Agile Curriculum Program

"Training a skilled workforce to meet tomorrow's rapidly changing needs"

Presented to the
Air Transportation Advisory Committee

July 7, 2022

Agile Curriculum Program
for Aviation Aerospace and Defense Manufacturing

"Training a skilled workforce to meet tomorrow's rapidly changing needs"

Agile Curriculum Program

Put in place a sustainable curriculum program founded on communication and relationship-building of, by and for the stakeholders

Develop appropriate degrees, certificates, and internship programs within educational institutions and industry that will expedite the availability of a highly skilled job ready workforce

Deliver training opportunities to upskill the current workforce to meet the ever-changing technology needs of the aviation, aerospace and defense industries

Evaluate, Expand & Sustain
- **Measure Outcomes**
- **Continuous Improvement**
- **Leverage New Assets**
- **Scale/Expand, Sustain**

Key Inputs
- **Data/Research**
- **Employer Input**
- **Relevant Stakeholder Intelligence**

Resource/ Asset Alignment
- **Secondary & Post Secondary Education, Especially CTE**
- **Adult Education**
- **Workforce Training Investment**

Knowledge Outputs
- **Occupational Skills Needs & Gaps Training**
- **Education**
- **Credentials Career Pathways Workforce Transition Opportunities**

Funding

Office of Local Defense Community Cooperation (OLDCC)

$1 Million Industry Resiliency Program Grant for the Agile Curriculum Program

The Industry Resilience program supports:

- Communities recovering from major defense contract reductions and lost jobs
- Critical military missions by building a more competitive and resilient defense industrial base and creating closer civilian-military partnerships
- Communities can use Industry Resilience resources to help respond to a local downturn or to invest in strengthening local defense industry capabilities

Agile Curriculum Program Framework

"Training a skilled workforce to meet tomorrow's rapidly changing needs"

DFW Regional Aerospace Consortium
Agile Curriculum Program Committee
Agile Curriculum Design Teams

Methodology

Agile methodology is an iterative development process that breaks down a development project into small, meaningful steps and applies a continuous improvement framework throughout.

- Benefits include frequent stakeholder feedback, significantly reduced time to develop a usable outcome, and higher quality outcomes.
- Adoption of agile methodology in curriculum development could result in training workers on content that is continuously aligned to industry needs
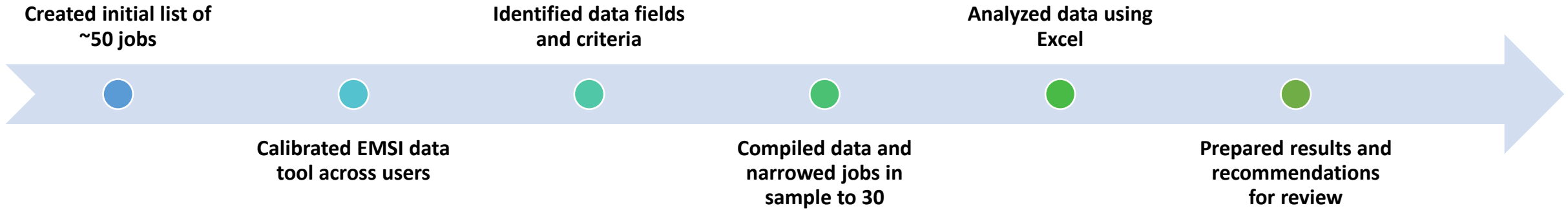
To respond to this opportunity, NTCOG brought together a cross-industry group comprised of workforce solutions, post-secondary educational institutions, and aerospace and defense companies that are members of the DFW Regional Aerospace Consortium.

Process Overview

Prioritize Workforce Gaps

+

Systematically Create Future-Oriented Training and a Cohesive Talent Base Brand

+

Recruit Education/ Training Participants Locally and Nationally

+

Connect Students with Local Companies for Paid, In-Person Internships

+

Convert Interns to Full-Time, Regular Employees

+

Connect Remaining Non-Employees with Virtual Opportunities in Other Areas of the State/Country

=

Large, High Paid Talent Base Living in North Texas & Drawing Wages from Anywhere

Strong Defense and Industry Supplier Base, Strong Economy, High Quality of Life

Data Collection & Analysis

Created initial list of ~50 jobs

Identified data fields and criteria

Analyzed data using Excel

Calibrated EMSI data tool across users

Compiled data and narrowed jobs in sample to 30

Prepared results and recommendations for review

Refinement of Industry Needs

Regional and national data was collected. Over 200 data elements were documented for 30 jobs.

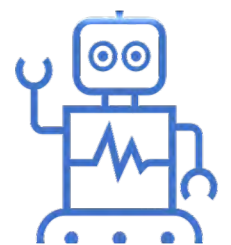Employers and Applicable Industries

Annual Compensation

Demand and Supply

Demographics

Technical and Common Skills Wanted
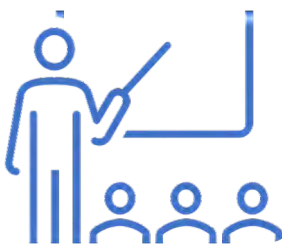
Schools Producing Graduates

Projected Growth Rates

Likelihood of Automation

Conclusions & Recommendations

Of the 30 jobs evaluated for this study, the top seven are:

- Ongoing workforce needs
- Have longevity
- Offer living wages or higher
- Will experience continued high demand
- Would create a competitive advantage for North Texas

The top two, information assurance and cybersecurity, are related (cyber is a subset of info assurance)

- They are fundamental to the ongoing expansion of technology throughout every industry and public safety as autonomous vehicles continue to grow on the ground, in the air, and space
- The supply is already lags demand and the gap will likely grow larger over time

Jobs Recommended for Final Consideration for the Pilot:

- Information assurance engineers & cybersecurity analysts
- Data engineers

Highest Job Demand with Moderate Skill Set Availability

Job Title	High Regional Demand, Low or Moderate Regional Supply Compared to the National Supply	High National and Regional Growth Rate	Above Avg to High Growth, Low Likelihood of Automation	Regional Median Compensation ($69,000 or Higher), Low Likelihood of a Job Being Automated
Information Assurance Engineers	X	X	X	X
Cyber Intelligence Analysts		X	X	X
Data Engineers		X	X	X
Data Analysts		X	X	X
Data Scientists		X	X	X
Software Developers		X	X	X
Manufacturing Engineers/Industrial Engineers		X	X	X

- In this job sample (*n* = 30), the analysis indicates that the highest priority position is information assurance engineers, which involves the protection of digital and non-digital assets. Cyber intelligence analysts (aka cybersecurity), which is a subset of information assurance focused on the protection of computer systems, networks, programs, and data is shown as a close second. At the fundamental level, the two jobs use the same skillsets and are both relatively difficult to fill.
- Within the next tier of positions, data engineers are not very prevalent, but the demand is expected to skyrocket as companies become increasingly more data savvy.
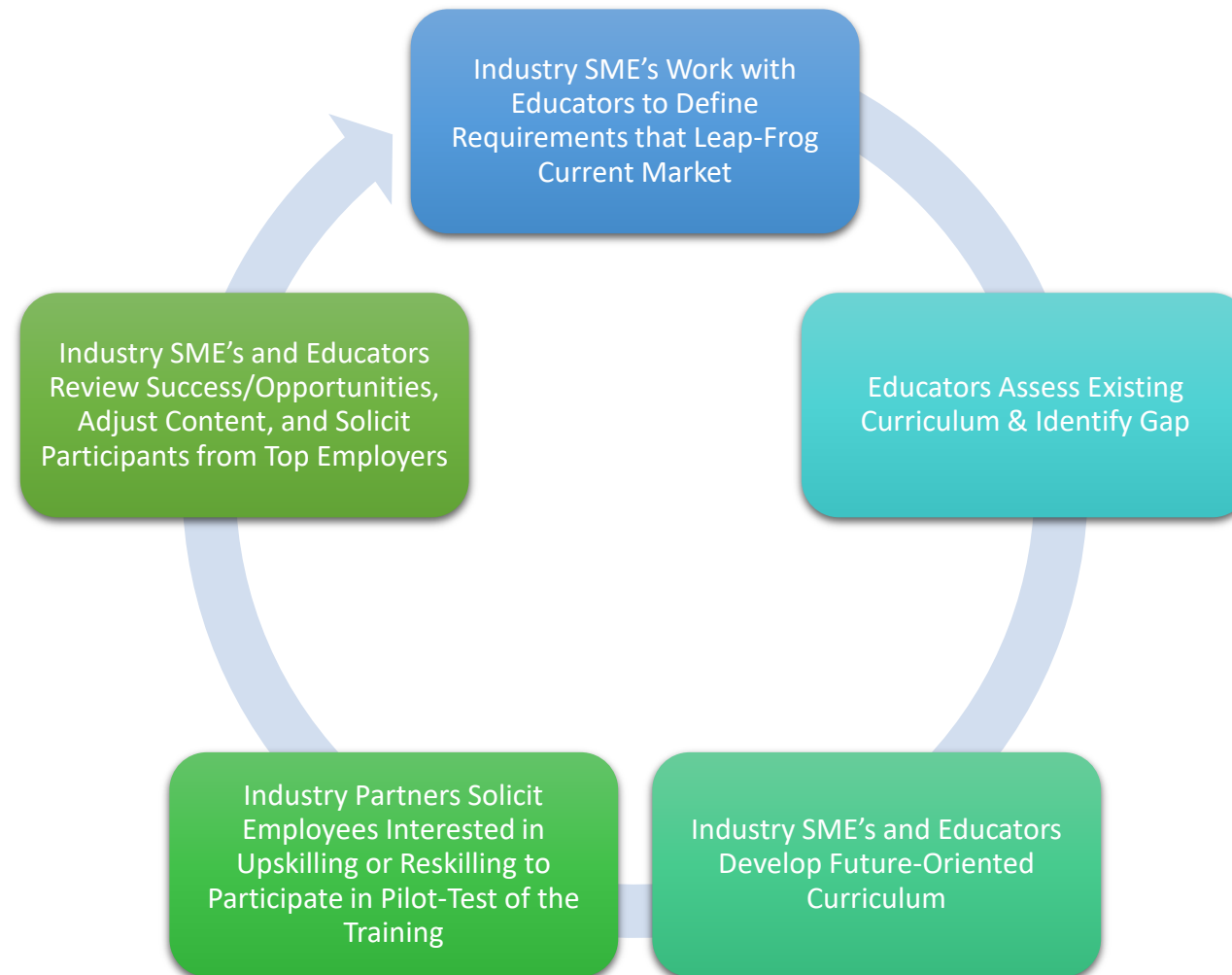- The top seven jobs are applicable to multiple industries.

A Phased Developmental Approach

- Perfect the agile curriculum development process

- Identify the peripheral components that, if changed, would make it even more successful

Pilot III: Recruit to Re-skill Employees and Train Entry-Level Undergrad/Grad Students

Goal: Train 100+

Expand Cert to Undergrad and Grad Level Degrees

Pilot Test II: Extend Cert Training to Top Employers around US

Goal: Train 50+

Pilot Test I: Reskill IT and Engineering Employees

Goal: Train 20+

Develop Cert Using Agile Curriculum Method
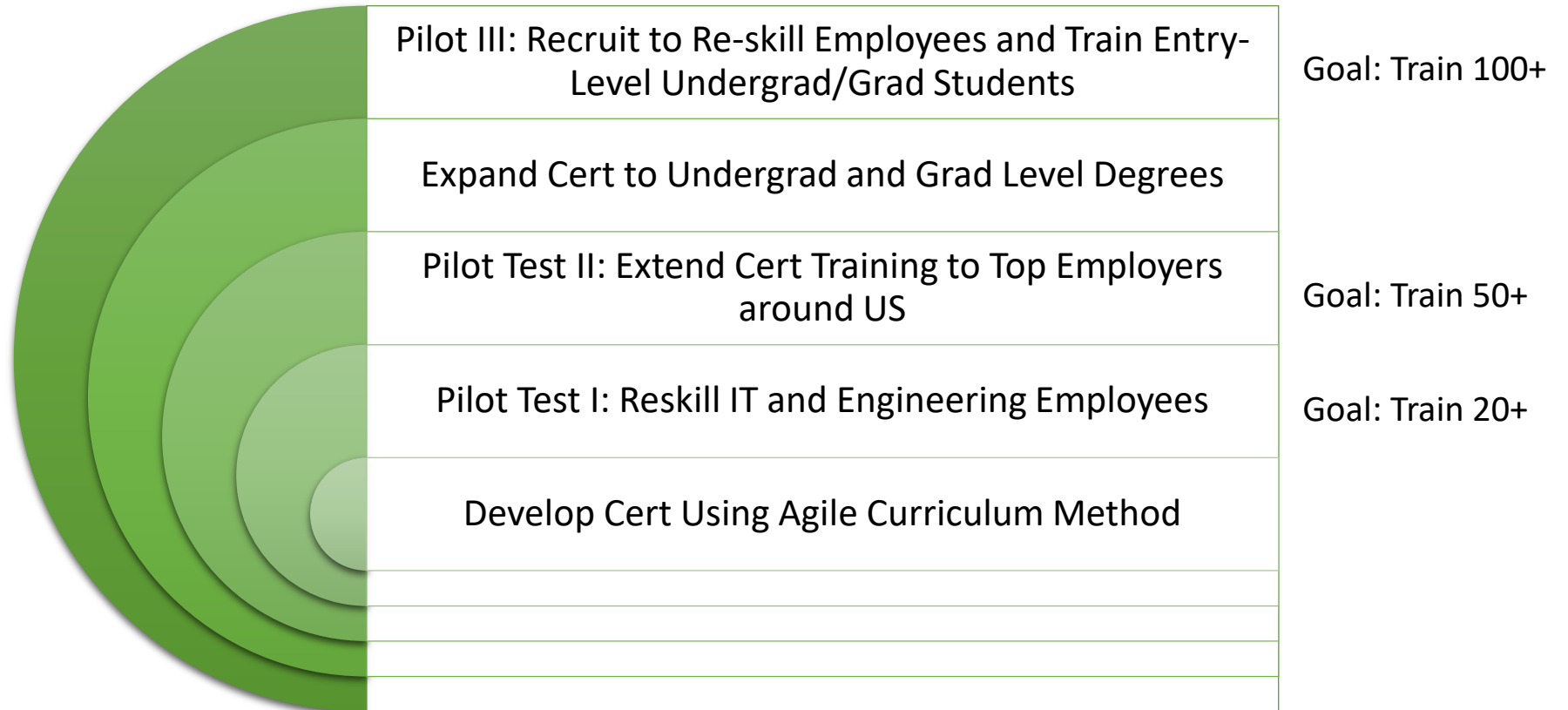
Review, Refine, & Repeat

Next Steps

Reach consensus on job(s) to include in agile curriculum development pilot

- Information assurance engineers/Cybersecurity analysts OR
- Data engineers

Reach consensus on the workforce population and goal that should be targeted for the curriculum (e.g., upskilling existing workers, existing students, military veterans, high school graduates not attending college, etc.)

- Upskill/Re-skill

Formalize committee for developing the curriculum using the agile methodology

- Identify the stakeholders that will participate in the development

Create a recruiting and marketing strategy to:

- Bring talent from other states for training
  - Identify states with highest demand, lowest supply, and lack of schools producing graduates
- Broaden list of companies that provide internships for the selected job(s) and have high conversion rates to full time, regular jobs

For future opportunities

- Identify and include additional jobs in analysis to create a ready-made list of workforce development priorities

Agile Curriculum Program Committee

"Training a skilled workforce to meet tomorrow's rapidly changing needs"

Organizations
Workforce Solutions for Tarrant County
NCTCOG
North Texas Center for Mobility Technologies
North Texas Commission

Colleges & Universities
Dallas College
Tarrant County College
Texas A&M University
University of Texas at Arlington

Aviation, Aerospace, & Defense Industries
Bell
CAE
Elbit Systems of North America
Lockheed Martin
Raytheon Technologies

The Benefits of Employing Autistic and Neurodiverse People

North Texas Air Transportation
Advisory Committee

July 7, 2022

Bottom Line:

It's Good for Business!!!

Our Agenda

- Introduction to Autism
- Business Benefits for Hiring People on the Autism Spectrum
- Career Opportunities in the Aerospace/Aviation/Airport Fields
- Accommodations for Successful Employment
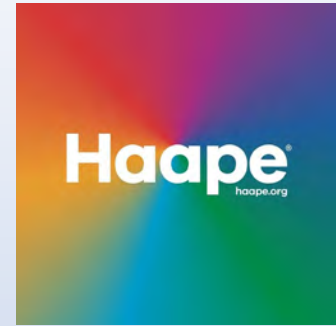
Who is Speaking Today?

- HAAPE (Helping Adults with Autism Perform and Excel is an all volunteer 501(c)(3) non-profit organization that focuses on meaningful and sustainable employment for people on the autism spectrum (www.haape.org) Larry Rothman, PhD is the Chairperson

- Aviation Concepts is a global provider of quality aircraft spares, Aviation Concepts, Inc. is a leader in worldwide distribution. Our vast experience has led to quality approvals and strong business partnerships with over 150 airlines worldwide, nearly every major and regional air carrier as well as FBO's, and distributors worldwide. (https://aviationconcepts.com/) Dean Wood is CEO

- The de Moya Foundation is a 501(c)(3) non-profit organization that is committed to creating employment opportunities for young adults with unique abilities by building long term partnerships with the employers and providing support for the employees. (https://demoyafoundation.com/) Alexandra Murray is Program Director and Employment Specialist

Executive Overview

Hiring autistic people is good for business!

- Productivity

- Profitability

- Company Loyalty

- Employee Retention

- Tax Incentives

- Customer Preference

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Autism in a Nutshell

Estimated Autism Prevalence 2018

CDC increases estimate of autism's prevalence by 15 percent, to 1 in 59 children
Autism Speaks calls on nation's leaders to adequately fund critically needed research and support services

- 1 in 44 Births (CDC, 2018), likely 1 in 30-35 in 2022
- Autism Spectrum Disorder (ASD) is a developmental disability caused by differences in the brain
- People with ASD may behave, communicate, interact, and learn in ways that are different from most other people.
- There is often nothing about how they look that sets them apart from other people.
- It may be considered a "hidden disability" or "unique ability"

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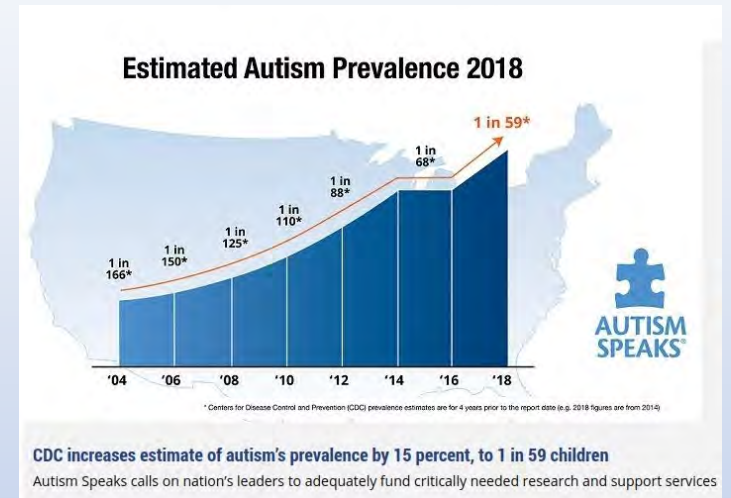
Business Benefits of Hiring People with Disabilities

- *Companies actively employing people with disabilities have:*

  - *89% higher retention rates,*
  - *72% increase in employee productivity*
  - *29% increase in profitability.*

  - *Source: Inclusively*

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The IRS Allows for Major Tax Credits and Deductions for Hiring Someone with Autism

- **Disabled Access Credit**

The **Disabled Access Credit provides a non-refundable credit for small businesses** that incur expenditures for the purpose of providing access to persons with disabilities. An eligible small business is one that earned $1 million or less or had no more than 30 full time employees in the previous year; they may take the credit each and every year they incur access expenditures. Refer to Form 8826, Disabled Access Credit PDF (PDF), for information about eligible expenditures.

- **Barrier Removal Tax Deduction**

The Architectural Barrier Removal Tax Deduction encourages businesses of any size to remove architectural and transportation barriers to the mobility of persons with disabilities and the elderly. **Businesses may claim a deduction of up to $15,000 a year for qualified expenses for items that normally must be capitalized.** Businesses claim the deduction by listing it as a separate expense on their income tax return. Also, businesses may use the Disabled Tax Credit and the architectural/transportation tax deduction together in the same tax year, if the expenses meet the requirements of both sections. To use both, the deduction is equal to the difference between the total expenditures and the amount of the credit claimed.

- **Work Opportunity Tax Credit**

The credit provides employers incentives to hire qualified individuals from these target groups. The **maximum tax credit ranges from $1,200 to $9,600, depending on the employee hired and the length of employment.** The credit is available to employers for hiring individuals from Certain target groups who have consistently faced significant barriers to employment. This includes people with disabilities and veterans

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Employment Strengths of Individuals with Autism

- ☐ **Excellent attention to detail**
- ☐ **Excellent rote memory**
- ☐ **Ability to wholly absorb facts**
- ☐ **Extremely focused**
- ☐ **Propensity for innovation**
- ☐ **Rules and routine oriented**
- ☐ **Accuracy**
- ☐ **Kind-hearted**
- ☐ **Loyal**
- ☐ **Honest**

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Employer Benefits by hiring people with autism

☐ **Qualified, well-educated candidates to fill hard-to-hire for jobs**

☐ **Improved managerial, communications, and team-building skills**

☐ **Showcased innovation**

☐ **Increased employee engagement**

☐ **Regulatory compliance mandates**

☐ **Improved workforce diversity**

Source: https://www.integrateadvisors.org

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JP Morgan Chase has enjoyed tremendous success hiring autistic people

- "I firmly believe that companies could always benefit from having employees who see things in an unconventional way, which is something to remember any time an individual on the spectrum is seeking a job."

- **"Our autistic employees achieve, on average, 48% to 140% more work than their typical colleagues, depending on the roles,"**

- "They are highly focused and less distracted by social interactions."

- "There's talent here that nobody's going after."

- While job opportunities at Chase started in tech-related jobs like software engineering and code writing, the categories have expanded. Today, openings for personal bankers and problem-resolution specialists are filled, with the highest-level autistic employee brought in at the vice president level.

Quotes from: James Mahoney, Executive Director and Head of Autism at Work for JPMorgan Chase

CAREER OPPORTUNITIES FOR PEOPLE ON THE SPECTRUM IN THE AEROSPACE/AVIATION INDUSTRY

DEAN WOOD, PRESIDENT AVIATION CONCEPTS
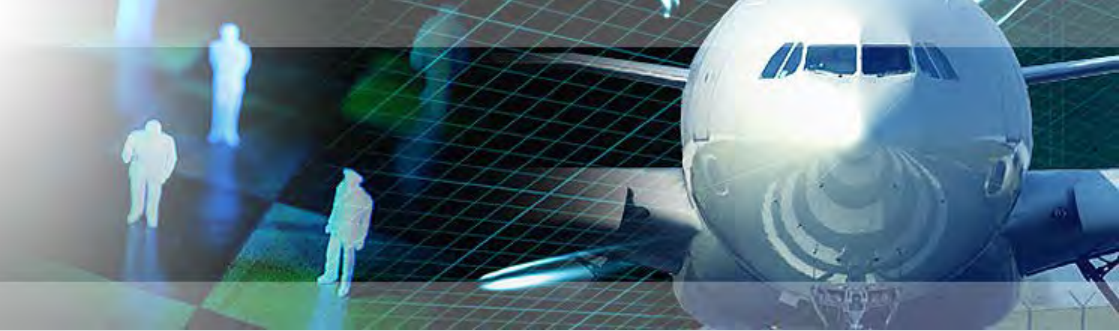
- Founded 30 years ago at FLL/MIA

- A global provider of quality aircraft spares

- A leading industry supplier of replacement parts and inventory management services for Airbus and Boeing commercial aircraft

- More than 50,000 line items valued at over $40 million

- Over 200 Years of combined Aviation Expertise from our Management Team

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Consignment Options

Aircraft Teardown

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Repair Management
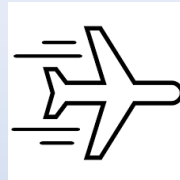
I joined the HAAPE Board of Directors in 2019 to build depth and bring attention within aviation community.

A 2017 study showed that individuals with autism may have a natural propensity for Avionics Repair.

In 2020, aviation jobs and opportunities slowed, so we turned the focus additionally to Supply Chain / Logistics jobs certifications and jobs.
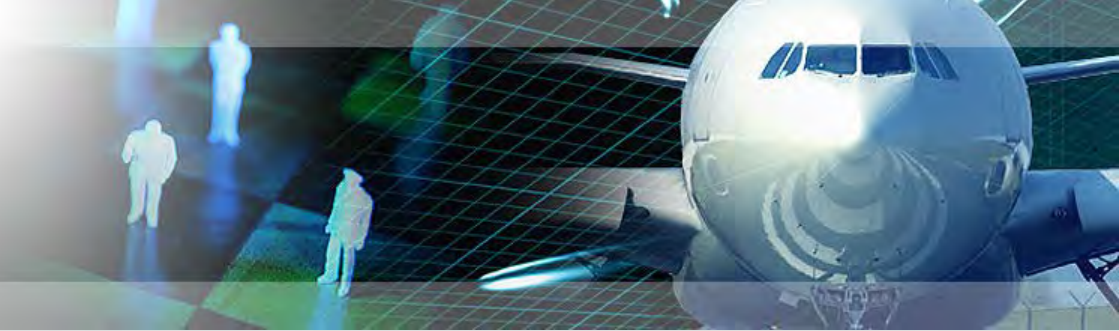
Boeing Neurodiversity Hiring Initiative

Realizes: A different perspective or an alternative communication style can be a great asset to any employer, yet because of standard recruitment processes and management practices, many people on the autism spectrum or with other neurodivergence face systematic barriers to accessing and maintaining employment.

Boeing Defense, Space Security Fabrication Electrical Center (Mesa, AZ) in 2021 received certification as a Certified Neurodiverse Workplace.

Boeing Ridley Township, PA facility launched and Autism at Work pilot program. The pilot's mission was to develop a reliable and repeatable hiring model that is inclusive of individuals with autism and leverages their key capabilities and expertise. The successful pilot led to three new hires, with the scalable model planned for application across the Boeing enterprise.

Currently seeking

Software Test Engineer
Structural Analysis Engineer
Static Analysis Assistant
Mid-Level Cloud Security Engineer

Ramp Service Employee
Shipping & Receiving Specialist
Mid-Level Quality Inspector
Supplier Quality Specialist

Beyond Boeing

MIA-based MRO Facility for Landing Gear, Hydraulics, Pneumatics, Power Generation and Avionics and Accessories

Certified Autism-Friendly Workplace

Has hired 3 of HAAPE's candidates so far, with a projection to hire 10-20 more.
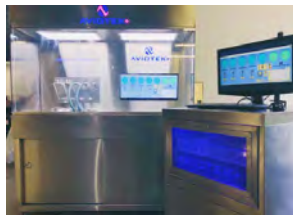
FLL-based MRO facility for Instruments, Avionics, Electro-Mechanical, Pneumatic and Hydraulics components

Pilot program with Broward County Schools to bring in 8 candidates + a Job Coach and Teacher, as unpaid internships for 1-year. A FREE program underwritten by Broward County with no obligation to hire at the end of the year.

Aviation, Aerospace, and Supply Chain Jobs for Neurodiverse Individuals

TSA Bag Scanner
Shipping & Receiving
Inventory Control Clerk
Quality Inspector
Avionics Repair Technician
IT Service Desk
Reach Truck Operator
Aviation Technical Writer
Technical Librarian
Transportation Planner
Transportation Specialist

Business Analyst
Commodity Specialist
Demand Planning Manager
Director of Global Procurement
Director of Logistics & Distribution
Director of Operations
Director of Supply Management
Distribution Manager
Global Sourcing Manager
Import/Export Specialist
Logistics Analyst
Supply Planner

Operations Manager
Plant Manager
Process Improvement
Manager
Production Planner
Project Manager
Purchasing Manager
Quality Systems Auditor
Sourcing Specialist
Strategic Procurement
Manager
Supply Chain Manager

KEYS TO SUCCESS IN SUPPORTING PEOPLE ON THE SPECTRUM IN THE AEROSPACE/AVIATION INDUSTRY

ALEXANDRA MURRAY, PROGRAM DIRECTOR, THE DEMOYA FOUNDATION

THANK YOU

Contact:

Larry Rothman, PhD

1.732.586.7367

L.Rothman@haape.org
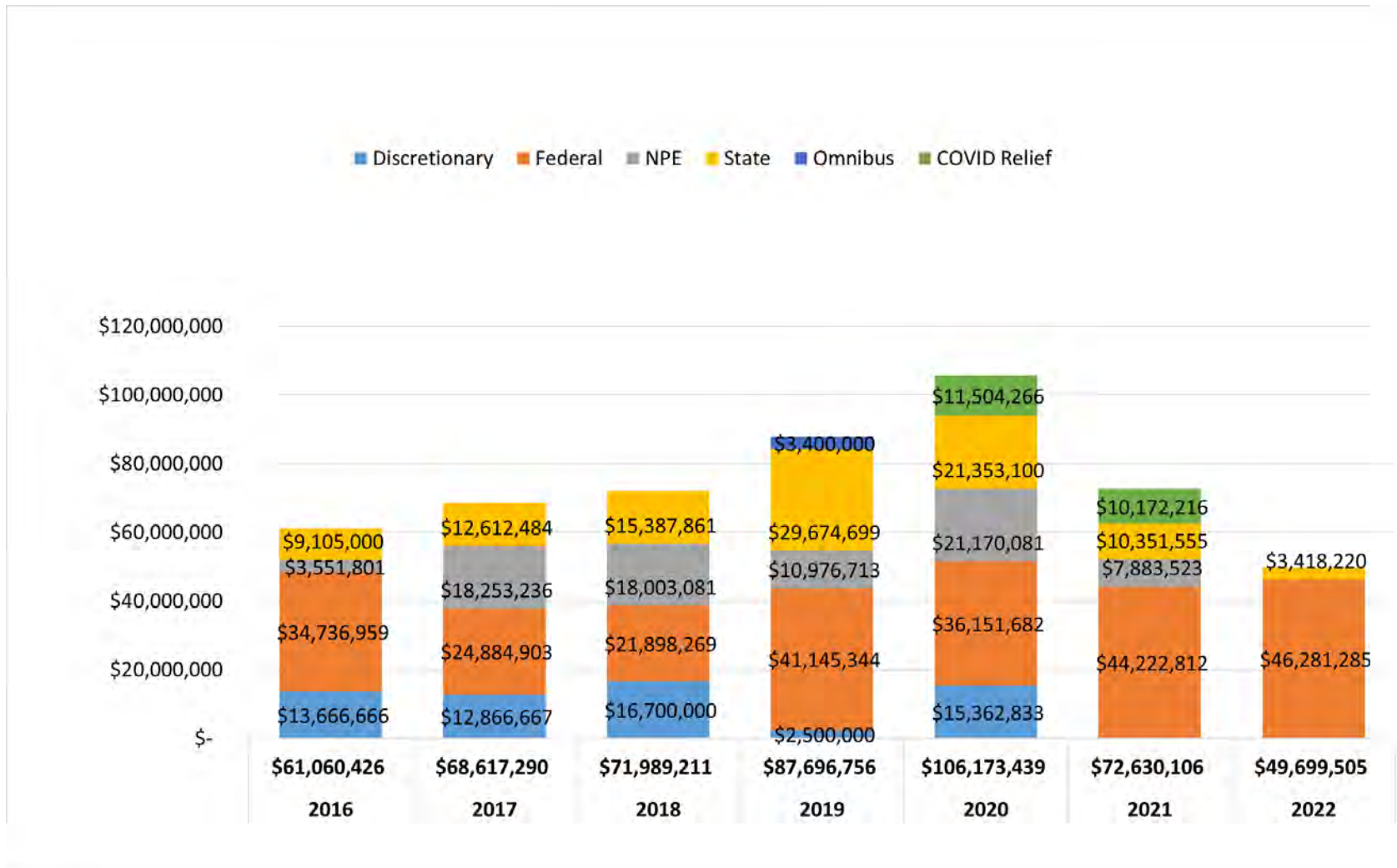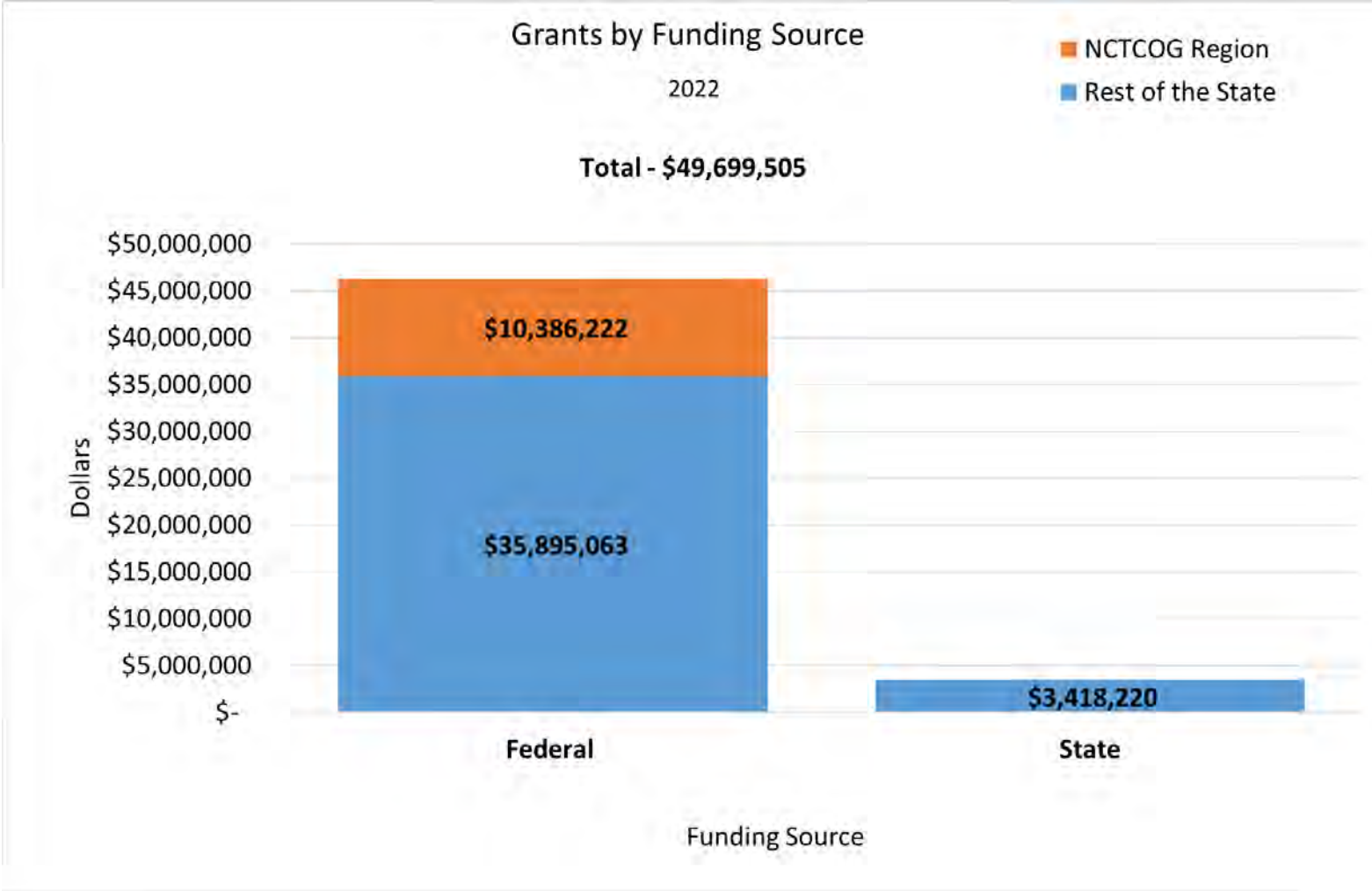
AIR TRANSPORTATION ADVISORY COMMITTEE

JULY 7, 2022
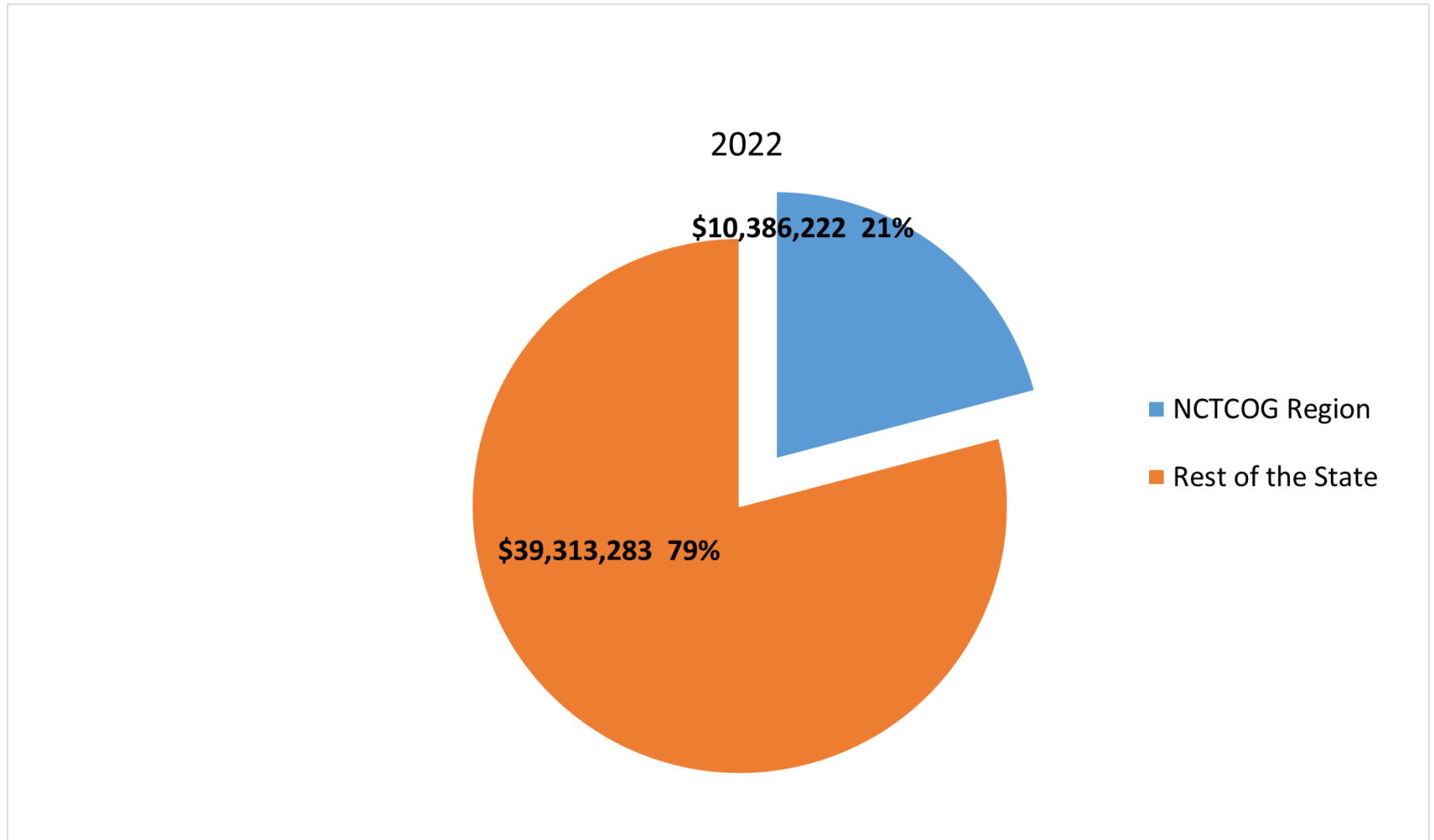
Regional Airport Funding Update

Ernest Huffman

Texas
Annual Funding Comparison

Texas Grants by Funding Source 2022

Grants by Funding Source
2022

Total - $49,699,505

NCTCOG Region
Rest of the State

$10,386,222

$35,895,063

$3,418,220

Federal

State

Funding Source

NCTCOG Region
vs. Non-Regional Funding
2022

2022

$10,386,222 21%

$39,313,283 79%

- NCTCOG Region
- Rest of the State

2022 DFW Region
Annual Funding Comparison

Annual Comparison
DFW Region

■ - Discretionary   ● - Federal   ▣ - NPE   ● - State   ■ - COVID Relief
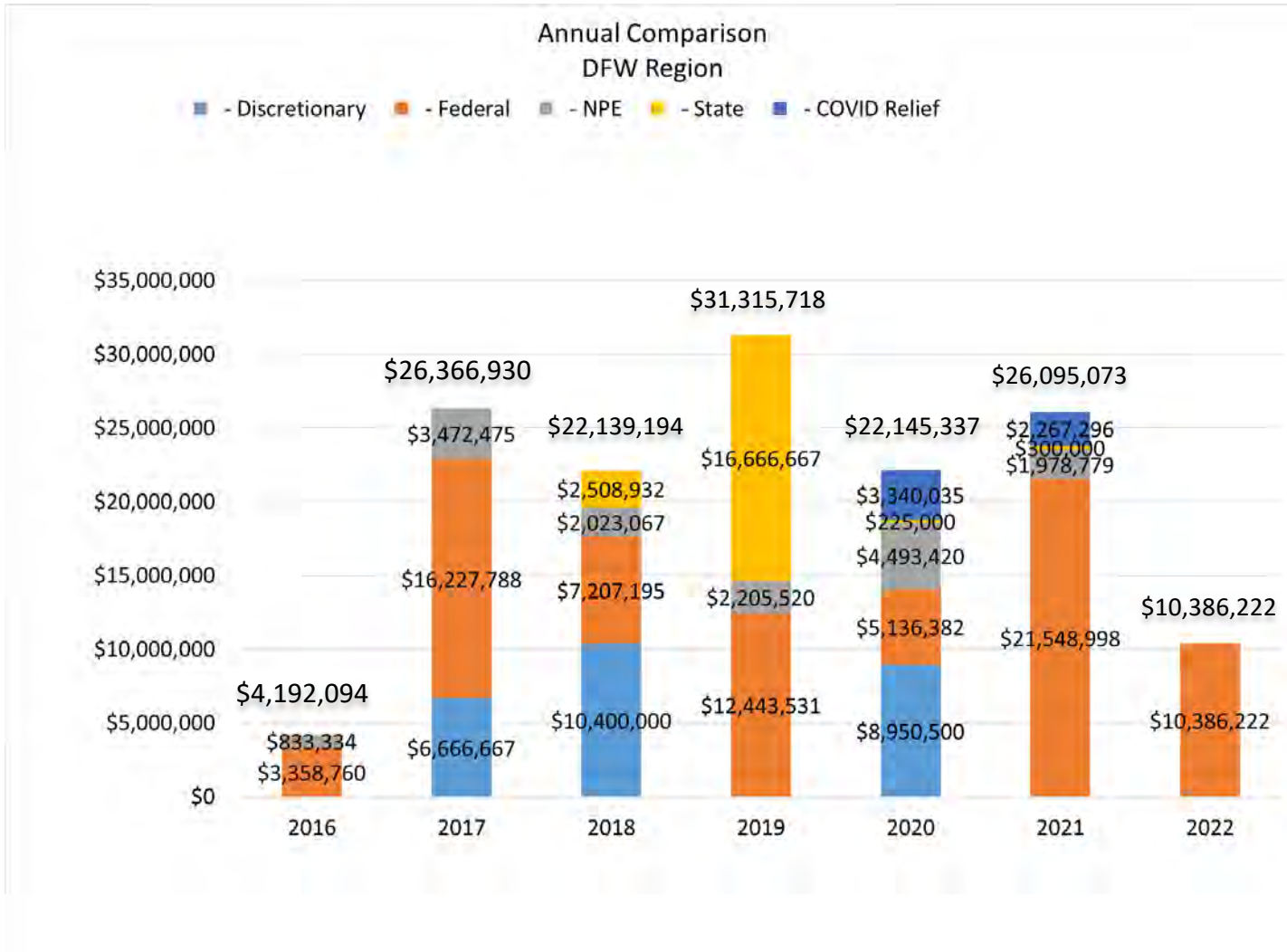
NCTCOG Regional Airport Grant Amount 2022
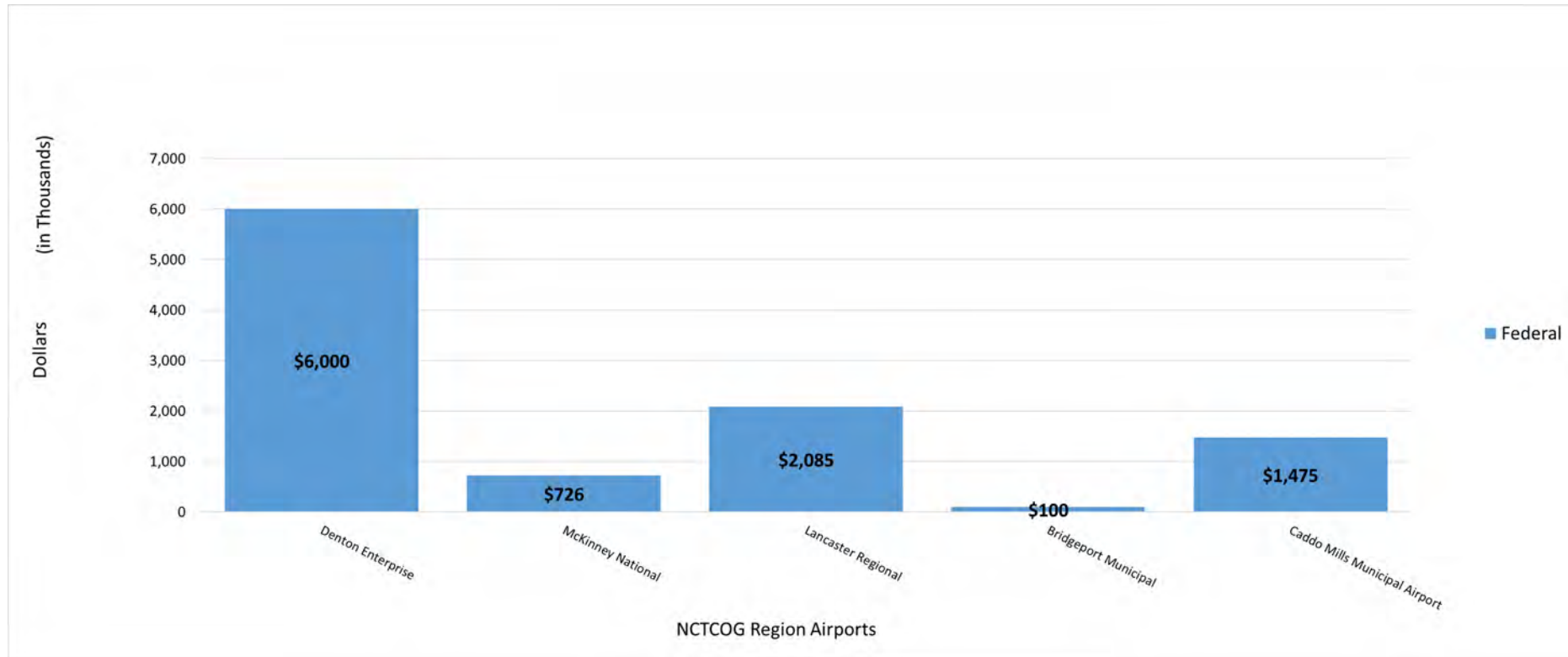
AIR TRANSPORTATION ADVISORY COMMITTEE

JULY 7, 2022

NCTCOG Aviation Planning and Education Program Area Update

Ernest Huffman

GRANT APPLICATIONS

The North Central Texas General Aviation and Heliport System Plan (System Plan)

FAA Aviation Workforce Development Grant – Aircraft Pilots

Mentorship Program Curriculum for the Region's Airline Pilots, Aerospace Engineers, and UAS Operators.

Standardized Internship and Externship Curriculum for Employers.

Know Before You Fly Your Drone Workshop Segments for Students and Educators

The Strengthening Mobility and Revolutionizing Transportation program

To help cities conduct "smart city technologies" demonstrations that include supporting advanced air mobility initiatives

NORTH TEXAS AIR RAIL PROGRAM

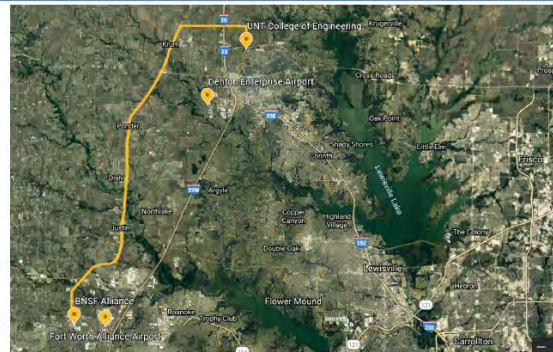Infrastructure

- Weather
- V2V
- 5G/Broadband

Planning

URBAN WEATHER INFRASTRUCTURE TESTBED FOR DFW METROPLEX

- New CASA Towers

- CASA Tower Upgrades

- Stormwater Forecasting
  - Push data to Waze and other navigation

- Low Altitude Weather Lidars

- Planning

- Research

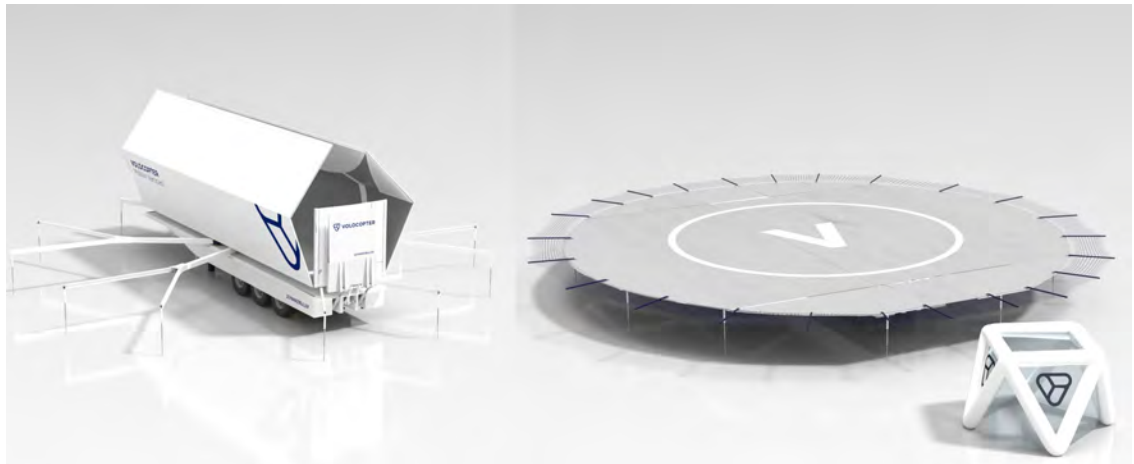NOTIONAL Dallas Urban Testbed Layout

10
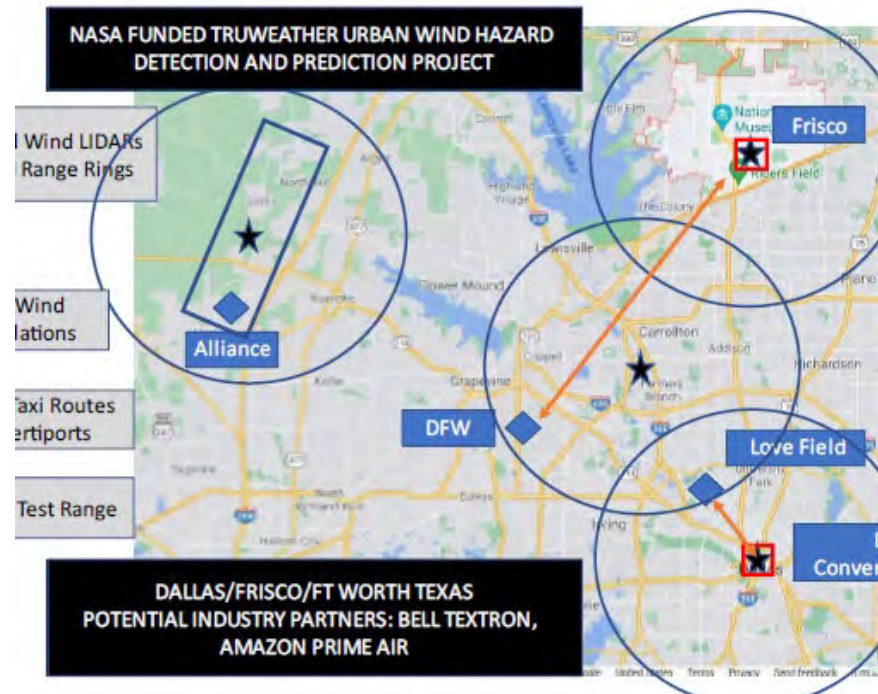
MOBIL AAM LANDING PAD PILOT

Collaborative Effort with Cherokee Nation

- Pair their AAM Landing Pad with Viable City Partner to test Landing Pad in Urban Environment with Current Gen Aircraft
  - Frisco
  - Desoto
  - Garland
  - Dallas

OEM – Galaxy UAV/Bell

Planning

OTHER UPDATES

North Texas UAS Safety and Integration Initiative
- Positioning for Federal Funding
- Monthly task force meetings
- KBUF Workshop – Drone Soccer at the World Games (Birmingham Alabama)

NCTCOG/NASA Community Planning and Integration Annex
- Final Report out End of Month/Early August
- Phase 2 – Concept of Operation Development

Texas Transportation Commission Urban Air Mobility Advisory Committee
- Fourth Meeting: July 7, 2022- Committee gives final approval to recommendations and report including comments
- Final report due to TxDOT: July 15, 2022
- Address TxDOT comments
- Final report due to legislature: September 1, 2022