



AAM 2024 ICAO'S FIRST ADVANCED
AIR MOBILITY SYMPOSIUM

Measuring and Managing AAM Environmental Impacts

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Overview

Public concern over environmental impacts can significantly delay deployment and constrain growth

Important AAM impacts are subjective

Objective measurement of impacts insufficient to manage public concerns

Local authorities will play critical role

Robust public process key to managing concerns

Uncertainty will be persistent

We need a plan

Is there an impact?

Environmental Impact Categories under U.S. National Environmental Protection Act (NEPA)

1. Air Quality
2. Biological resources (including fish, wildlife, and plants)
3. Climate
4. Coastal Resources
5. Department of Transportation, Section 4(f)
6. Farmlands
7. Hazardous materials, solid waste, and pollution prevention
8. Historical, architectural, archeological and cultural resources
9. Land use
10. Natural resources and energy supply
11. Noise and compatible land use
12. Socioeconomics, environmental justice and children's health and safety
13. Visual effects (including light emissions)
14. Water resources (including wetlands, floodplains, surface waters, ground water and wild/scenic rivers)

All Could be Implicated Depending on Project Under Review

Is there an impact?

Most likely to present obstacles to development of vertiport/route infrastructure

Not a few compatible land use
engender strong **local** opposition
Visual effects (including light emissions)

Noise

Natural resources and energy supply

Visual effects

Socioeconomics, environmental justice and children's health and safety

Environmental Justice

Climate

While these impacts may drive public concern, any and all impacts will

be required to support challenges to development

All impacts relevant to AAM sustainability and public acceptance

Hazardous materials, solid waste, and pollution prevention

Broader impacts will also
be closely scrutinized

Climate

Natural resources and

energy supply

What is quiet?



Solution or pollution? May literally depend on POV



Some Key Impacts Inherently Subjective



Image by: *Kalea Texeira*
StratComm Consulting

Person **A** may not be bothered

Person **B** may be highly annoyed

But then again . . .

Some Key Impacts Inherently Subjective (cont'd)



... and in broader context there **will** be many other opinions

Some Key Impacts Inherently Subjective (cont'd)



. . . and opinions will diversify further where eVTOLs operate in suburban and rural environments

Measuring Impacts

Can subjective impacts be measured effectively?

AAM will present familiar impacts in novel ways

UAS and UAM/AAM “vehicles will operate in ways that *differ fundamentally from traditional* fixed wing aircraft and helicopters that take off and land at airports. As a result, these operations *will change the way communities interact* with aircraft and *experience* noise exposure”

FAA Review of the Civil Aviation Noise Policy (88 Fed. Reg. 26641; May 1, 2023)

Objective measurement a challenge

- Lack of empirical data / public experience
- Shifting sensitivities
- Varied vehicle configurations
- Evolving human habitats

Objective measurement not necessarily sufficient: subjective criteria may impact even “technical” standards

ICAO/CAEP Aircraft Noise Standards for Supersonics: TORs evoke objective criteria (technological feasibility, economic reasonability, environmental benefit) but ICAO Assembly has required consideration of “unacceptable situation for the public”

“Notice” of objective analyses of subjective impacts often ineffective

Who decides?

The local will be vocal

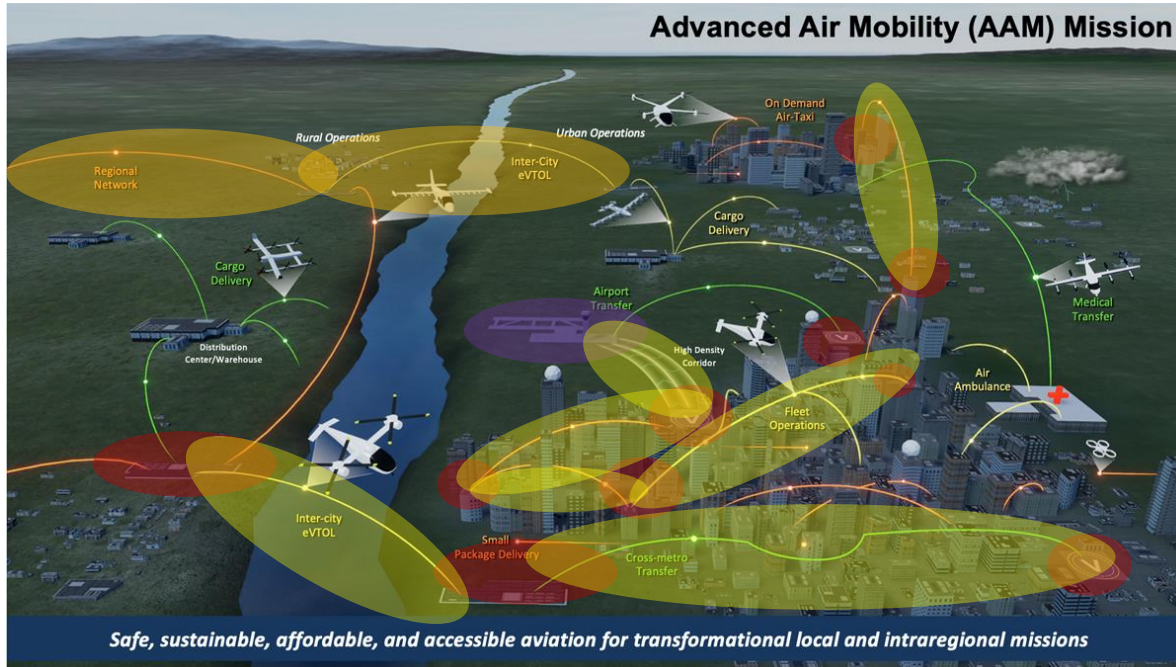
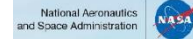


Image from



FAA will continue to have jurisdiction over airspace

But even in the context of traditional aviation state and local authorities demanding more “say so” and challenging preemptive federal laws

AAM success will depend on development of many more facilities where local officials have effective “veto” authority

Process will be critical

Understand roles of international, national, regional, state and local authorities

Public acceptance a critical component at every level, but particularly the local level

Prepare for ongoing, long-term engagement

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Thank You!