



WATERJET TECHNOLOGIES

PRESENTED BY:

Kofi Barkoh, General Manager

Michael Chaisson, Sales Manager

Nicholas Iverson, Cyclone Technology Sales Director

WATERJET TECHNOLOGIES

WELCOME TO THE NEW AGE OF INNOVATION & SERVICE

Waterjet Technologies is Texas based distributor of high pressure waterblasting accessories and systems, specializing in unique lines of products aimed at increasing productivity and safety. Waterjet Technologies offers state-of-the-art equipment from leading manufacturers that are suitable for a wide range of industrial and municipal applications.

Waterjet Technologies LLC | 8765 Spring Cypress Rd L137

Spring | Texas | 77379 | United States



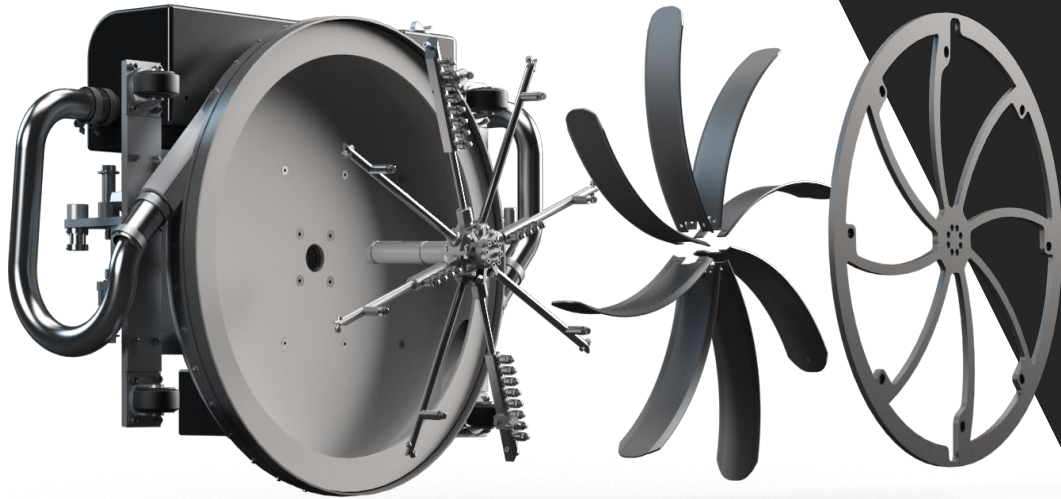
Direct: +1.832.663.6280



www.waterjet-techs.com



WATERJET TECHNOLOGIES



FASTER!

Spray nozzles rotate at 1600 rpm blasting the surface clean resulting in approximately 20,000 ft²/hr removal



GREENER!

Technologically advanced design uses only water, wind, and heat. Eliminating the use of chemicals and secondary recovery unit for waster water runoff



CLEANER!

The multi-patented Cyclone cleaning head revitalizes the surface creating a consistent unrivaled result

HARD SURFACE CLEANING SYSTEMS



CY5X00

- Purpose built; operator driven system
- Full Recovery and Recycle Capabilities
- Hydraulically adjustable operating pressure up to 5500 psi
- 34" cleaning Path
- Up to 20,000 ft²/hr
- 390 Gallon supply/recovery tanks



SK/SK2

- Factory integrated Cyclone cleaning system
- Full Recovery and Recycle Capabilities
- Manually adjustable operating pressure up to 3600 psi
- 18" cleaning path
- Up to 12,000 ft²/hr



TR5X00

- Trailer mounted Cyclone System that meets (US DOT standards)
- Full Recovery and Recycle
- Manually adjustable operating pressure up to 3600 psi
- 18" cleaning path
- Up to 12,000 ft²/hr

CYCLONE TECHNOLOGY LOW PRESSURE PRODUCT FOCUSED MARKET GROUPS



CY5X00

- Municipalities
- Transportation (Road and Bridge)
- Airfield Maintenance
- Pervious Concrete Maintenance
- Parking Authorities



CY5X00SK

- College Campuses
- Emergency Spill Response
- Port Authorities
- Military and Defense
- Property Management
- Facilities Management



TR5X00

- Event Venues
- Athletic Complexes
- Transit Authorities
- Glycol Recovery
- Parks and Recreation
- Fuel Station / Retail

CY5X00 CASE STUDIES

PACIFIC LUTHERAN UNIVERSITY, TACOMA, WA USA



Walkway and common area clean up with no water runoff or impact to students

UCLA ATHLETIC TRACK, LOS ANGELES, CA USA



Sports Facility beautification and Maintenance

MEDICAL CENTER PARKING GARAGE, NASHVILLE, TN USA



Infectious disease control with heated water and full recovery in medical center parking

SEAWORLD, SAN DIEGO, CA USA



Ideal for after hours cleaning in amusement parks and facilities

SK CASE STUDIES

TEMPE TRANSPORTATION DEPOT, TEMPE, AZ USA



Municipal Cleaning of surface
tire markings, dirt, grease, and
oil

MUNICIPAL SIDEWALK, TACOMA, WA USA



Introduced heated water to
remove contaminants and
stains from sidewalks

PARKING GARAGE, PHOENIX, AZ USA



Parking garage cleaning and
marking renewal

LOADING DOCK, ISSAQUAH, WA USA



Organic growth removal to
reduce slip hazards and
increase traction

TR5X00 CASE STUDIES

HIGH POINT COMMUNITY SEATTLE, WA USA



Pervious sidewalk cleaning and rejuvenation

FAST FOOD DRIVE THRU, CHARLOTTE, NC USA



Introduced heated water to remove contaminants and stains from sidewalks

CARLTON FORGE WORKS, LOS ANGELES, CA USA



Industrial cleanup in confined areas

UCLA ATHLETIC TRACK, LOS ANGELES, CA USA



Self Propelled Axle increases ease of use

CY5X00 CASE STUDIES

CONROE REGIONAL AIRPORT

BEFORE



- Mold buildup
- Dirt deposit

AFTER



- Mold Removed
- Dirt Deposit Removed

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QUESTIONS

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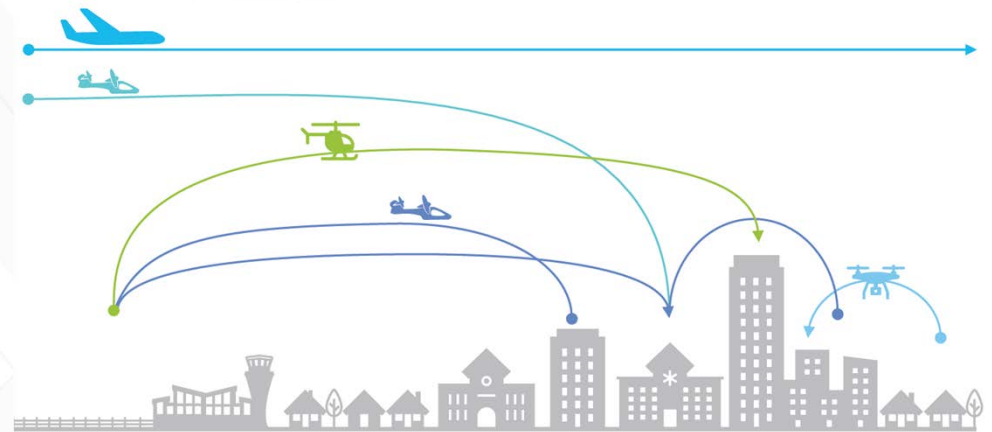
Electric Aircraft & Airports

Mead
& Hunt

APRIL 7, 2022

Agenda

- Vehicles and Infrastructure
- Planning Considerations
- FAA Coordination/Guidance
- ACRP Guidance



Key Terms

- **AAM – Advanced Air Mobility**
- **ADG – Aircraft Design Group**
- **eCTOL – Electric Conventional Takeoff and Landing**
- **eVTOL – Electric Vertical Takeoff and Landing**
- **FAA – Federal Aviation Administration**
- **RAM – Regional Air Mobility**
- **UAM – Urban Air Mobility**
- **UAV – Uncrewed Aerial Vehicle**



Vehicles and Infrastructure

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Vehicles

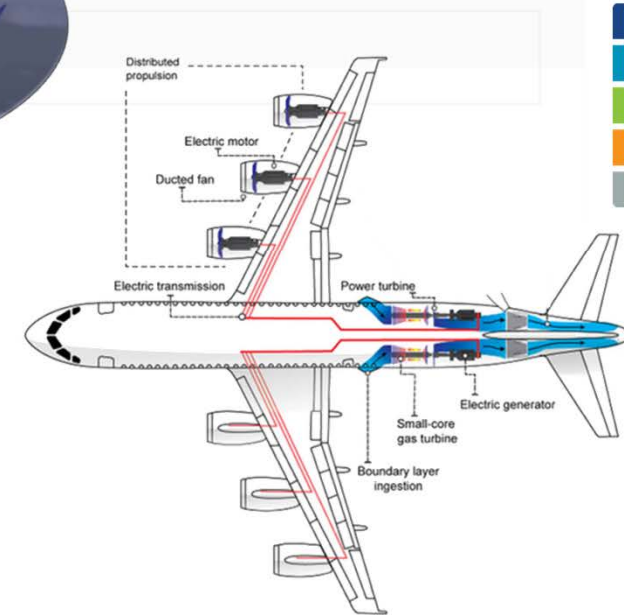
Electric AAM and eVTOL



New Fixed Wing Designs, eCTOL



Hybrid-Electric Aircraft



UAVs



Existing Design, New Engine



Certification Status

→ In five years

- ADG I and II fixed wing and eVTOL
- General aviation, air taxi, small cargo

→ Beyond five years

- Designs larger than ADG II
- Air carrier
- Hybrid, hydrogen, and sustainable aviation fuels vs. pure electric



Certification Status



Pipistrel Velis



BETA Alia 250



Wright Spirit



Airbus Zero E

	2020	2025	2030	2035	2040	2045	2050
Commuter » 9-19 seats » < 60 minute flights » <1% of industry CO ₂	SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF
Regional » 50-100 seats » 30-90 minute flights » ~3% of industry CO ₂	SAF	SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF
Short haul » 100-150 seats » 45-120 minute flights » ~24% of industry CO ₂	SAF	SAF	SAF	SAF potentially some Hydrogen	Hydrogen and/or SAF	Hydrogen and/or SAF	Hydrogen and/or SAF
Medium haul » 100-250 seats » 60-150 minute flights » ~43% of industry CO ₂	SAF	SAF	SAF	SAF	SAF potentially some Hydrogen	SAF potentially some Hydrogen	SAF potentially some Hydrogen
Long haul » 250+ seats » 150 minute + flights » ~30% of industry CO ₂	SAF	SAF	SAF	SAF	SAF	SAF	SAF

Source: ATAG Waypoint 2050

Near-term Capabilities

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Infrastructure

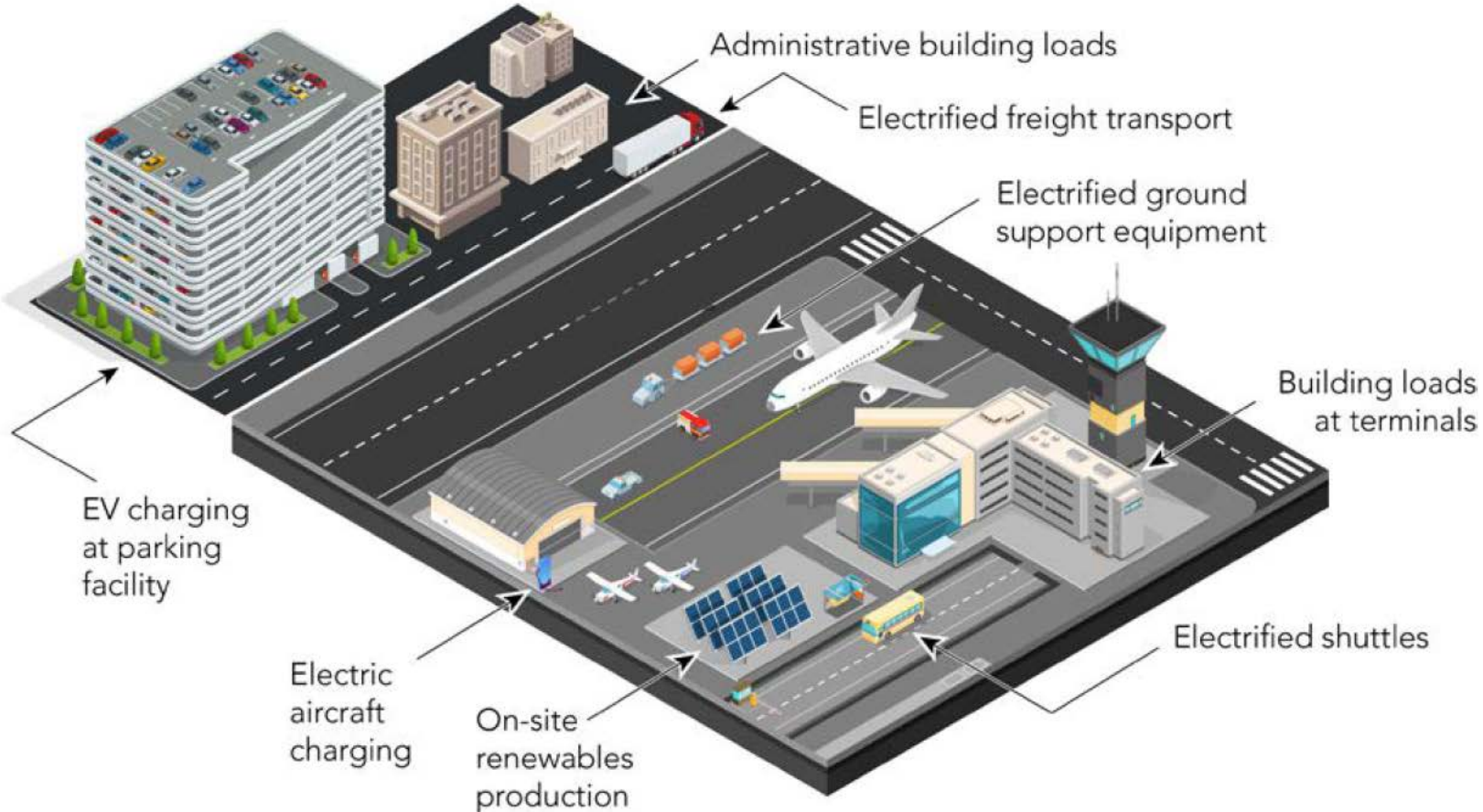




Image: National Renewable Energy Labs, 2021

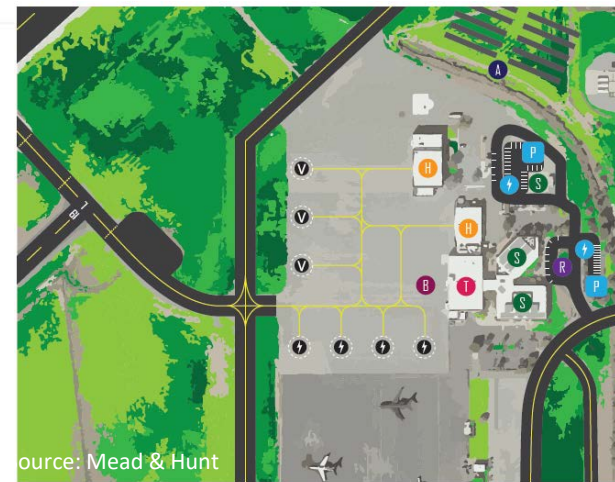
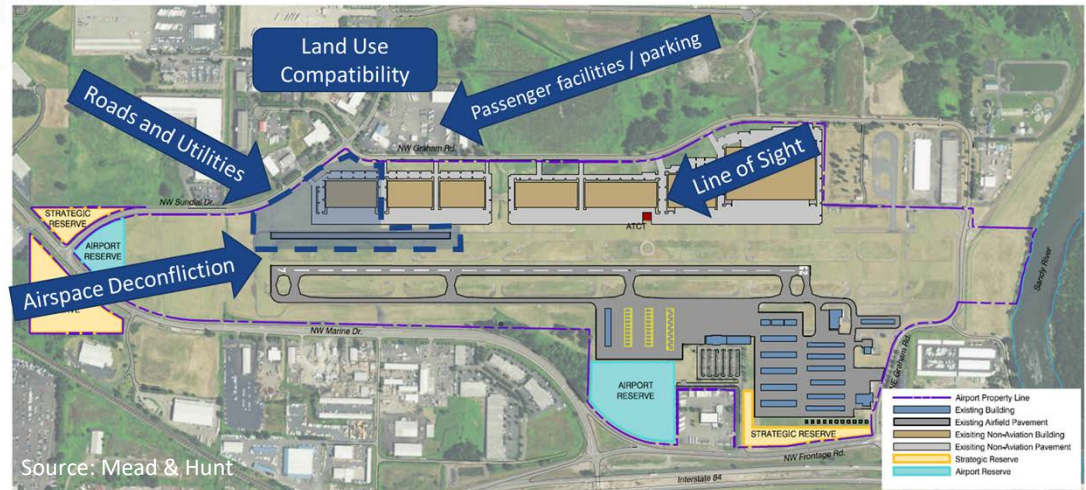


Planning & Environmental Considerations

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- ➔ **Power Supply**
 - Simultaneous charging
 - Comprehensive need
- ➔ **Airside Planning**
 - Aircraft type
 - Airfield compatibility
- ➔ **Landside Planning**
 - Transit tie-in
 - Auto parking
 - Road network
- ➔ **Environmental**
 - Noise and overflight
 - NEPA
 - Source of electricity



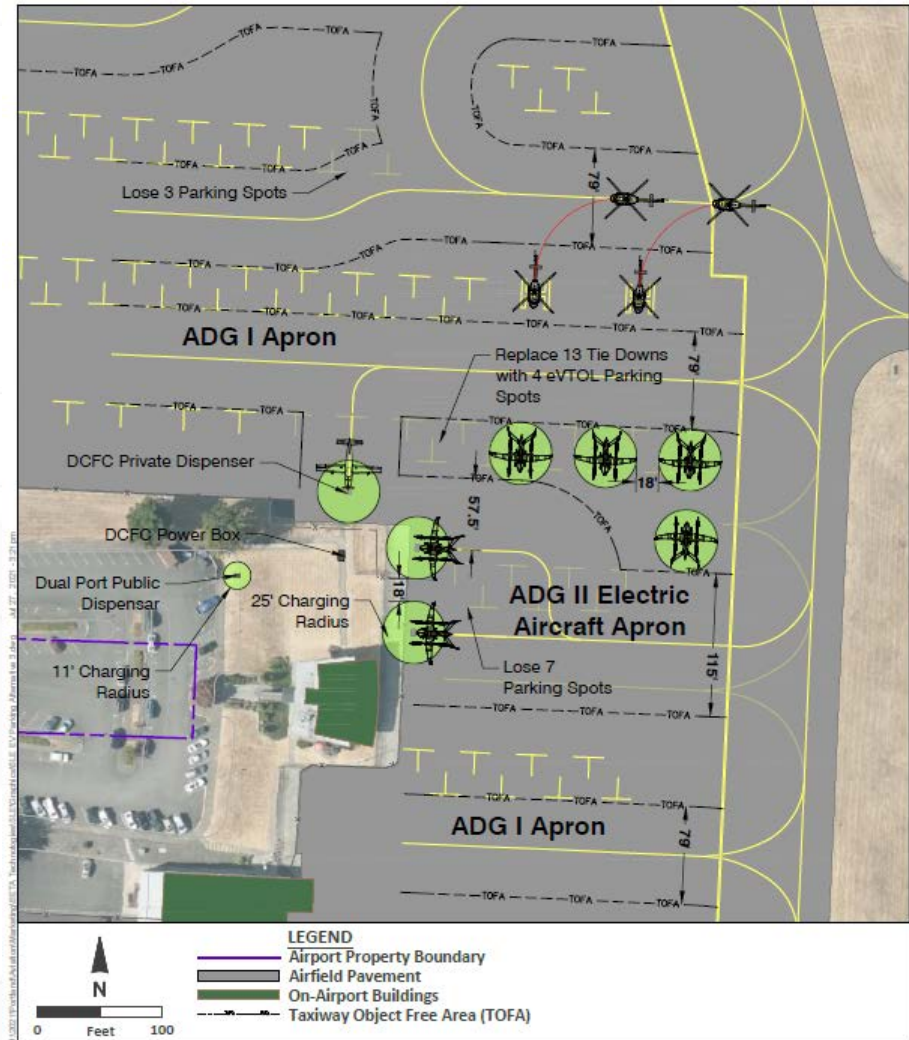
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|---|------------------|---|------------------|----|----------------|
| V | VERTIPORTS | T | TERMINAL | P | PARKING |
| C | CHARGING STATION | H | HANGAR | EV | EV CHARGING |
| E | EVTOL RUNWAY | B | BOARDING | U | UBER/RIDESHARE |
| S | SOLAR ARRAYS | R | RETAIL/AMENITIES | | |

✈️ Planning

- Distance to power
- Setbacks
- Compatibility
- Rotor wash
- Pilot services
- MRO facilities
- Car charging

✈️ Environmental

- Trenching
- Facilities
- Noise



Source: Mead & Hunt

Power Supply

- 1 megawatt of solar capacity takes 5-10 acres of solar panels
- Utility pricing may be punitive for users with inconsistent power demands



Image: National Renewable Energy Labs, 2021

FAA Coordination

- **Desktop planning**
 - Taxi and parking
 - NAVAID interference
 - Policy in development
- **Permitting**
 - ALP Pen & Ink
 - §163 (ADO/RO)
 - NEPA (if applicable)
 - 7460
- **Design and Build**
- **Implement**
 - Revenue
 - Grant assurances



Federal Aviation Administration

Memorandum

Date: June 22, 2021

To: All Airports Regional Offices and Airports District Offices

From: **JOHN R DERMODY** Digitally signed by JOHN R DERMODY
Date: 2021.06.22 18:52:46 -04'00'

From: John R. Dermody, Director, Office of Airport Safety and Standards, AAS-1

Prepared by: Keri Lyons, Airport Safety and Operations, AAS-300

Subject: Process for Submitting and Reviewing Proposed Landing Pads and Supporting Equipment for Advanced Air Mobility and Electric Aircraft

FAA Guidance

- ➔ **EB No. 105**
 - Draft format
 - Industry review until 4/18
- ➔ **Contents**
 - Design and Geometry
 - Marking, Lighting, and Visual Aids
 - Charging Infrastructure
 - On-Airport Vertiports
 - Safety Elements
- ➔ **Key Takeaways**
 - Much research to be done
 - Plan like helicopters for now

DRAFT



**Federal Aviation
Administration**

Memorandum

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Date: June XX, 2022
To: All Airports Regional Division Managers
From: Michael A.P. Meyers, P.E.
Manager, Airport Engineering Division, AAS-100
Prepared by:
Subject: Engineering Brief No. 105, Vertiport Design

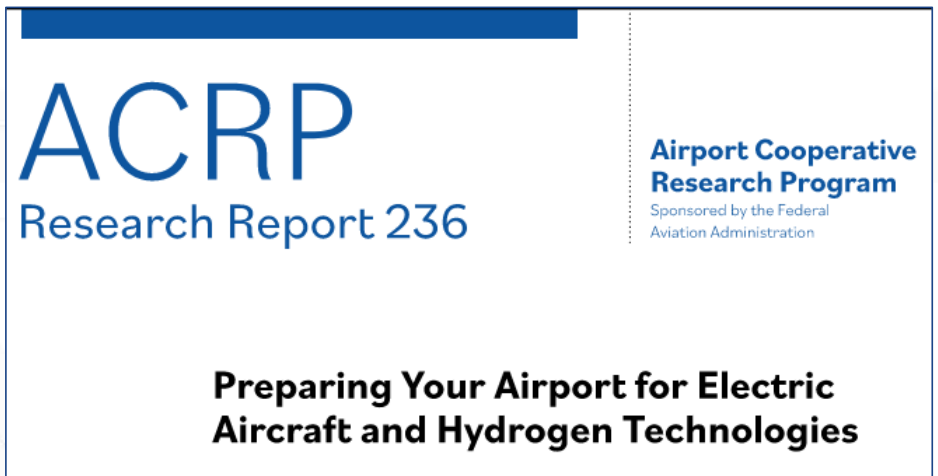
This Engineering Brief provides interim guidance to airport owner operators and their support staff for the design of vertiports for vertical takeoff and landing (VTOL) operations. Note that this interim guidance will be subject to updates as data, analysis, and VTOL aircraft and operations develop in the future.

Attachment

ACRP Guidance

- **ACRP Report 236**
 - Electric Aircraft Overview
 - Guidance
 - Toolkit

- **ACRP Project 11-02/43**
 - Community Inclusion
 - State of the Practice Scan
 - AAM Primer
 - Communication Sequencing Plan



Thank You!



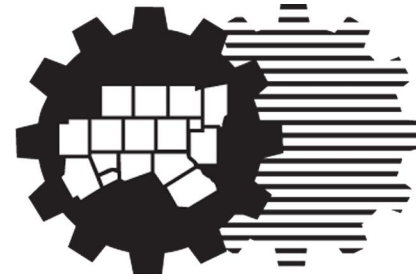
Maranda Thompson | Aviation Planning Supervisor
Maranda.Thompson@MeadHunt.com | 707.235.6106

NCTCOG Aviation Program Updates

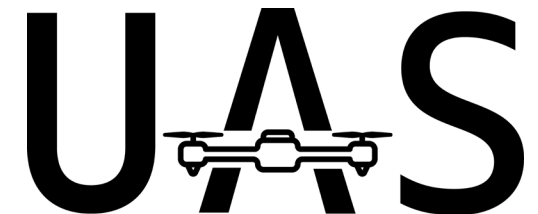
For: Air Transportation Advisory Committee

North Central Texas Council of Governments

Presented by Ernest Huffman



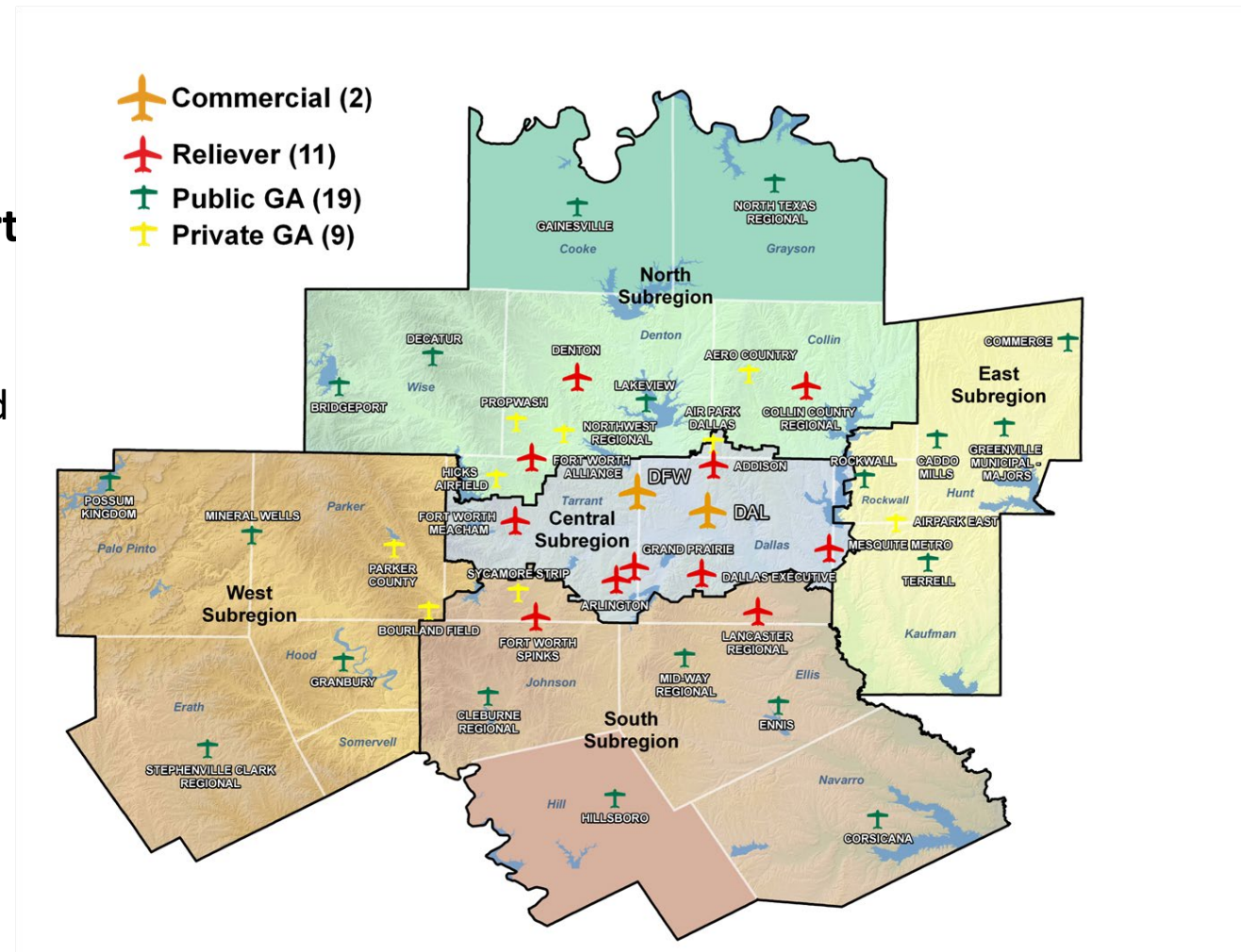
**North Central Texas
Council of Governments**



Aviation Planning

North Texas General Aviation and Heliport/Vertiport System Plan Update

- New Growth
- Need the planning to help determine how to spend the money on the streets
- Asset Classifications reanalyzed
- Advanced Air mobility Planning
- Energy Grid Planning for EVTOLS and EVs



Aviation Careers

Collaboration with FAA and NASA

Aviation Career Website and Program extension

- Funding
- Mentorships
- Expand Speakers Bureau
- Increase database of information



North Texas UAS/AAM Integration Updates

North Texas UAS Safety and Integration Task Force –May 31st

- City of LA
- Mead and Hunt – Beta Engineering Partnership
- Skyports
- NCTCOG 911 - Texas 3D Users Group Kick Off
- NASA NC Campaign 1

The NCTCOG/NASA AAM Community Planning and Integration Agreement



North Texas AAM Updates

North Texas UAS Safety and Integration Initiative Working Groups

- Education and Public Awareness - *Workshops*
- Legislation and Policy – *FAA Rule Making Comments and setting 2023 agenda*
- Training and Workforce – *Manufacturing Standards*
- Testing and Integration – *Seeking funding for infrastructure projects*
- Community Integration – *Introduction to Industry*



North Texas AAM Updates

Arlington Entertainment District Pilot Program

- Nine Cowboy Games
- 48 Drone Events
- 22 Unsafe Flights



Possible Future Collaborations

- **Choctaw Nation**
 - AAM Corridor
- **Cherokee Nation**
 - Mobile Vertiport Pad Pilot



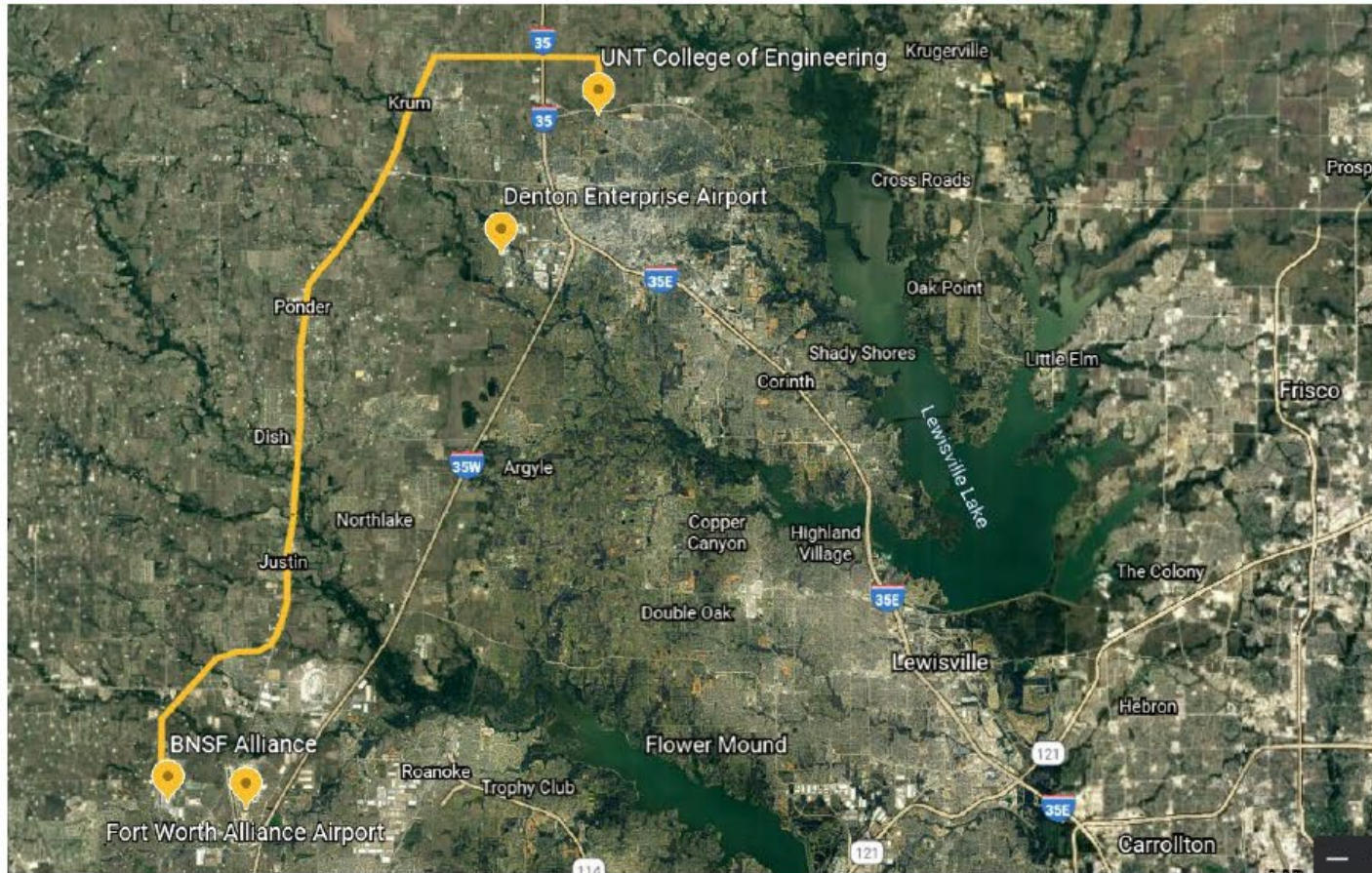
Air Rail Objectives (Update)

- **Air Rail** will build the world's first series of Air Track networks with V2V2I communications to facilitate BVLOS commercial operations of UAS and AAM assets.
- **Air Rail** will iterate a program of Air Track 'builds' in 3 phases:
 1. Main Line One from MIZ to UNT
 2. OPO Short Route from MIZ to Addison Airport (KADS)
 3. OPO Long Route from Lubbock via MIZ to KADS
- **Air Rail** will be instrumental in pushing the NASA AAM National Campaign's flight test program, and the USAF's Agility Prime eVTOL efforts, to fruition.
- **Air Rail** will inform, test and codify international standards in V2V and AAM technologies with IEEE, ASTM, GAMA and NASA



Phase 1: Main Line One

VP MIZ to VP UNT

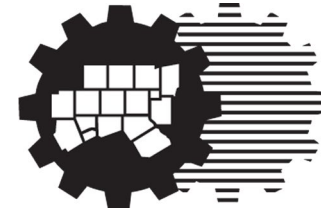


Other News

- Looking for New ATAC Vice Chair
- Currently Hiring New Planner
- Airport News?
 - Cleburne Master Plan
 - Others?

Questions/Comments?

- **Ernest Huffman**
- Aviation Education and Planning Program Manager
- North Central Texas Council of Governments
- ehuffman@nctcog.org
- (817)704-5612
- Website: www.norhtexasuas.com



**North Central Texas
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