



CALIFORNIA PILOTS ASSOCIATION

October 30, 2023

Advanced Air Mobility (AAM)

The future of urban air transportation is arriving sooner than you might think. Is your community/airport ready?

Multiple companies, some of which are headquartered in the greater Bay Area, are preparing to provide aircraft to operators (or operate the aircraft themselves) in commercial passenger and cargo service within the region. These are not “fly-by-night” operations - some are Billion Dollar companies backed by firms like Boeing, Delta Airlines, United Airlines, Stellantis, UPS, Amazon, and Toyota.

It is important to understand that the initial primary infrastructure needed to commence operations in the 2025-2026 timeframe includes using our existing General Aviation airports. While the initial infrastructure requirements may be minimal, the operational aspect of mixing these new aircraft onto the airfield will require education for the pilots and airport staff alike.

Further, the development of relations with the community will require significant outreach efforts as these new novel operations will be conducted with aircraft having very low noise levels and using different routings than existing aerial operations. We need to recognize that things are different but also provide both education and communication options for outreach to minimize the public’s concerns.

CalPilots stands ready to advise and assist in these efforts to support our airports and the communities that surround them and we also believe that pilot education will be critical to ensure the continued safe operation of our airports.

The attached summary is being provided to elected officials, commissioners, and other interested parties by CalPilots.

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Overview of Advanced Air Mobility

On October 17, John Carr (the current Chairman of the Santa Clara County Airports Commission) and I attended a presentation by ARCHER AVIATION COO Tom Anderson on their view of Advanced Air Mobility (AAM) in the San Francisco Bay Area. Following that, I reached out to JOBY AVIATION in Santa Cruz and OVERAIR in Santa Ana for their perspective on AAM.

Department of Transportation Advanced Air Mobility Interagency Working Group -

DOT Docket DOT-OST-2023-0079 - Published in the Federal Register May 17, 2023
Request for Information on 20 Areas of Interest

On a national scale, AAM is seeing increased visibility as we move closer to numerous milestones - FAA Regulatory Implementation, Flight Testing, Production Facility and Vertiport Development, and Passenger Flight Operations currently planned for 2025/2026 timeframe.

Business Case - Premise is that "Urban Congestion is Not Sustainable"

US - Traffic congestion cost was \$87 Billion in 2018

Majority of trips in urban areas are less than 50 miles long.

Morgan Stanley - AAM Global Market Value: 2030 - \$29 Billion 2040 - \$1 Trillion+

Takeaways:

Air Quality is improved as Electric VTOL aircraft have Zero Emissions

Aircraft will be pilot controlled - these are not remote control drones

Significant need for Pilots to facilitate industry growth by 2030

Noise levels will be very low (below 65 db) - much lower than current helicopters

Airspace is Federally Regulated - Local Control over locations of landing facilities

Integration into and enhancement of the future transit ecosystem

Encourage Economic Development opportunities including local capital

investment and Job Creation with a focus on Technical Education

Industry View:

Over 200 manufacturers worldwide with over 12,000 aircraft on order

Regulatory environment still in flux - aviation rulemaking is inconsistent between FAA and EASA. Regulatory harmonization will be worked out without compromising safety.

Aircraft configurations differ greatly resulting in different control methodologies, operational considerations and infrastructure needs

Aircraft payload/range vary greatly based on design

Capitalization varies greatly - resultant levels of success will vary as well

Talent is not endless - future needs will dictate additional requirements

On a local level, we continue to see a lack of AAM insight on the part of elected officials.

Lack of Regional Coordination - No Regional Airport Planning Committee or group functioning as a clearinghouse for development of AAM infrastructure
FAA is starting to prepare - Crafting AAM Regulations and Air Traffic Procedures
Airports are not prepared for operations - airside or landside

Some communities have regulations in place that impede AAM implementation -
ie. Napa County restriction on non-airport operations

General Aviation Airports are critical - Existing space, facilities, infrastructure

Initial "**Focus on using existing Real Estate**" - helipads, airports, retrofits

Archer is capable of vertical takeoff and utilizing existing GA runways -

Runway usage results in 90% reduction in energy requirements. This also allows for flexibility in operations as well as extended operating range.

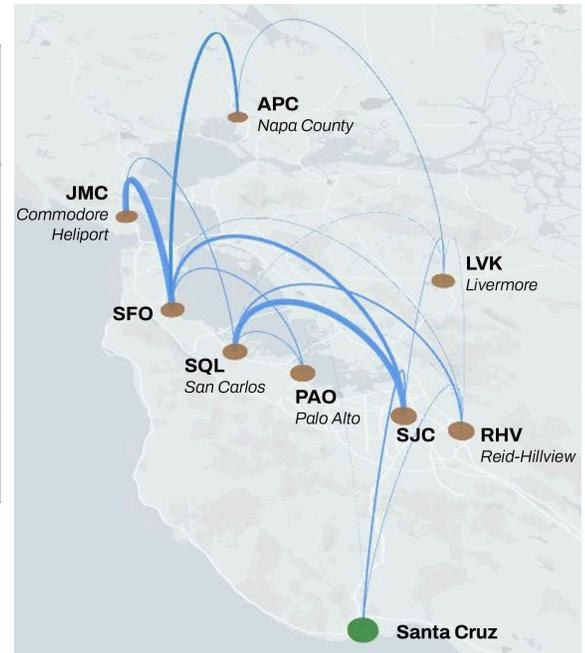
Aerial Ride Sharing - Associated with Airlines or Stand Alone

Goal is 1.5 to 2 times the cost of Uber with significant time reduction

Operational build-out to occur during the 2025-2028 timeframe

Operational planning is based on phased implementation to allow stable growth and development of a mature environment. This will promote public acceptance of the concept as well as support the recognition of operations as safe, environmentally friendly, and cost-effective.

| Bay Area Network | Initial Network - (Focus is on the Highway 101 Corridor) | Mature Network |
|-------------------------------|--|----------------|
| Fleet Size | 13 Aircraft | 53 Aircraft |
| Flights/Day | 290 | 1530 |
| Passengers | 797 | 5011 |
| Average Mission Distance | 23.7 miles | 22.2 miles |
| Flight Hours/Aircraft/ Day | 4.2 | 5.14 |



Scaling Archer UAM Operations

| | CRAWL | WALK | RUN | SOAR |
|------------------------|--|--|--|--|
| FLIGHT RULES | <ul style="list-style-type: none"> - VFR - Current operating procedures | <ul style="list-style-type: none"> - VFR/IFR - Current operating procedures | <ul style="list-style-type: none"> - Bridge to automated ATM - Piloted | <ul style="list-style-type: none"> - Uncrewed and automated |
| OPS & TEMPO | <ul style="list-style-type: none"> - Low volume - LOAs - Existing VFR flyways & helicopter routes | <ul style="list-style-type: none"> - Medium volume - LOAs - New VFR flyways & helicopter routes | <ul style="list-style-type: none"> - High volume - UAM corridors - All airspace | <ul style="list-style-type: none"> - High volume - UAM corridors - All airspace |
| INFRASTRUCTURE | <ul style="list-style-type: none"> - Existing aviation infrastructure - Light retrofits | <ul style="list-style-type: none"> - Existing aviation infrastructure - Light retrofits - Low-volume new builds | <ul style="list-style-type: none"> - Existing aviation infrastructure - High-volume new builds | <ul style="list-style-type: none"> - Broad network of purpose-built infrastructure |

→ TIME AND COMPLEXITY

Community Benefits:

Reduced Noise Pollution: AAM vehicles prioritize low noise emissions. This reduction in noise levels benefits both residents and wildlife, creating quieter neighborhoods and preserving natural habitats.

Enhanced Urban Planning: The lower noise footprint of AAM vehicles enables cities to rethink urban planning and design and by promoting better land use while allowing development closer to enhanced transportation hubs with aerial access for large urban regions.

Air Quality Improvement: AAM vehicles use electric propulsion systems. This leads to improved air quality, decreased pollution levels, and a healthier environment for residents, particularly in densely populated urban areas.

Reduced Traffic Congestion: AAM can alleviate ground traffic congestion by providing an additional mode of transportation that bypasses road congestion and contributes to a more sustainable urban transportation network.

Community Acceptance: The quieter operation of AAM vehicles is likely to lead to higher levels of community acceptance and support. Residents are more likely to embrace technology that enhances their quality of life by reducing noise disturbances.

Tourism and Economic Growth: Cities and communities that adopt AAM with low noise levels can attract environmentally conscious tourists and investors, boosting local economies. The positive reputation of a city with advanced and eco-friendly transportation options can drive tourism and contribute to sustainable growth.

FAA Innovate 28 program is to have AAM at scale and ready for the 2028 Los Angeles Olympics
<https://www.faa.gov/air-taxis/implementation-plan>

