OCTOBER 2026

# National AAM Infrastructure

- The **Vertical Mobility Economy** and the $16.6 Billion Infrastructure Gap
- Tapping Federal Loan Guarantees to Accelerate Private Investment and Nationwide AAM Development

**Michael J. Dyment**
*Managing Partner, NEXA Capital*

NEXA Capital Partners, LLC
NEXA Capital powers the industry

UAM Geomatics, Inc.
A NEXA Capital Company

# NEXA Advisors AAM Experience

GIS Mapping | Passenger/Cargo Demand | Social Use Cases | Business Case Viability | Jobs and GDP Growth

## Commonwealth of Virginia



Mead & Hunt and Cignus prepared the **2024** VA Aviation System Plan. NEXA and UAMGEO Forecasted demand, infrastructure, job creation and much more under **2023** contract from VIPC.

## State of Ohio ODOT



Teaming with HNTB, NEXA and UAMG provided estimates for vertiport infrastructure as well as Air Traffic Control equipment along with demand and an Economic Impact report.

## State of Arkansas




Working for the Walton Family Foundation, NEXA and UAMG were tasked with forecasting the impact of AAM on the state and the economic impact it could have on rural healthcare.

## State of North Carolina - NCDOT




Alongside HNTB, UAMG has been forecasting the demand and infrastructure required for AAM operations in North Carolina.

## U.S. General Aviation Aircraft OEM



NEXA and UAM Geomatics provided long- term demand forecasting for general aviation aircraft serving existing airport networks.

## State of Florida




NEXA/UAMG is supporting FDOT's SunTrax project by identifying priority AAM routes and developing the business case and CAPEX analysis to guide infrastructure investment.

## Commonwealth of Massachusetts MASSDOT



Alongside Woolpert, UAMG is now forecasting the demand and infrastructure required for AAM operations in Massachusetts state-wide.

## State of Oklahoma - ODOT




Alongside HNTB, NEXA and UAMG forecasted the passenger demand and infrastructure required for AAM operations in Oklahoma.

## State of Utah - UDOT



Alongside NUAIR, UAMG has been forecasting the demand and infrastructure required for AAM operations in Utah state-wide. NEXA provided the investment banking support for future CAPEX investment strategies.

## State of Washington - WSDOT



Team Member Mead & Hunt served as the prime consultant for the Washington Advanced Aircraft Plan. The plan assessed the state's transportation and regulatory infrastructure and provided a 3-year implementation roadmap.

## Vancouver BC Part 135 AAM Operator Planning




NEXA is assisting Vancouver-based Helijet, which already services 100K passengers a year, to plan an AAM network. The company has ordered a fleet of eVTOL aircraft to start operations as soon as possible..

## State of California - Caltrans




Mead & Hunt served as the prime consultant for the AAM Infrastructure Readiness and Three-Year Implementation Work Plan. Team member AURA provided technical support.

# THE FOUR SUPPLY CHAINS POWERING ADVANCED AIR MOBILITY

*An Integrated Ecosystem Creating Manufacturing, Infrastructure, Workforce and Investment Opportunities*

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## 1 GROUND INFRASTRUCTURE

The Foundation for AAM Operations




**KEY ELEMENTS**

- Vertiports & Vertipads
- Fast-Charging Systems
- Electrical Grid Upgrades
- Passenger Facilities
- Construction & Civil Engineering
- Ground Support Equipment

**MANUFACTURING OPPORTUNITIES**

- Electrical equipment
- Charging hardware
- Steel & concrete products
- Building systems
- HVAC & mechanical systems

## 2 AIR NAVIGATION INFRASTRUCTURE

The Digital Backbone of AAM



**KEY ELEMENTS**

- UTM / ATM Integration
- Communications Networks
- Remote ID
- Detect-and-Avoid Systems
- Weather Services
- Cybersecurity
- Digital Infrastructure

**MANUFACTURING OPPORTUNITIES**

- Sensors & radar
- Communications equipment
- Avionics
- Software & AI
- Electronics

DATA & CONNECTIVITY

INFRASTRUCTURE ENABLED OPERATIONS

SAFE, EFFICIENT OPERATIONS

DEMAND DRIVES MANUFACTURING AND INFRASTRUCTURE

**ADVANCED AIR MOBILITY ECOSYSTEM**

Four Interconnected Supply Chains.
One Shared Future.

## 3 FLIGHT OPERATIONS

Safe, Reliable and Efficient Services



**KEY ELEMENTS**

- Airlines & Operators
- Maintenance (MRO)
- Flight Training
- Dispatch & Scheduling
- Emergency Response
- Cargo Logistics

**MANUFACTURING OPPORTUNITIES**

- Maintenance tooling
- Ground support equipment
- Fleet management systems
- Training simulators
- Cargo handling systems

## 4 AIRCRAFT MANUFACTURING

Building the Future of Flight



**KEY ELEMENTS**

- Airframe Assembly
- Composite Structures
- Electric Propulsion
- Batteries
- Flight Controls & Avionics
- Final Assembly
- Tier 1–3 Suppliers

**MANUFACTURING OPPORTUNITIES**

- CNC machining
- Composite fabrication
- Electric motors & systems
- Battery manufacturing
- Wire harnesses
- Additive manufacturing
- Precision components

**SUCCESS IN ADVANCED AIR MOBILITY DEPENDS ON DEVELOPING ALL FOUR SUPPLY CHAINS—NOT JUST BUILDING AIRCRAFT.**

THOUSANDS OF HIGH-QUALITY JOBS | BILLIONS IN PRIVATE & PUBLIC INVESTMENT | STRONGER SUPPLY CHAINS & LOCAL INDUSTRY | COMPETITIVE STATES. STRONGER COMMUNITIES.

NEXA CAPITAL PARTNERS | UAM GEOMATICS

# What Is Required to Facilitate AAM: Next 25 Years

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## UATM Low Altitude ATC Systems




## Ground Cargo/Passenger Infrastructure










# AAM National Infrastructure Cost Components

## United States — 62 metro areas and 10 State-wide regions (2025 – 2050)

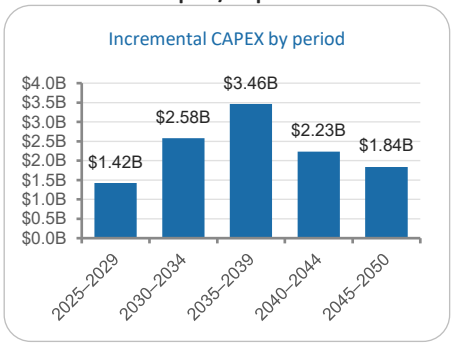
**$16.6B**
total CAPEX, 62 CSA/MSA + selected corridors

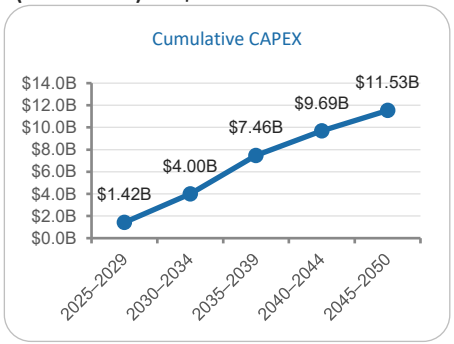
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### AAM Ground Vertiport/Airport Infrastructure Components

- Network design studies
- Architectural and engineering
- Environmental studies
- Airspace flight approach study
- Concession agreements
- Secure project financing
- Purchase or lease land
- Construction permitting
- Site preparation
- Site construction
- Foundation modifications
- Platforms
- Egress, walkways
- Elevators
- Passenger shelters
- Lighting landing systems
- CNS systems (ILS, optical beacons, etc.)
- IT and security systems
- Perimeter systems
- Parking
- Power grid updates
- FAA (etc.) permitting and certification
- Recharging capability and systems
- Fire suppression systems
- Aeronautical chart preparation
- Etc.

### AAM Ground Vertiport/Airport Infrastructure Costs (2025 – 2050) — $11.5B

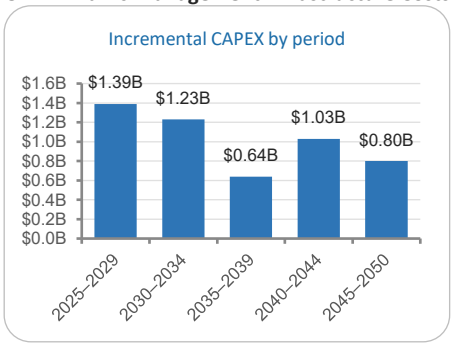


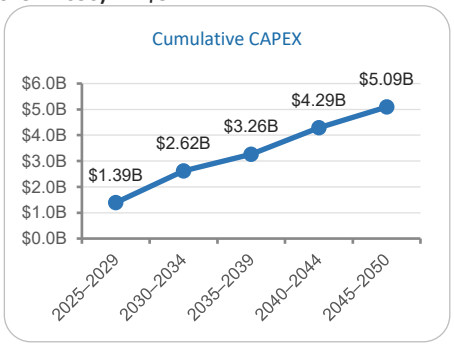




### UATM Traffic Management Infrastructure Components

- UATM interoperability standards and drone/eVTOL CONOPS
- UATM one-time facilities planning
- Site/network optimization study
- Systems specifications
- Power grid studies
- Cyber security architecture studies
- Physical security architecture
- Facilities (offices) rental costs
- Automation systems and stations
- Flight decision support tools
- Flight plan and flight operations database
- SCADA for systems and networks
- Computers and equipment
- Power grid and backup systems
- Network design and site selection studies
- Weather information systems – areal
- Micro weather detection sensors
- Beacon navigation nodes
- Resilient communications nodes
- High density radar

### UATM Traffic Management Infrastructure Costs (2025 – 2050) — $5.1B




**Automation inflection point** (2035–2040): ground CAPEX peaks, then declines as automation lifts utilization.

WHY NOW

# The aircraft are nearly certified.
# The FAA's eIPP program has launched.

## ✅ What's Ready

- Aircraft certification programs advancing to conclusion in 2026-2028
- FAA eIPP launched across multiple U.S. regions
- Regulatory frameworks rapidly evolving
- Industry investment & operator readiness building

## ⚠️ What's Missing

- Vertiport networks at scale
- Airport AAM facilities
- Charging & energy infrastructure
- Urban air traffic management systems
- Part 135 operators and fleets
- **$16.6B in capital investment**

***Take away: Without infrastructure, AAM stays grounded.***

WHY NOW: POLICY

# Washington has already moved: the policy runway is built

## EXECUTIVE ORDERS · LEGISLATION · RULEMAKING

**MAY 2024**
**FAA Reauthorization Act of 2024 (P.L. 118-63), Subtitle B**
Defines vertiports; mandates an AAM National Strategy; extends the AAM infrastructure planning grant pilot (Sec. 960); sets a BVLOS rule deadline.

**OCT 2024**
**FAA Powered-Lift Special Federal Aviation Regulation**
First new category of civil aircraft rules since helicopters: pilot certification and operating rules for eVTOL aircraft.

**JUN 2025**
**Executive Orders 14307 and 14305**
"Unleashing American Drone Dominance" creates the eIPP, orders a BVLOS rule and prioritizes U.S.-made drones; "Restoring American Airspace Sovereignty" funds counter-UAS security.

**AUG 2025**
**FAA / TSA Part 108 BVLOS Proposed Rule**
"Normalizing UAS Beyond Visual Line of Sight Operations"; final rule under OMB review since July 2026.

**DEC 2025**
**DOT Advanced Air Mobility National Strategy, 2026–2036**
40 recommendations across airspace, infrastructure, security, workforce and automation; anticipates vertiports "funded mostly by private sources."

**MAR 2026**
**eIPP Selections and First Flights**
Eight pilot projects across 26 states selected from 30+ proposals; first federal eVTOL pilot flights at Fort Worth, September 2026.

## IN THEIR OWN WORDS

*"The future of aviation is here — and it's going to dramatically improve how people and products move."*
**Sean P. Duffy, U.S. Secretary of Transportation · March 9, 2026**

*"Advanced Air Mobility vehicles are the future of aviation."*
**Bryan Bedford, FAA Administrator · September 10, 2026**

*"The United States must accelerate the safe commercialization of drone technologies and fully integrate UAS into the National Airspace System."*
**Executive Order 14307, Sec. 1 · June 6, 2025**

*"In Texas, we don't wait for the future to arrive, we build it."*
**Sen. Ted Cruz, Chairman, Senate Commerce Committee · September 10, 2026**

Orders, statute, rules and pilots are in place. **Infrastructure capital is the one instrument not yet created.**

HOW MUCH

# The infrastructure price tag for a national AAM network:

# $16.6B

in infrastructure CAPEX investment through 2050

across 62 U.S. metro areas · ~60% of the national population

**$11.5B**

Ground Infrastructure
Vertiports · Charging · Utilities · Terminals

**$5.1B**

Air Traffic Management
Surveillance · Comms · Airspace Systems

*2,200 vertiports · 62 markets · 20+ year buildout*

HOW

# Two thirds of the AAM market is URBAN/SUBURBAN:

## Ground Infrastructure $11.5B

- 1250 Remediation($1.–1.4M each)
- 500 Unserviced vertiports ($1.6–2.2M each)
- 300 Serviced vertiports ($2.8–3.9M each)
- 100 Urban multiports ($17–23M each)
- 60 Airport multiports ($55–68M each)
- \+ Charging, utilities, surface connections

## Airspace & Traffic Mgmt $5.1B

- Urban/Corridor digital radar, weather & comms
- Urban ATC procedures & integration
- Network management & route sequencing
- Data infrastructure for multi-vertiport ops
- Autonomous eVTOL traffic management

*Profitability depends on utilization. Utilization depends on URBAN infrastructure.*

HOW: WHERE

# Start in the High Value Urban MSAs. Build outward.

### 💰 High-Value Trips

Airport transfers, business travel, medical — willingness to pay is highest in dense metros.

### ✈️ Operational Density

Urban traffic creates the recurring routes and frequency operators need for fleet efficiency.

### 🔗 Network Effects

Each new vertiport multiplies the value of every other. More nodes = more O-D pairs = more revenue.

### 📈 Investor Confidence

Profitable urban corridors will prove the model, unlocking capital for national expansion.

*The 62 markets in this study represent the geographic platform for a national AAM network.*

HOW: WHO PAYS

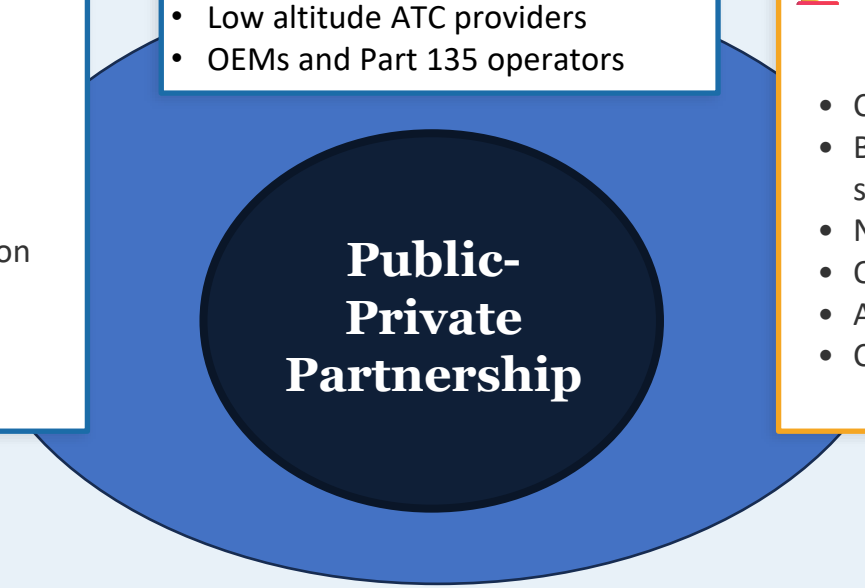
# Neither government nor private industry can do this alone.

## Public Sector

- Planning & zoning
- Environmental studies
- Utility coordination
- Regulation and harmonization
- Federal loan guarantees
- Private Activity Bonds

## ✈ Industrial Consortium

- CAPEX developers and integrators
- Low altitude ATC providers
- OEMs and Part 135 operators




## Private Investment

- CAPEX phased for expansion
- Business case and bond securitization
- Network operations
- Operator investment
- Airport & utility partners
- Cities & state agencies

***$16.6B is less than rebuilding a single major airport. It builds a nationwide mobility network.***

HOW: THE P3 ITSELF

# Who forms the AAM network P3, and what each party brings

### STATE / PUBLIC SPONSOR (grantor)

- Grants the concession; controls the regulatory and concession structure
- Sites, zoning, permitting, utility coordination
- eIPP partnership resources where available

*Governance: sets rates, step-in rights, chairs oversight board*

### EQUITY SPONSORS

- Infrastructure funds, aerospace companies, family offices
- ≥ 20% first-loss equity and development capital
- Carry development risk until financial close

*Governance: control the concession company board*

### DESIGN-BUILD & SYSTEMS INTEGRATORS

- Fixed-price, date-certain contract: vertiports, charging, UATM
- Performance security and liquidated damages
- Deep-tech sensor and automation suppliers

*Governance: completion risk transferred to contractor*

### REVENUES IN

Ticket taxes and user fees paid by passengers and cargo shippers, collected by Part 135 operators, flow to the concession company → debt service → reserves → equity returns. Same waterfall as a toll road.

### AAM NETWORK CONCESSION COMPANY

Project P3 organization (special-purpose vehicle)

Design · Build · Finance · Operate · Maintain — 30–40 year concession

*Holds the assets, the debt and the concession agreement*

### INVESTMENT OUT

Network CAPEX plus development and ramp-up OPEX form the project investment. Borrowings against it (≤ 80%) are backstopped by the Federal Loan Guarantee; equity funds the balance.

### FEDERAL (DOT / FAA)

- Federal Loan Guarantee backstops project borrowings
- eIPP operating data, airspace and vertiport standards
- A-129 guardrails via the Approval Board

*Governance: observer seat; credit covenants; program reviews*

### SENIOR LENDERS

- Private activity bonds, banks, bond investors
- Up to 80% of project investment, FLG-backstopped
- Reserve accounts, trustee, rating review

*Governance: covenants, independent engineer, waterfall*

### PART 135 OPERATORS & O&M

- Collect ticket taxes and user fees from passengers and cargo shippers
- Fleet, crews, network operations; O&M contractor maintains assets

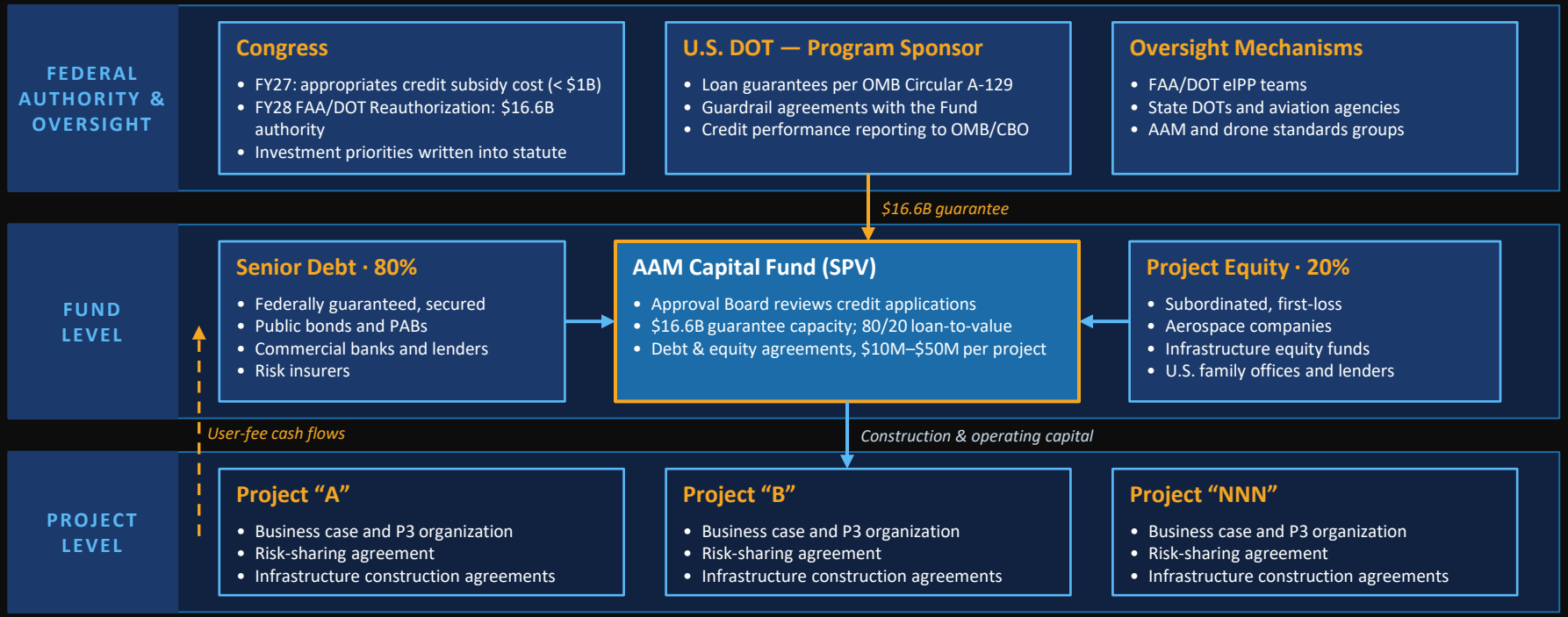
*Governance: access, revenue-share and service-level agreements*

**Toll-road analogue:** toll → AAM ticket tax / user fee · DBFOM highway concession → vertiport + UATM network concession · TIFIA loan → Federal Loan Guarantee · state toll authority → state AAM concession grantor

States keep control of rates, regulation and the concession; **private capital takes delivery and demand risk; the FLG lowers the cost of debt.**

HOW: STRUCTURE

# How the $16.6B Federal Loan Guarantee structure works




**Congress appropriates the credit subsidy — under $1B — not the $16.6B face value.** Project cash flows repay secured bonds first, subordinated equity second.

HOW: THE INSTRUMENT

# Loan guarantees: how they work, how A-129 protects taxpayers

## THE MECHANISM

1. **Sponsor puts equity at risk**
   Project sponsors and equity investors fund at least 20% of project cost in a first-loss position.
2. **Private lenders fund the debt**
   Bonds, PABs and banks lend against project cash flows — taxpayer money is not lent.
3. **DOT guarantees part of the loan**
   The guarantee covers up to 80% of the loan; lenders keep at least 20% of any loss, so they underwrite carefully.
4. **Congress budgets only the expected loss**
   Under the Federal Credit Reform Act of 1990, the appropriation equals the net present value of expected defaults, net of fees — not the face value.
5. **Projects repay; the guarantee is rarely called**
   User-fee cash flows service the debt. The Treasury pays only if a project defaults, after the lender absorbs its share.

**$16.6B** authority × ~5% expected net loss = **< $1B** appropriation

## OMB CIRCULAR A-129 SAFEGUARDS (rev. Sept. 2024)

**Fill a gap, not a market** §II.A.1, §III.A.1
"Correct a capital market imperfection, which should be defined and quantified"; borrowers certify they cannot obtain private credit.

**80% cap · 20% lender risk** §II.C.1
Federal credit finances no more than 80% of cost; non-federal lenders "bear at least 20 percent of the loss."

**Equity at risk, assets outlive debt** §II.C.1.b, §II.C.3
Sponsors hold an equity interest; no 100% loan-to-value; maturities shorter than asset life.

**Priced to minimize subsidy** §II.C.2
Interest and fees "set at levels that minimize default and other subsidy costs," reviewed annually.

**Budgeted up front, modeled honestly** §II.C
Subsidy cost estimated with statistical default models and appropriated under FCRA before any commitment.

**Independent oversight** §II.D.3, §III.B
Oversight independent of program staff; quarterly performance data; program review at least every three years.

A-129 fills gaps private lenders will not — **on terms that keep taxpayer exposure small, priced and monitored.**

HOW: TAXPAYER RISK

# A-129 by design: six elements that keep the subsidy score small

## OVERSIGHT DESIGN AND GOVERNANCE

1. **Additionality test** §II.A.1 · §III.A.1
   Credit only where a quantified capital-market gap exists; borrowers certify private financing is unavailable. No crowding out, no windfalls.

2. **Shared risk, aligned incentives** §II.C.1
   Guarantee capped at 80%; lenders keep ≥ 20% of any loss; sponsors hold first-loss equity. Everyone who underwrites has money at stake.

3. **Collateral and coverage** §II.C.3 · §III.A.3
   Secured by project assets and user-fee cash flows; no 100% loan-to-value; maturities shorter than asset life.

4. **Risk-based fees offset expected loss** §II.C.2
   Guarantee fees set to "minimize default and other subsidy costs" and reviewed annually — borrowers, not taxpayers, fund the cushion.

5. **Honest scoring under FCRA** §II.C · FCRA 1990
   Subsidy estimated with statistical default models, appropriated before any commitment, and re-estimated every year against actual performance.

6. **Independent governance** §II.D.3 · §III.B
   Approval Board with statutory investment priorities; credit oversight independent of program staff; quarterly performance data; triennial program reviews.

## THE RECORD: GUARANTEES THAT PAID

| | |
|---|---|
| ~1.1% | **TIFIA, 1998–present**<br>$38B of DOT credit leveraged $135B of projects; realized losses ~1.1% of commitments; last default 2016. |
| 3.4% | **DOE Loan Programs, 2009–present**<br>$35.7B issued; losses 3.4% of disbursements against $3.3B of interest earned (FY2020). |
| $0 | **Chrysler, 1980–1983**<br>$1.2B guaranteed, repaid seven years early at no budgetary cost; Treasury netted $311M on its warrants. |
| $300M | **Airlines after 9/11, 2002–2007**<br>$1.2B guaranteed to seven carriers; fees and warrants returned a ~$300M profit to Treasury. |

Four decades of guarantees built this way have cost taxpayers little and often returned a profit. **Same rules, same result.**

WHAT

# What we get when AAM is finally built:

**$200B+**

**62 MSA Operator revenue opportunity over 25 years**

*Regional, shuttle, air taxi, biz, medical*

**$300B+**

**Total MSA/CSA economic impact (VME)**

*Across 62 U.S. metro areas*

**250,000**

**Permanent new jobs**

*In manufacturing, services, healthcare, and other adjacent sectors*

🛬 Regional Air Mobility · 🚑 Medical Transport · 🚕 On-Demand Air Taxi · 🤝 Business Aviation · 🛫 Airport Shuttle

**Infrastructure CAPEX is market-enabling capital — not a cost to be minimized.**

WHAT: NATIONAL BENEFITS

# Seven national-interest benefits of a U.S. AAM and drone network

1. **National security**
   A dense low-altitude ATC system below 5,000 ft: micro-radars over urban skies, corridors and high-value sites such as power plants and chemical plants, identifying non-cooperative aircraft.

2. **Public safety**
   Mobility and airspace tools for firefighting, policing and security agencies — faster response, persistent overwatch, coordinated low-altitude operations.

3. **200,000+ permanent jobs**
   Full-time, well-paid employment nationally in manufacturing, operations, maintenance, services and healthcare — sustained, not one-time.

4. **Rural healthcare access**
   PPPs that fly doctors, dentists and clinicians to remote airports — and potentially to retail anchors such as Walmart — bringing care to rural residents.

5. **Tens of thousands of construction jobs**
   $16.6B of modern AAM infrastructure — 2,210 vertiports and low-altitude ATC across 62 metros covering 60% of the U.S. population.

6. **Congestion relief and cleaner air**
   Trucks and cars taken off major corridors as passengers and cargo move by air — less gridlock and less airborne pollution.

7. **Best-available weather intelligence**
   Dense micro-weather sensor networks give pilots and meteorologists advance warning of hazards — safer flying for all aviation.

| $16.6B | 62 | 60% | $330B+ |
|---|---|---|---|
| infrastructure CAPEX | U.S. metro areas | of U.S. population | economic activity |

**Ranked by national interest:** security and safety first, then jobs and access, then congestion, emissions and weather.

WHAT NOW

# The eIPP regions are America's AAM proving grounds.

1. Align planning now — infrastructure, regulatory, and operational testing must move together in eIPP markets.

2. Prioritize the 62 markets — start where demand is highest; urban profitability validates the entire sector.

3. Structure PPP agreements — states, cities, airports, utilities, integrators, deep-tech developers of sensors, and P135 operators around coordinated deployment.

**NEXA Capital Partners can source over $2 billion in infrastructure CAPEX now**