Aircraft



5,900

Max Runway Length



2

Military Operations



Up to 250

Annual Air Taxi Operations



68

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



241

Aerodromes
within 80 miles¹

FirstEnergy

**the
Illuminating
Company**
A FirstEnergy Company

FirstEnergy Corp.,
The Illuminating Co

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	6
Regional Air Mobility	L	M	7
Airport Shuttle	L	M	5
Emergency Medical Services	M	M	4
Business Aviation	H	M	1
Transport of Cargo and Freight	M	M	2
Flight Training	M	H	3
Tourism	L	M	8
Leisure	H	H	9

TOP 3 USE CASES



Business Aviation



Transport of Cargo and Freight



Flight Training

H High

M Medium

L Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



98,181

Airport Service
Area Population ¹



5.1%

Percent of population
with 60+ minute commute
times to work ²



2,448,900

Jobs
within 80 miles



170,800

Businesses
within 80 miles



#

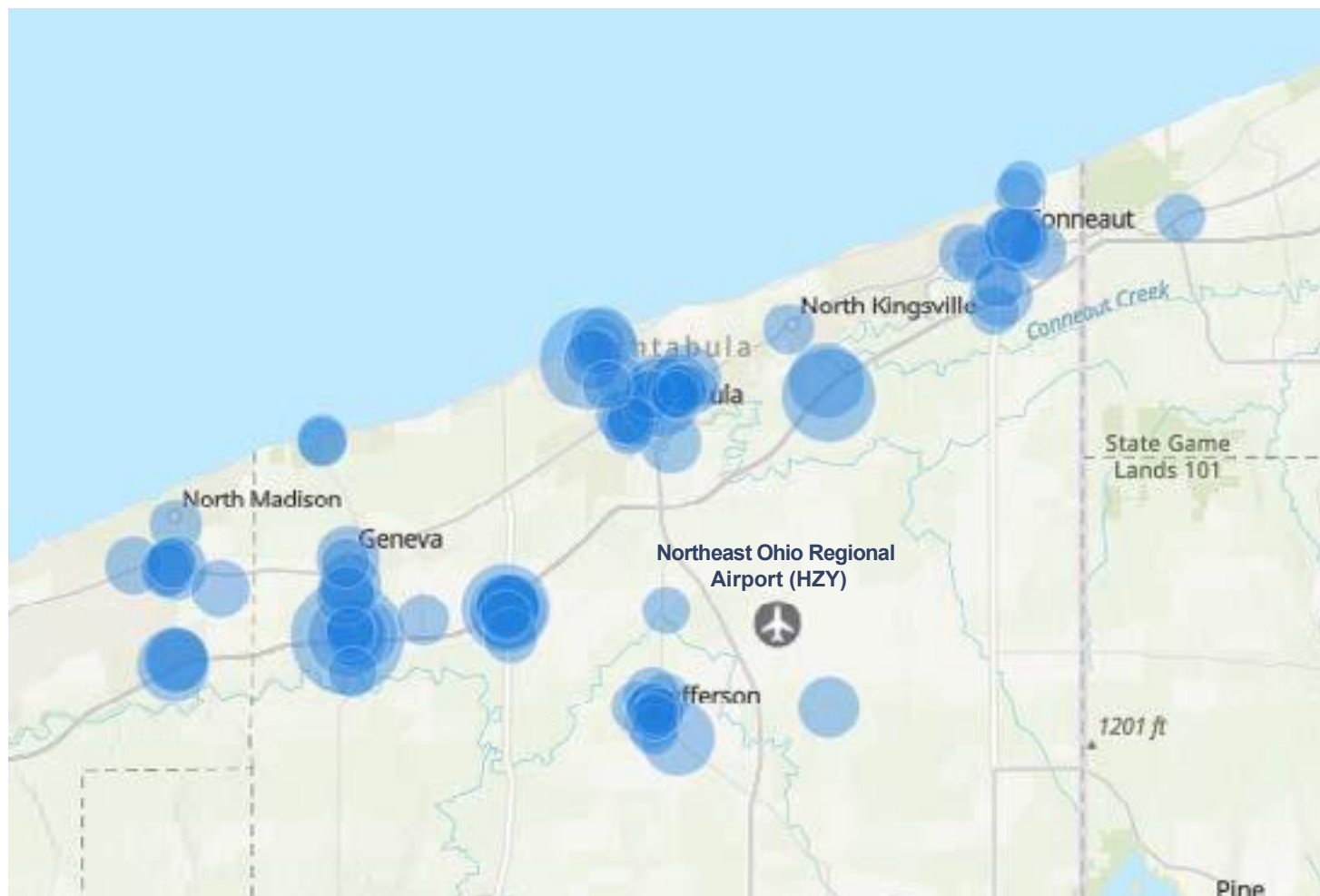
Airport Facilitated
Airport Expenditure ³



3,468

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

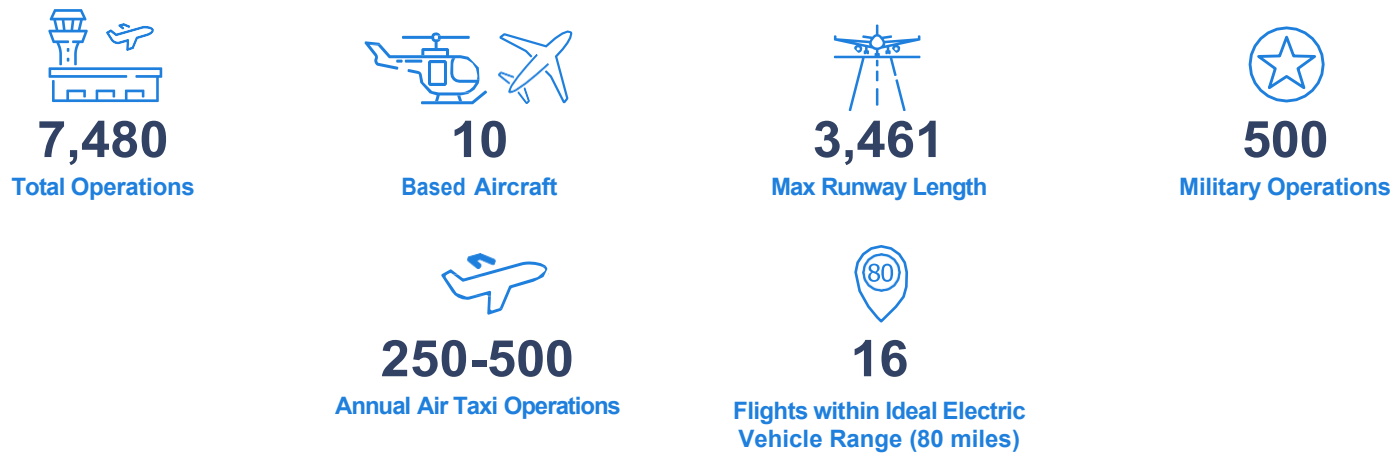
³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Tucker-Guthrie Memorial Airport (I35)

Harlan, Kentucky

Airport Overview



Electric Infrastructure Readiness



Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	8
Regional Air Mobility	M	M	6
Airport Shuttle	M	M	7
Emergency Medical Services	M	M	2
Business Aviation	H	H	9
Transport of Cargo and Freight	M	M	3
Flight Training	M	M	5
Tourism	H	H	4
Leisure	H	H	1

TOP 3 USE CASES

- Leisure
- Emergency Medical Services
- Transport of Cargo and Freight

H High M Medium L Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



33,586

Airport Service
Area Population ¹



8.2%

Percent of population
with 60+ minute commute
times to work ²



983,400

Jobs
within 80 miles



77,200

Businesses
within 80 miles



#

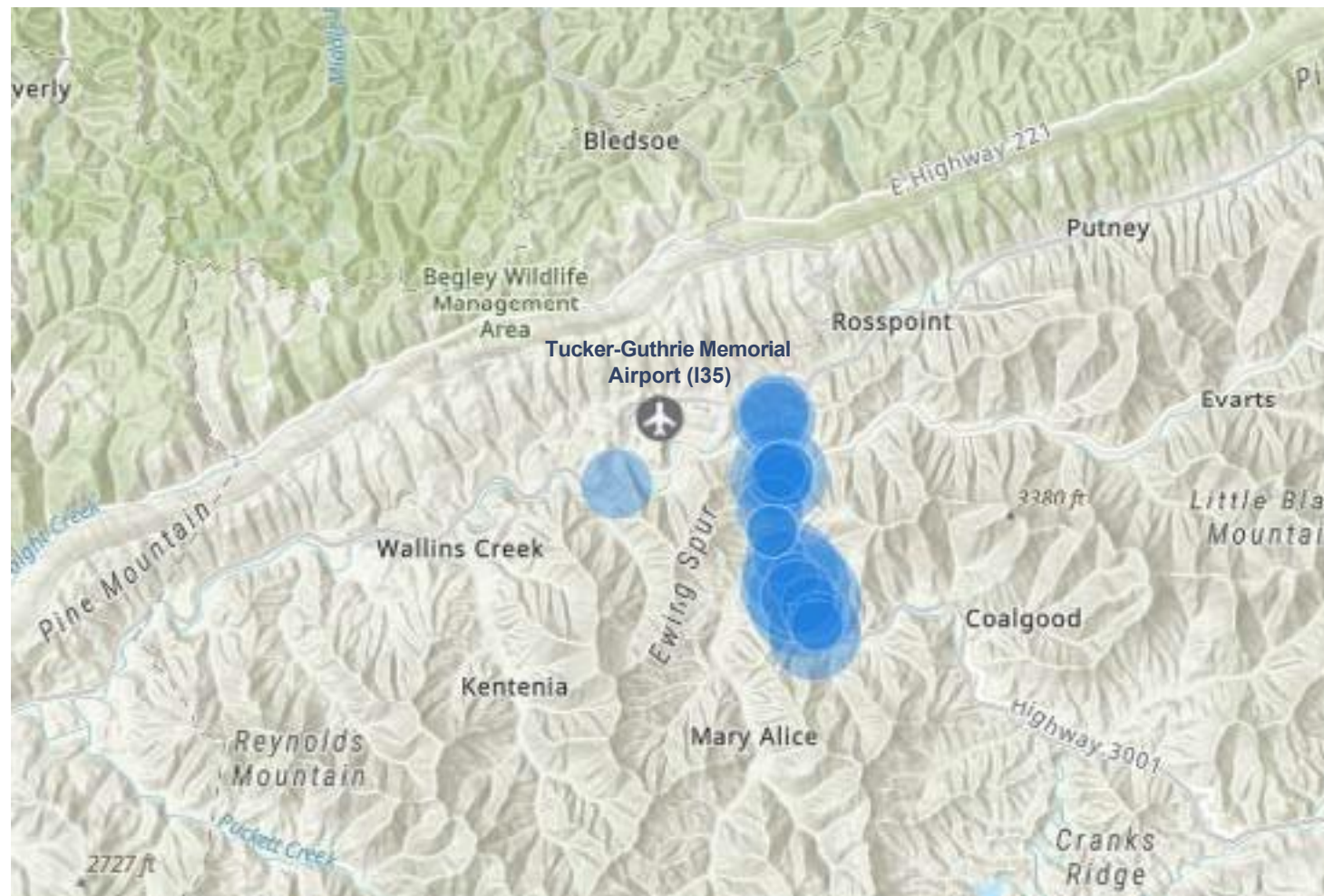
Airport Facilitated
Airport Expenditure ³



2,016

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Richard Downing Airport (I40)

Coshocton, Ohio

Airport Overview



7,480

Total Operations



10

Based Aircraft



3,461

Max Runway Length



500

Military Operations



250-500

Annual Air Taxi Operations



16

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



4

Substations
within 5 Miles



Yes

3 Phase, 240v
On-site



288

Aerodromes
within 80 miles¹



Frontier Power Company

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	6
Regional Air Mobility	L	L	7
Airport Shuttle	L	L	5
Emergency Medical Services	H	M	1
Business Aviation	L	M	9
Transport of Cargo and Freight	L	L	4
Flight Training	M	M	8
Tourism	M	M	3
Leisure	H	H	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Tourism



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



43,520

Airport Service
Area Population ¹



5.5%

Percent of population
with 60+ minute commute
times to work ²



2,853,300

Jobs
within 80 miles



205,900

Businesses
within 80 miles



#

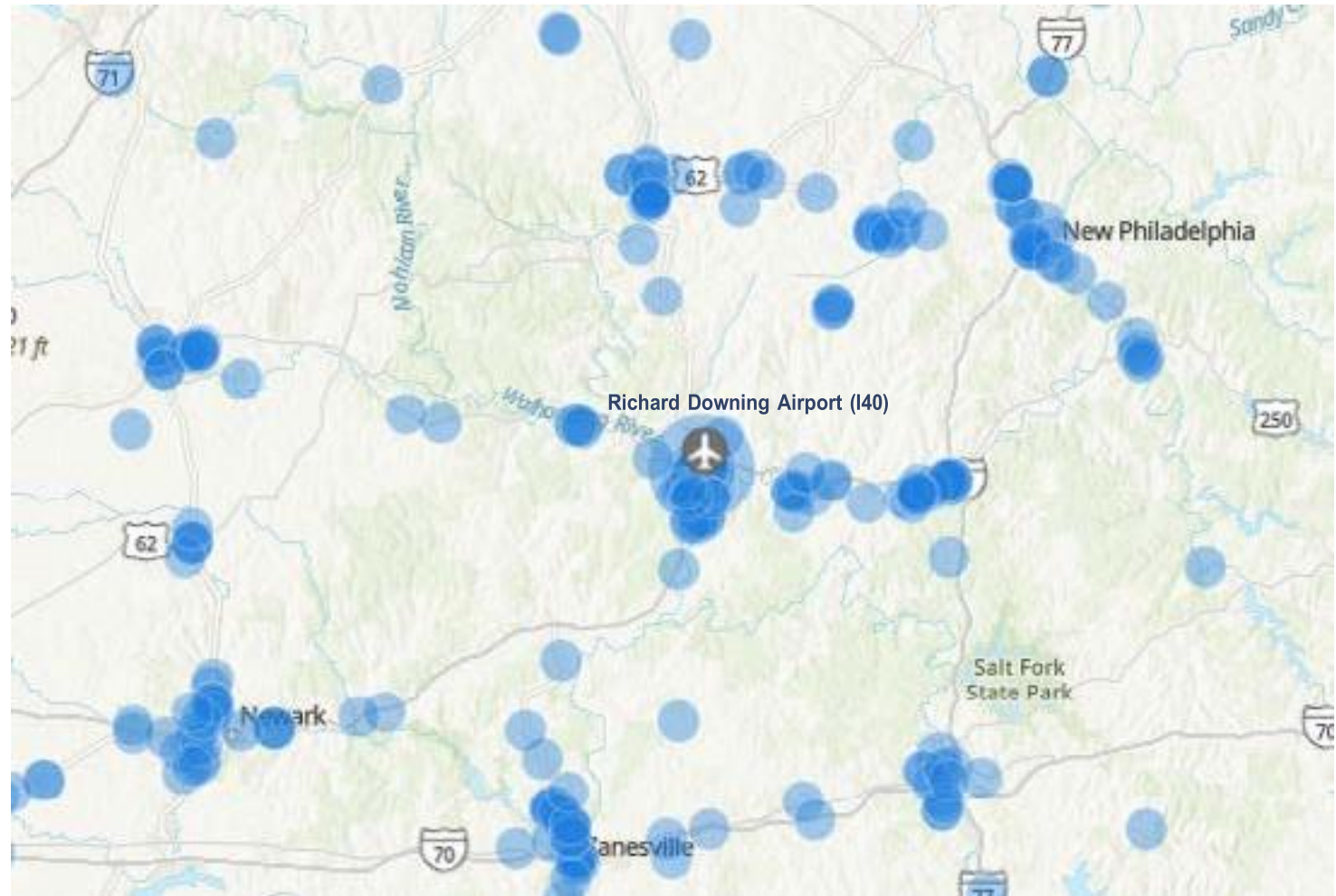
Airport Facilitated
Airport Expenditure ³



24,045

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Stanton Airport (I50)

Coshocton, Ohio

Airport Overview



5,185

Total Operations



12

Based Aircraft



2,996

Max Runway Length



60

Military Operations



Up to 250

Annual Air Taxi Operations



5

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



4

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



120

Aerodromes
within 80 miles¹



Clark Energy Cooperative

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	6
Regional Air Mobility	L	M	8
Airport Shuttle	L	L	9
Emergency Medical Services	M	M	1
Business Aviation	M	M	7
Transport of Cargo and Freight	L	L	3
Flight Training	M	H	4
Tourism	M	H	5
Leisure	M	H	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Transport of Cargo and Freight



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



43,998

Airport Service
Area Population ¹



9.3%

Percent of population
with 60+ minute commute
times to work ²



799,900

Jobs
within 80 miles



68,400

Businesses
within 80 miles



#

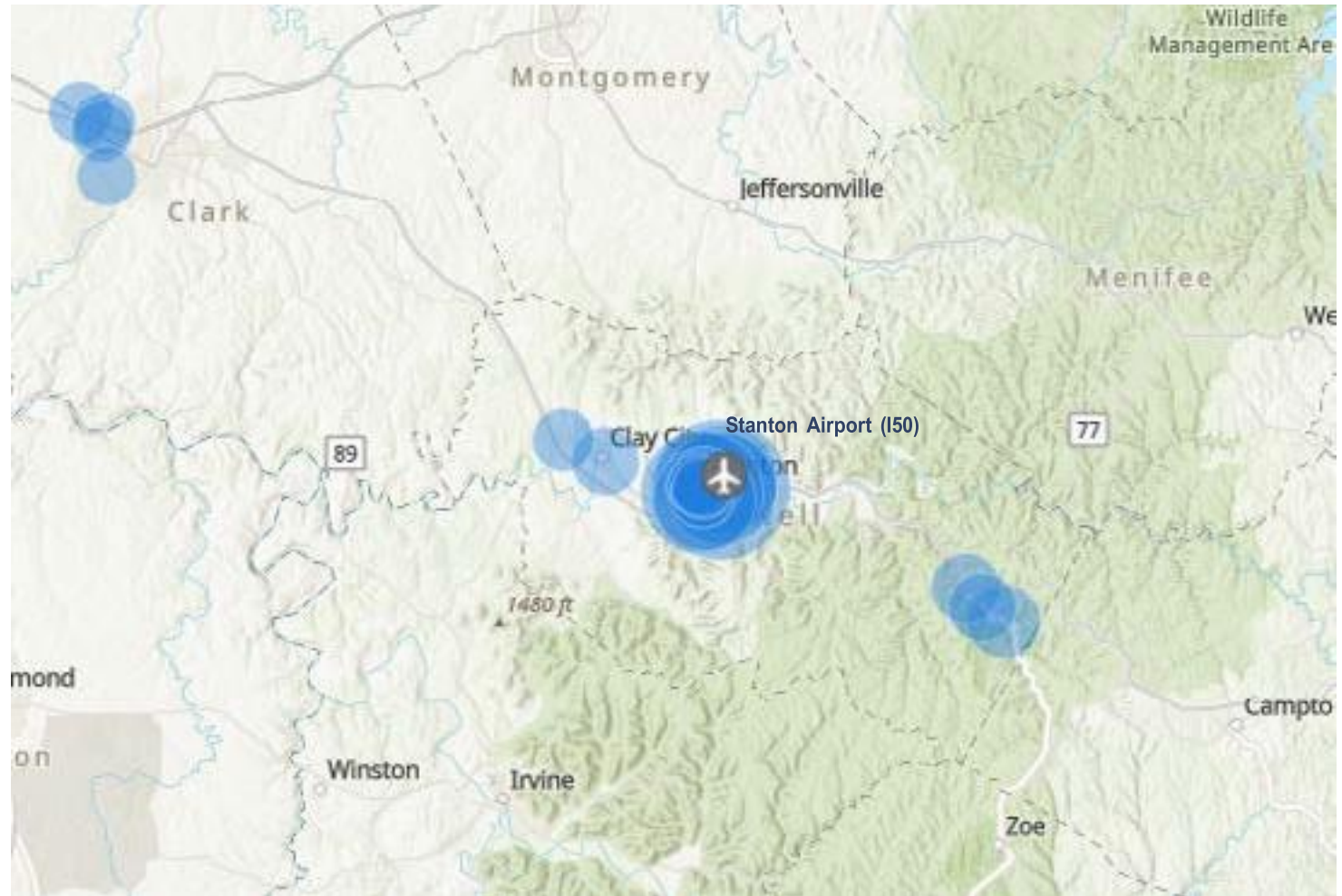
Airport Facilitated
Airport Expenditure ³



1,158

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Mount Sterling/Montgomery County Airport (IOB)

Mt. Sterling, Kentucky

Airport Overview



39,918

Total Operations



81

Based Aircraft



5,000

Max Runway Length



875

Military Operations



4,500-5,000

Annual Air Taxi Operations



250

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



7

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



154

Aerodromes
within 80 miles¹



Clark Energy Cooperative

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	H	H	5
Regional Air Mobility	H	H	8
Airport Shuttle	H	H	7
Emergency Medical Services	H	H	4
Business Aviation	H	H	9
Transport of Cargo and Freight	M	H	6
Flight Training	H	H	2
Tourism	M	M	1
Leisure	M	M	3

TOP 3 USE CASES



Tourism



Flight Training



Leisure



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



67,390

Airport Service
Area Population ¹



7.7%

Percent of population
with 60+ minute commute
times to work ²



1,310,900

Jobs
within 80 miles



98,300

Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³



16,209

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Julian Carroll Airport (JKL)

Jackson, Kentucky

Airport Overview



375

Total Operations



0

Based Aircraft



4,400

Max Runway Length



50

Military Operations



Up to 250

Annual Air Taxi Operations



4

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



Yes

3 Phase, 240v
On-site



105

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	5
Regional Air Mobility	L	M	3
Airport Shuttle	L	M	4
Emergency Medical Services	M	M	2
Business Aviation	M	M	1
Transport of Cargo and Freight	L	M	6
Flight Training	M	M	6
Tourism	M	H	6
Leisure	M	H	6

TOP 3 USE CASES	
	Business Aviation
	Emergency Medical Services
	Regional Air Mobility

	High
	Medium
	Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



17,393

Airport Service
Area Population ¹



9.4%

Percent of population
with 60+ minute commute
times to work ²



772,500

Jobs
within 80 miles



64,600

Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³



2,247

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

James A Rhodes Airport (JRO)

Jackson, Kentucky

Airport Overview



6,053

Total Operations



20

Based Aircraft



5,201

Max Runway Length



275

Military Operations



500-1,000

Annual Air Taxi Operations



0

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



2

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



158

Aerodromes
within 80 miles¹



Buckeye REC

Buckeye Rural

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	6
Regional Air Mobility	L	L	8
Airport Shuttle	L	M	7
Emergency Medical Services	M	M	1
Business Aviation	M	M	9
Transport of Cargo and Freight	L	L	3
Flight Training	M	M	4
Tourism	M	M	5
Leisure	H	H	2

TOP 3 USE CASES



Emergency Medical Services



Leisure



Transport of Cargo and Freight



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



35,598

Airport Service
Area Population ¹



7%

Percent of population
with 60+ minute commute
times to work ²



1,513,200

Jobs
within 80 miles



104,500

Businesses
within 80 miles



#

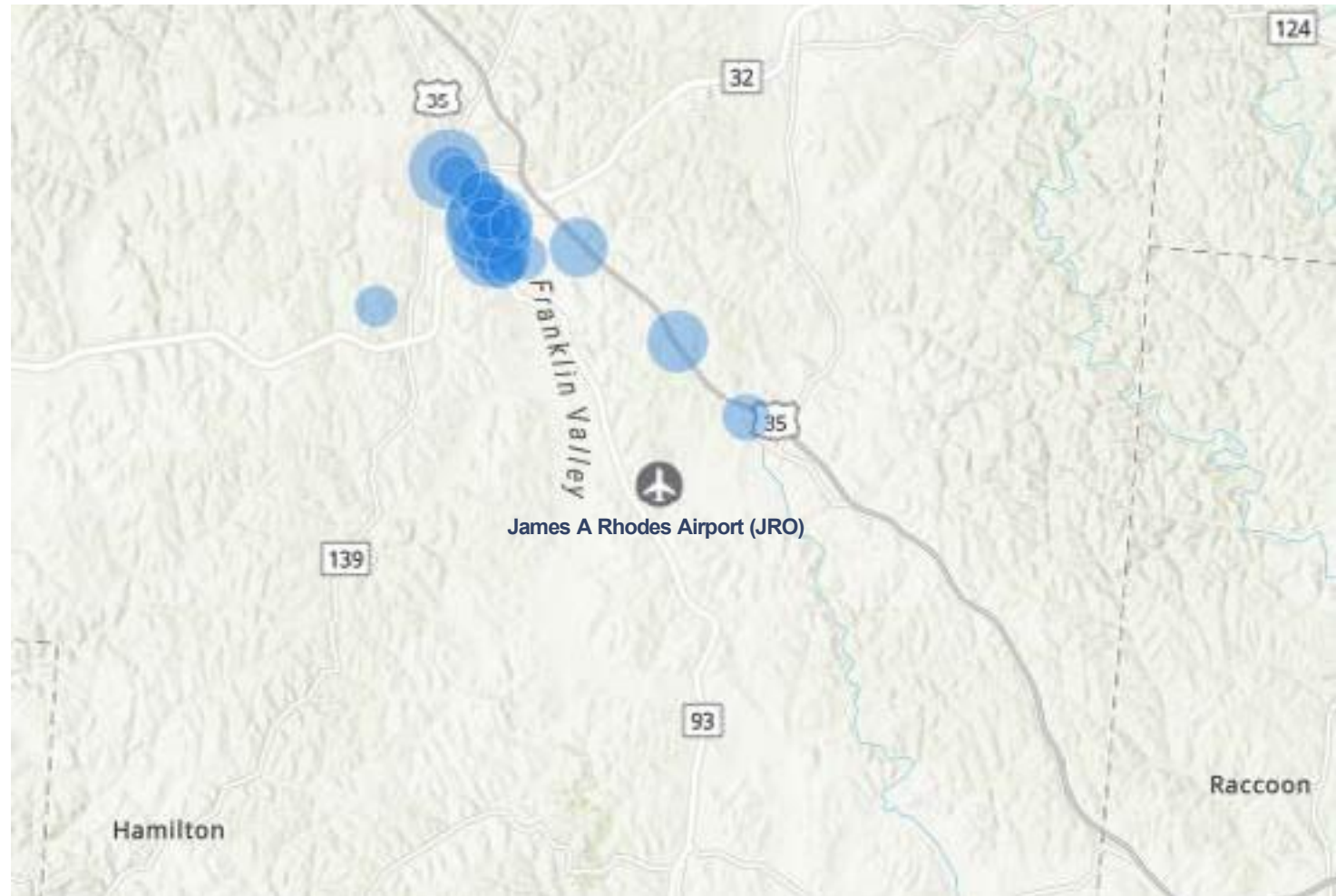
Airport Facilitated
Airport Expenditure ³



1,267

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Russell County Airport (K24)

Russell Springs, Kentucky

Airport Overview



8,990

Total Operations



13

Based Aircraft



5,010

Max Runway Length



220

Military Operations



Up to 250

Annual Air Taxi Operations



146

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



Yes

3 Phase, 240v
On-site



115

Aerodromes
within 80 miles¹



South Kentucky RECC (Rural
Electric Cooperative Corporation)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	H	L	7
Regional Air Mobility	L	L	8
Airport Shuttle	H	H	9
Emergency Medical Services	M	M	4
Business Aviation	H	H	6
Transport of Cargo and Freight	L	L	3
Flight Training	L	L	5
Tourism	H	M	2
Leisure	H	H	1

TOP 3 USE CASES



Leisure



Tourism



Transport of Cargo and Freight



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



15,508

Airport Service
Area Population ¹



8%

Percent of population
with 60+ minute commute
times to work ²



779,100

Jobs
within 80 miles



69,000

Businesses
within 80 miles



#

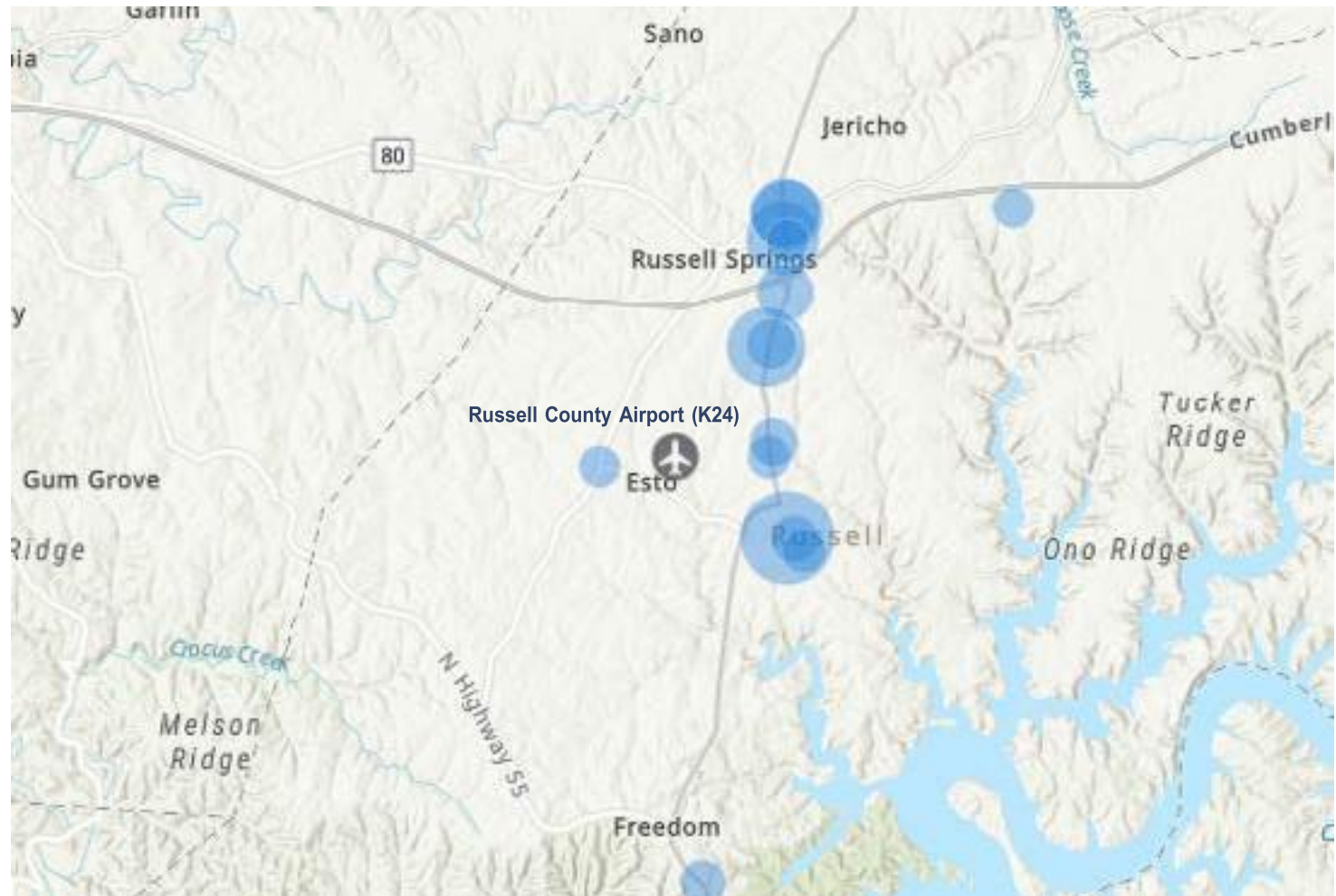
Airport Facilitated
Airport Expenditure ³



1,442

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

London/Corbin/Magee Airport (LOZ)

London, Kentucky

Airport Overview



29,028

Total Operations



39

Based Aircraft



5,751

Max Runway Length



13,454

Military Operations



4,000-4,500

Annual Air Taxi Operations



313

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



7

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



120

Aerodromes
within 80 miles¹



Louisville Gas & Electric
Kentucky Utilities (LG&E - KU)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	L	9
Regional Air Mobility	H	M	6
Airport Shuttle	L	L	7
Emergency Medical Services	H	M	3
Business Aviation	H	M	8
Transport of Cargo and Freight	M	H	5
Flight Training	H	M	1
Tourism	M	M	4
Leisure	H	M	2

TOP 3 USE CASES



Flight Training



Leisure



Emergency Medical Services



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



108,883

Airport Service
Area Population ¹



8.3%

Percent of population
with 60+ minute commute
times to work ²



941,500

Jobs
within 80 miles



74,400

Businesses
within 80 miles



#

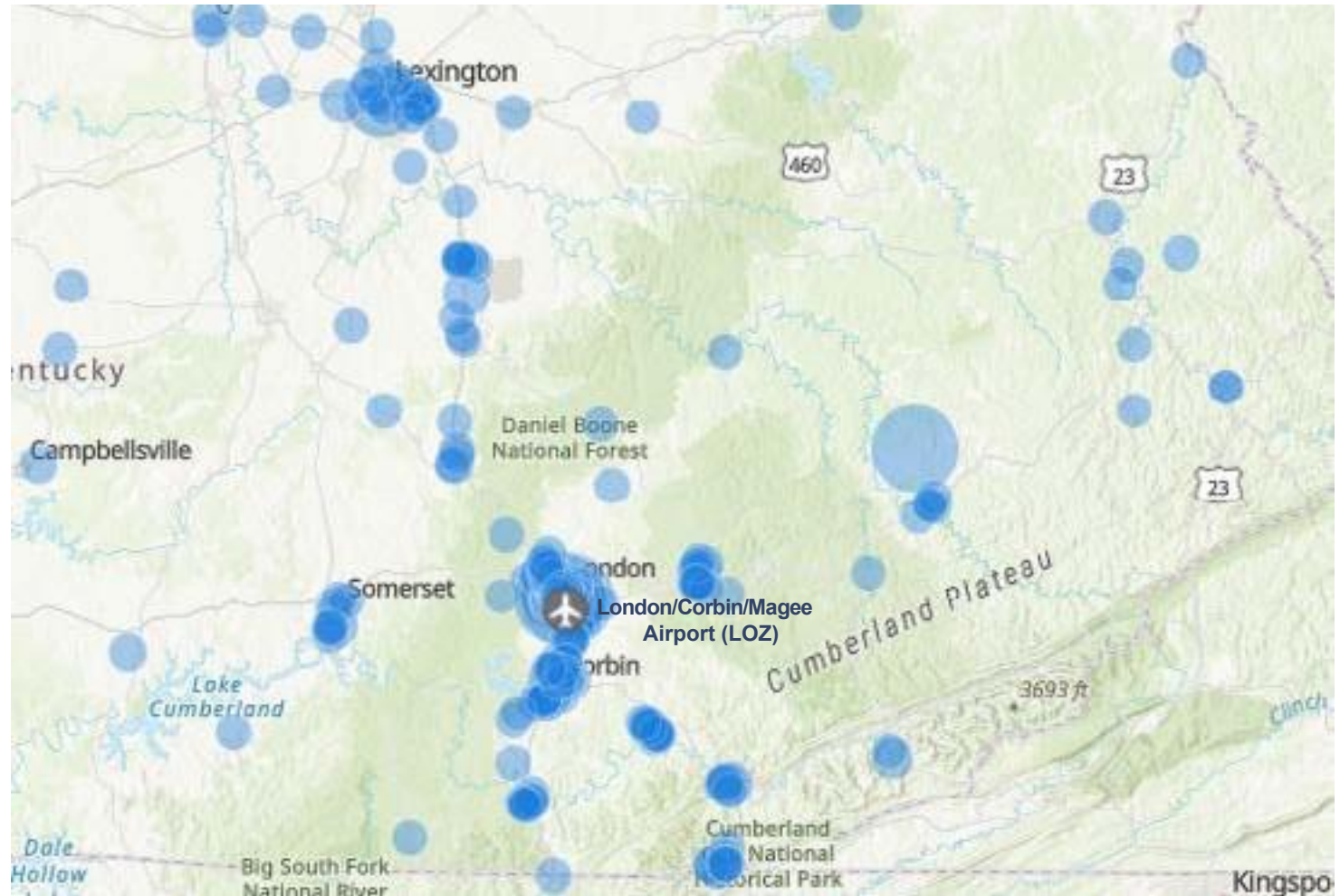
Airport Facilitated
Airport Expenditure ³



22,041

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Greater Portsmouth Regional Airport (PMH)

Portsmouth, Ohio

Airport Overview



45,530

Total Operations



25

Based Aircraft



5,001

Max Runway Length



100

Military Operations



250-500

Annual Air Taxi Operations



124

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



3

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



157

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	L	8
Regional Air Mobility	L	L	7
Airport Shuttle	L	L	6
Emergency Medical Services	L	M	3
Business Aviation	L	L	9
Transport of Cargo and Freight	M	L	4
Flight Training	L	M	2
Tourism	H	L	5
Leisure	L	H	1

TOP 3 USE CASES



Leisure



Flight Training



Emergency Medical Services



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



77,800

Airport Service
Area Population ¹



7.9%

Percent of population
with 60+ minute commute
times to work ²



1,188,900

Jobs
within 80 miles



85,400

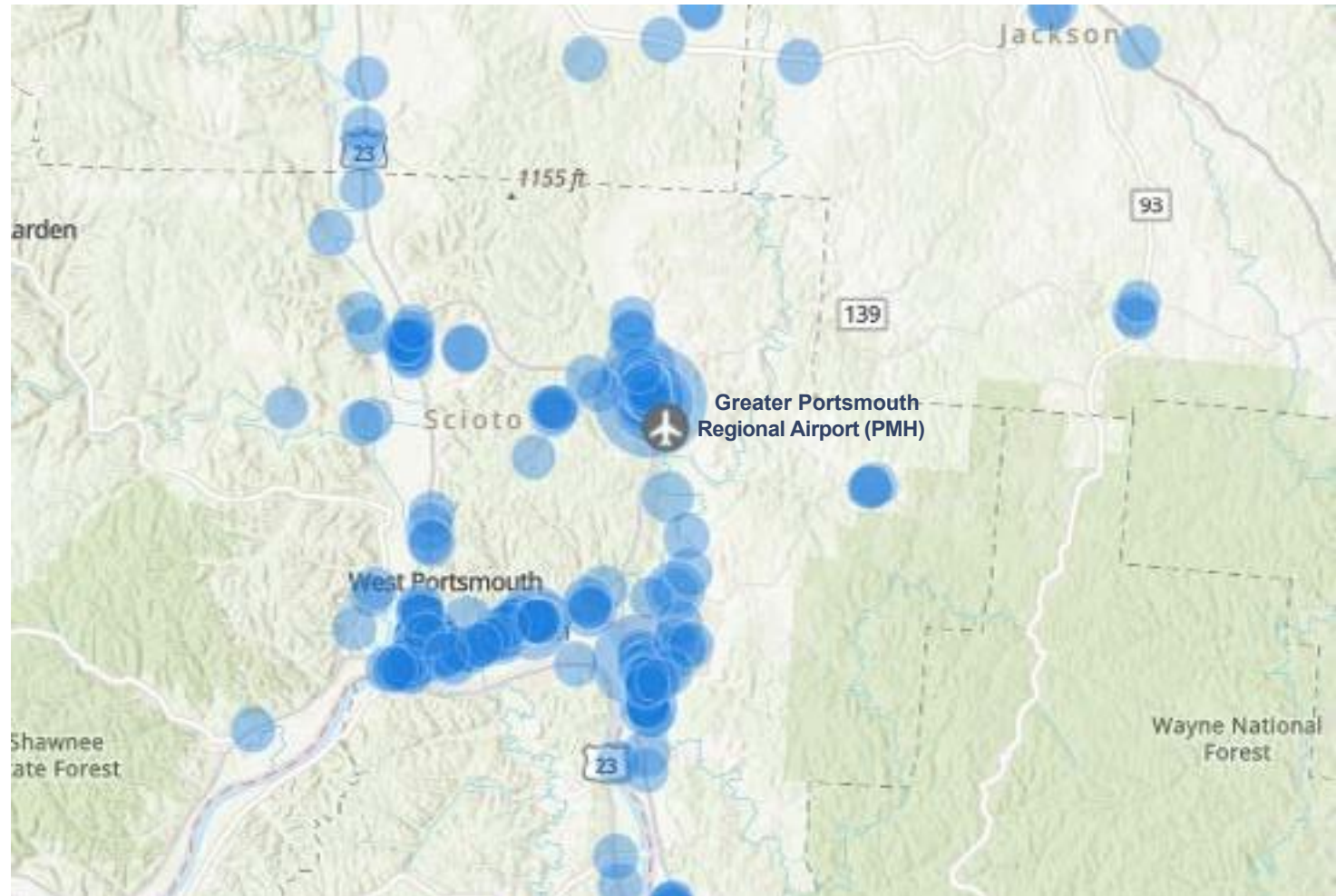
Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³

Map of Airport-Related Visits



45,084

Airport-Facilitated
Business Visits ⁴

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Central Regional Airport (RGA)

Richmond, Kentucky

Airport Overview



45,530

Total Operations



25

Based Aircraft



5,001

Max Runway Length



100

Military Operations



250-500

Annual Air Taxi Operations



124

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



8

Substations
within 5 Miles



Yes

3 Phase, 240v
On-site



128

Aerodromes
within 80 miles¹



Blue Grass Energy

Bluegrass Energy

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	H	H	7
Regional Air Mobility	M	H	6
Airport Shuttle	L	H	8
Emergency Medical Services	H	M	4
Business Aviation	H	M	9
Transport of Cargo and Freight	M	H	5
Flight Training	H	H	1
Tourism	M	H	2
Leisure	H	M	3

TOP 3 USE CASES



Flight Training



Tourism



Leisure



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



120,842

Airport Service
Area Population ¹



8.3%

Percent of population
with 60+ minute commute
times to work ²



878,200

Jobs
within 80 miles



75,000

Businesses
within 80 miles



#

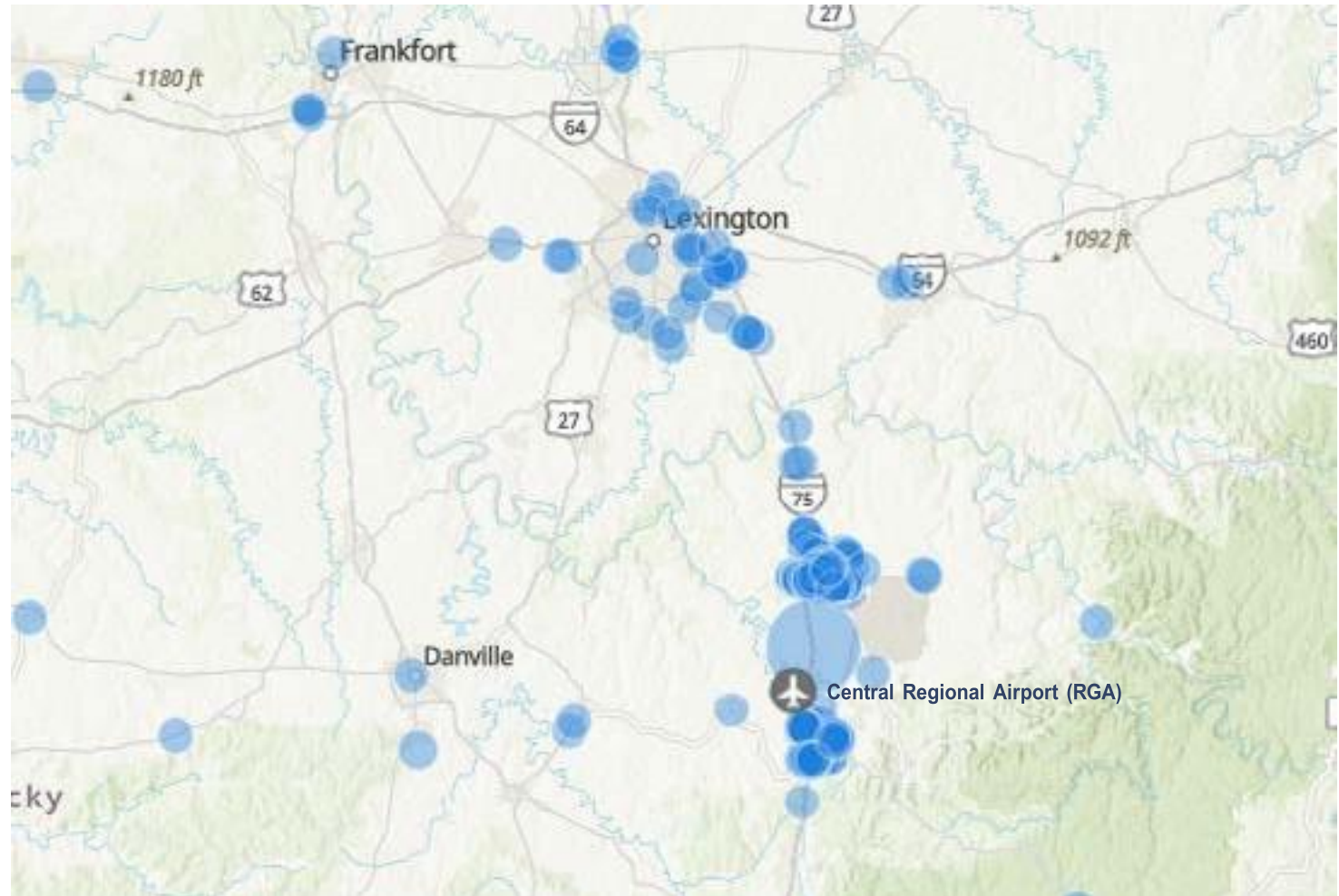
Airport Facilitated
Airport Expenditure ³



22,463

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Western Carolina Regional Airport (RHP)

Andrews, North Carolina

Airport Overview


45,530
Total Operations


25
Based Aircraft


5,001
Max Runway Length


100
Military Operations


250-500
Annual Air Taxi Operations


124
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


5
Substations
within 5 Miles


N/A
3 Phase, 240v
On-site


166
Aerodromes
within 80 miles¹


Duke Energy

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	H	2
Regional Air Mobility	L	M	8
Airport Shuttle	L	H	5
Emergency Medical Services	H	H	9
Business Aviation	H	H	6
Transport of Cargo and Freight	L	M	7
Flight Training	H	H	1
Tourism	H	H	3
Leisure	H	H	4

TOP 3 USE CASES

-  Flight Training
-  Air Taxi Operations
-  Tourism

H High **M** Medium **L** Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



27,872

Airport Service
Area Population ¹



7.7%

Percent of population
with 60+ minute commute
times to work ²



1,629,500

Jobs
within 80 miles



137,100

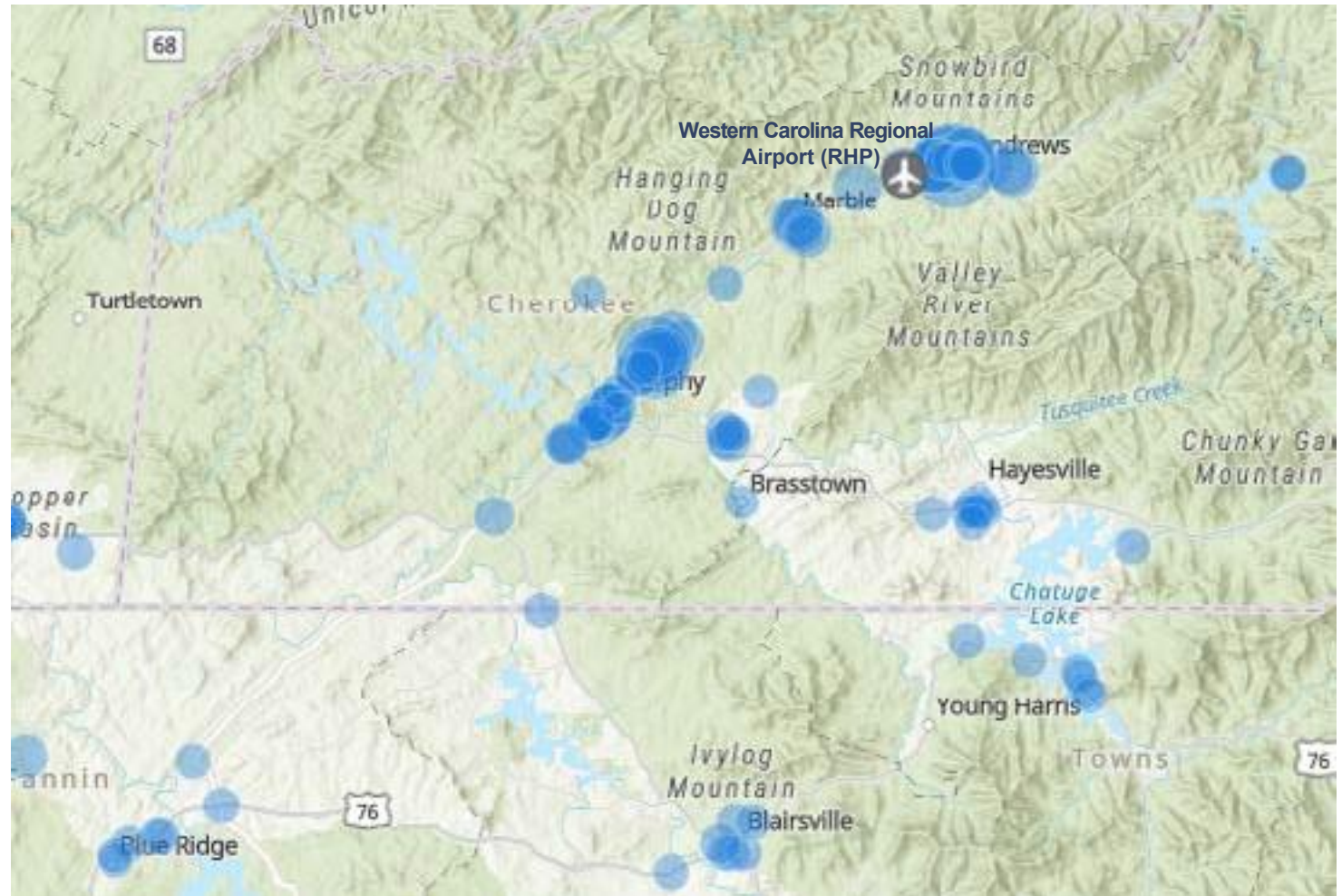
Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³

Map of Airport-Related Visits



11,279

Airport-Facilitated
Business Visits ⁴

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Big Sandy Regional Airport (SJS)

Debord, Kentucky

Airport Overview


45,530
Total Operations


25
Based Aircraft


5,001
Max Runway Length


100
Military Operations


250-500
Annual Air Taxi Operations


124
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness


2
Substations
within 5 Miles


N/A
3 Phase, 240v
On-site


76
Aerodromes
within 80 miles¹


American Electric Power (AEP),
Kentucky Power

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	M	M	7
Regional Air Mobility	M	M	8
Airport Shuttle	L	M	9
Emergency Medical Services	M	M	1
Business Aviation	M	M	6
Transport of Cargo and Freight	L	M	4
Flight Training	M	M	3
Tourism	M	H	5
Leisure	M	H	2

TOP 3 USE CASES

-  Emergency Medical Services
-  Leisure
-  Flight Training

 High  Medium  Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



21,810

Airport Service
Area Population ¹



10.2%

Percent of population
with 60+ minute commute
times to work ²



567,700

Jobs
within 80 miles



48,900

Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³



53,460

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

² Values derived from Placer.Ai, Data Axle, and IMPLAN. Values are sourced from ACS Five Year estimates using table S0801 at the Census Tract Level. Values are reported for workers living within 80-miles of the airport.

³ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport. Values derived from Placer.Ai, Data Axle, and IMPLAN.

⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Lake Cumberland Regional Airport (SME)

Somerset, Kentucky

Airport Overview



45,530

Total Operations



25

Based Aircraft



5,001

Max Runway Length



100

Military Operations



250-500

Annual Air Taxi Operations



124

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



18

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



127

Aerodromes
within 80 miles¹



South Kentucky RECC (Rural
Electric Cooperative Corporation)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	8
Regional Air Mobility	L	L	6
Airport Shuttle	L	L	7
Emergency Medical Services	H	H	5
Business Aviation	H	H	9
Transport of Cargo and Freight	L	L	4
Flight Training	H	H	2
Tourism	H	H	3
Leisure	H	H	1

TOP 3 USE CASES



Leisure



Flight Training



Tourism



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



67,148

Airport Service
Area Population ¹



8.3%

Percent of population
with 60+ minute commute
times to work ²



839,000

Jobs
within 80 miles



69,700

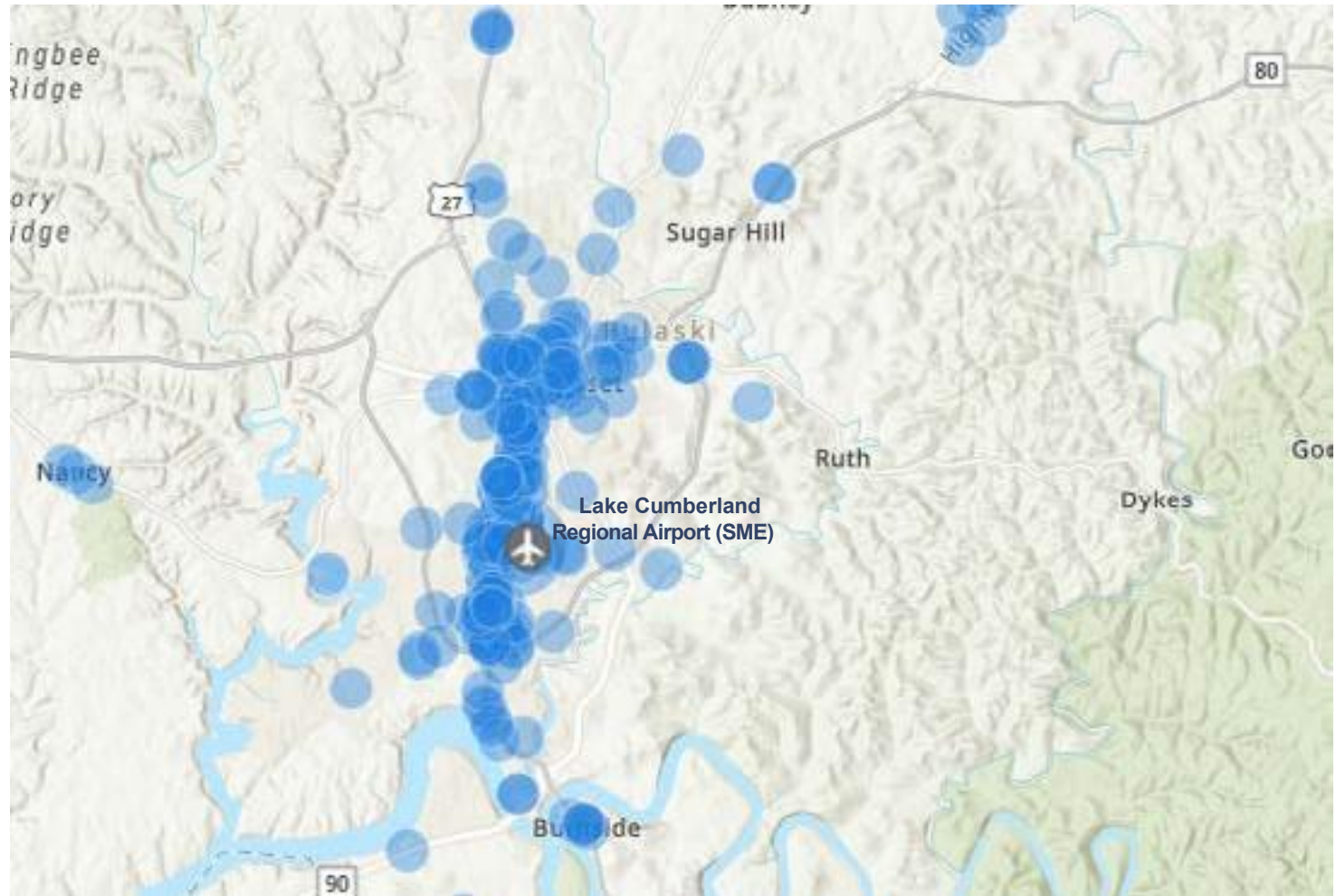
Businesses
within 80 miles



#

Airport Facilitated
Airport Expenditure ³

Map of Airport-Related Visits



80,432

Airport-Facilitated
Business Visits ⁴

¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Airport Overview



7,300
Total Operations



26
Based Aircraft



5,500
Max Runway Length



300
Military Operations



Up to 250
Annual Air Taxi Operations



47
Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



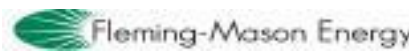
1
Substations
within 5 Miles



N/A
3 Phase, 240v
On-site



147
Aerodromes
within 80 miles¹



**Fleming-Mason Energy
Cooperative Inc.**

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	5
Regional Air Mobility	L	L	7
Airport Shuttle	L	L	6
Emergency Medical Services	H	H	2
Business Aviation	H	H	3
Transport of Cargo and Freight	L	L	8
Flight Training	H	H	1
Tourism	H	H	9
Leisure	H	H	4

TOP 3 USE CASES	
	Flight Training
	Emergency Medical Services
	Business Aviation

H High **M** Medium **L** Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



43,404

Airport Service
Area Population ¹



8%

Percent of population
with 60+ minute commute
times to work ²



1,270,200

Jobs
within 80 miles



95,700

Businesses
within 80 miles



#

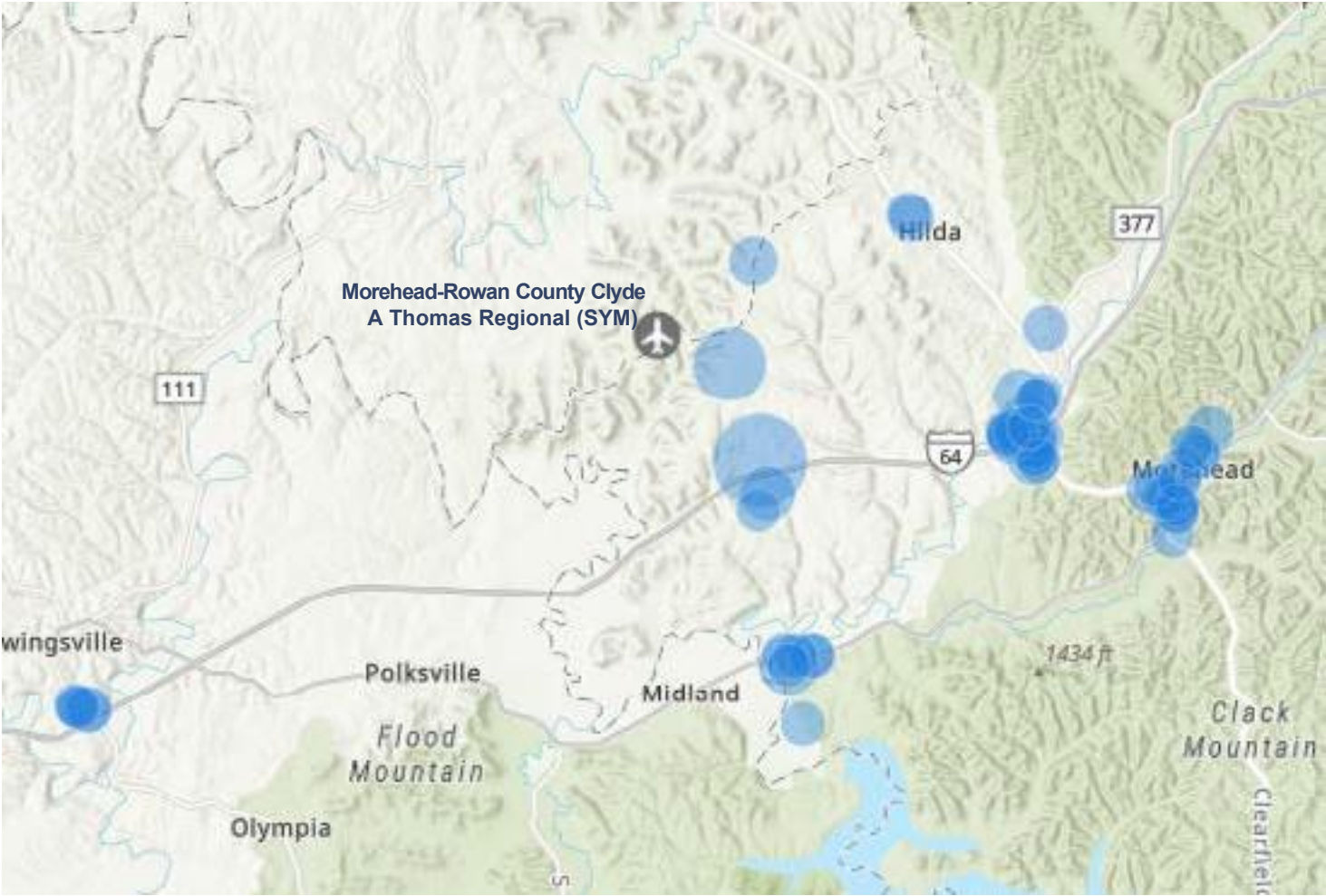
Airport Facilitated
Airport Expenditure ³



4,896

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Tompkinsville/Monroe County Airport (TZV)

Tompkinsville, Kentucky

Airport Overview



45,530

Total Operations



25

Based Aircraft



5,001

Max Runway Length



100

Military Operations



250-500

Annual Air Taxi Operations



124

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



125

Aerodromes
within 80 miles¹



Tri-County
EMC

Tri-County Electric Membership
Corporation (TCEMC)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	7
Regional Air Mobility	L	M	9
Airport Shuttle	L	M	8
Emergency Medical Services	M	H	6
Business Aviation	M	M	3
Transport of Cargo and Freight	L	M	4
Flight Training	M	H	1
Tourism	M	H	5
Leisure	H	H	2

TOP 3 USE CASES



Flight Training



Leisure



Business Aviation



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



19,593

Airport Service
Area Population ¹



8.6%

Percent of population
with 60+ minute commute
times to work ²



1,250,100

Jobs
within 80 miles



93,500

Businesses
within 80 miles



#

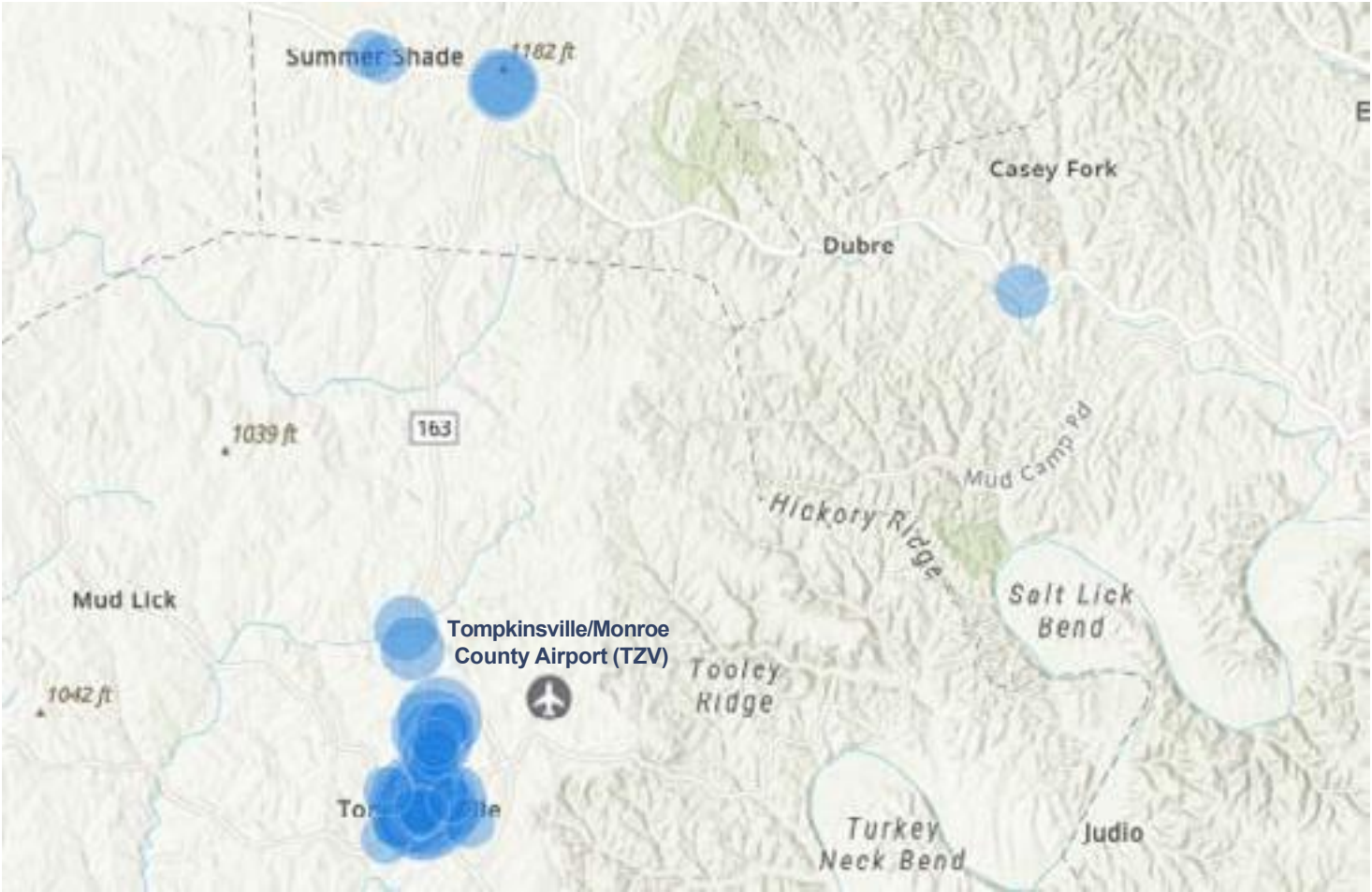
Airport Facilitated
Airport Expenditure ³



3,254

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



¹ The number of people who live closer to that airport than to any other airport. It represents the primary population that the airport is most likely to serve based on geographic proximity.

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⁴ Includes the direct, indirect, and induced impacts of sales facilitated by people making purchases at locations visited directly before or after a visit to the airport.

Ohio University Airport (UNI)

Albany, Ohio

Airport Overview



45,530

Total Operations



25

Based Aircraft



5,001

Max Runway Length



100

Military Operations



250-500

Annual Air Taxi Operations



124

Flights within Ideal Electric
Vehicle Range (80 miles)

Electric Infrastructure Readiness



1

Substations
within 5 Miles



N/A

3 Phase, 240v
On-site



156

Aerodromes
within 80 miles¹



American Electric Power (AEP)

Electric Aviation Current and Future Use Cases (Self-Assessed by Airport)²

USE CASE	EXISTING	FUTURE	RANK
Air Taxi Operations	L	M	6
Regional Air Mobility	L	M	8
Airport Shuttle	L	H	7
Emergency Medical Services	M	H	3
Business Aviation	H	M	9
Transport of Cargo and Freight	M	M	5
Flight Training	M	H	2
Tourism	L	M	4
Leisure	H	H	1

TOP 3 USE CASES



Leisure



Flight Training



Emergency Medical Services



High



Medium



Low

¹ An aerodrome is a facility that allows for the takeoff and landing of aircraft. It includes airports, balloonports, gliderports, heliports, seaplane bases, and ultralight flightparks.

² Electric aviation potential was self-assessed through a project survey. Additionally, a site suitability analysis was conducted. Each use case was scored and ranked based on site suitability criteria. The ranking shows the use case's relative score compared to other use cases at the airport.

Economic Opportunity



45,557

Airport Service
Area Population ¹



6.4%

Percent of population
with 60+ minute commute
times to work ²



1,684,200

Jobs
within 80 miles



115,800

Businesses
within 80 miles



#

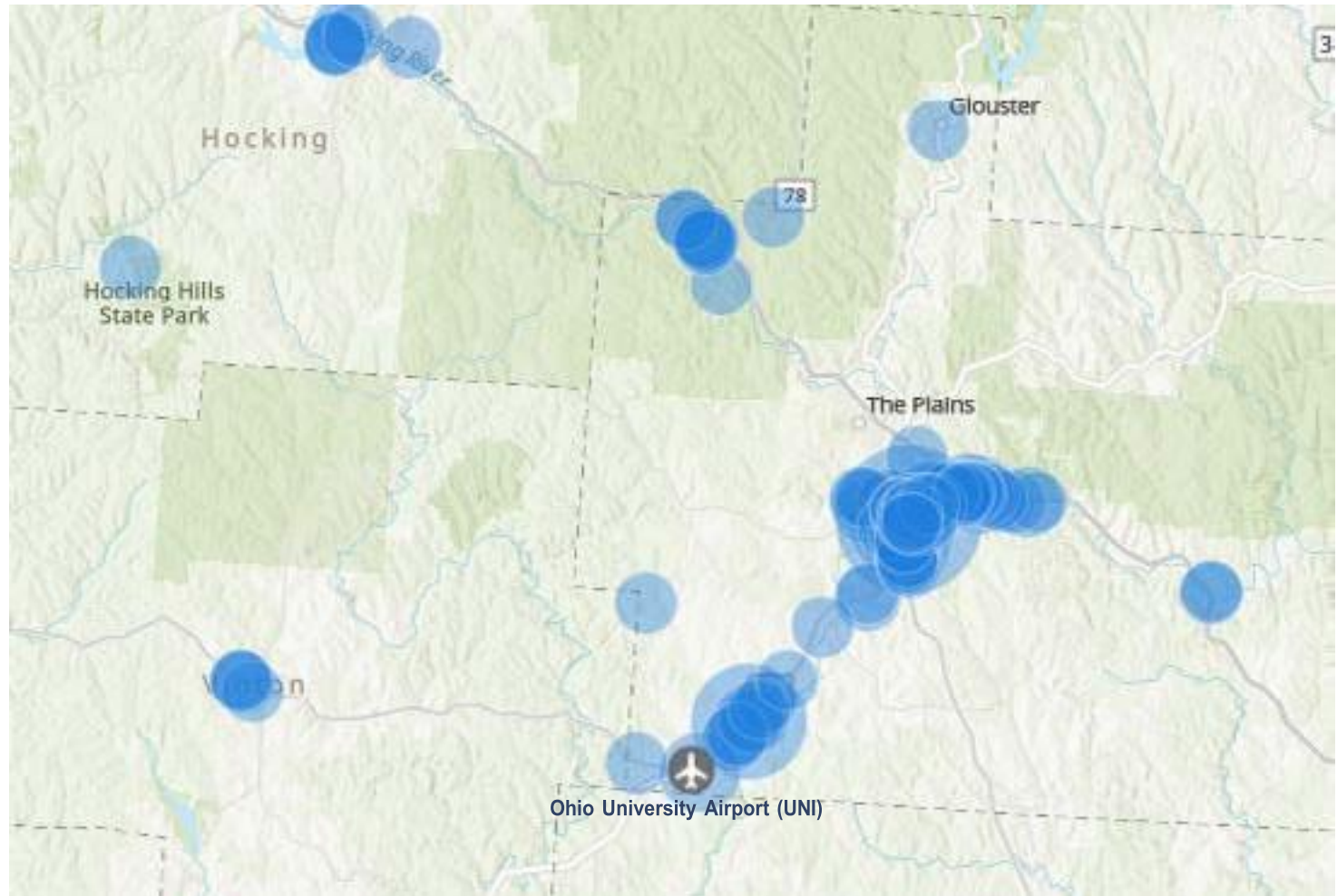
Airport Facilitated
Airport Expenditure ³



24,027

Airport-Facilitated
Business Visits ⁴

Map of Airport-Related Visits



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Appendix E: Feasibility Analysis

Table 26. Feasibility Analysis Results (ITRE, 2025).

Ranking	Airport	Code	County	City	State	Air Taxi	RAM	Airport Shuttle	EMS	Corporate Aviation	Air Cargo	Flight Training	Tourism	Leisure	Total Points
1	Shelby-Cleveland County Regional	EHO	Cleveland	Shelby	NC	94.4	100.0	100.0	75.9	50.5	100.0	90.4	81.7	84.0	776.8
2	Geary A Bates/ Jefferson County	2G2	Jefferson	Wintersville	OH	100.0	86.3	97.1	100.0	37.9	87.5	50.2	100.0	80.0	738.9
3	Central Regional Airport	RGA	Madison	Richmond	KY	52.4	53.2	49.2	73.3	41.4	73.3	100.0	84.6	80.5	607.9
4	Richard Downing	I40	Coshocton	Coshocton	OH	67.6	55.3	68.6	95.3	31.3	73.3	50.0	76.0	84.4	601.7
5	Highland County	HOC	Highland	Hillsboro	OH	69.0	53.1	65.4	57.2	100.0	88.3	51.5	36.9	45.7	567.1
6	Lake Cumberland Regional	SME	Pulaski	Somerset	KY	35.4	42.1	39.2	72.5	23.6	73.7	81.7	76.5	91.9	536.7
7	Cambridge Municipal	CDI	Guernsey	Cambridge	OH	58.2	48.0	54.9	89.0	20.4	74.3	29.7	76.2	84.8	535.4
8	Ashland Regional	DWU	Boyd	Worthington	KY	42.5	50.1	44.1	81.1	22.7	76.4	50.5	75.8	81.9	525.0
9	Lawrence County Airpark	HTW	Lawrence	South Point	OH	41.1	41.4	34.0	87.9	19.8	74.2	71.6	72.1	79.6	521.8
10	Ohio University	UNI	Athens	Albany	OH	37.8	33.1	34.4	64.9	31.6	45.4	92.7	46.8	100.0	486.7
11	Vinton County Airpark	22I	Vinton	New Plymouth	OH	54.9	43.2	45.9	74.0	38.3	64.3	16.2	61.7	64.8	463.4
12	Pike County	EOP	Pike	Waverly	OH	55.4	46.3	53.6	68.6	32.9	56.9	23.5	51.9	61.7	450.9
13	West Liberty	9I3	Morgan	West Liberty	KY	33.2	35.3	30.7	57.7	75.1	76.5	36.2	43.0	55.4	443.1
14	Alexander Salamon	AMT	Adams	Winchester	OH	60.3	46.4	55.1	48.3	39.9	42.6	41.1	36.5	45.5	415.7
15	Greater Portsmouth Regional	PMH	Scioto	Portsmouth	OH	31.3	35.7	36.9	53.6	24.0	46.6	65.5	43.6	70.9	408.1
16	London/Corbin/Magee	LOZ	Laurel	London	KY	20.6	38.8	35.5	51.4	30.8	46.5	77.5	46.9	59.8	407.8
17	Rutherford County/ Marchman Field	FQD	Rutherford	Rutherfordton	NC	51.3	48.1	53.2	34.0	29.5	43.4	68.8	43.7	31.1	403.0
18	Monroe County	4G5	Monroe	Woodsfield	OH	44.2	28.4	34.2	74.1	12.7	51.7	33.1	61.2	62.4	401.9
19	Gallia-Meigs Regional	GAS	Gallia	Gallipolis	OH	31.8	23.7	20.3	70.9	22.8	53.8	62.0	47.5	62.6	395.3
20	Tucker-Guthrie Memorial	I35	Harlan	Harlan	KY	28.3	32.8	31.1	60.9	24.0	57.1	35.2	49.8	63.8	383.1
21	Stanton	I50	Powell	Stanton	KY	37.2	29.1	26.9	54.6	34.3	46.1	42.5	42.3	47.0	360.0
22	James A Rhodes	JRO	Jackson	Jackson	OH	31.0	26.4	28.7	58.9	23.6	43.7	42.8	38.5	48.0	341.5
23	Fleming-Mason	FGX	Fleming	Maysville	KY	47.2	35.1	41.8	34.3	38.9	25.1	54.2	23.1	35.8	335.3
24	Mount Sterling/ Montgomery County	IOB	Montgomery	Mt. Sterling	KY	35.0	25.2	27.2	37.3	15.5	32.9	53.3	55.2	43.6	325.1
25	Northeast Ohio Regional	HZY	Ashtabula	Jefferson	OH	27.7	24.7	36.4	37.3	54.4	51.6	47.3	11.1	2.5	293.1
26	Big Sandy Regional	SJS	Floyd	Debord	KY	22.4	22.0	15.7	53.3	27.9	36.6	40.9	31.7	42.0	292.5
27	Morehead-Rowan County Clyde A Thomas Regional	SYM	Rowan	Morehead	KY	29.0	25.4	26.6	34.0	31.8	23.3	66.4	22.4	30.9	290.0
28	Wendell H Ford	CPF	Perry	Chavies	KY	13.0	21.7	18.9	35.0	33.7	24.5	63.3	19.3	31.7	261.1
29	McCreary County	18I	McCreary	Stearns	KY	8.2	7.2	9.2	24.6	62.5	55.3	16.7	27.5	25.2	236.4
30	Tompkinsville/ Monroe County	TZV	Monroe	Tompkinsville	KY	17.6	12.2	12.4	20.6	33.1	28.8	42.5	25.6	34.1	227.0
31	Russell County	K24	Russell	Russell Springs	KY	9.6	6.8	6.6	30.6	24.9	35.5	26.0	36.1	41.1	217.2
32	Williamsburg-Whitley County	BYL	Whitley	Williamsburg	KY	5.3	9.2	10.4	24.6	26.3	24.6	49.7	27.0	22.5	199.5
33	Jackson County	24A	Jackson	Sylva	NC	19.9	17.3	22.8	12.8	0.0	14.8	41.2	45.0	15.7	189.4
34	Middlesboro/Bell County	1A6	Bell	Middlesboro	KY	7.6	10.3	11.6	17.3	26.1	21.4	44.4	11.7	20.6	171.1
35	Wayne County	EKQ	Wayne	Monticello	KY	0.0	0.0	0.0	15.9	23.7	21.3	21.3	22.1	24.7	129.1
36	Western Carolina Regional	RHP	Cherokee	Andrews	NC	16.1	3.0	8.8	0.0	5.4	3.6	53.4	15.2	15.0	120.5
37	Julian Carroll	JKL	Breathitt	Jackson	KY	2.3	4.3	3.3	15.4	18.4	0.0	0.0	0.0	0.0	43.7

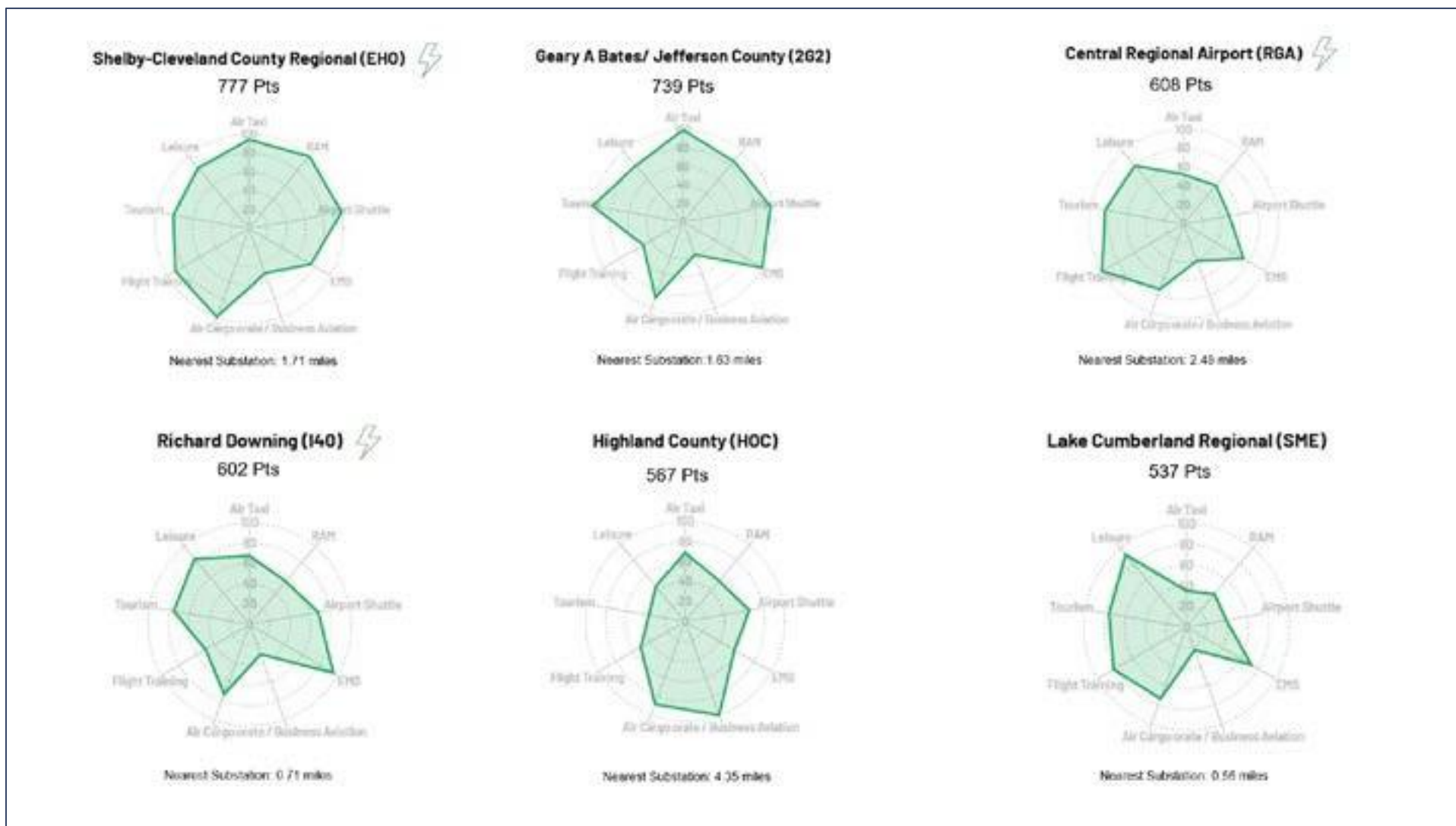


Figure 8. Site Suitability Analysis Results - Radar Plot 1 (ITRE, 2025).

Cambridge Municipal (CDI) ⚡



Ashland Regional (DWU)



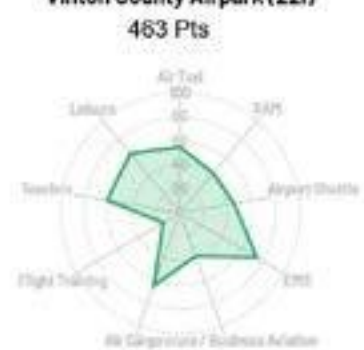
Lawrence County Airpark (HTW)



Ohio University (UNI)



Vinton County Airpark (221)



Pike County (EOP)



Figure 9. Site Suitability Analysis Results - Radar Plot 2 (ITRE, 2025).

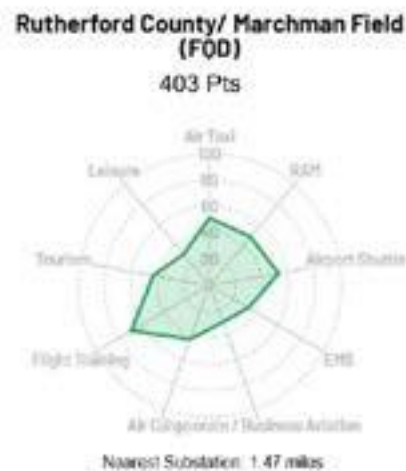
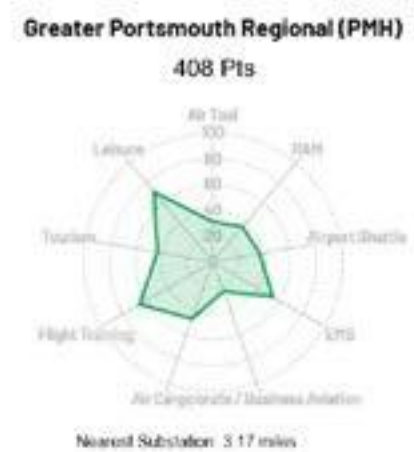


Figure 10. Site Suitability Analysis Results - Radar Plot 3 (ITRE, 2025).

Gallia-Meigs Regional (GAS)

395 Pts



Nearest Substation: 2.03 miles

Tucker-Guthrie Memorial (I35)

383 Pts



Nearest Substation: 1.23 miles

Stanton (I50)

360 Pts



Nearest Substation: 1.31 miles

James A Rhodes (JR0)

341 Pts



Nearest Substation: 3.70 miles

Fleming-Mason (FGX)

335 Pts



Nearest Substation: 3.28 miles

Mount Sterling/ Montgomery County (IOB)

325 Pts



Nearest Substation: 1.00 miles

Figure 11. Site Suitability Analysis Results - Radar Plot 4 (ITRE, 2025).

Northeast Ohio Regional (HZY)



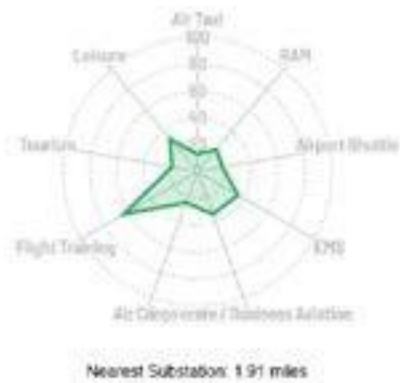
Big Sandy Regional (SJS)



Morehead-Rowan County Clyde A Thomas Regional (SYM)



Wendell H Ford (CPF) ⚡



McCreary County (181)



Tompkinsville/ Monroe County (TZV)



Figure 12. Site Suitability Analysis Results - Radar Plot 5 (ITRE, 2025).

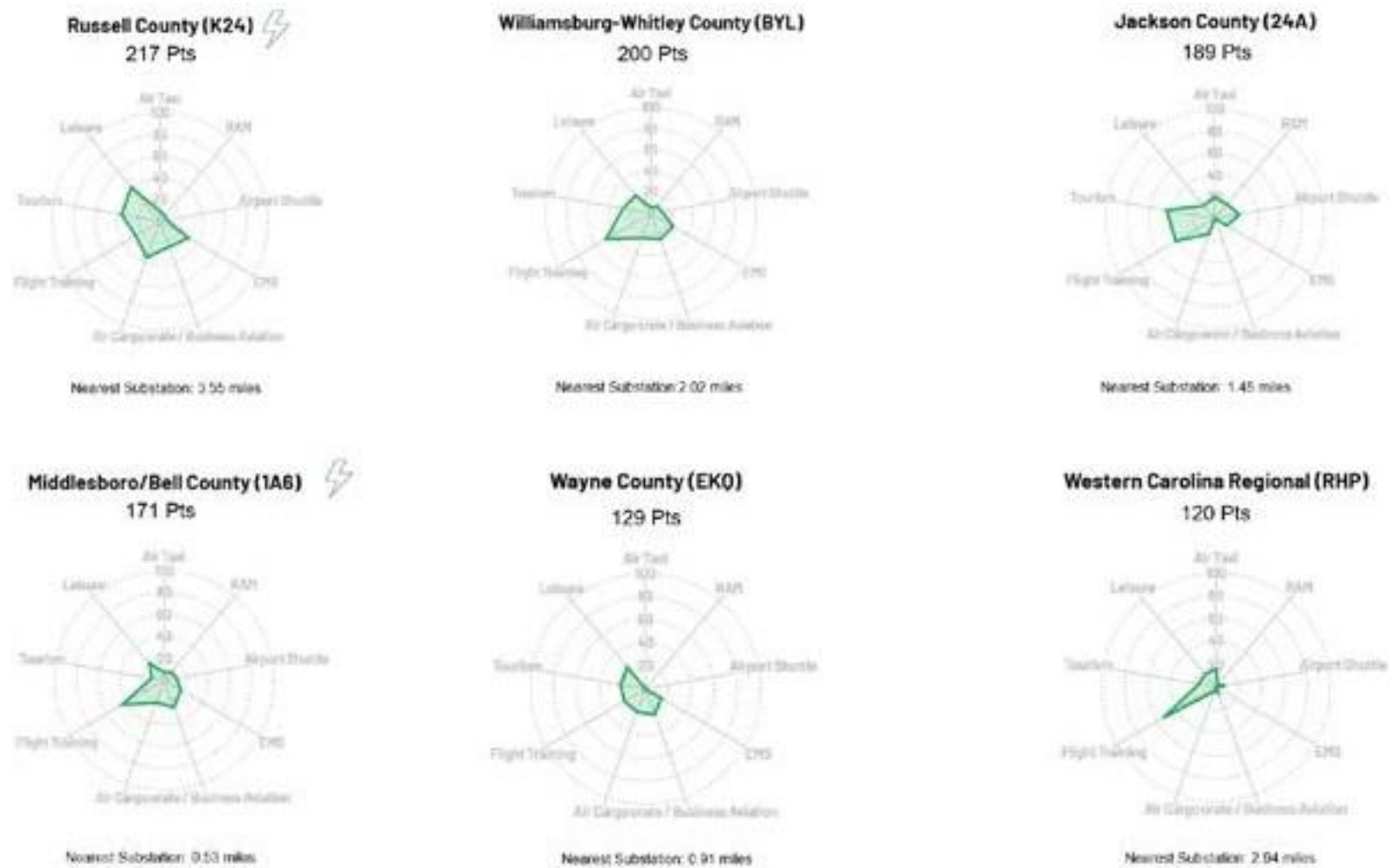


Figure 13. Site Suitability Analysis Results - Radar Plot 6 (ITRE, 2025).



Figure 14. Site Suitability Analysis Results - Radar Plot 7 (ITRE, 2025).