Community Integration:
Adding the Third Dimension to Urban and Regional Transportation

UAS Safety & Integration Task Force
June 30, 2020

Presented by Yolanka Wulff, Co-Executive Director, CAMI
yolanka@communityairmobility.org

TECHNOLOGY IS REDEFINING FLIGHT

Tech Drivers	**Propulsion Electrification**	**Autonomous Systems**	**Mobility Services**
New Capabilities	 **eVTOL**	 **Electric and Hybrid-electric**	
Solution Areas	Moving goods	Moving people	Automating tasks
Thematic Benefits	Lowers the barriers for leveraging UAVs to get jobs done Lowers the operating cost of small aircraft on short routes Increases the number of access points to the air Stimulates latent demand for flight where ground transportation is used today		

What is Urban Air Mobility? (CAMI's definition aligns with NASA's "AAM")

Nothing new: regional airline travel and helicopter service (e.g., Blade) are current/historical forms of UAM in service today.

Everything new: electric vertical takeoff and landing (eVTOL) aircraft make UAM safer, quieter, greener, and more economical than ever before.

UAM may share airspace with UAS* but is not UAS: autonomy helps pilot operators but (in most concepts) doesn't replace them in initial operations.

*UAS = unmanned aircraft systems

Zones of Operation:

- City Center
- Suburbs to City
- Edge City to (Edge) City
- Rural Access
- Hub Airport Access

Types of Operation:

- Airline (micro haul)
- Air Metro
- On Demand (air taxi)
- Airport Shuttle
- Emergency Services

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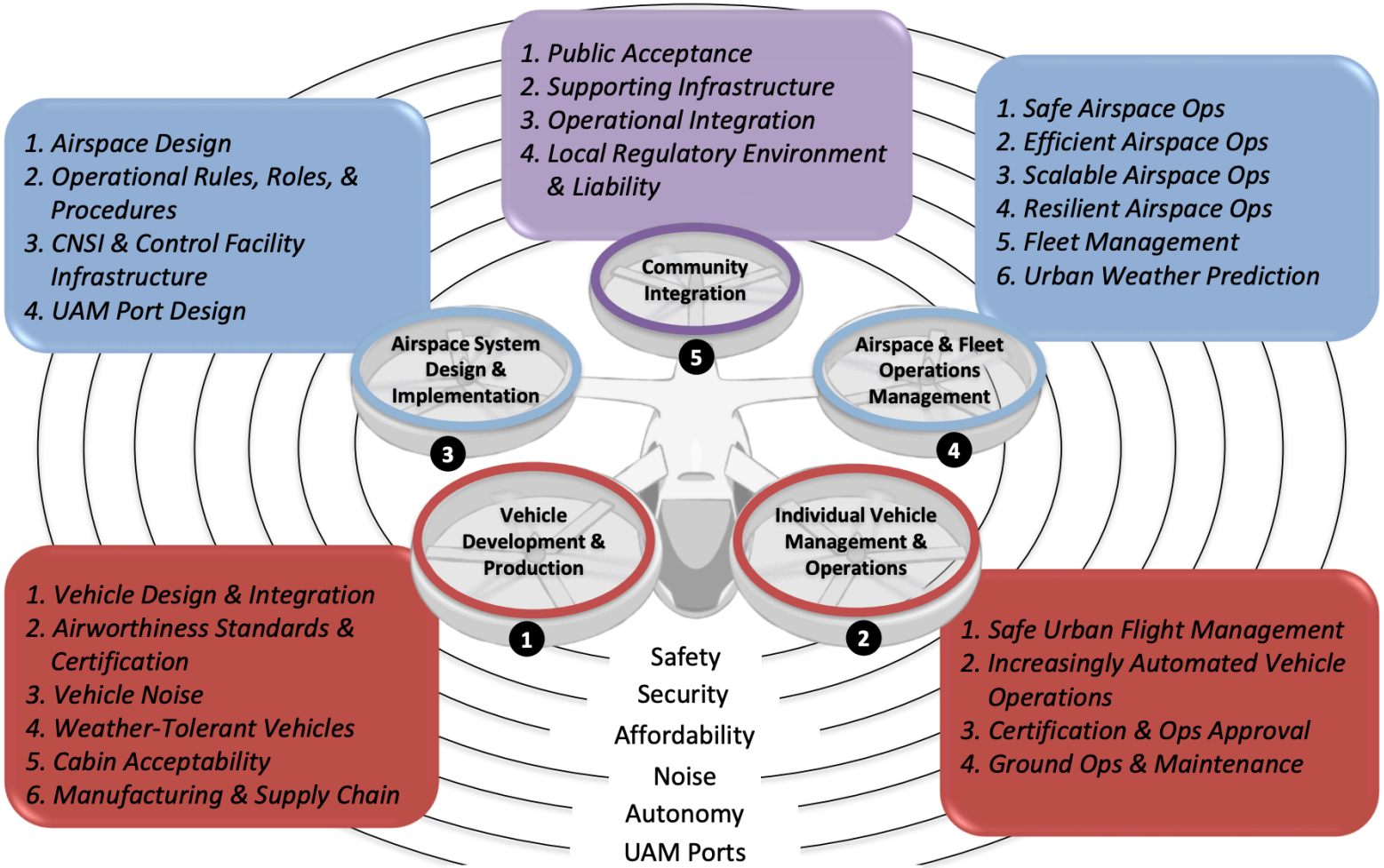
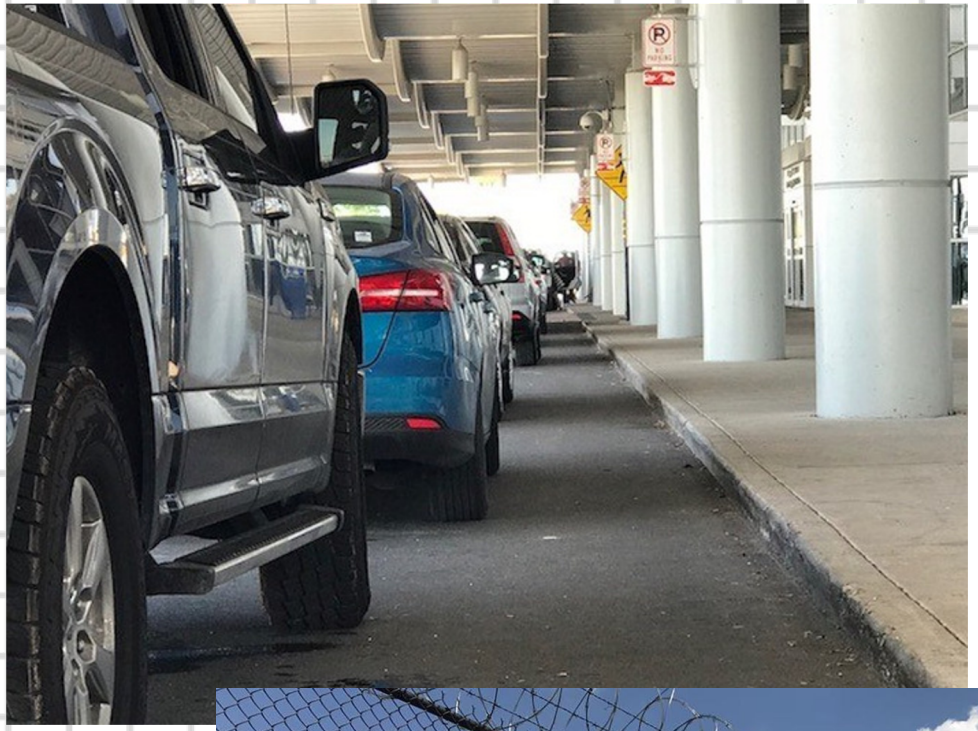
UAM Framework and Barriers





Today's aviation industry operates separately from other forms of urban transportation

- Passengers leave behind the urban environment when they enter airport premises
- Ground traffic is restricted and controlled

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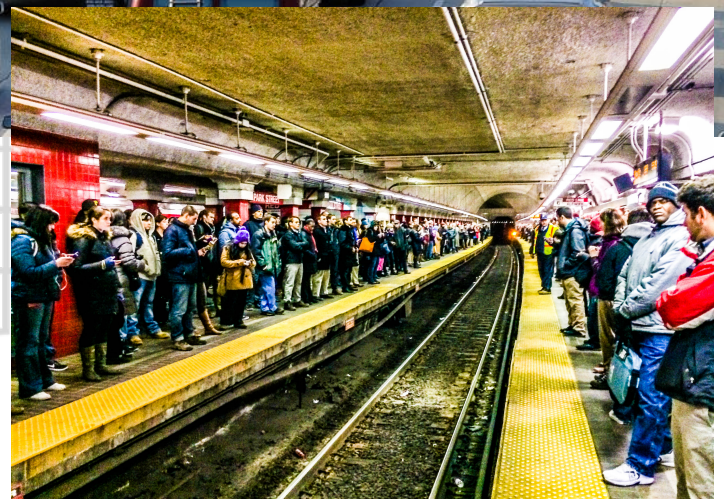

Urban Air Mobility requires aviation to integrate into an existing urban transportation system that is currently fraught with its own challenges

- Traffic Congestion
- Urban Sprawl
- Environmental Impacts
- Transit under/over use
- Noise
- ... and others

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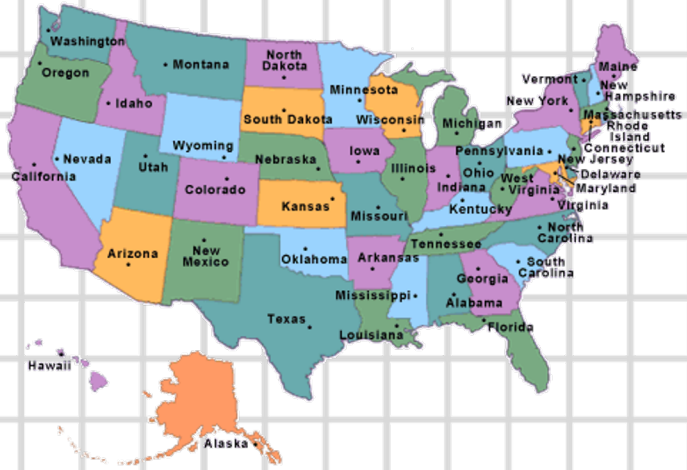
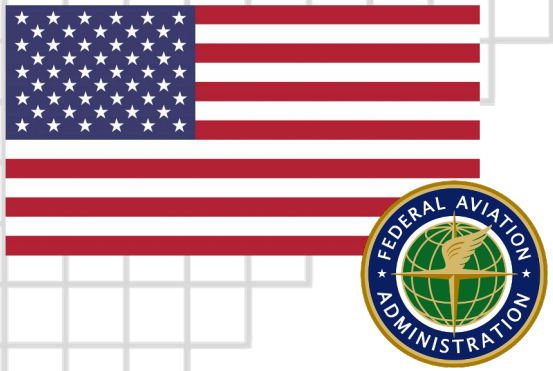


VS



VS

UAM also requires the industry to interact with new jurisdictions and players

- FAA – certification, airspace management
- Federal code & preemption
- State and local regulations – e.g., land use, zoning, transportation regulation
- State common law – liability, property rights, nuisance

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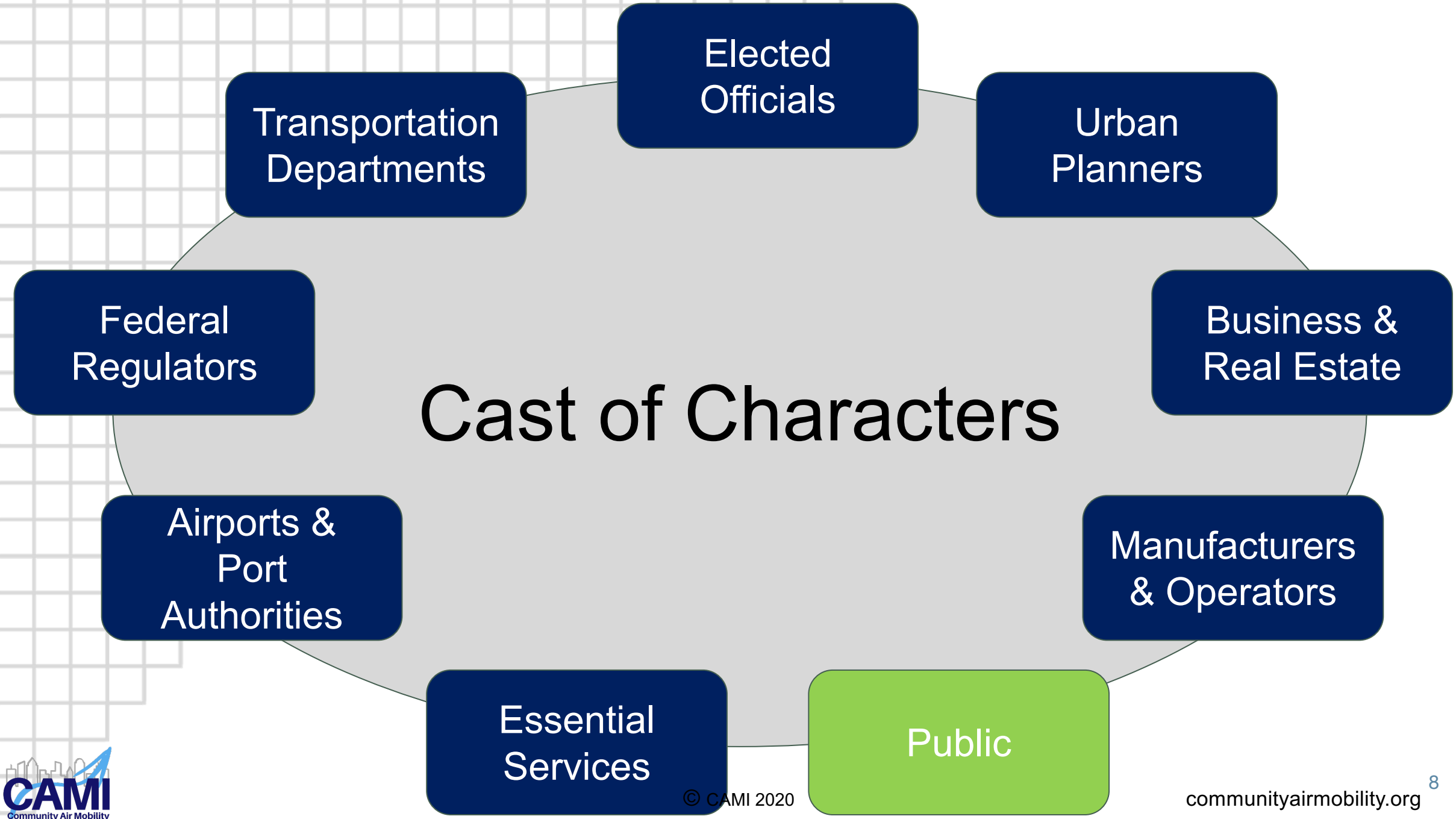
Elected Officials
Transportation Departments
Urban Planners
Federal Regulators
Business & Real Estate
Cast of Characters
Airports & Port Authorities
Manufacturers & Operators
Essential Services
Public

Public acceptance is far from guaranteed.

- Decision makers and the public need credible, transparent and unbiased information so they can be empowered to make good decisions.
- Politicians care about what constituents complain about.
- If the UAM industry doesn't invest in public education, it will be hard to recover from negative perceptions.

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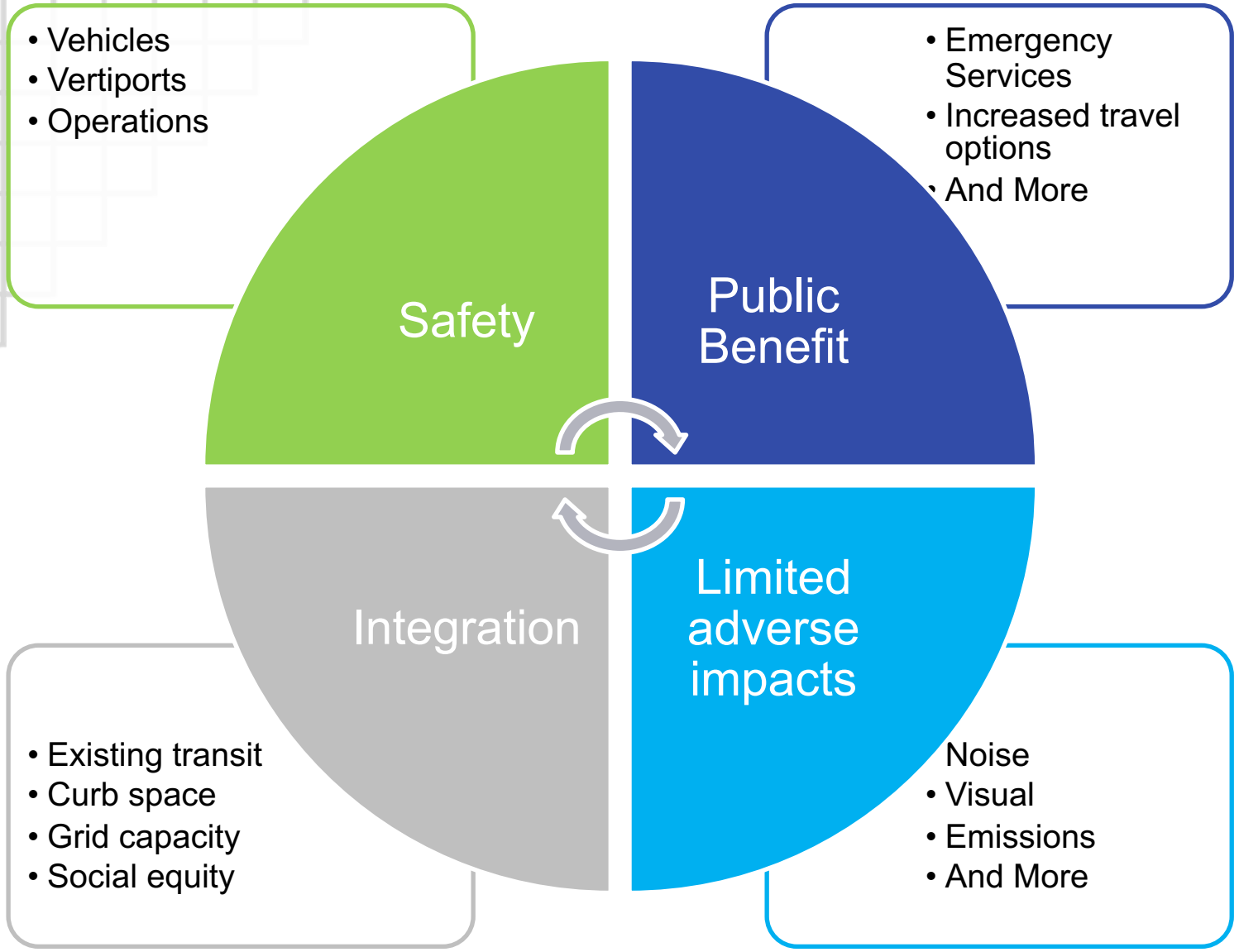
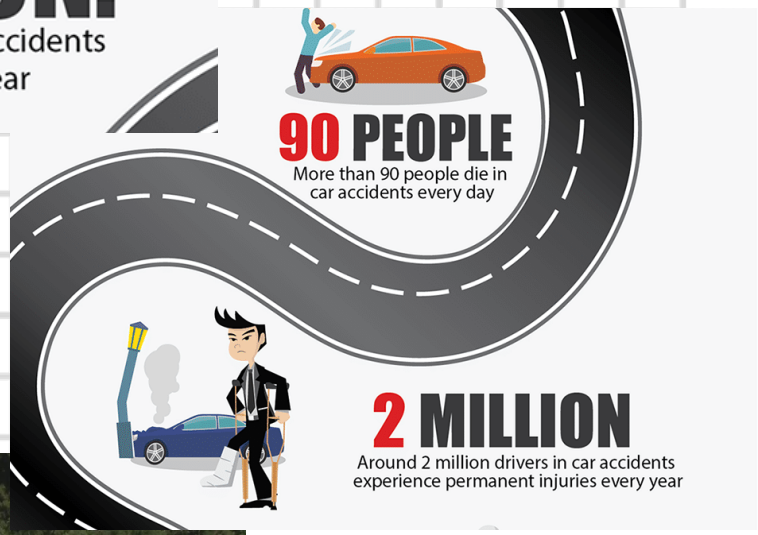
Public Acceptance requires Safety:



Infographics from:

Driver KNOWLEDGE
WWW.DRIVERKNOWLEDGE.COM



Safety is non-negotiable, but what does it mean to be "safe enough"?

- Commercial aviation has a strong safety record and reputation
  - General aviation (small planes) does not
- UAM will be aviation at an automotive scale
- UAM must prove that is it *safer* than the status quo for daily transportation (e.g., cars)
- It must also « feel » safer

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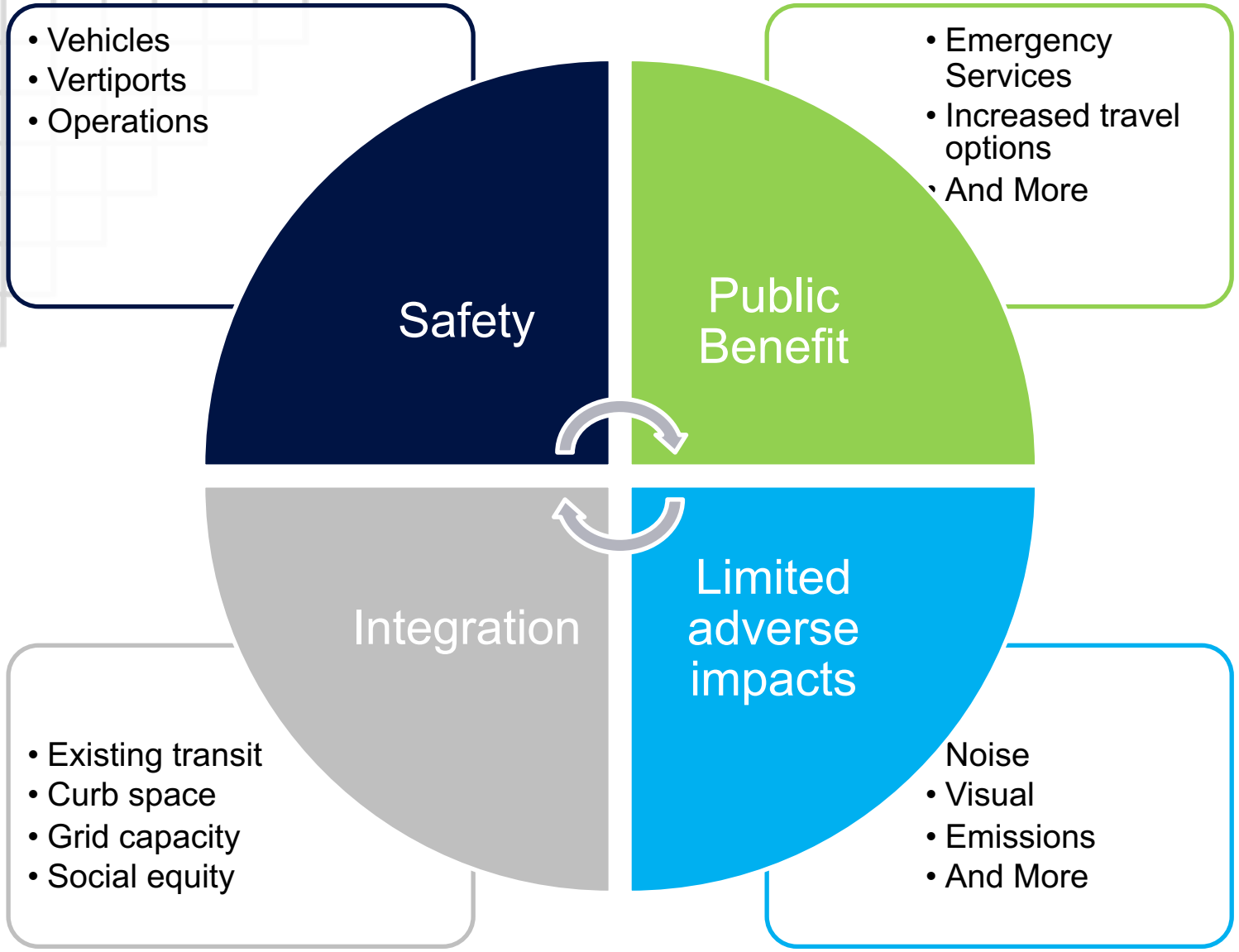
Public Acceptance means showing Public Benefits:



- Reduced need for vehicle traffic within urban core
- Reduced emergency response times
- Increased range of access to the urban core
- Additional transportation demand management options
- Urgency-trip pairing with commuter transit

Some potential public benefits may be surprising

- Stronger connection of rural areas to urban opportunities
- Increased utility of GA airport infrastructure
- Additional disaster response capabilities
- Increased electrification for lower in situ emissions
- Elimination of transportation deserts
- Workforce development and economic opportunities

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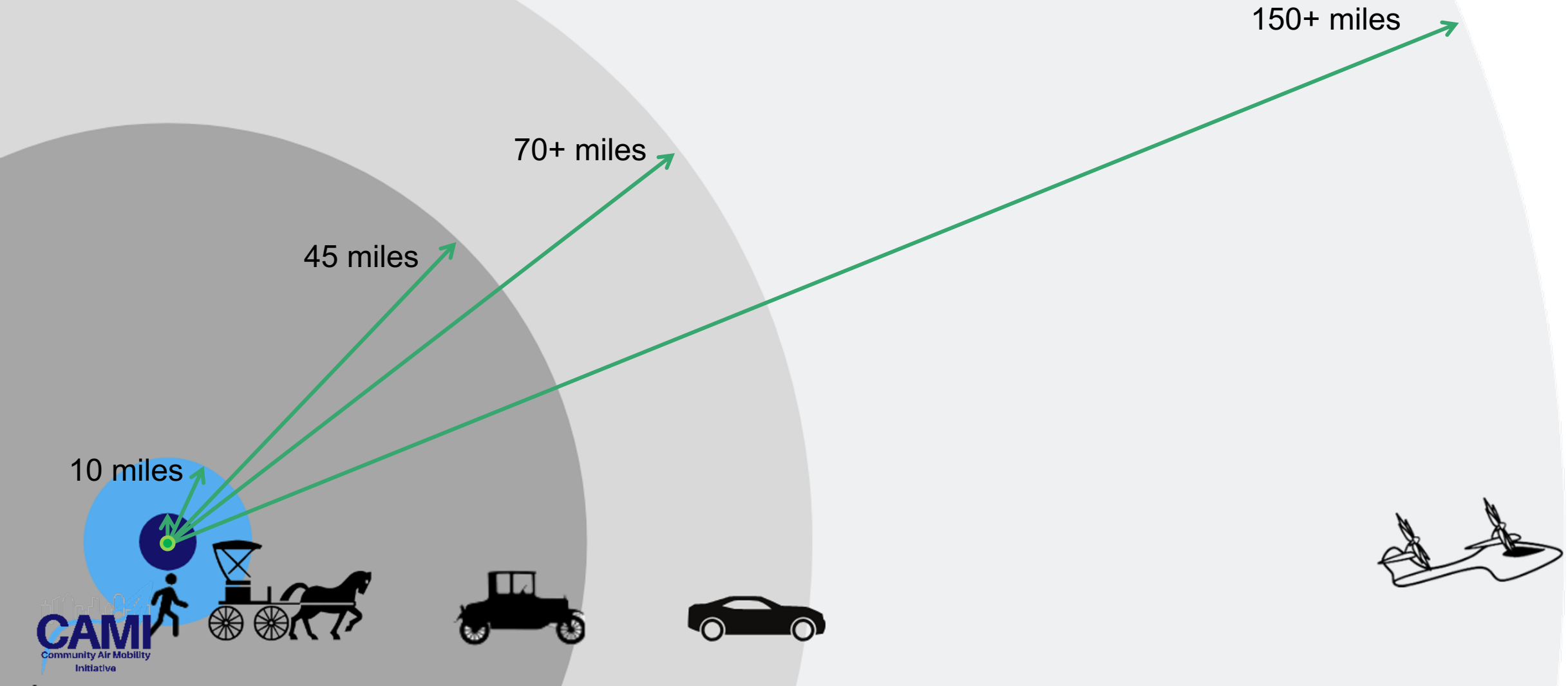
eVTOL aircraft dramatically increase the range that can be traveled in an hour of commuting time.



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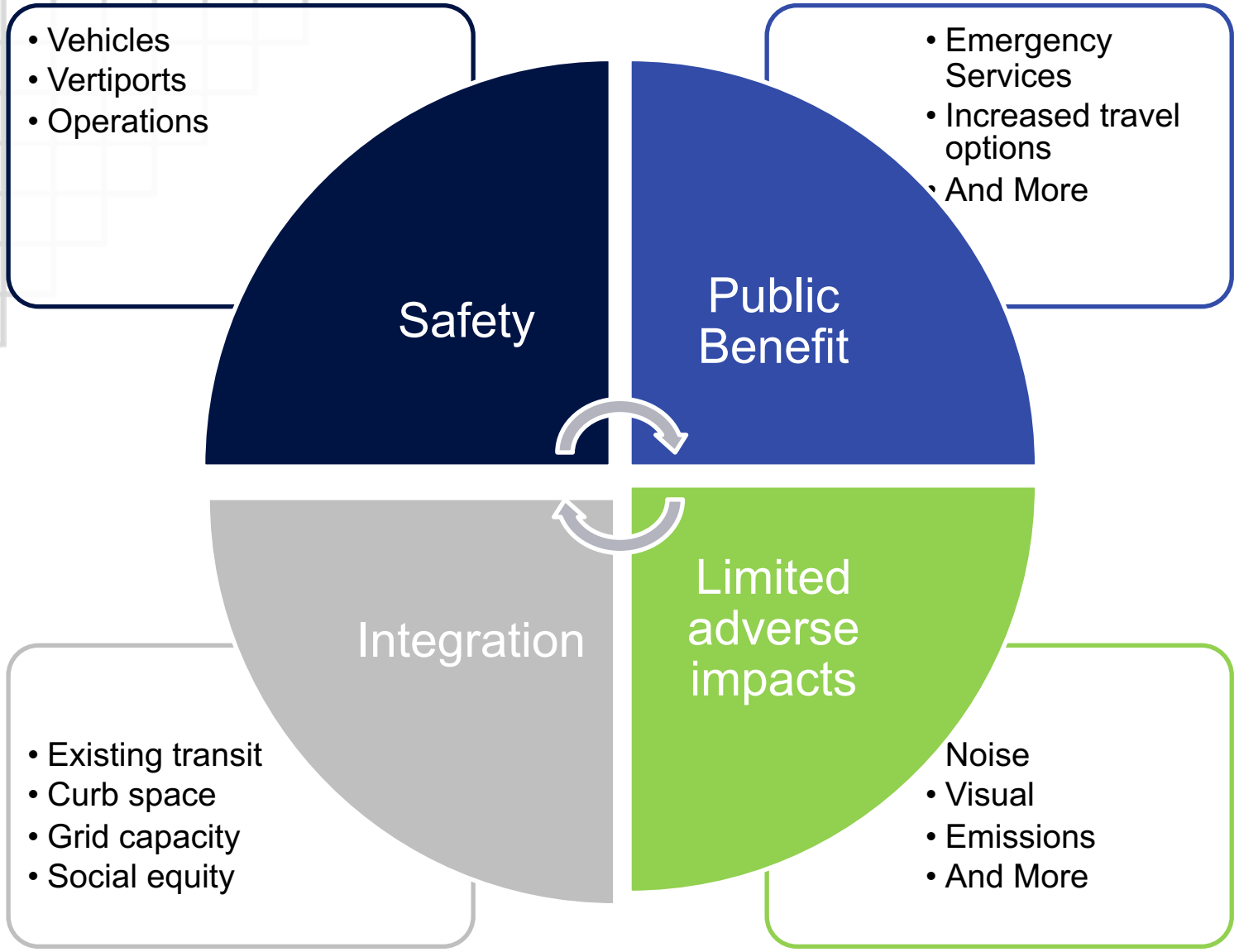
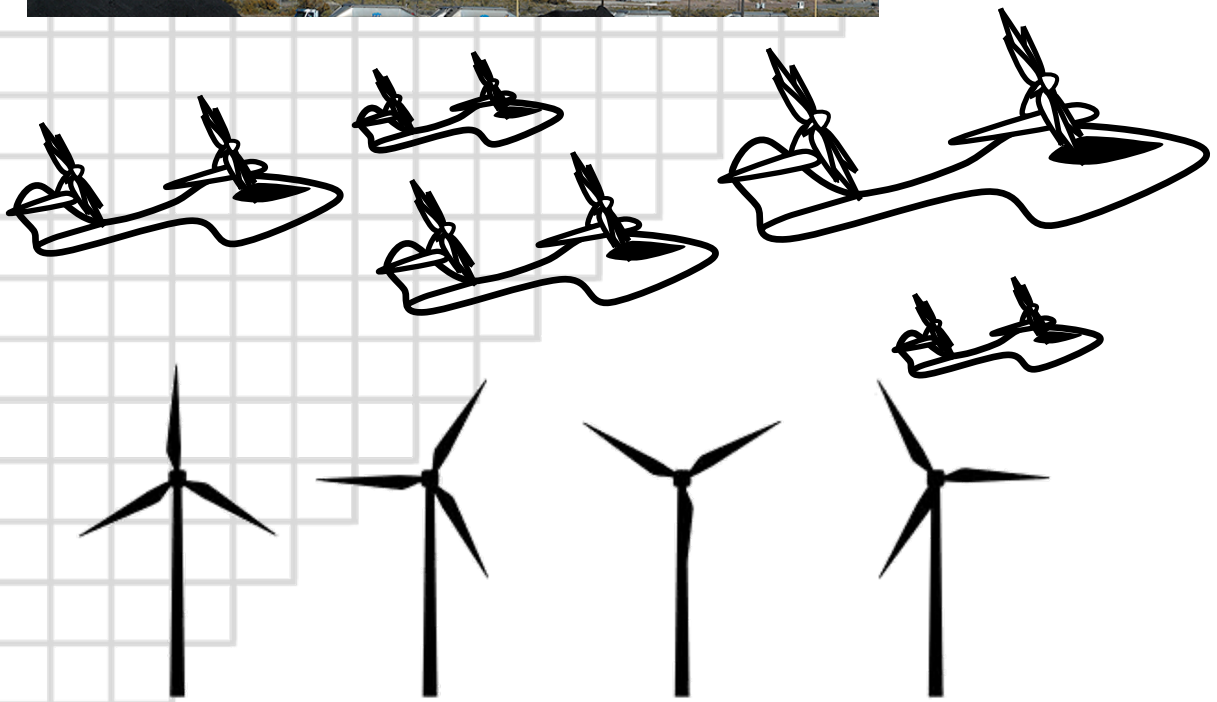
Public Acceptance means limiting adverse impacts:





There will be some level of undesirable impacts. Being transparent about this will help minimize them and build trust with the public.

- Electric vehicles are only as green as their grid and battery disposal
- Visual impact
- Congestion may just shift
- Risk of urban sprawl
- **Noise**

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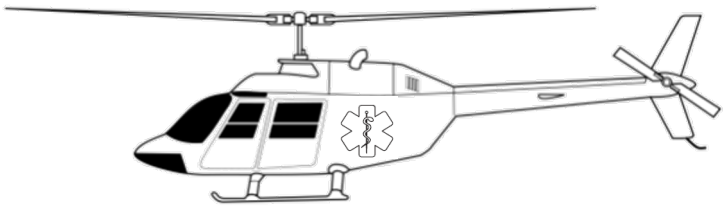
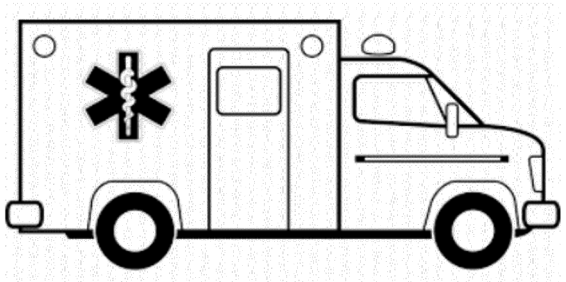
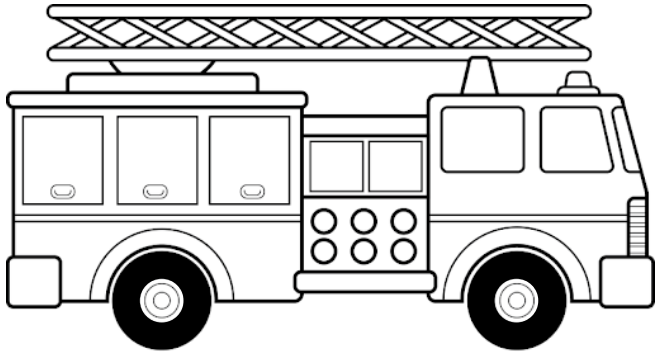
Even silence can be too loud.

The perceived value of the thing making the noise is critical to whether or not it is perceived as “too loud” by the community.

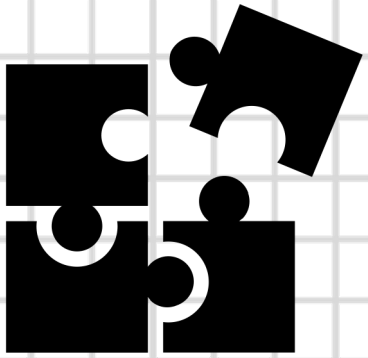
If there is no perceived value, there is no “quiet enough”.







Approach to noise: restricting or right-sizing?



- It is tempting to just set a maximum decibel level (or other measurable criteria) for “acceptable” noise, but this is an oversimplification.
- Noise is like the inverse of safety: for one you can never have too much, for the other, never too little. So how do you set the cut off?
- Instead of restricting, equip communities to “right size”:
  - Understand the noise impacts of various aircraft and operations
  - Understand their ambient noise landscape
  - Understand the benefits that UAM offers
  - Facilitate decision-making and community buy-in

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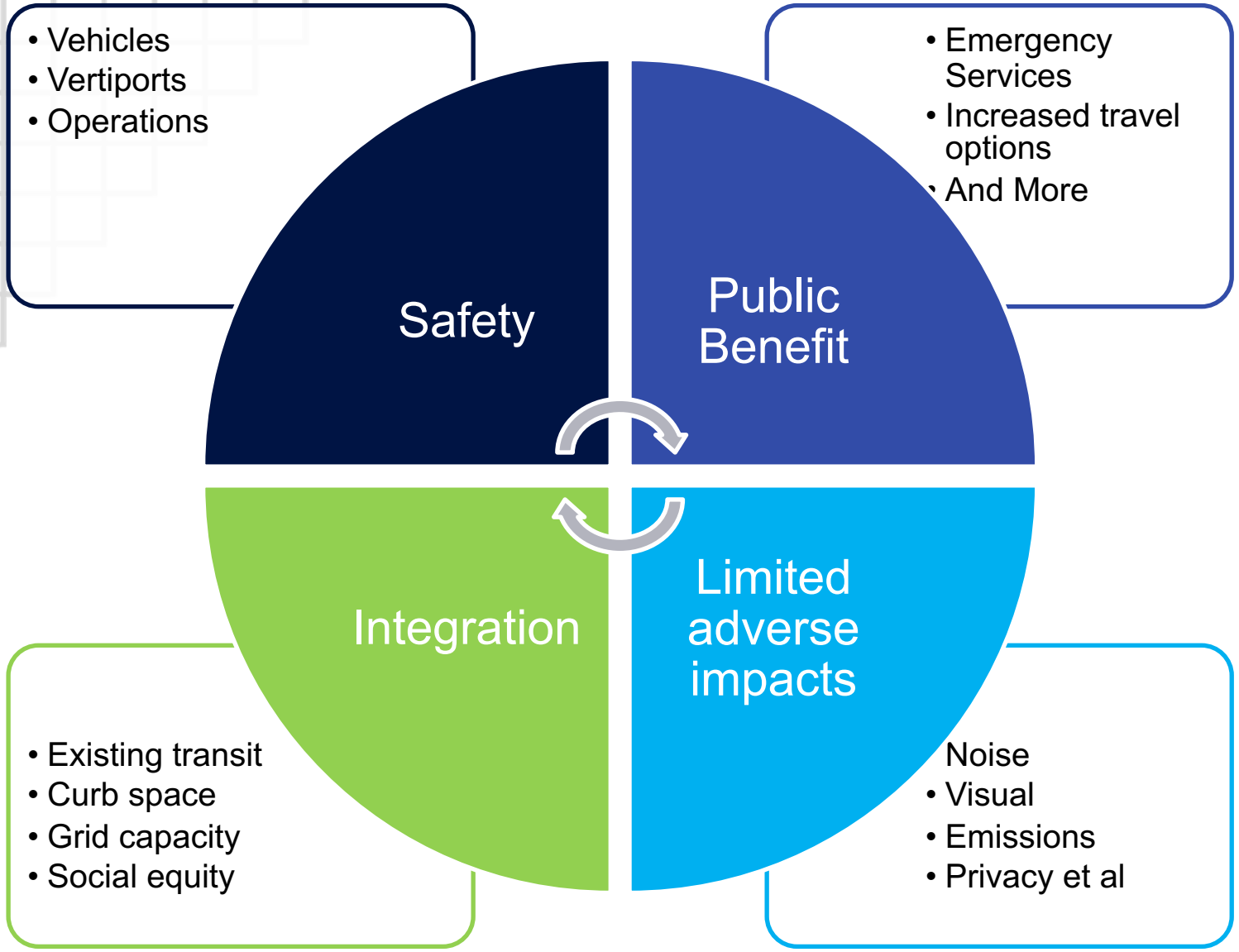
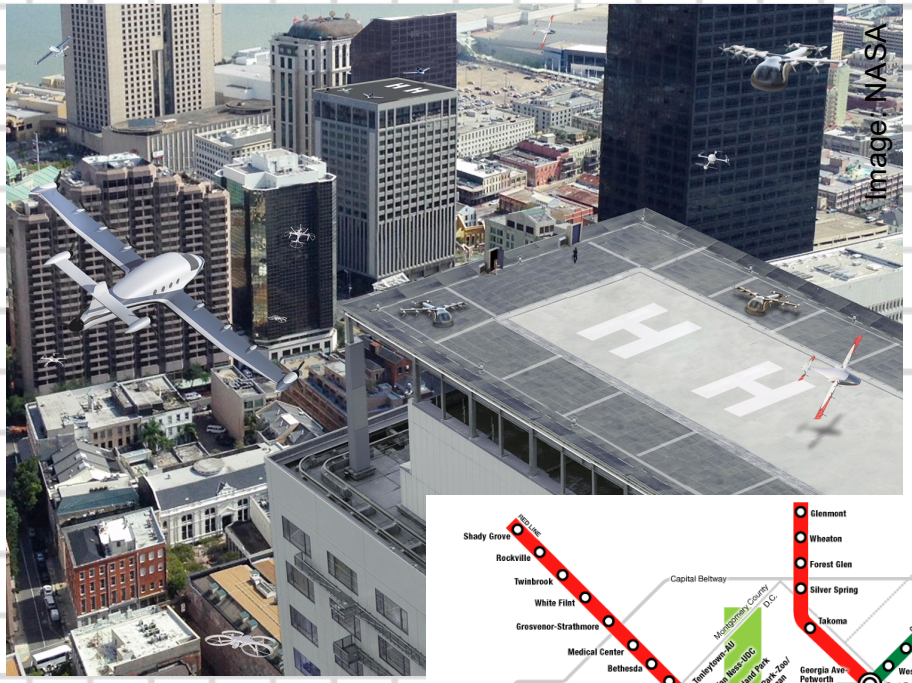
Public Acceptance requires Integration into Communities:





Integration needs to consider the existing transportation landscape, accessibility, social equity, and secondary impacts.

- Integrate with transit options to provide « urgency travel »
- UAM can address transportation deserts in underserved areas
- Social equity and broad public benefit are important, not just the most profitable locations
- Use zoning advantageously
- Ensure grid capacity

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Crawl – Walk – Run Adoption Approach

- Crawl
  - Public engagement, safety, and legislation
  - Pilot projects, demonstrations and data gathering
- Walk
  - Repurpose existing infrastructure
  - Develop new regulations
- Run
  - Build and scale new infrastructure
  - Streamline new regulations, permitting and licensing
  - Develop data management practices for privacy and efficiency
  - Advocate and safeguard public safety

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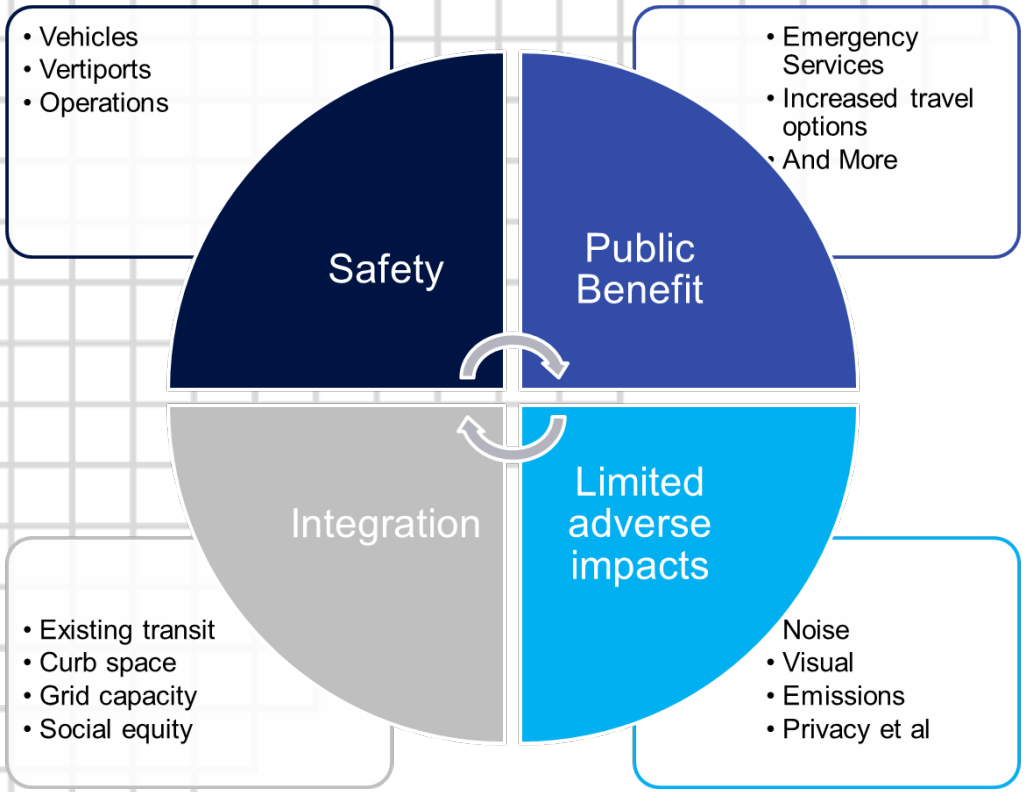
Is the UAM industry prepared?



- Urban air mobility is not commercial aviation as we have known it.
- Urban aircraft must integrate into the metropolitan multi-modal transportation system.
- Urban air mobility must serve the community's needs.

Or will it focus solely on technology and certification?

Are cities prepared?

5th Ave, NYC, Easter Morning 1900

5th Ave, NYC, Easter Morning 1913

- Are they incorporating urban air mobility into their transportation plans? Into their Comprehensive Plan Updates?
- Are they aware of the state of the UAM industry? The urgency?
- Do they have the necessary infrastructure and ground support?

Or will they be reactive to industry?

Images from the National Archive, compiled by Morgan Stanley
https://www.businessinsider.com/5th-ave-1900-vs-1913-2011-3

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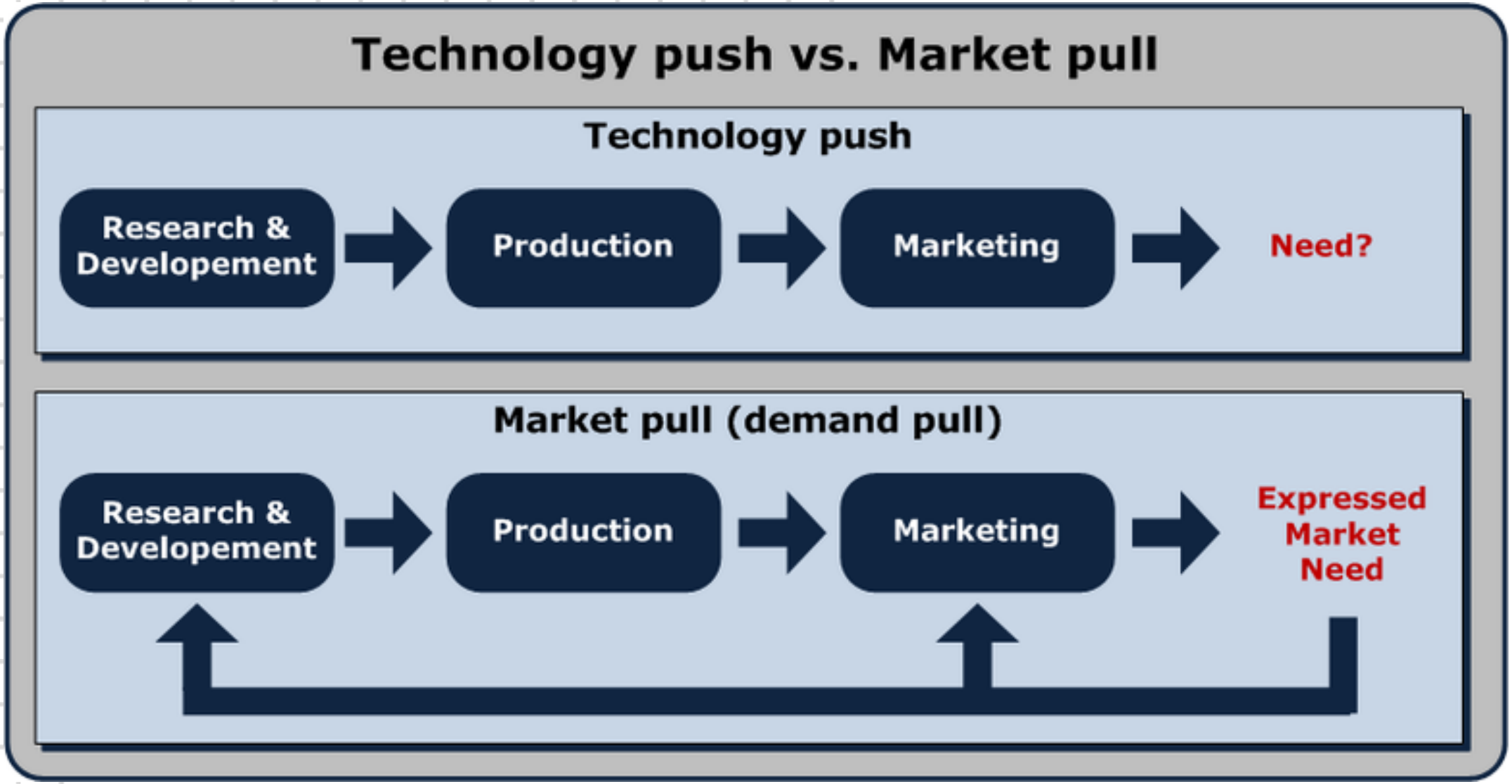
Technology push vs. Market pull
Technology push
Research & Developement
Production
Marketing
Need?
Market pull (demand pull)
Research & Developement
Production
Marketing
Expressed Market Need

Introducing… the Community Air Mobility Initiative

CAMI is a 501(c)(3) nonprofit organization dedicated to supporting the responsible integration of the third dimension of urban transportation at the **state and local level**.

CAMI **educates and equips state and local decision makers**, the public, and the media with the information they need to set policies and design infrastructure and systems that address transportation needs for their communities.

BELL

BLACK & VEATCH

BLADE

GAMA

JOBY AVIATION

JUMP AERO

massDOT Massachusetts Department of Transportation Aeronautics Division

NBAA

Overair

Raytheon

SAE INTERNATIONAL

USI UNMANNED SAFETY INSTITUTE

Vertical Flight Society

SEBRING SEBRING REGIONAL AIRPORT AND INDUSTRIAL PARK COMMUNITY REDEVELOPMENT AGENCY

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CAMI Leadership

Anna Dietrich, Co-Executive Director

- Founding COO, Terrafugia
- Co-Chair GAMA EVTOL
- Certification & Gov't Relations
- UMASS Boston Public Policy
- Leadership in ASTM F44 & F37
- ASTM AC377 (Autonomy) & AC433 (EVTOL)
- S.B., S.M. MIT Aero/Astro
- Private Pilot

Yolanka Wulff, J.D., Co-Executive Director

- Sustainable Aviation Consultant
- Deep industry experience
- Non-profit business attorney
- Former planning commissioner
- Communications & Public Affairs
- Standards development involvement
- CAFE Foundation Executive Director
- Former land use hearing examiner

CAMI Community Air Mobility Initiative

CAMI Expert Contributors

Rex Alexander
Five Alpha
Infrastructure

Alexandra Hall
Futurescape.tech
Operations

Peter Shannon
Radius Capital
Markets

Lourdes Maurice
FAA (retired)
Environment & Energy

Darrell Swanson
Swanson Aviation
Infrastructure & Airports

Parker Vascik
Blue Sky Consulting & MIT
UAM Industry

Adam Cohen
UC Berkeley
Public Acceptance

Darshan Divakaran
Airavat LLC
UAS and UAM

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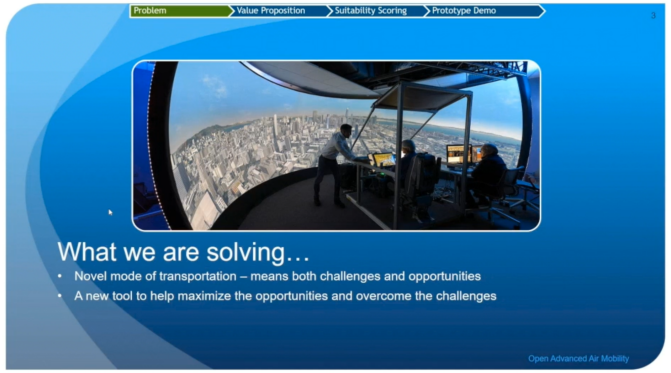
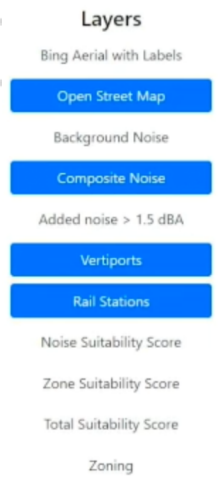
CAMI's Mission and Resources

Supporting the responsible integration of the third dimension at the state and local level.

Understanding integration through modeling





From UAM 101 presentation by David Shapiro
https://www.communityairmobility.org/uam101

Urban Air Policy Collaborative

Kickoff

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Ellis & Associates

Ellis & Associates, a wholly-owned subsidiary of Lacuna Technologies, was chosen as one of 17 partners that will participate during the duration of the Campaign.

E&A has partnered with **CAMI** to develop relevant conversation topics and materials to enhance the UAM discussion in an actionable way.

VISION

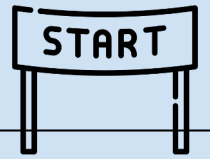
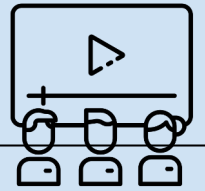
The Urban Air Policy Collaborative aims to unify local governments on policy issues pertaining to the integration and operation of UAM technologies into existing transportation networks.

GOALS

To provide a forum for local governments to **anticipate and integrate** this important and emerging mode of transportation into our **existing transportation network** in a way that is **safe, sustainable, equitable, and noise-free.**

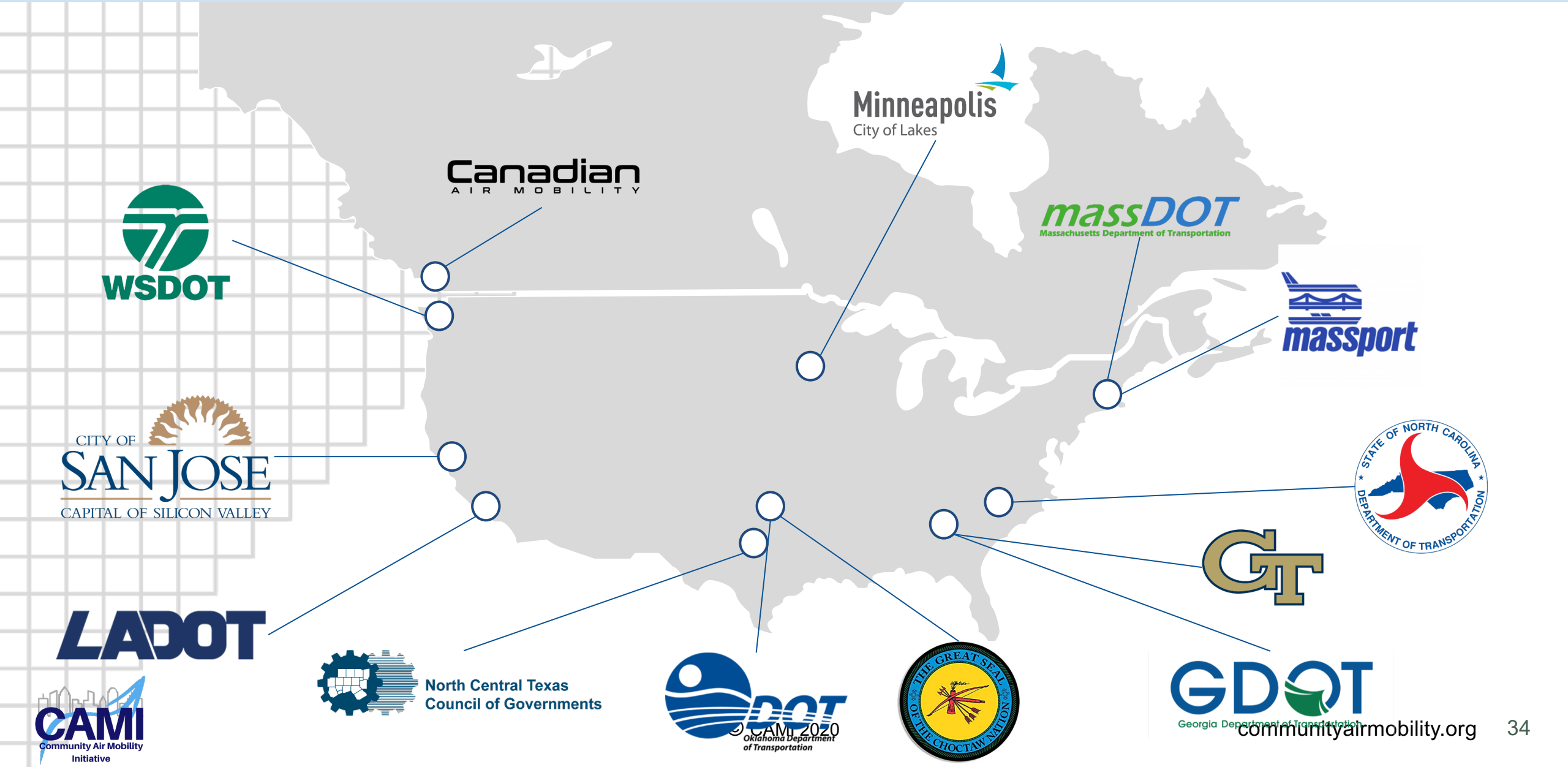
To give a **voice to local governments** that can feed into adjacent efforts such as the NASA AAM National Campaign, USCM, OMF etc.

URBAN AIR POLICY COLLABORATIVE | Timeline

TODAY	JULY & AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
					
Onboarding & Kick-off meeting	*Workshop #1 (individual cities)*	*Ellis & Associates "UAM Deep Dive" Webinar*	*Workshop #2 (all cities)*	*Synthesis*	*Findings & Presentation*

Our approach prioritizes **conversation and collaboration**, with key events taking place each month of the 6-month engagement. The structure of the program is designed to help **city-led insights & inputs inform key areas of UAM policy** while also providing opportunities for learning and peer collaboration.

URBAN AIR POLICY COLLABORATIVE | Participants



WHAT DO YOU WANT TO LEARN ABOUT?

POLICY

What local levers can be used to change outcomes in various places in the region?

SAFETY IMPACTS

Vehicle safety is covered by FAA certification. How do we ensure operational airspace and vertiport issues will have strong local components?

EQUITY & PUBLIC ENGAGEMENT

UAM carries the potential to uplift a diverse cross section of our communities. How do we have an educated dialogue about integrating UAM for maximum good?

LAND USE REGULATION

How do local regulations dovetail with FAA rules to reflect municipal priorities while avoiding a patchwork of requirements?
What are important zoning and land use considerations for accessibility, safety, equity, and public benefit?

VEHICLE IMPACTS

How do we understand and mitigate adverse impacts of different vehicle types, such as visual and noise impact?
How do we ensure the benefits justify the costs?

ECONOMIC IMPACT

How can we leverage AAM to contribute economically?
How do we ensure that AAM networks are designed to avoid disadvantaging certain socio-economic demographics?

URBAN TRANSPORTATION SYSTEM INTEGRATION

How do we prepare for AAM integration and interaction with existing urban transportation ecosystems?

PRIVACY & SECURITY

How can we continue to act with integrity and protect privacy and private data? How do we ensure a secure system and network?

CAMI
Community Air Mobility Initiative

Supporting the responsible integration of the third dimension into our daily transportation needs through education and advocacy.

Yolanka Wulff
yolanka@communityairmobility.org
www.communityairmobility.org

Jon McLoughlin, Senior Account Executive,
InterDrone

Leslie Wolf, Conference Producer,

InterDrone

Co-Located Events

GeoDrone

The content of this co-located event will cover topics such as photogrammetry, point clouds, topographic surveys, building orthomosaics, cadastral and corridor surveying techniques, volumetric collection and calculations, and more.

AECDrone

AECDrone content will demonstrate how UAS are effective tools in the push towards streamlining workflow through image collection, data analysis, and building information modeling, creating more efficient resource management.

UAS First Responders Summit

The public safety conference content will concentrate on the evolving real-world applications of using drones in search and rescue, firefighting, and emergency response.

InspectionDrone

Designed to surface challenges and solutions to operational workflows, Inspection Drone program content will cover the evolving use and real-world implementations of unmanned aircraft systems in oil & gas, wind turbines, powerlines, nuclear energy, and utility infrastructure inspection.

Drone Nexus

This will cover business practices, photography, entertainment, supply chain, as well as current policies, regulations, and standards.

InterDrone

Sponsor Information- Goals & Tactics

The goal for many of our sponsors/exhibitors is to establish and build meaningful relationships with key enterprise-level attendees that align most closely with the verticals they serve.

Verticals: Public Safety, Energy & Infrastructure Inspection, Construction, Surveying & Mapping

Tactics:

- Booth Space
- Speaking/Thought Leadership Opportunities
- Lead Capture
- Hands-On Workshops

InterDrone

Networking and Connecting

- Opening Reception in Exhibit Hall
- Enterprise Connect Networking Event
- Exhibitor Console Messaging and Appointment Setting

- North Texas Pavilion in Exhibit Hall
  - Dedicated area in the exhibit hall for North Texas based vendors, schools, associations and municipalities to engage with InterDrone attendees and promote your promote your latest project, products and/or services.
  - Participation includes a 10x10 booth space for each company within the pavilion

InterDrone

Sponsor Information- Opportunities to Get Involved

Booth Packages

Type Of Package	☐ Exhibitor Package	☐ Silver	☐ Gold	☐ Platinum	☐ Title Vertical Sponsor 4 available
Description of Package	• Inline Booth (10x10) • Logo/Sponsor Page • Newsletter Banner Ad+Sponsored social mediapost • Exhibitor Console, your free tool to populate your directory listing, access show information, and retrieve leads from attendees who have "favorited" your profile	• Corner Booth Placement • Logo on Sponsor Page of Website • Newsletter Banner Ad + Social Media Post **NEW! Exhibitor Console Attendee Outreach** • Exhibitor outreach tools to kick-start attendee engagement prior to the event. Search and filter pre-registered attendees and send up to 50 personal emails and up to 25 meeting invitations directly to those attendees meeting your specific criteria.	• Corner Booth Placement • 20-minute show floor theater session, product demo, or flight cage session • Logo on Sponsor Page of Website • Bag Insert • Email Blast • Mobile App Enhanced Listing • Newsletter Banner Ad + Social Media Post **NEW! Exhibitor Console Attendee Outreach** • Exhibitor outreach tools to kick-start attendee engagement prior to the event. Search and filter pre-registered attendees and send up to 50 personal emails and up to 25 meeting invitations directly to those attendees meeting your specific criteria.	• Corner Booth Placement • 30-minute thought leadership session • Logo on Sponsor Page of Website • Bag Insert • Email Blast • Mobile App Enhanced Listing • Newsletter Banner Ad + Social Media Post **NEW! Exhibitor Console Attendee Outreach** • Exhibitor outreach tools to kick-start attendee engagement prior to the event. Search and filter pre-registered attendees and send up to 50 personal emails and up to 25 meeting invitations directly to those attendees meeting your specific criteria.	• Seat on panel within vertical conference program • Enterprise Round Table Discussion/Networking Lunch (vertically targeted, invite-only guest list) • Participation in off-site, hands-on, experiential workshops (vertical specific). • Logo as Vertical Sponsor on Door Signage and Website • Lead Capture for All Sessions in Vertical • Participation in Enterprise Connect (vertical specific) networking event

InterDrone

Questions?

Jon McLoughlin
Senior Account Executive

Jon.McLoughlin@Emeraldx.xom

917-562-6522

NCT9-1-1 UAS Program

David Dean

9-1-1 GIS Project Coordinator, UAS Team Leader

NCT9-1-1

SAVING LIVES AND MAKING A DIFFERENCE

Topics

- NCT9-1-1 UAS Program Overview
- Indoor Mapping, 3D and Z-Axis
- Drone 3D Z-axis Pilot

NCT9-1-1
SAVING LIVES AND MAKING A DIFFERENCE

The NCT9-1-1 UAS Mission

- Automating manual processes
- Updating imagery for Dispatch and First Responders
- Regional UAS support
- Microwave tower inspections
- Advanced mapping and 3D
- Research and Development

NCT9-1-1
SAVING LIVES AND MAKING A DIFFERENCE

The NCT9-1-1 UAS Flight Team

- Four 107 Remote Pilot Certification Carriers
- Positions
  - Pilot in Command (PIC)
  - Pilot at Controls (PAC)
  - Visual Observer (VO)
  - Payload Officers (PO)
- One Pilot in Training
  - Visual Observer (VO)
  - Payload Officers (PO)
- One Imagery Data Specialist

NCT9-1-1
SAVING LIVES AND MAKING A DIFFERENCE

NCT9-1-1 UAS Fleet

- **Big Bertha**
  - DJI Matrice 600 Pro
  - 3D Mapping
  - Search and Rescue
  - Heavy Payload
  - Tower Inspections (Utilizing RTK)

- **Skeeter**
  - DJI Inspire II
  - Mapping
  - Search and Rescue

- **Casper and Jasper**
  - DJI Phantom Pro 4's
  - Training
  - Mapping
  - Search and Rescue

All NCT9-1-1 UAS data and imagery is public and non-proprietary

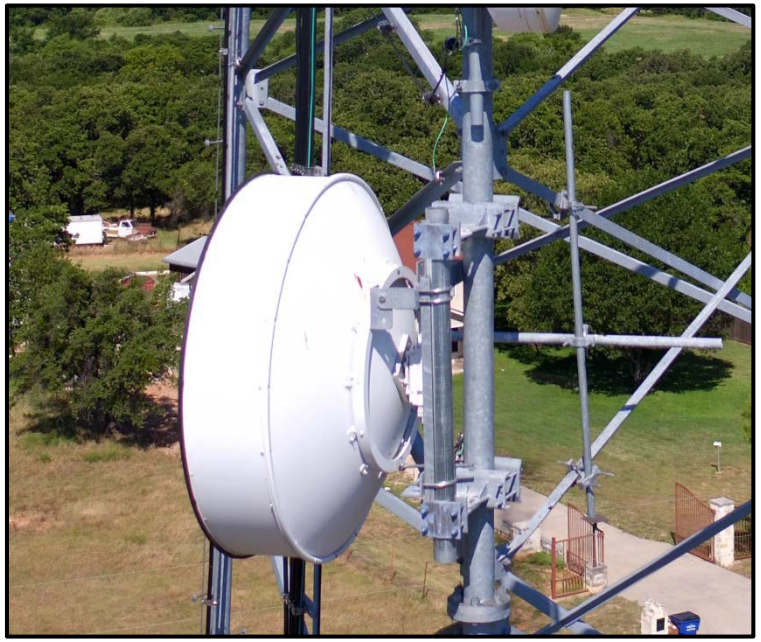
UAS and New Developments

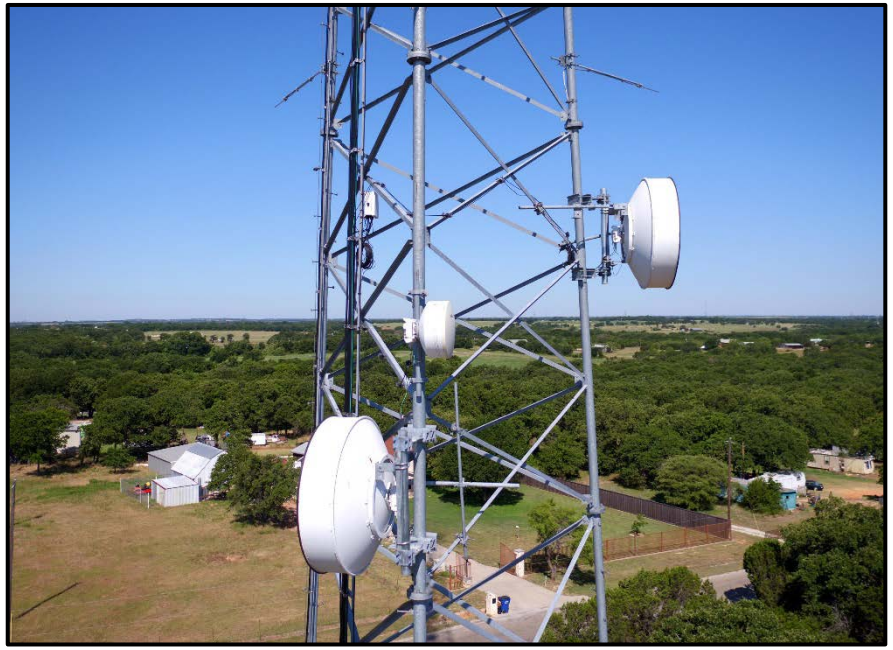
- Improving 9-1-1 Addressing efficiency and accuracy (process automation)
- Aiding First Responders with current imagery

Regional UAS Support

- Assisting local governments
  - Search and Rescue
  - Education/Training

NCT9-1-1
SAVING LIVES AND MAKING A DIFFERENCE





Infrastructure Inspections

NCT9-1-1 Microwave Network

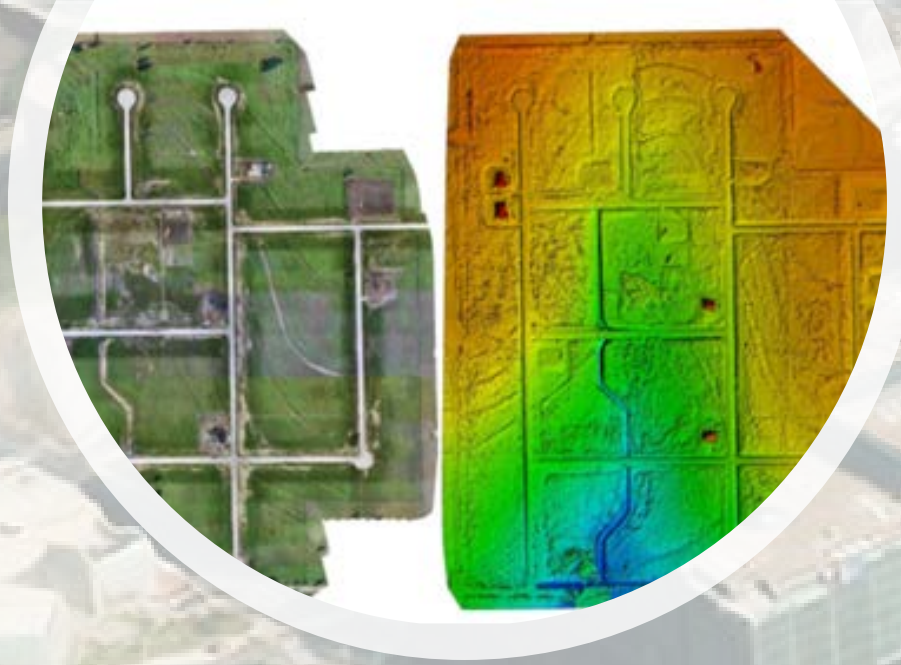
Infrastructure Inspections:

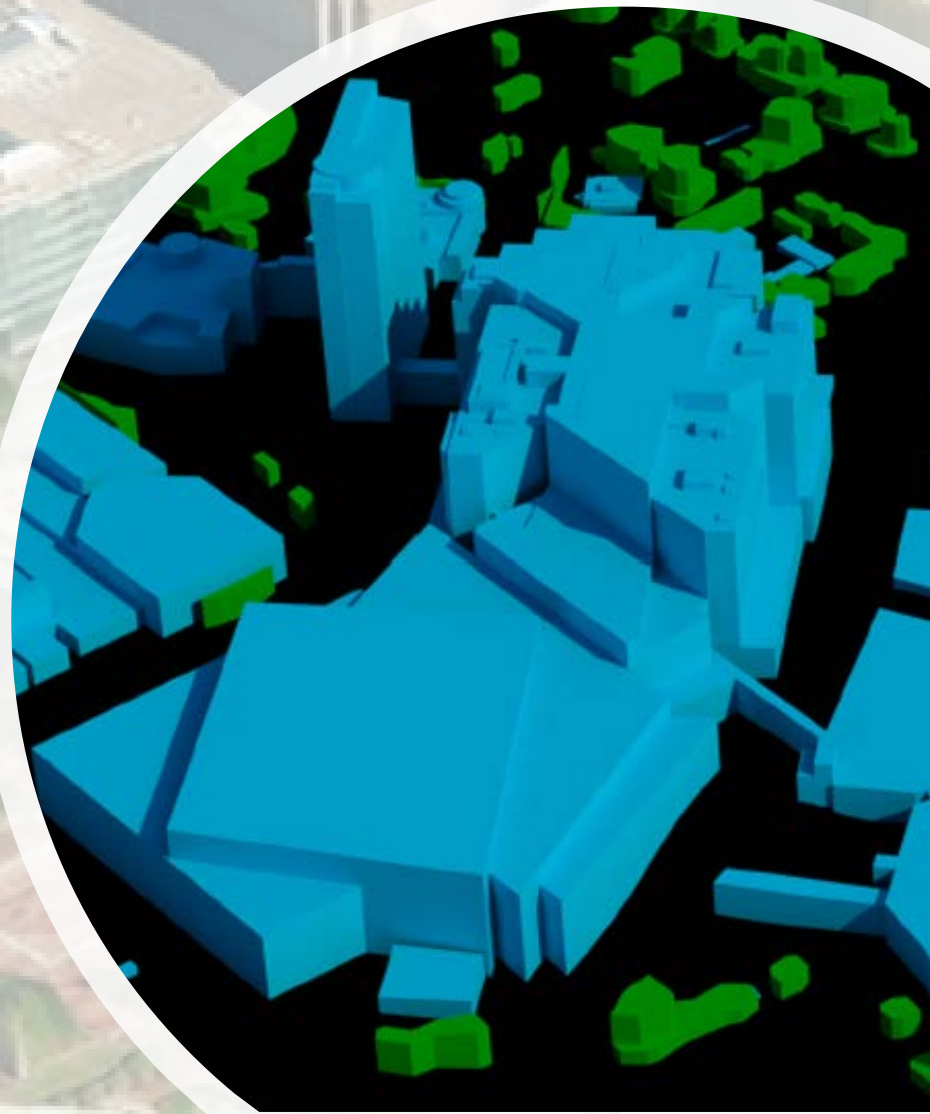
PSAP

Damage

Surveys

Advanced Mapping and 3D





- Taking 9-1-1 into the Third Dimension
- Supplementing Device-based Location

NCT9-1-1
SAVING LIVES AND MAKING A DIFFERENCE

Federal Communications Commission (FCC)

- In October 2019 the FCC issued the Fifth Report and Order (FRO) and Fifth Further Notice of Proposed Rulemaking (FNPRM) – PS Docket No. 07-114 proposing that Commercial Mobile Radio Services (CMRS) must provide a z-axis accuracy metric of +/- 3 meters for 80% of the wireless Enhanced 9-1-1 (E9-1-1) calls from z-axis capable cell phones.[1]
- This proposal will also require that wireless carriers meet this metric in the top 25 markets by April 3, 2021 and the top 50 markets by April 3, 2023.
- Further, this measure is supported by the National Emergency Number Association (NENA) as stated in their response to The FRO and FNPRM, titled "NENA: The 9-1-1 Association PS 07-114 | Fifth FNPRM | Initial Comments Feb. 21, 2020."[2]

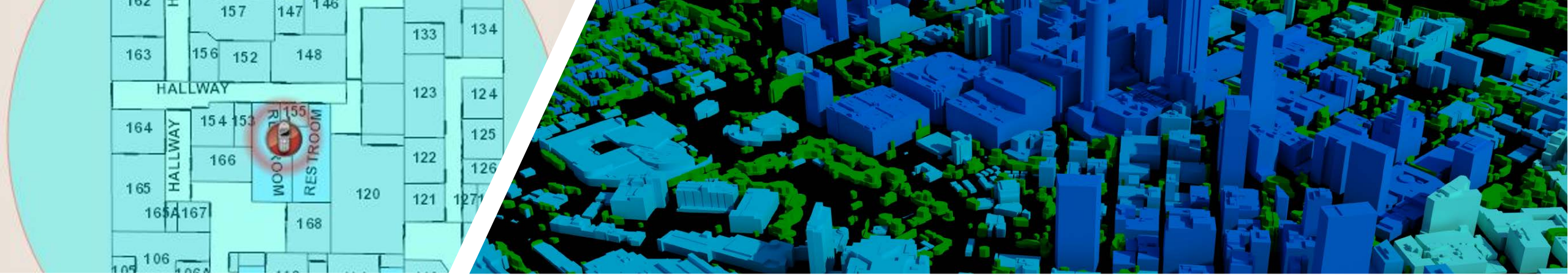
NCT9-1-1
SAVING LIVES AND MAKING A DIFFERENCE

[1] *See* FIFTH REPORT AND ORDER AND FIFTH FURTHER NOTICE OF PROPOSED RULEMAKING, https://docs.fcc.gov/public/attachments/FCC-19-124A1.pdf
[2] *See* NENA: The 9-1-1 Association PS 07-114 | Fifth FNPRM | Initial Comments Feb. 21, 2020, https://ecfsapi.fcc.gov/file/102222567206119/NENA%20Indoor%20Loc%20FNPRM%20Comment%20Feb%202020.pdf

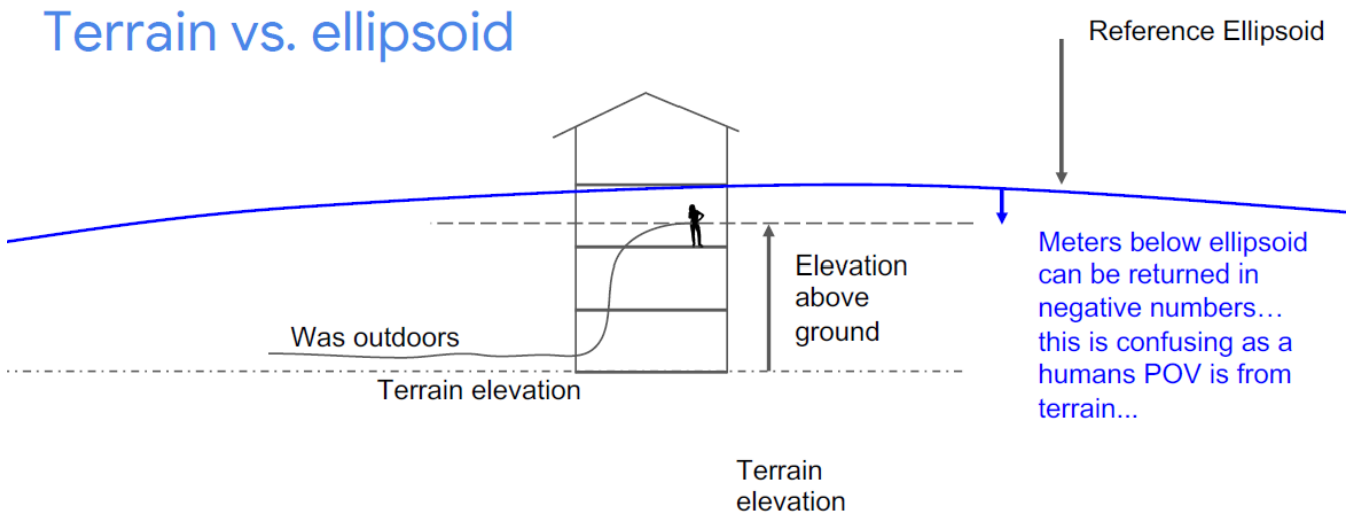
North Texas 911 agency using drones at schools to improve emergency responses

A North Texas 911 agency launched a project that it hopes will be a game-changer for emergency response.

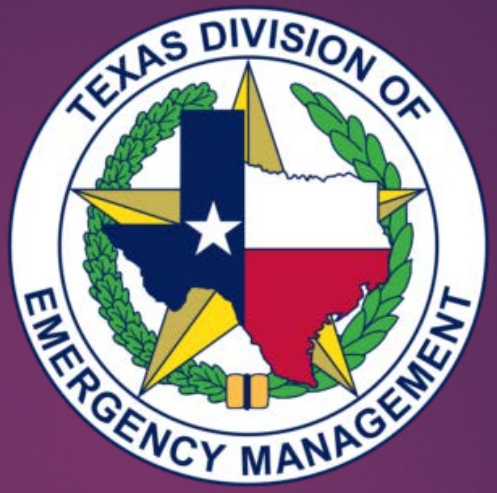
https://www.fox4news.com/news/north-texas-911-agency-using-drones-at-schools-to-improve-emergency-responses



Indoor Mapping, 3D and Z-Axis Research and Development



- Elevation Models
- Floor Plans
- 9-1-1 Test Calls



HB2340 sUAS Task Force
RECOMMENDATIONS

Task Force Purpose

HB 2340 (by Dominguez/Johnson)

Relating to emergency and disaster management, response, and recovery.

The legislation establishes an unmanned aircraft study group and an information sharing work group and provide for the study of federal laws and policies related to disaster response. The group would submit recommendations on the issues to the Legislature by November 1, 2020, and would be abolished on January 1, 2021.

Effective Date: September 1, 2019.

- Our recommendations will allow the State of Texas to request qualified sUAS pilots and equipment for operations during an emergency.

Our mission is to establish a set of standards for qualified pilots and equipment that are eligible and certified to be used in times of disasters.

AREAS OF FOCUS

- **STANDARDIZED TRAINING**
  - To establish a set of training standards and qualifications to ensure pilots called upon by TDEM meet or exceed our recommendations.

- **LEGISLATION**
  - To clarify and amend laws around Unmanned Aircraft usage that will enhance and protect public safety entities and designated mission volunteers.

REGIONAL UAS COORDINATION

- Each Regional group will consist of an official hierarchy working with other regions under TDEM leadership.
- Regional group responsibilities will include ensuring pilots are certified, trained and updated in the system.
- Each Regional group will coordinate with TDEM for qualified pilots, and mission designated volunteers to ensure agency training and requirements are met.

STANDARDIZED TRAINING

Our training recommendations are to establish a set of training standards and qualifications to ensure pilots called upon by TDEM meet or exceed the required training.

- FEMA training
- NIST Training
- UAS Flight training missions
- Night Flight Training

RECOMMENDED LEGISLATION

- **USE OF UNMANNED AIRCRAFT SYSTEM BY LAW ENFORCEMENT AND PUBLIC SAFETY**
  - **Protecting emergency responders from liable for any damages during a mission and defining the gathering of evidence in a criminal investigation.**

- **OBSTRUCTING EMERGENCY PERSONNEL WHILE USING AN UNMANNED AIRCRAFT SYSTEMS**
  - **Recommendations around obstructing a peace officer, firefighter, emergency management personnel, medical service provider, or designated mission volunteer.**

- **CHAPTER 423**
  - **Recommendations around the term “Capture and “Surveillance” and their definitions.**

- **USE OF UNMANNED AIRCRAFT IN EMERGENCIES AND DISASTERS**
  - **Recommendations on acquiring information through the operation of an unmanned aircraft system, and disclose of information acquired through the operation of an unmanned aircraft system, for the purpose of search and rescue activities.**

RECOMMENDED LEGISLATION

- **PUBLIC SAFETY UNMANNED AIRCRAFT INTERFERENCE**
  - **Recommendations around penalties for interfering with emergency responder personnel while they are performing or attempting to perform their individual's official duties.**

- **INVESTIGATIONS OF CRIMES AND ACCIDENTS WHILE USING UNMANNED AIRCRAFT**
  - **Recommendations around acquiring information through the operation of an unmanned aircraft system, and the disclosure of information acquired through the operation of an unmanned aircraft system, for the purpose of reconstruction of a specific crime.**

- **911 AERIAL MAPPING; EMERGENCY SERVICES USES**
  - **Recommendations around the use of 9-1-1 mapping services to enhance the dispatch of emergency services to someone seeking emergency assistance.**

- **PUBLIC SAFETY TRAINING IN THE USE OF UNMANNED AIRCRAFT**
  - **Recommendations around the acquisition of information through the operation of an unmanned aircraft system and the data management associated with it.**

FEMA / CAP

- CAP and FEMA see a benefit to having sUAS response capabilities during times of disasters.
- Regional CAP sUAS teams will respond to support state or federal level response efforts to a catastrophic event.
- Local training within the Wings, using the Wing's issued equipment and software, to exercise the operational, product delivery portion of these disaster missions.
- CAP sUAS Teams will work closely with FEMA and TDEM recommendations for training and deployment as needed.

QUESTIONS

UAS Workforce Steering Committee

Presentation to the UAS Safety & Integration Task Force

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

JUNE 30, 2020

UAS Workforce Steering Committee

- Partnership between FWISD, COG, UASWERX
- Supported by TEA Grant
- Integrated 3 Initiatives
  - -FWISD Grant Project
  - -COG Training Task Force
  - -UASWERX Training Academy

Fundamental Goal/Objective

Engage business & industry; education; and workforce development to develop a strategic approach to provide the skilled, trained, educated workers needed to support the UAS Sector.

Current Resource Support

- Council of Governments Taskforce
- Texas UASWERX
  - Training Academy
  - Test Center
- TEA Grant
- State & Federal Agencies
  - Policy
  - Funding
- Universities
  - Research
  - Curriculum/Degrees

Premise

- Identify the need
- Identify what training & curriculum we have to meet the need
- Identify what we need and don’t have
- Develop what we don’t have to meet the need

Two Working Groups Established

1. Education

The Education Group is focused on assessing all the training, curriculum, courses, and degrees relevant to UAS

2. Workforce & Industry

The Workforce & Industry Group is focused on assessing the skills, competencies & knowledge relevant to UAS

Education

Lead – Fort Worth ISD (Daphne Rickard)

- Independent School Districts
- Community Colleges
- Universities
- Regional Education Service Centers

- Crowley ISD
- Kelly ISD
- Fort Worth ISD
- Mineral Wells ISD
- Northwest ISD
- ESC-Region 10
- ESC-Region 11
- Dallas College
- TCC
- Ranger College
- Weatherford College
- UTA-College of Business
- UTA-College of Engineering
- UNT Dallas

Workforce & Industry

Lead – COG Training Taskforce (Wes Jurey)

- Local Workforce Boards
- Non Profit Employer Organizations
- Business & Industry Partners
- Cities & Airports

- North Central Texas Workforce Investment Board
- Inter-Link
- Workforce Solutions
- Mineral Wells Airport
- UASWERX
- Council Of Governments
- Airbus
- Bell
- Genesys
- L3
- Lockheed Martin
- NewCastle
- Martin UAV
- Beck
- Texas Instruments
- AirTractor
- Tech Labs
- City of Mineral Wells

Sequential Action Steps

Phase 1 – Identify what is needed

Phase 2 – Identify what is currently available – from public education, higher education, the workforce system, and vendor community

Phase 3 – Identify & define the scope of skills, competencies & knowledge the industry will need in the foreseeable future

Phase 4 – Identify what we need but don't have – certificates, certifications, courses, degrees, etc.

Phase 5 – Develop a plan to meet the demand

Informational Resources

Market Research

- Documenting current market research, relative to the UAS Sector.
- It will be made available for review in Google Documents

We have 6 reports currently available:

- 11 Facts on UAS Industry
- NDIA: $98 Billion Expected for Military Drone Market
- Accenture: It's Time for Flying Robots
- Goldman Sacs: Drones Flying into the Main Stream
- PwC: Drone Industry Clarity From Above
- ASTM International: The Promise of Urban Air Mobility

Project Status

A. Working Groups Launched – January 2020

B. Scope of Work established – February 2020

C. Resource identification launched – February 2020
   - Education & Industry/Workforce Groups began

D. Federal Research Assessed – April 2020

E. Industry Workgroup to begin identifying Sector Needs – June 2020

Request for Input & Participation

CONTACTS

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Education Group
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Ehuffman@nctcog.org

NCTCOG Automated Vehicle Department Update

UAS Safety and Integration Task Force

June 30, 2020

Automated Vehicle (AV) Program 2.0

Regional Planning for Transportation Automation [$1.5M]

- Identify mobility gaps/challenges
- Scenarios where AVs may help
- Policy recommendations

AV Deployment Cost Support [$10M]

- Provide financial support for public agencies partnering on private sector AV deployment
- Ensures all DFW communities can be effective AV partners

AV Strategic Investment [$20M]

- Identify AV use cases/communities that need support
- Invest in AV services to serve community mobility needs

Automated Vehicle Planning RFP Issued

Purpose: “NCTCOG is requesting written proposals from consulting firms to conduct a planning process to help the North Texas region prepare for automated transportation, such as automated vehicles, and related technologies.”

Link: https://www.nctcog.org/trans/funds/overview/planning-process-to-help-n-tx-region-prepare-for-a

Vendor questions deadline: July 27

Proposals due: August 7

~$1M budget

Defense Manufacturing Community Support Program: Purposes

1. “Undertake long-term investments in critical skills, facilities, research and development, and small business support in order to strengthen the national security innovation and manufacturing base.”
2. “Ensure complementarity of those communities so designated with existing defense manufacturing institutes.”
3. “Recognize communities that demonstrate best practices in attracting and expanding defense manufacturing.”
4. “Build a self-sustaining ecosystem that attracts private investment from new and existing manufacturers and leads to a broad-based increase in manufacturing resilience.”

Grant Application Elements

R&D: $2.5 DoD funding leverages $10M in R&D on projects at intersection of defense/transportation technology.

DMC: Targeted Strengthening

1. Software skills: Avionics, Power/Propulsion, Energy
2. Software factories
3. Supply chain visibility
4. Cybersecurity certification
5. UAS pilot certification/simulation tech

North Texas Defense Manufacturing Consortium: Organization

Initial members: Those who sign Letter of Commitment

NCTCOG chairs; provides administrative support

Texas Research Alliance provides technical support with help from representatives from each sector—e.g., industry, education

Quarterly meetings

Bylaws/minutes

Timeline

7/1: Draft Application and Commitment Letter circulated to team

7/2: Team comments on draft Application and Commitment Letter due

7/8: Commitment Letter signed; Support letters due

7/10: Application filed

8/15: DoD announces defense manufacturing community designations

Contacts/Reference

Thomas Bamonte
Clint Hail
Ernest Huffman
Dan Kessler
Kyle Roy
Amanda Wilson

Texas Research Alliance: Victor Fishman

Grants.gov page: https://www.grants.gov/web/grants/view-opportunity.html?oppId=319238

North Texas UAS Safety and Integration Task Force

Next Steps

June 30, 2020

UAS
Unmanned Aircraft Systems
Safety + Integration

Task Force Conference Involvement Survey

This year, the DFW region is hosting both the AUVSI Xponential 2020 and the InterDrone Conferences.

We believe this is a great opportunity to gain exposure for the Task Force.

This survey is meant to gauge Task Force Members' interest in participating and at what level.

Survey Deadline – July 10

Working Group Meetings

Schedule – July 7, 2020

1. Education and Public Awareness – 9:00 am to 10:00 am
2. Legislation – 10:30 am to 11:30 am
3. Training – 1:00 pm to 2:00 pm
4. Integration – 2:30 pm to 3:30 pm

Education and Public Awareness Working Group

The Education and Public Awareness working group was established to help educate the general public on drone technology and to improve public perception on the use of the technology platform.

❖ Goals

1. Reduce the number of reckless drone flights
2. Enhance community UAS education
3. Educate the regional police force on UAS activities, opportunities, and resources
4. Educate communities near airports/military bases on safe operations and restrictions
5. Promote the FAA Know Before You Fly Campaign

Activities

1. Know Before You Fly workshops
2. Safety brochures
3. Task Force website
4. Outreach events
5. Safe places to fly

Legislative Working Group

The Legislative working group was established to support the development of local, state and federal regulations that create a safe and viable environment for automated drone operations.

❖ Goals

1. Develop and support Texas State laws that create a safe and viable environment for autonomous UAS
2. Support federal regulations and rules that create a safe and viable environment for automated drone operations
3. Support safety-related UAS legislation
4. Support State legislation that mirrors federal laws
5. Collaborate on legislative strategy

Activities

1. Comment on pending UAS Legislation
2. Comment on Notice for Rule Changes from government
3. Hold general informational sessions for legislature/policy makers
4. Develop strategic legislative plan
5. Legislation for next session
    a. Critical infrastructure amendment
    b. Public safety/emergency management
    c. NCT911

Training Working Group

The Training working group was established to assist in the development and implementation of standardized drone training for all levels and help develop a UAS industry workforce.

- Goals

1. Standardized training for schools, governments, public safety and professional services
2. Create internships/externships
3. Support the development and creation of a UAS apprenticeship program
4. Assist in the development of a UAS-related school competition
5. Standardized public safety training and certifications
6. UAS industry workforce development

Activities

1. Fort Worth ISD Grant Support and UAS Workforce steering committee
2. Support the region's drone competitions
3. Internship/externship creation
4. Assisted in establishing the DCCCD Apprenticeship Program
5. Participate in Interlink Regional Employee Survey
6. PSURT certification and training
7. Inventory and create UAS training sites
8. Provide letters of support for UAS-related grants
9. Police Training Program

Integration Working Group

The Integration working group was established to support the safe integration and adoption of UAS technology region-wide.

❖ Goals

1. Assist in the establishment of a package delivery business
2. Assist in the development of Urban Air Mobility
3. Assist in the creation of the Training and Test sites
4. Assist in the development of a Weather and UAS detection network

Activities

1. Participate in NASA Working Groups
2. Collaborate on the CASA weather study
3. Facilitate city and industry pilot pairing
4. Collaborate with Lonestar UAS
5. Collaborate with Alliance Texas Mobility Innovation Zone

Join Us

- Help develop solutions
- Become part of the solutions
- Have your voice heard
- Additional exposure
- Gain more information
- Additional networking

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