OP ROSALYN Live Flight Trials Report

North Texas UAS Safety and Integration Task Force Meeting

ROSALYN Mission Objectives

April 2024
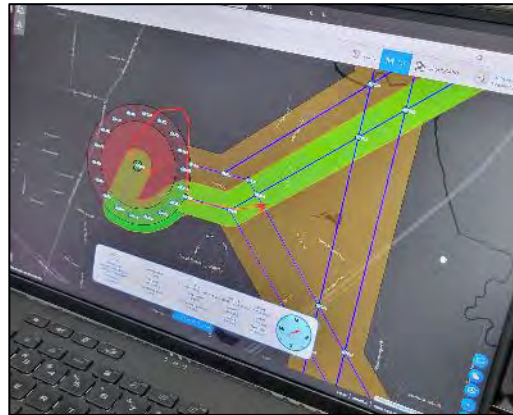
1. Multi-aircraft, Multi-Operator, Multi-PSU live flight

2. Show Strategic, Operational, and Tactical Contingency Management

DIOXIDE BLUF

C$_3$0$_2$: Command, Coordination, Control, Orb-to-Orb

"Design, simulate and live flight test Advanced Air Mobility Air Corridor CONOPs in coordinated airspace with representative Orb platforms from OEM partners"


Elevator Pitch:

"DIOXIDE will build an Air Corridor-based airspace system utilizing Vehicular Ad-hoc Networks to provide safe and efficient PSU-strategic and V2V-tactical coordination of the AAM network"

NASA AAM X3, X4, NC-1

- AAM National Campaign Plan
- Space Act Agreement-based
- DFW-based simulation
- Various live flight tests planned
- Joby Sim @ Ames?
- Advanced Mobility Pathfinder?
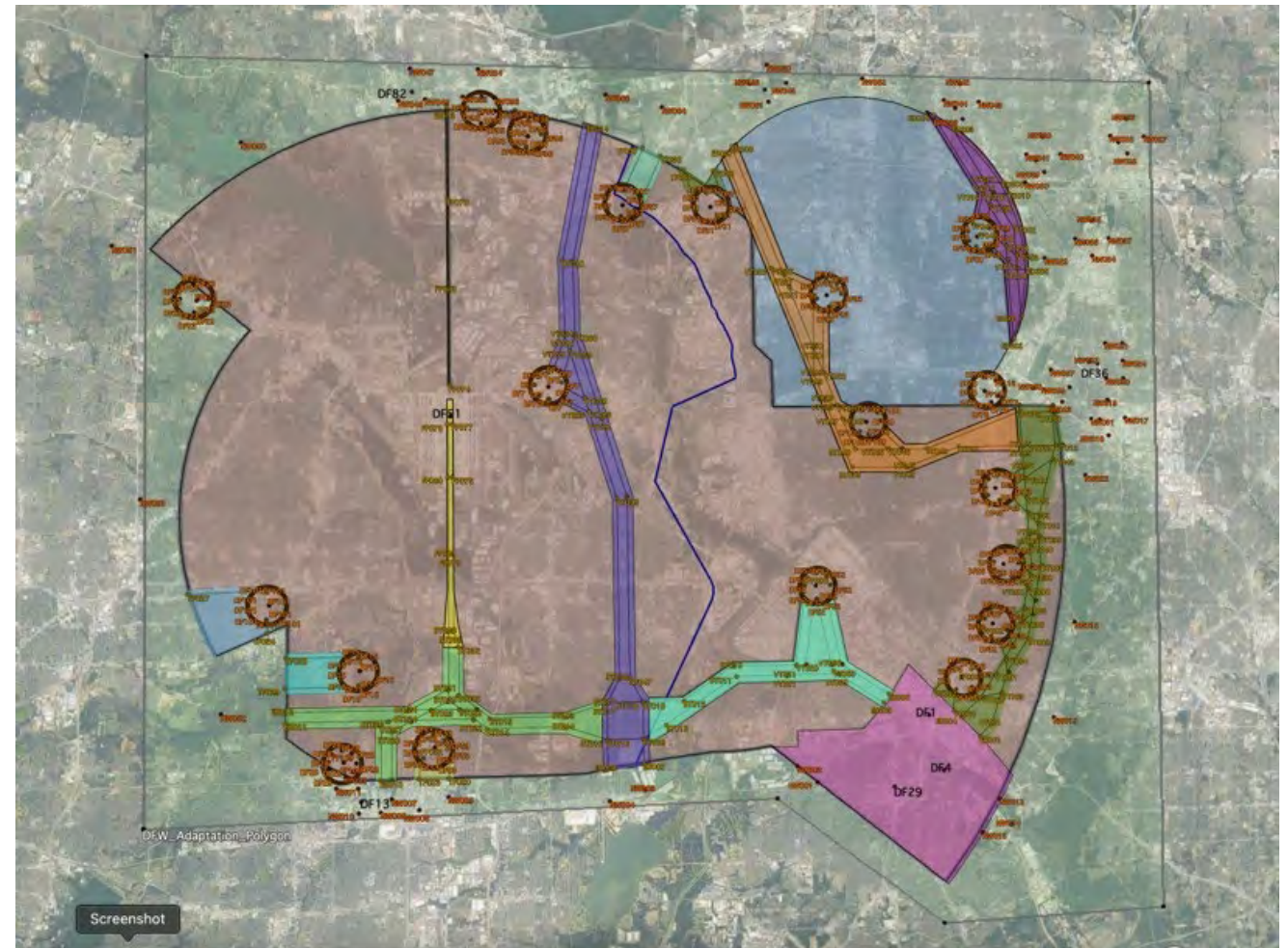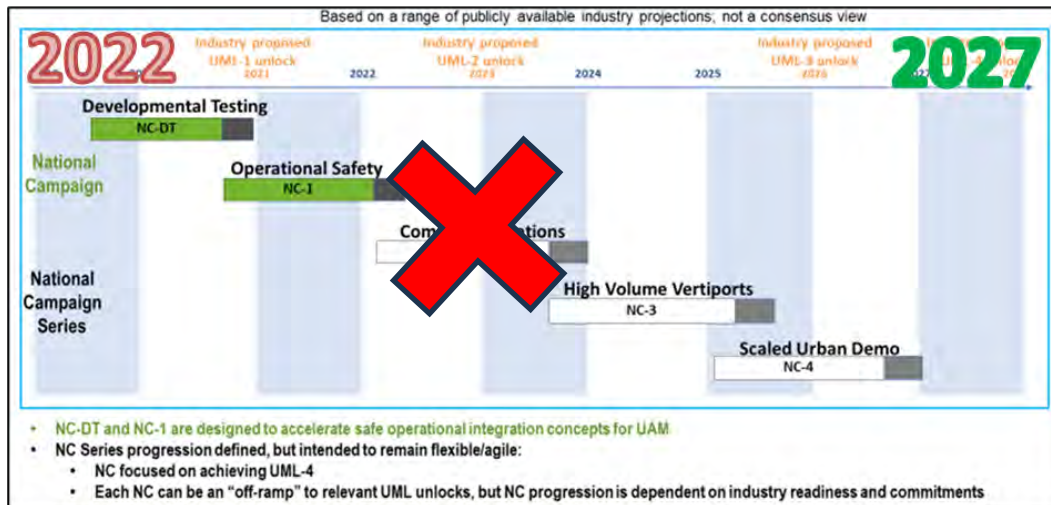
DIOXIDE: Air Track C3O2

Current NTX Cohort Partners
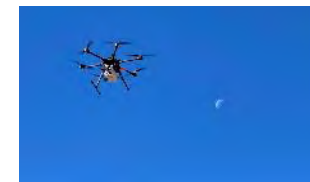
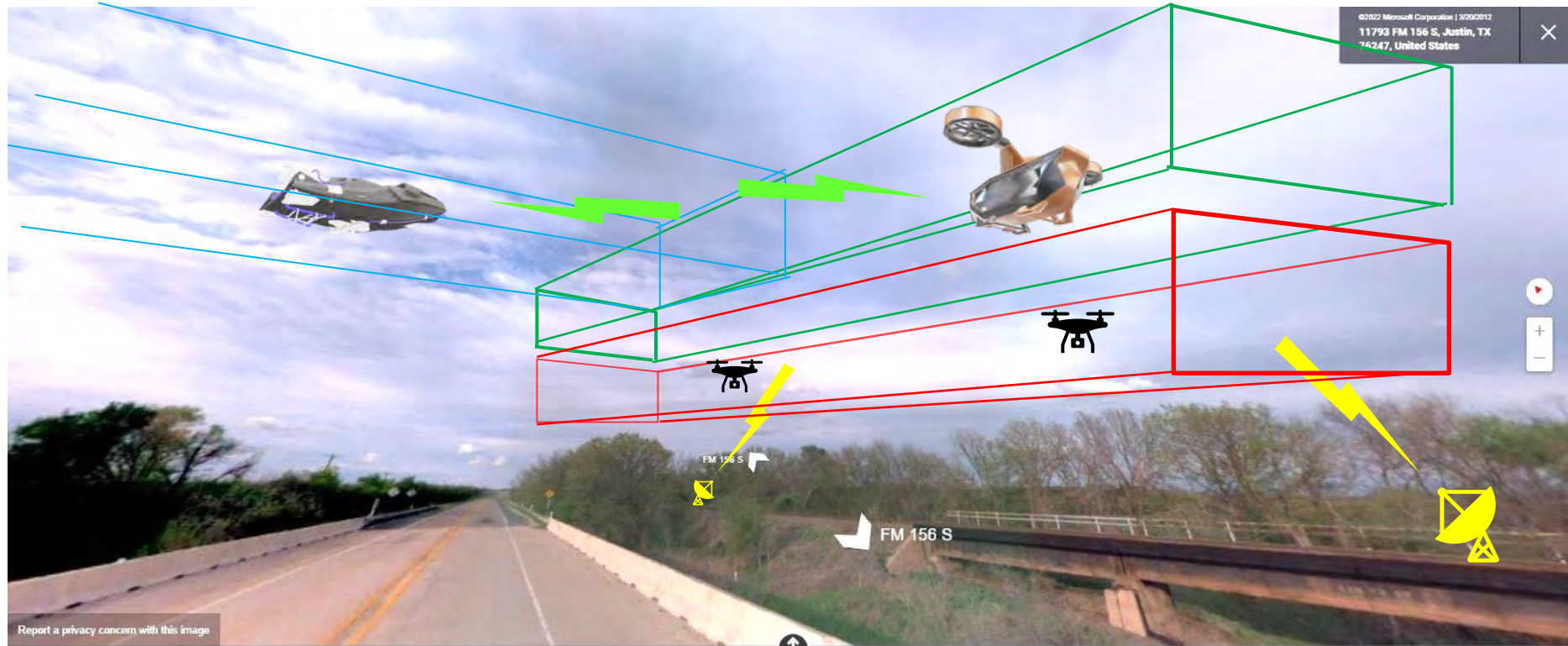## NCTCoG Brief (May 22)

AAM Airspace Constructs

Demonstrate V2V2I Strategic and Operational Contingency Management

AAM Conflict Management

Image credit: Maria Consiglio
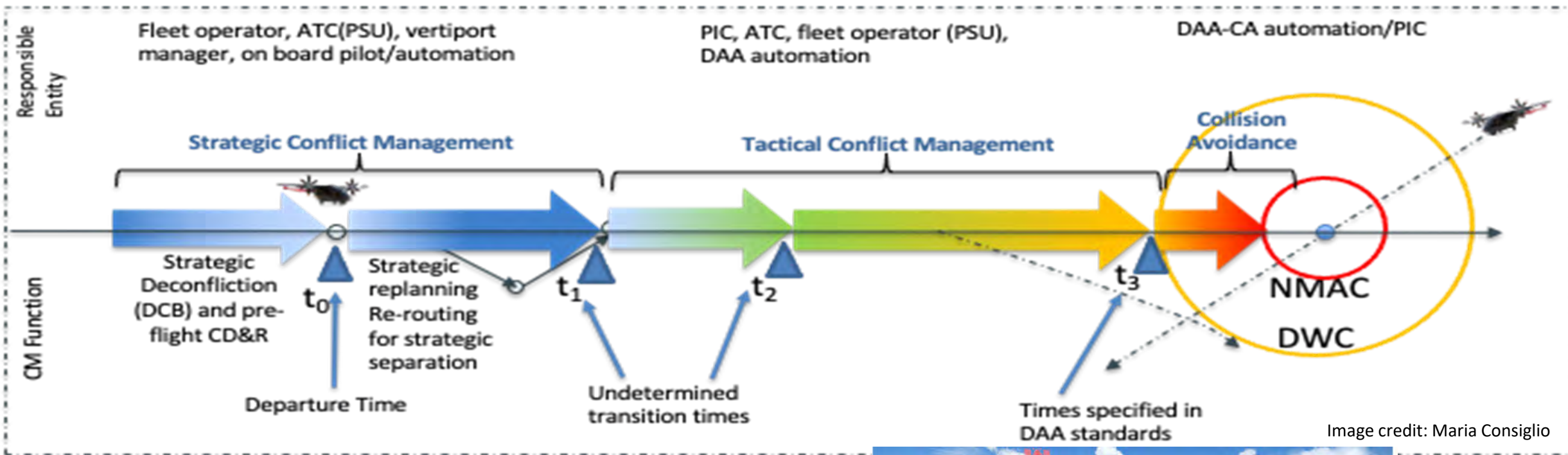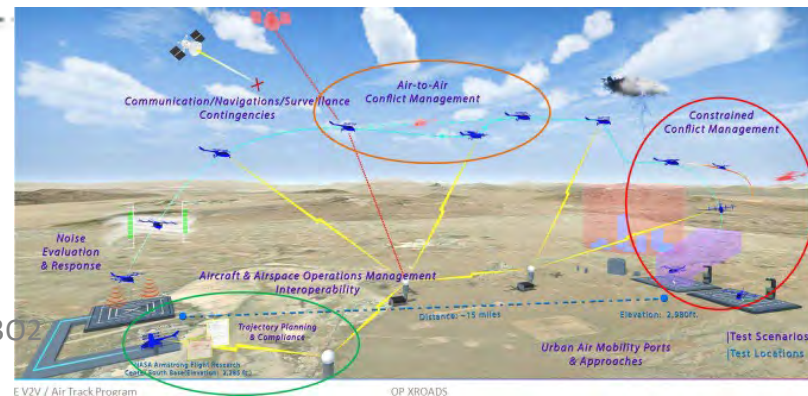
The Loop
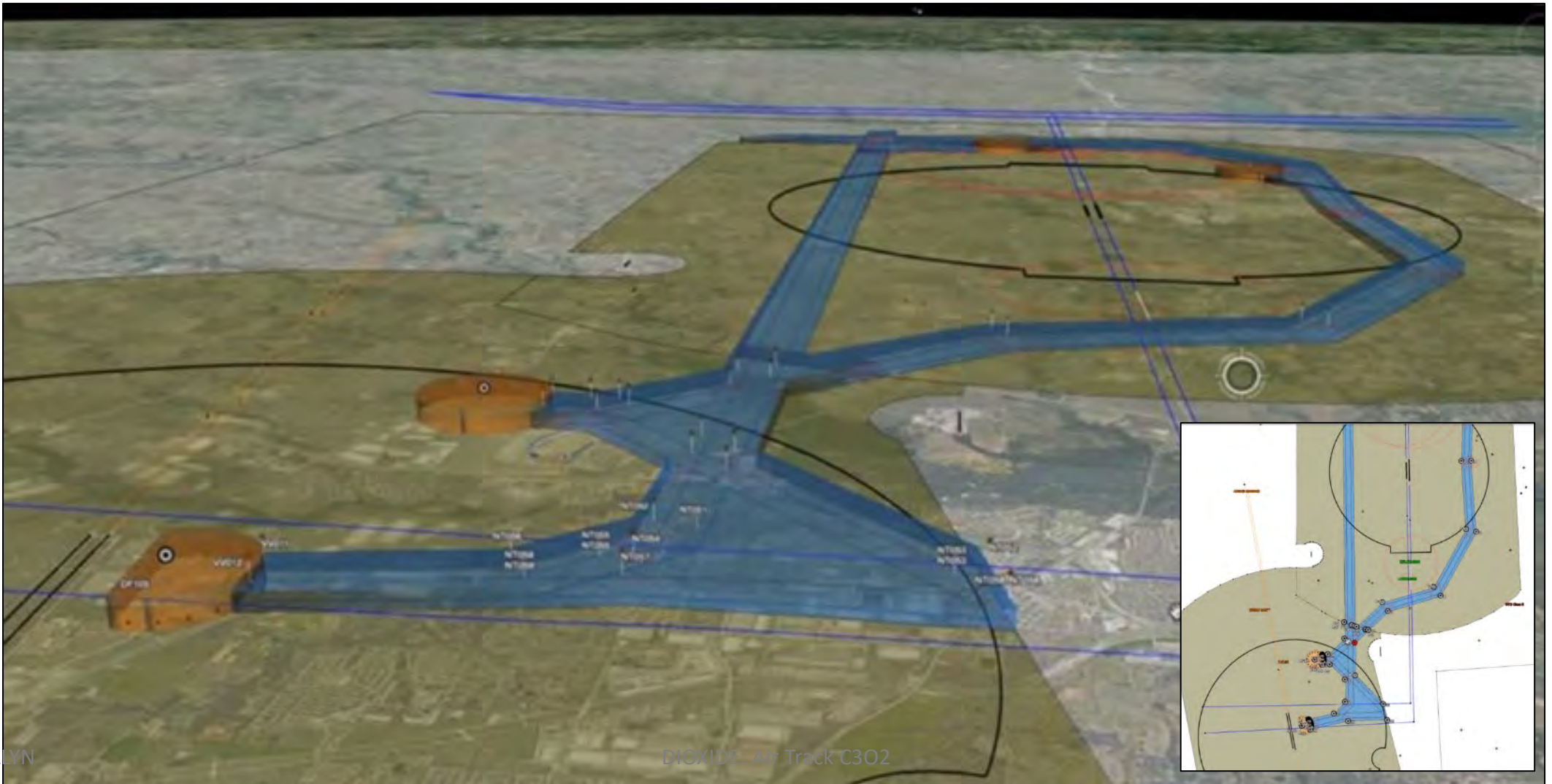
Flight Test Center
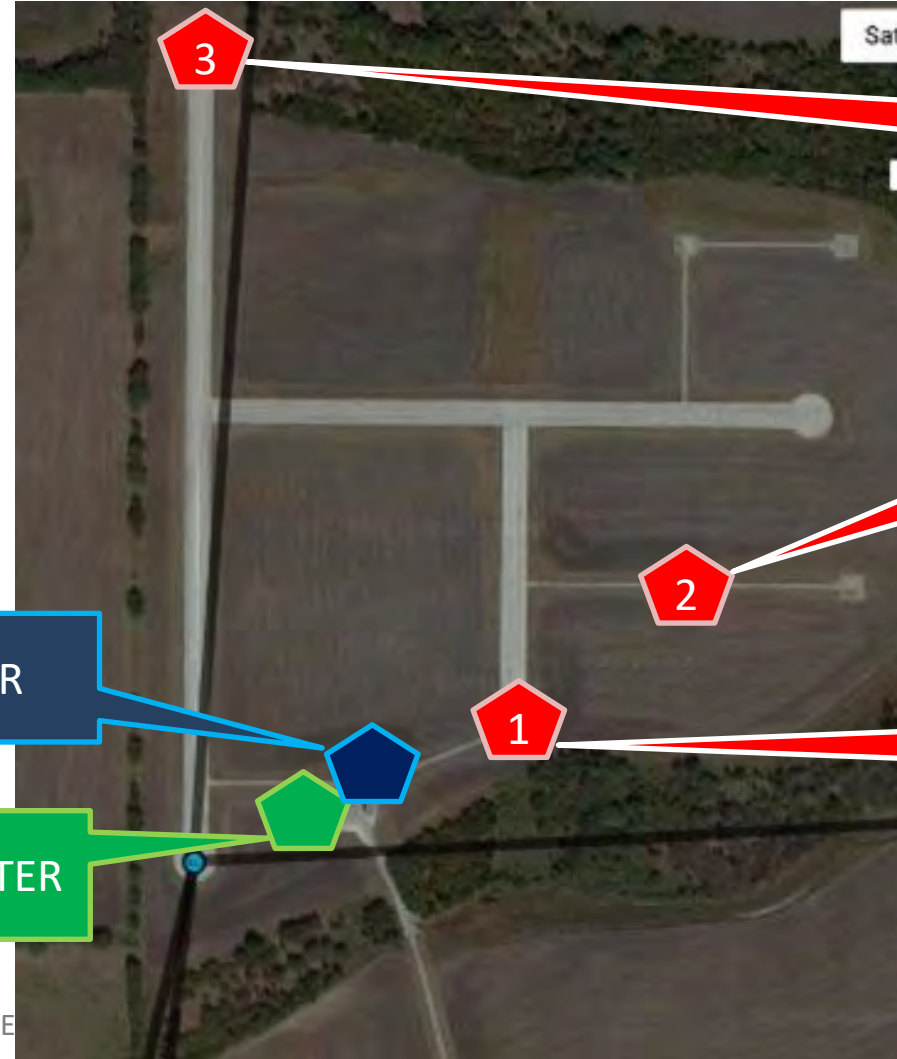
PAD 3

PAD 2

PAD 1

TOWER

OPS CENTER

OP ROSALYN Architecture
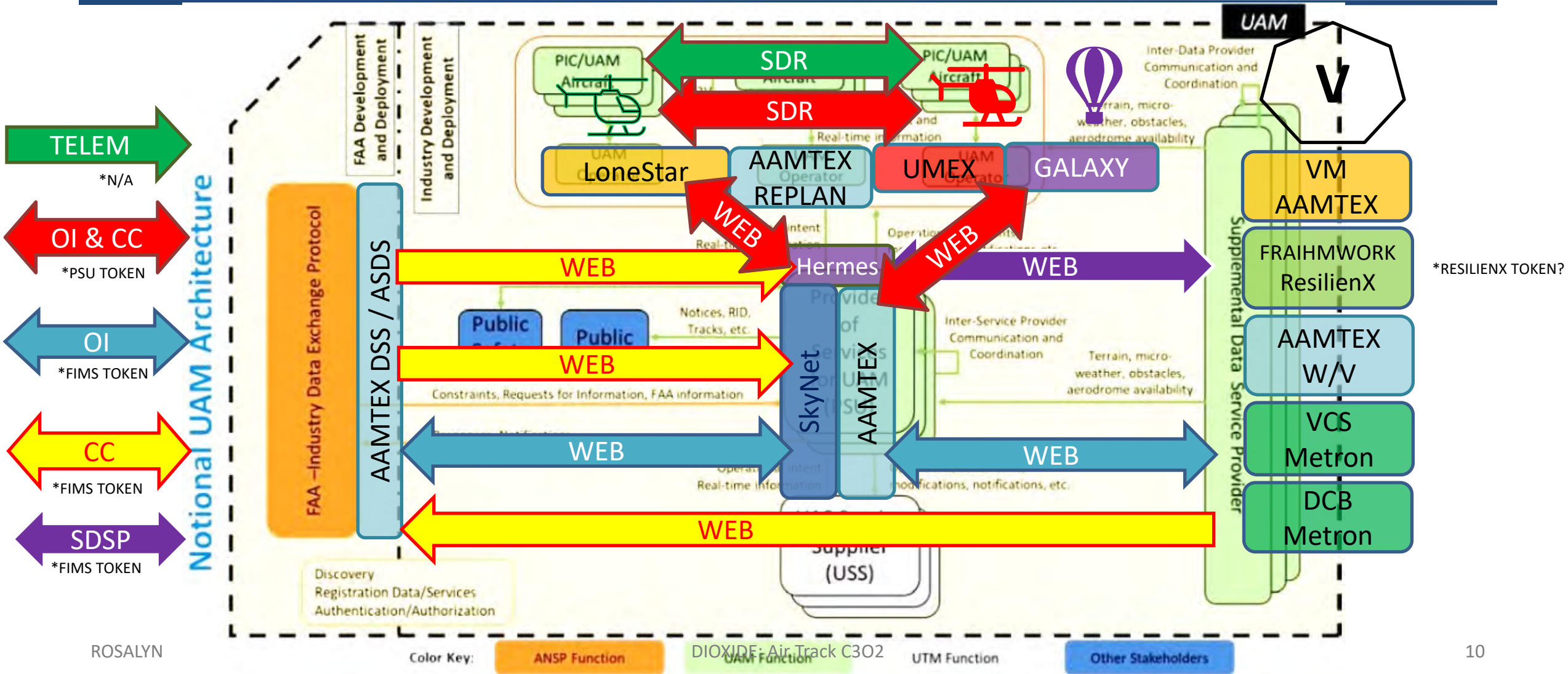
OP ROSALYN Goals

16-20 April 24

- ## V2V2I live flight test:
  - 2 manned surrogate eVTOLs: Helicopter Institute Robbins 44 and 22
    - ROVER 01 + ROVER kit / REX 02 + REX kit
  - 1 unmanned UAS: Galaxy 35ft
    - JABBA 03 + SPOT kit
  - 2 PSUs
    - AAMTEX (ROVER 01 & JABBA 03) & Avianco (REX 02)
  - 2 AAM Operators
    - UMEX (ROVER 01 & JABBA 03) & Lone Star (REX 02)
  - 1 UAS Operator
    - Galaxy on AAMTEX

- Strategic Conflict Management:
  - DCB
- Operational Conflict Management:
  - 'Hazard in Road' CC & OIs
- Tactical Deconfliction:
  - Relay Comms
  - Overtaking

Schedule

- **M15: UMEX / AAMTEX Fly In**

- **T16: Ground & Channel Tests**
  - Channel Mapping for ROVER / REX
  - 1600: AVX Aircraft Team

- **W17: Full team Sim Runs**
  - Full Dress Rehearsal (at Perot Field Office)

- **Th18: Fly Day 1**
  - Full Live Flight Tests
    - 0700: On Site
    - 0800: Helos Arrive
    - 0900 – 1000: Fly Window 1
    - 1100 – 1200: Fly Window 2
  - LA Gauntlet Team visit

- **F19: Fly Day 2**
  - Full Live Flight Tests
    - 0900: On Site
    - 1000: Helos Arrive
    - 1100 – 1200: Fly Window 1
    - 1300 – 1400: Fly Window 2
  - PR Day

- **S20: Back Up Fly Day**
  - Clean up items
  - RTB from 1500

Assets

ROVER 01
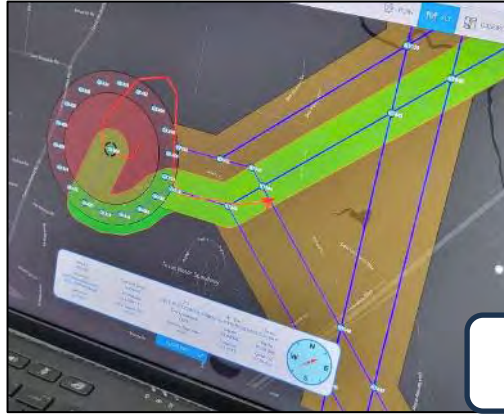
REX 02

JABBA 03

VIDEO 04

CALVIN, HOBBES, OLIVE

AAMTEX PSU
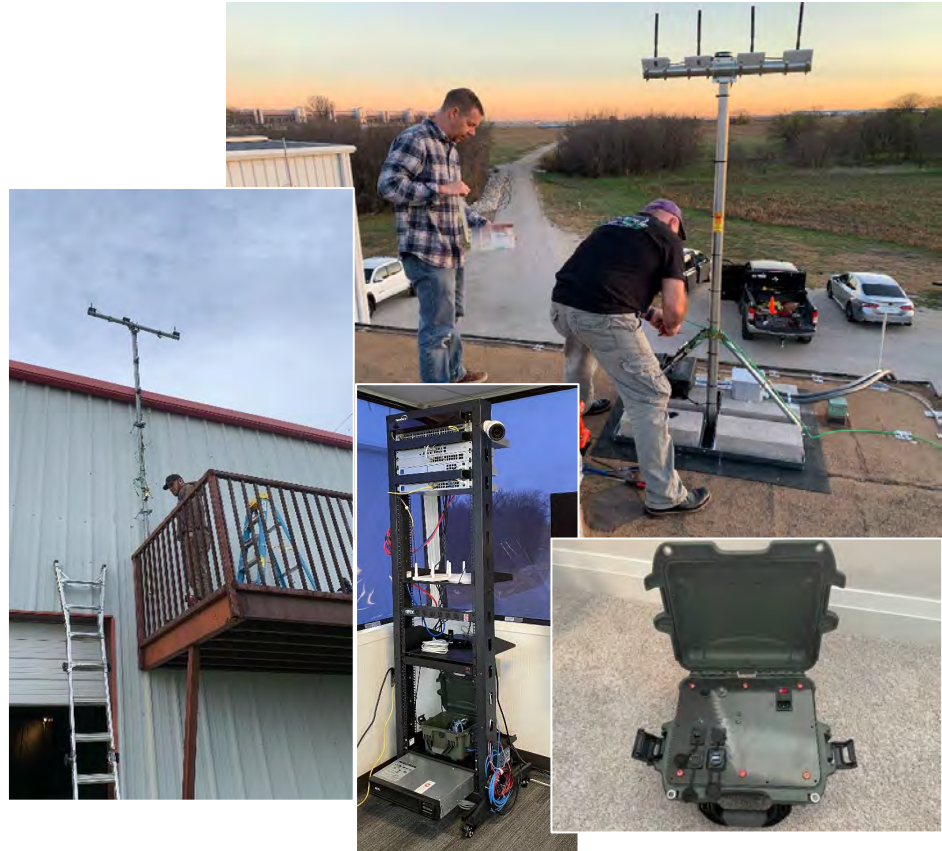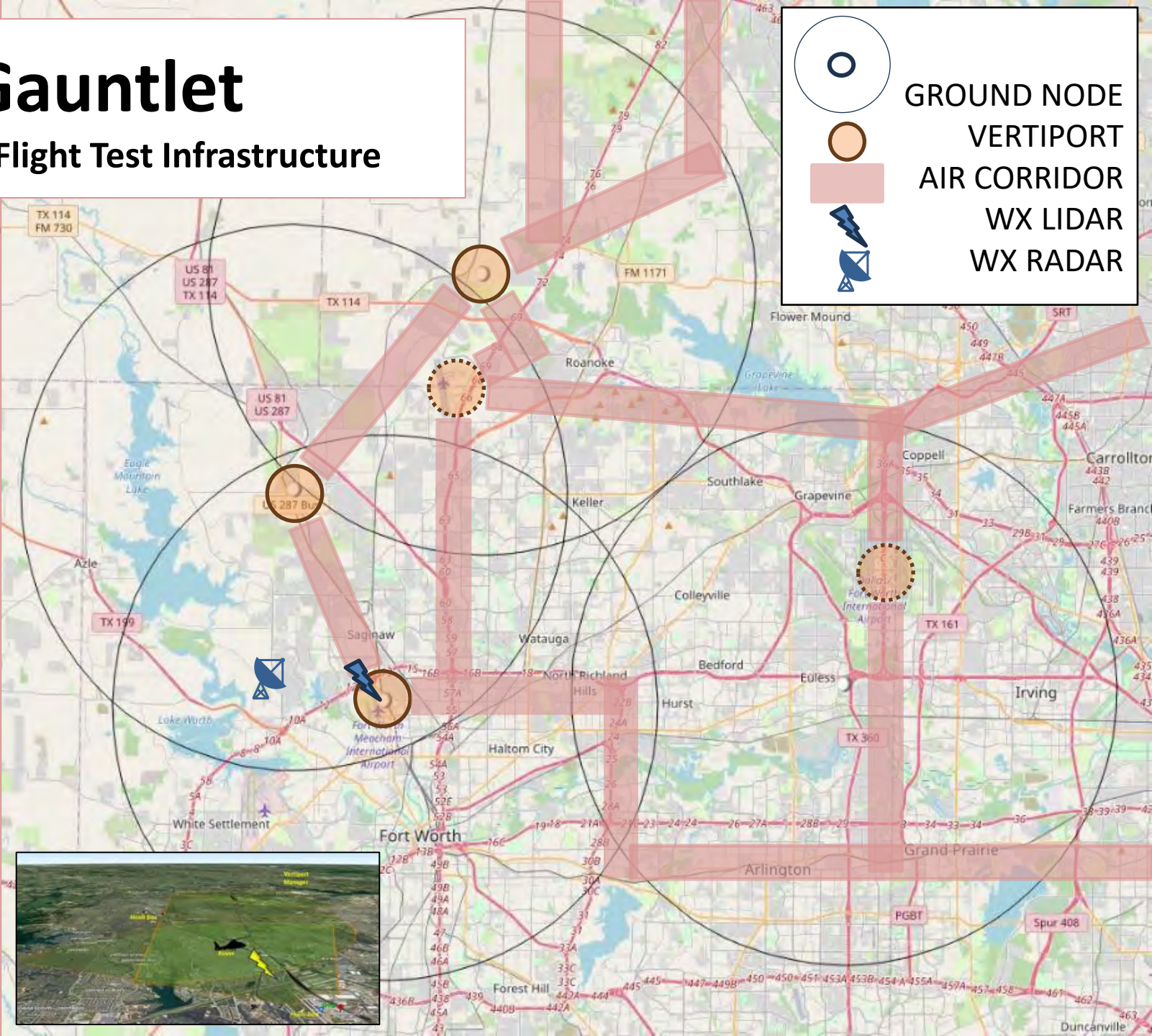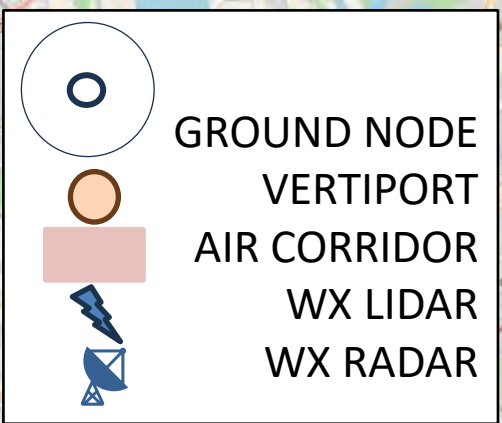
SkyNet PSU

Gauntlet

Fixed Live Flight Test Infrastructure

- Industry-led AAM trials architecture
  - Key Site (East) = UTM

Legend:
- GROUND NODE
- VERTIPORT
- AIR CORRIDOR
- WX LIDAR
- WX RADAR

Simulation Rehearsals Ground Operations

Mission Test Checklist

LoneStar

- Roll Call
- Hard Reset
- Comms Check
- On Ground:
  - O/I Request – Approved x3
- Cleared for Mission
- J03, R01, R02, V04 launch
- Wx CC
- Replan O/I
- Off Nominal flight = HIR CC
- Emergency O/I

								Test Card #	Time	Scenario Event	Action	Reaction
									T-30	**Roll Call**		
										BELL		
										HERMES		
										FREQUENTIS		
										CASA		
										METRON		
										AVIANCO		
										NASA		
										UNT		
										UMEX		
										LONESTAR		
										Mission Brief		
										Run start		
										HARD RESET ON ONBOARD OPERATOR TABLET	Ensure cache is cleared	
										CONNECTIVITY CHECKS		
										NASA ASDS/USS/DSS/AA		
										METRON (DCB)		
										AVIANCO (PSU) SUBSCRIPTION CHECK		
										CASA		
										FREQUENTIS		
										HERMES		
										LONE STAR		
										GO/NO-GO		
									T	**MISSION START**		
								1		**DATA COLLECTION BEGINS**		
								2		CASA sends Weather Capacity Constraint (CC)	CASA transmits CC to DSS	DSS acknowledges receipt of CC
								3		DSS transmits CC to Frequentis	DSS sends CC to Frequentis	Frequentis receives CC
										Frequentis transmits CC to Partners	Frequentis forwards CC to DSS	DSS receives CC
										PSU receives CC from Frequentis	Frequentis forwards CC to Avianco PSU	Avianco PSU receives CC
								4		Onboard Operator submits Operational Intent (OI) (DRAFT) to Hermes	Onboard Operator transmits data via API	Hermes receives OI
										Hermes forwards OI (DRAFT) to Avianco PSU	Forward OI to Avianco PSU	Avianco receives OI
										PSU begins checks		
										Checks ASDS for compliance		
										Avianco sends OI back to Hermes	Avianco sends OI to Hermes	Hermes acknowledges receipt of OI

Sprint 1 | **Sprint 1 Run 2** | Test Events

Domestics Brief

Roles & Responsibilities

- SAFETY CALLER:
  - HHI Pilots (ROVER01/REX02)
  - Galaxy Remote Pilot (JABBA03)
  - Mission Lead: Kev Gambold (Ground)
- HSE Sup: Ken Erney (UMEX)
- Mission Lead: Kev Gambold (UMEX)
- Network Lead: Ken Erney (UMEX)
- Software Lead: Eric Adams (AAMTEX)
- RPIC: Tony White (Galaxy)
- Manned Safety Pilot: TBC (HHI)
- NO-DUFF VO: Bill Cossoff (UMEX)

Weather

- TAF/METAR

```
TAF KAFW 191219Z 1912/2012 36014KT P6SM FEW018 OVC035
FM191400 02012KT P6SM BKN025 OVC040
FM191900 02010KT P6SM BKN035
FM200100 05007KT P6SM OVC025
```

Flight Deconfliction & Comms Plan

- LAANC for J03 and V04
- VFR Flight Plan R01 and R02
- Ground PTT Comms: BLACK2
- Flight PTT Info: GREY3
- Mission Flow: TEAMS / BLACK2
- InterFlight Aircom: 123.025
  - Alliance Twr: 135.15
  - Denton Twr: 119.95
- InterFlight Cell:
  - ROVER01: 972 955 0049
  - REX02: 623 224 0510
  - JABBA03: 817 818 6111

Safety Brief
No Duff: Outside of the Scenario / IRL

- "See something, Say something"
- No stupid questions
- "KNOCK IT OFF" x3
  - Manned Emergency = Land ASAP
  - Unmanned Emergency = Land at FTC / Manned Return to FTC when clear
- "ENDEX" x3
  - Return to FTC
  - Potentially remain in orbit
- Intruders (Air & Ground)
  - Call Cardinals
- Stay cool, hydrated and destressed

Execution
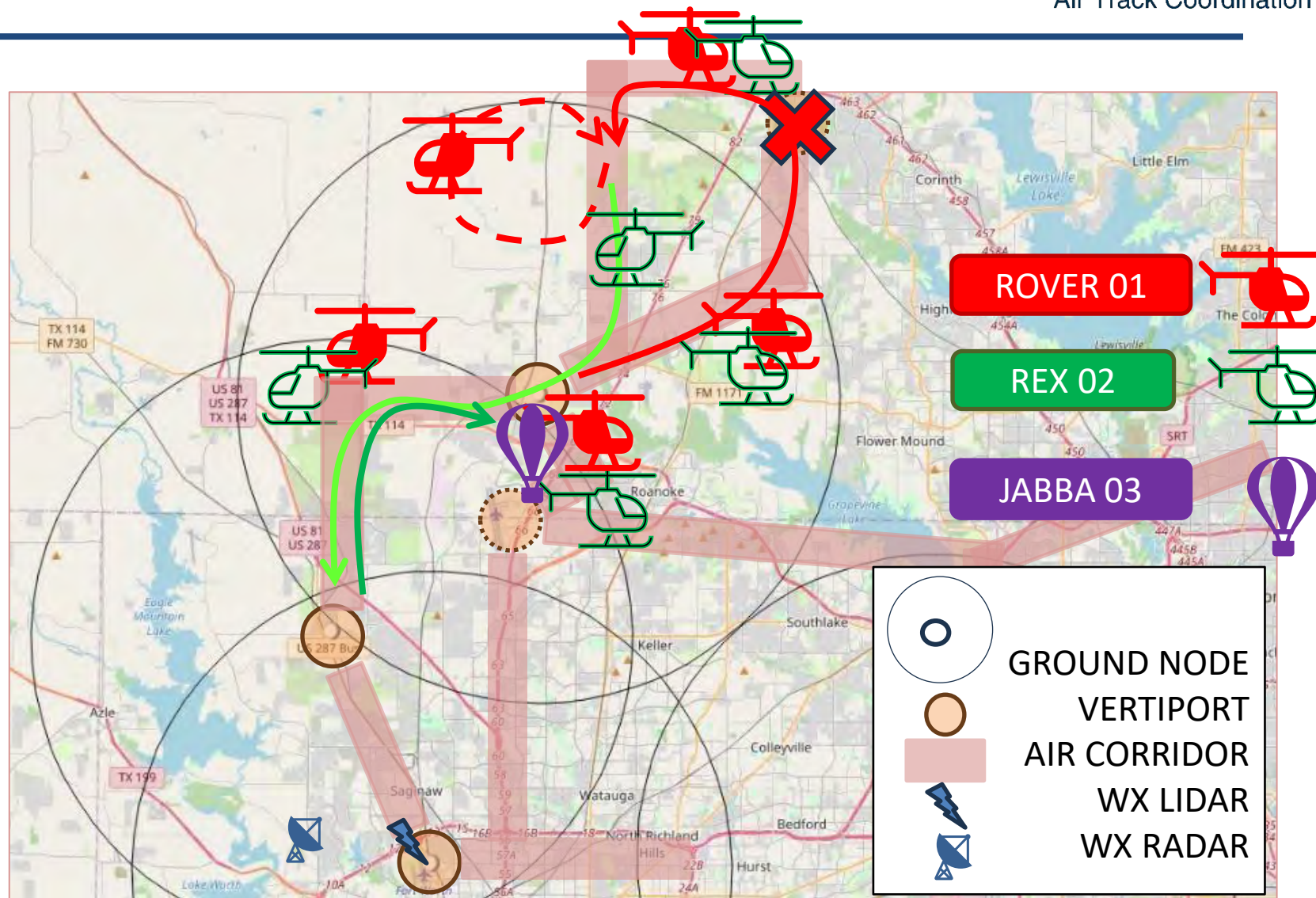
Day One Debrief

- **SAFETY POINTS?**
  - **Motor Anomaly on JABBA03**
    - **Controlled by RPIC, ATC coord via ROVER01**
  - **Knock It Off not passed to all players**
    - **Move all not flyers to Teams**
- Plan
  - Galaxy had requested a test flight
  - Test Card updated to add Engine Start for flyers
  - Needed better coordinated for ROVER01/REX02 Foreflight
- Brief
  - Should have done a comms check
- Ground Ops
  - Role Call needs to go faster
  - Computer issue with JABBA03 not conveyed to RPIC until last minute
  - Go/NoGo does NOT mean 'Take Off' (who did that?)

- Flight Ops
  - Loop One: N/A
  - Loop Two: 300-500' AGL with 5 mins spacing
- Mission Ops
  - Loop One: Good tracking
  - Loop Two: Good V2V2I despite no JABBA, but poor ROVER on RTB
    - Antennae positioning?
- Recovery
- AOB

Day One Network Maps

Air Commons®

AC Sharp

Press Esc to exit full screen
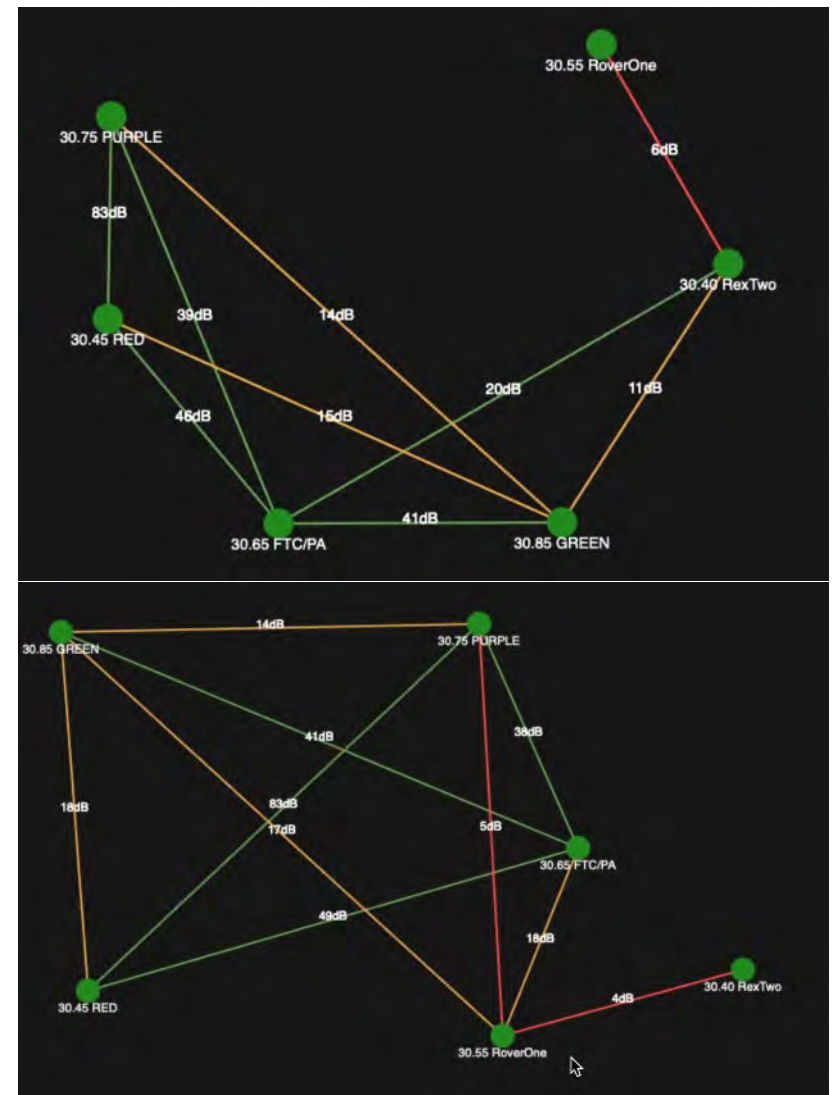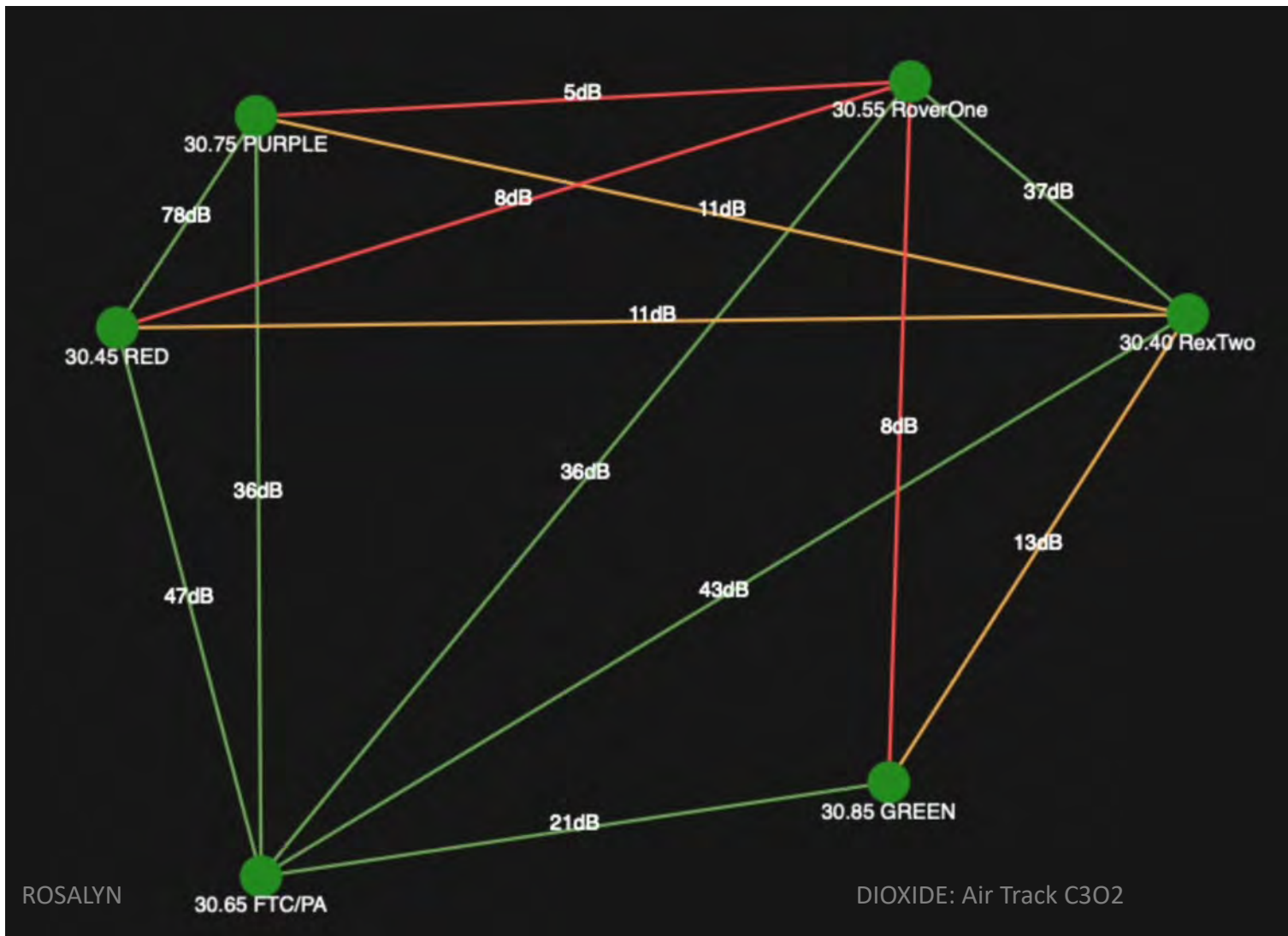
AIRCOMMONS

Search

Select Airspace ▾   Airspace Locations ▾

Level Of Autonomy: 1

UMEX User

33°10'35" N 97°11'16" W

JABBA-TH...   REX-TWO   ROVER-ONE

ADSB

a2c0bd	a96c72	a086b1
adfd0e	424b0d	ac9e2b
a98b7b	a1c364	a83673
adfca7	aabc22	a680e6
a4ee59	a9df25	abcca0
a165d1	adadda	aae95d
ac97a5	a7a232	ad9bc8

Follow

Icao: REX-TWO
Role: PRIVATE
Personality: PERSON...   Status: UNKNOWN
Lat: 33.2767066666...   Alt: 172.8
Lon: -97.16651   Bat: 0%
Heading: 96.8   Rank: LEADER
Speed: 43.85126898...   Latest:

SWARM_ENGINE ▾   Mute   +

Switch Song

Mission:

No. of Drones:
3

Current Phase:

Current Tactic:

STOP MISSION
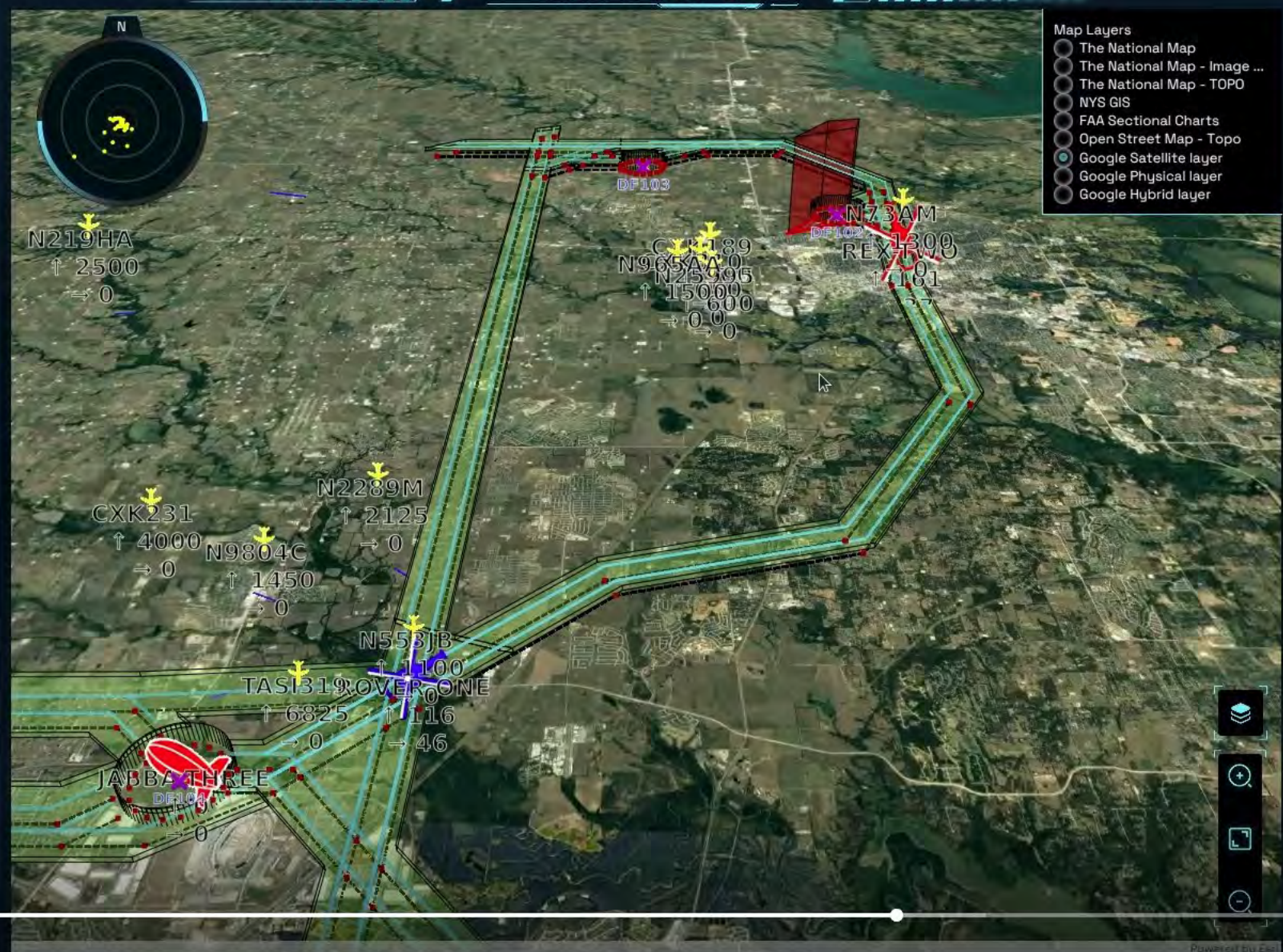
Map Layers
- ○ The National Map
- ○ The National Map - Image ...
- ○ The National Map - TOPO
- ○ NYS GIS
- ○ FAA Sectional Charts
- ○ Open Street Map - Topo
- ◉ Google Satellite layer
- ○ Google Physical layer
- ○ Google Hybrid layer

AA1905 ↑ 20075 → 0

N1266U ↑ 4050 → 0

N260MG ↑ 2025 → 0

N23AMO ↑ 1300 → 01

N25995 ↑ 439

N219HA ↑ 2200 → 0

CXKB10 G N90 ↑ 1500

LLN211 ↑ 3125 → 0

N2153A ↑ 1800 → 0

N721FL ↑ 3050 → 0

RN353JBNE

N9804C 1625

CXK231 ↑ 4100

AAL2746 → 401 4475

MAFIA12 3200

0ABBA N2289M ↑ 1425 → 0

UPS2977 ↑ 3425 → 0

MAF591 N930275 N9802

AAL1626

Powered by Esri

Swarm Info

Swarm Battery

100%

Swarm Health

100%

Distance to Target

0m

Swarm Song: HEALTH

Operational Intent   Scan PSU   Sync PSU   Beacon/Radar   Playbook   Air Corridors ▾

○ Route Parameters   ○ Select Route   ○ Activated UI

Check Constraint   DFW.json ▾

Load Drones

Select Start Vertiport

Select End Vertiport

Request Route

Messages   Notifications

LOA 1: AI suggestions disabled. Full user control.

27:44 / 46:12   1x

Live Flight Images

MY DREADFUL PHOTO ABILITY
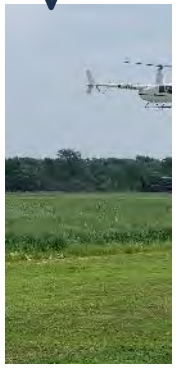
Day Two Images
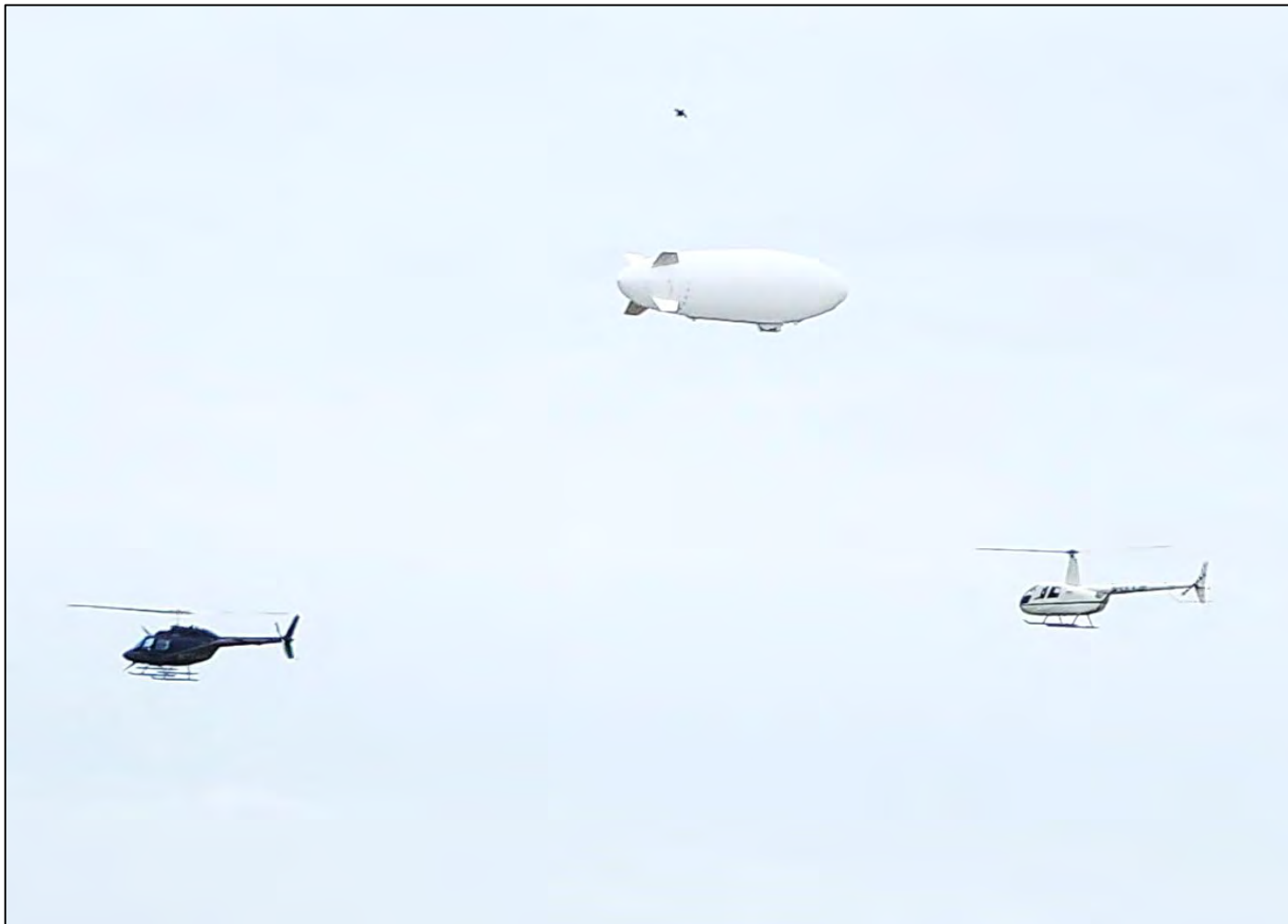
Video

OP ROSALYN Live Flight Trials

DIOXIDE Graduation Flight Tests

ROSALYN Achievements

1. World's first multi-vehicle, multi-operator, multi-PSU, live AAM flights.
2. Demonstrated Strategic, Operational, and Tactical CM in live flight.
3. Fully tested initial two ground nodes of US's first permanent AAM air corridor
4. Commencement of first AAM data gathering effort (GAUNTLET).
5. Demonstrate deployability of DIOXIDE to 'flash bases' as part of ACE CONOPs.
6. Full Airspace Structure Editor (ASE) for rapid 'Corridor builds.'
7. Full Live-Virtual-Constructive capability for mission rehearsal and operations.
8. Hardware prototype digitally engineered designs for V2V2I mesh air and ground nodes.

SAAMBOX

Standardized AAM Baseline Operations eXperiment

VERTIPORT/HUB/STOP (10)

AIR CORRIDORS

ON DEMAND MOBILITY (2)

AAM OPERATION (2)

USS OPERATION (2)

BABEL

Data Rights on Final Slide

Blue Skies
Operational Air Mobility

BLUE SKIES OPERATIONAL AIR MOBILITY

Leading the Way in AAM Solutions and Integration

Key Benefits

Comprehensive, Scalable Solution

Adaptable for various scales and applications, from small vertiports to extensive vertihub networks.

Enhanced Traffic Management

Innovative mesh networking and contingency management ensure safety and efficiency.

Community Engagement

Facilitates stakeholder involvement and support, fostering awareness and dialogue.

Technological Integration

Seamlessly incorporates existing systems with new AAM technologies.

Target Audience

State and Local Governments

Implementing efficient and sustainable AAM solutions.

Operators and Manufacturers

Deploying and managing AAM systems, providing components and services

Community Stakeholders

Engaging in community planning and development

Overview

Blue Skies is a pioneering solution for planning, simulating, fielding, and implementing Advanced Air Mobility (AAM) systems. Our comprehensive approach:

- Addresses the needs of local governments, operators, users, passengers, and suppliers.

- Offers tailored professional services to ensure seamless integration into unique applications and use cases.

With robust simulation capabilities, scalable infrastructure, and cutting-edge traffic management systems, Blue Skies is the ideal partner for organizations looking to lead in the AAM industry.

Core Competencies

End-to-End AAM Solutions

Blue Skies covers all aspects from initial planning to full implementation, offering an intuitive and user-friendly platform that supports early adoption and easy entry into AAM planning.

Air Corridor Editor Optimized for On-Demand Mobility

Blue Skies covers all aspects from initial planning to full implementation, offering an intuitive and user-friendly platform that supports early adoption and easy entry into AAM planning.

Advanced Simulation and Infrastructure

Our Live-Virtual-Constructive (LVC) simulation capabilities and scalable 'Jigsaw' approach enable clients to visualize and optimize their operations, from single Vertistops to multi-Vertihub systems. Full AAM capability.

Integrated Traffic Management

Utilizing a mesh network of software-defined radios and a PSU software backbone, Blue Skies ensures secure, efficient communication between vehicles and infrastructure.

Live Flight Operational Demonstrations

Used in multiple live flight operations with drones, blimps, ground vehicles and helicopters to simulate eVTOL flights and AAM Air Traffic Management (ATM). Testing includes both autonomous and piloted missions.

Integrated Traffic Management

Our team provides specialized services to tailor the Blue Skies platform to unique operational requirements, enabling clients to leverage existing infrastructure while seamlessly integrating new technologies.

Blue Skies
By Unmanned Experts

Project Management

Complete Project Management resources to Initiate, Plan, Execute, Monitor and Control through project closing.

Interfaces

Mesh Network
Weather
SDR Radios
PSU IUSS
OI's (Operational Intent)
Data Sources

Market Expertise

Expertise and Concepts of Operation (CONOPS) development in

- UAS (Unmanned Aircraft System)
- AAM (Advanced Air Mobility)
- UTM (Unmanned Traffic Management)
- Swarm AI (Artificial Intelligence)
- Security- Systems are built with cybersecurity from the ground up, incorporating robust data encryption and protection measures.

Success Criteria

Validated by NASA and FAA Standards

Built and tested using established CONOPS standards, ensuring reliability and compliance.

Flexible Implementation Timeline

Our role-based timeline ensures smooth integration and rapid deployment, leading to successful first revenue operations within six months.

Strategic AAM Partnerships

Spearhead advancements and innovations with Unmanned Experts and AAMTEX in partnership with leading AAM organizations

Blue Skies offers a complete AAM solution that empowers clients to Achieve leadership in Advanced Air Mobility, Support public safety integration and Engage with their communities.

With our professional services, we provide the expertise needed to integrate and optimize AAM systems for unique applications, delivering transformative benefits for all stakeholders involved.

A Provider of Services for Urban Air Mobility (PSU) for Advanced Air Mobility (AAM) acts as a communication hub between different air mobility service providers to help operators comply with regulations and ensure safe operations. It gathers and analyzes information about planned flights in urban corridors, ensuring that operations are safe and efficient by checking for conflicts with airspace restrictions and resource availability. The PSU distributes important notifications, weather updates, and operational data to operators, helps manage air traffic and corridor usage, archives data for future reference, and negotiates airport access as needed.

Blue Skies
Operational Air Mobility

Unmanned Experts Inc.

Confidence at the Cutting Edge

Consultancy

Build Knowledge

RDT&E

Field New Capabilities

CONOPs

Operationalize

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DIOXIDE

Air Track Coordination, Contingency & Control (C3) Orb-to-Orb (O2)

Primary AF
Customers

C3O2

DIOXIDE

Problem/Opportunity

AAM, UAM, UTM, and BVLOS UAS have large numbers of semi-autonomous aircraft, or Orbs, which must flight plan, coordinate and deconflict with neighbors to ensure safe, optimal flight paths and efficient scheduled ops.

Unmanned Experts Inc.

Proposed Solution

A robust air track infrastructure (similar to the Interstate Freeway system) and established CONOPs (akin to rules of the road) are required to make AAM deployment a realistic proposal

Impact

The program with mirror and inform the NASA AAM National Campaign efforts; progress IEEE and ASTM V2V standards and build the first CONUS-based commercially-viable AAM Air Track in the North Texas area.

DIOXIDE Start	DIOXIDE End	Planned Phase III Start
1 APR 22	31 DEC 23	1 MAR 24

ROSALYN

DIOXIDE: Air Track C3O2

"Overwhelm adversaries with complexity, unpredictability, and numbers through a collaborative and autonomous network of systems and effects" USAF's 2030 Science & Technology Strategy
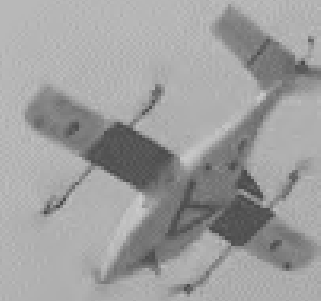
City of Arlington Multimodal Delivery Demonstration

North Texas UAS Task Force

8/27/24

Project Overview

- Project Description:
  - Test and evaluate innovative, autonomous food delivery to underserved and mobility challenged populations
  - Using electric, autonomous air and ground robots for deliveries
  - Studying public adoption trends and energy benefits

- Funding from the US Department of Energy

- Timeline: October 2023 to September 2025

- Project Team:

Vehicles

Air Robot

Ground Robot

Vehicles will be monitored by trained human operators at all times

Community Engagement

Survey (Spring 2024)
Community Workshop (May 2024)
Neighborhood Presentations (Summer 2024)
Mailers, Website, Social Media posts (Summer 2024)

Survey Results

Survey conducted in May and June 2024; ~200 responses

76% of responders have ordered food or groceries online for home delivery

60% have some familiarity with uncrewed air or ground vehicles

11% have ever interacted with an uncrewed air or ground vehicle

Benefits of Uncrewed Air and Ground Delivery Vehicles

- Safety/Less vehicles on the road : 18.15%
- Speed of delivery : 23.21%
- Reduced cost : 19.94%
- Overall convenience/easier to access services : 21.73%
- Environmental friendliness : 16.96%
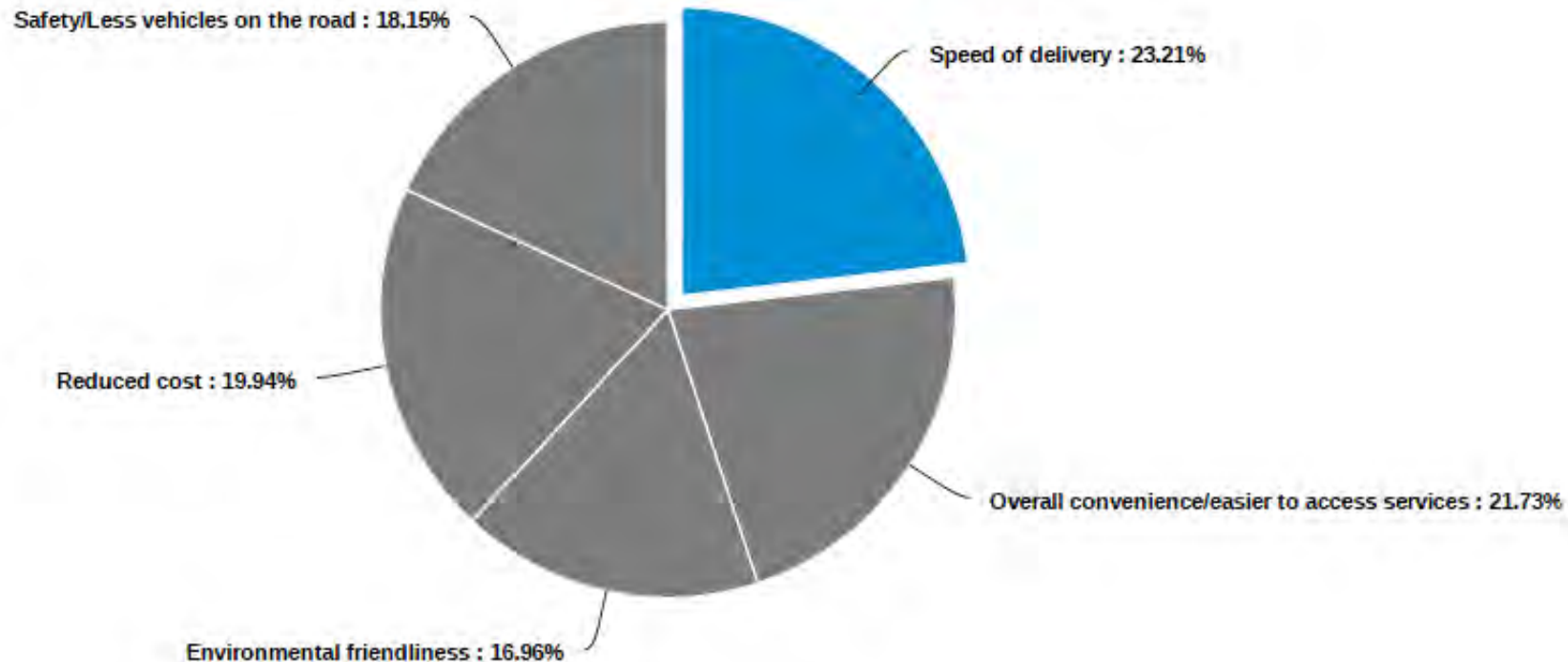
Survey Results

How much do you support the use of UAS (Uncrewed Aircraft System) or ground robot system for following purposes?

Statement	Stongly Object	Object	Neutral	Support	Strongly Support	Overall
Military Activities	19 10.27%	11 5.95%	31 16.76%	42 22.7%	82 44.32%	185 100%
Search and Rescue Operations in Remote or Rugged areas	5 2.7%	2 1.08%	8 4.32%	34 18.38%	136 73.51%	185 100%
Aerial Mapping/ Surveying	6 3.28%	6 3.28%	25 13.66%	42 22.95%	104 56.83%	183 100%
Traffic Monitoring	14 7.57%	10 5.41%	27 14.59%	60 32.43%	74 40%	185 100%
Small Package Delivery	28 15.3%	25 13.66%	34 18.58%	44 24.04%	52 28.42%	183 100%
Recreational Use	17 9.29%	20 10.93%	66 36.07%	37 20.22%	43 23.5%	183 100%
Other	14 8.7%	10 6.21%	106 65.84%	14 8.7%	17 10.56%	161 100%

Min   Max

Survey Results

What are some concerns you might have around UAS (Uncrewed Aircraft System) or ground robot delivery system?

Statement	No Concern	Somewhat Concerned	Extremely Concerned	Overall
Accidents and injury	35 19.77%	80 45.2%	62 35.03%	177 100%
Noise level	89 51.45%	63 36.42%	21 12.14%	173 100%
Loss of privacy	53 31.36%	55 32.54%	61 36.09%	169 100%
Theft of packages	32 18.93%	74 43.79%	63 37.28%	169 100%
Legal liability	43 25.6%	76 45.24%	49 29.17%	168 100%
Other	64 60.95%	21 20%	20 19.05%	105 100%

Min   Max

First Delivery Demonstration

Dates: September 9 to 13, 2024
Location: East Arlington neighborhoods
Target Participants: Food Bank clients,
  other residents
Goal: 150 grocery box deliveries
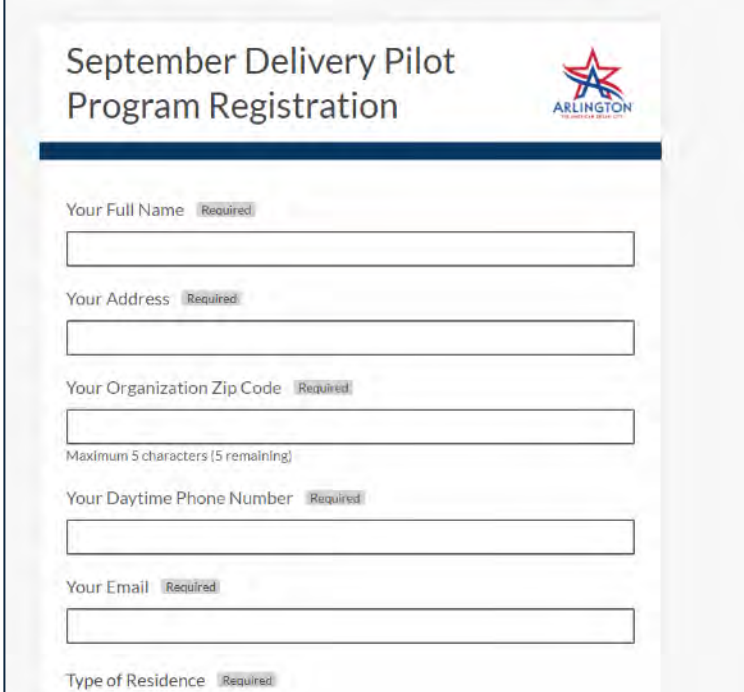
Delivery Zone
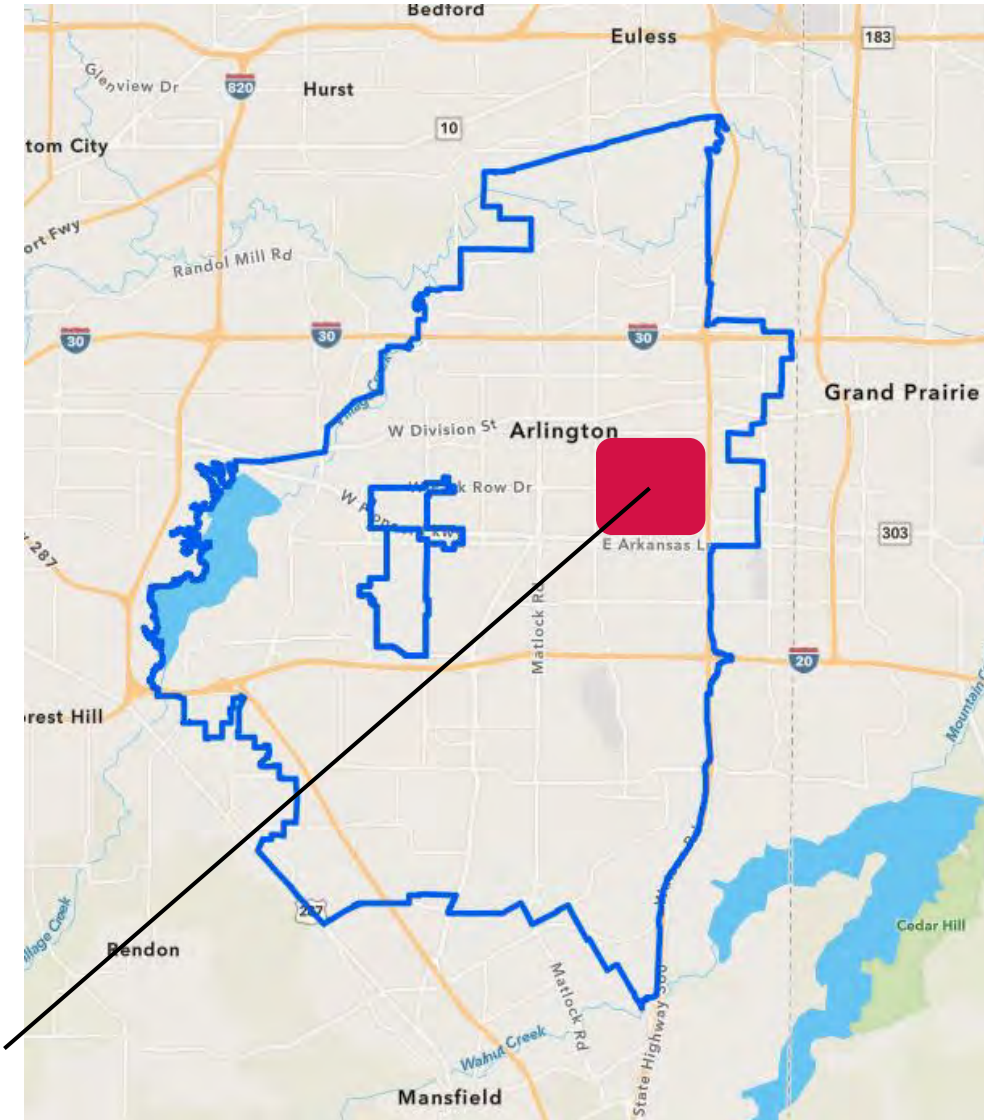
Participant Experience

1. Participants sign up online or by calling the City.

2. City will verify address and add delivery to the route plan; participants will be notified of delivery date, time window, and code to open delivery bay.

3. On delivery date and time, participants wait for the ground robot to roll up to their residence.

4. Type in unique code to receive grocery delivery.

5. Fill out a quick survey about the experience.

September Delivery Pilot Program Registration

ARLINGTON

Your Full Name   Required

Your Address   Required

Your Organization Zip Code   Required

Maximum 5 characters (5 remaining)

Your Daytime Phone Number   Required

Your Email   Required

Type of Residence   Required

Air and Ground Routes
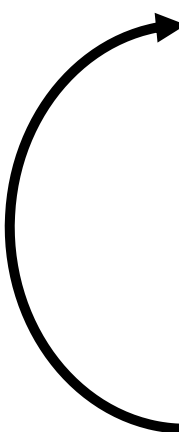
Air Robot Route (~0.45 miles)

Ground Robot Example Routing
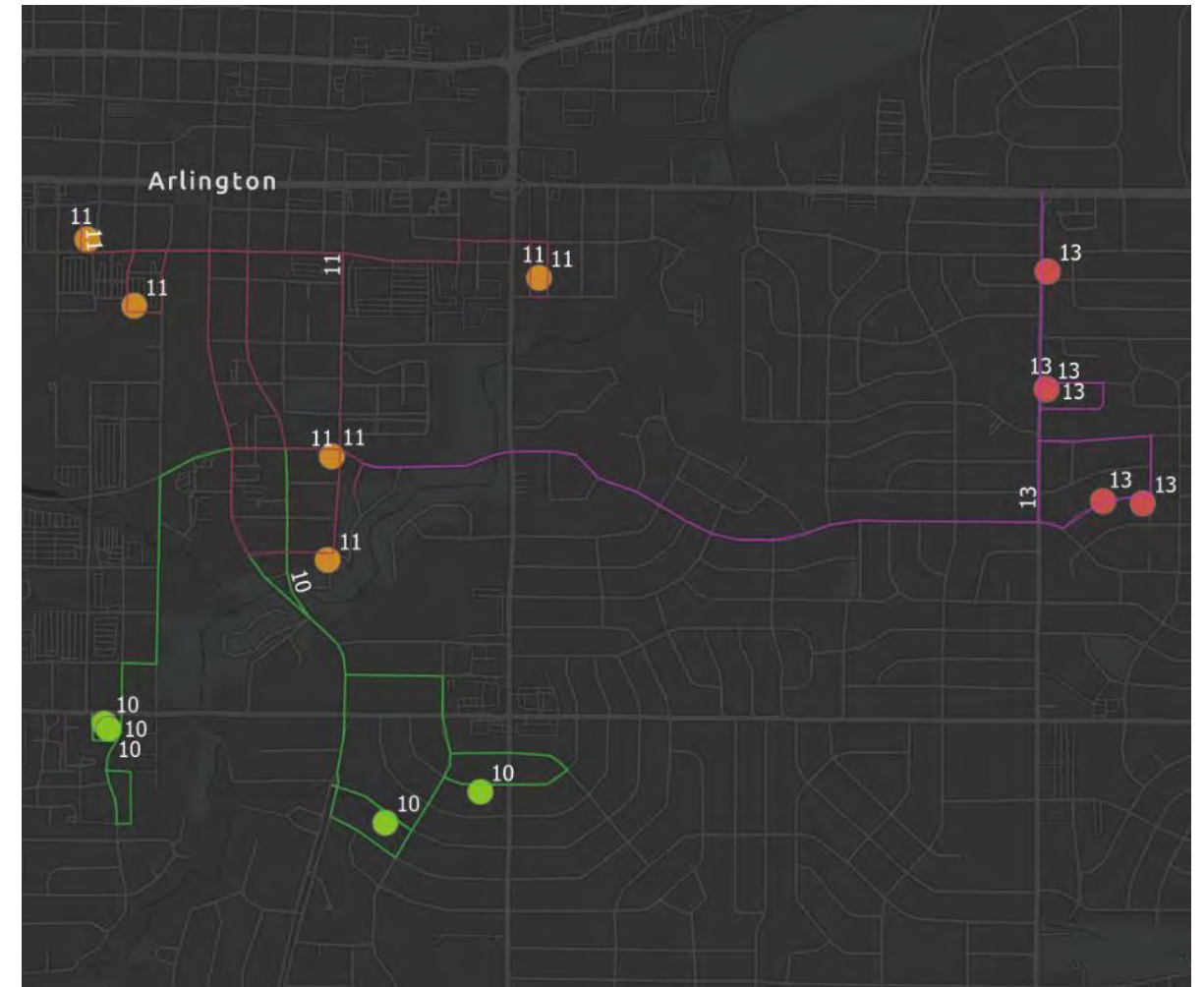
Operational Plan and Risk Mitigation

- Created Concept of Operations (UAS) as well as Service Flow, Test Plan of the Week (TPOW), and Schedule of Events (SOE) documents to guide the week of operations

- Day-Of Operational Summary:
  1. Team arrives on site
  2. Setup and preparation, including staging of food packages
  3. Air Robot operations commence – 12 full loops to deliver 12 ~10 lb packages
  4. Transfer packages from Air Robot to Ground Robot – 2 packages per slot totaling 20 lbs
  5. Ground Robot drives route
  6. At scheduled delivery time, and as notified by text message, participants wait for the ground robot to roll up to their residence
  7. Ground Robot returns to home once all onboard packages are delivered
  8. Repeat from step 3 until daily deliveries are complete.

  ~5 times per day totaling ~30 packages per day and ~150 for the week

Next Steps

- Complete September demonstration

- Gather feedback from demonstration participants

- Analyze findings

- Prepare for Spring 2025 demonstration

  - Finalize operational area and air robot routing

  - Begin customer acquisition planning

  - Apply lessons learned from Demonstration #1

Discussion

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Workforce Solutions for
North Central Texas
Eric Shanks, Industry Workforce Development

WORKFORCE SOLUTIONS
NORTH CENTRAL TEXAS
A proud partner of the AmericanJobCenter network

Our Vision

The recognized leader in building tomorrow's workforce.

Our Mission

To advance business-driven solutions that promote economic growth, opportunity and a skilled workforce.

Our Values

Trust: Operate with integrity and respect
Leadership: Courage to shape a better future
Inclusion: Leverage our collective genius
Community: We're in this together

Workforce Solutions for North Central Texas

We Serve 14 Counties

The North Central Texas Workforce Development Area covers more than 10,986 square miles and includes the 14 counties of:

— **Collin**

— **Denton**

— **Ellis**

— **Erath**

— **Hood**

— **Hunt**

— **Johnson**

— **Kaufman**

— **Navarro**

— **Palo Pinto**

— **Parker**

— **Rockwall**

— **Somervell**

— **Wise**

We oversee programs to assure that the businesses in our 14-county North Central Texas Workforce Development area remain competitive and grow jobs, that workers have opportunities to obtain skills that will help them become or remain self-sufficient, and that our communities are economically resilient.
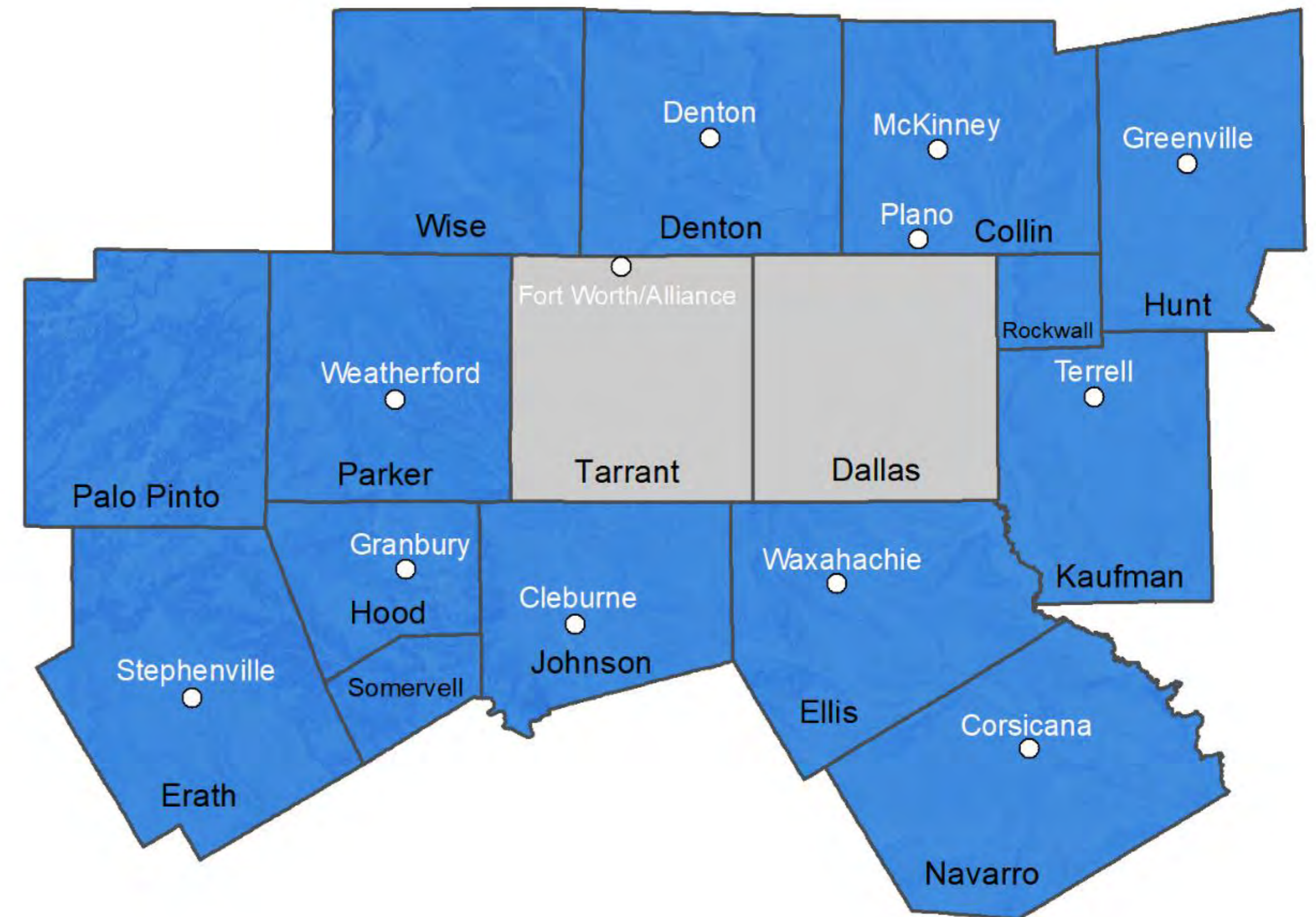
Our Ecosystem of Services

Adult Career Seekers
- Career Coaching & Skills Training
- Educational Workshops
- Work-Based Learning*
- Help with Child Care Costs*
- Adult Education Literacy

Youth & Young Adults
- Youth Career Exploration Events
- Internships and Apprenticeships
- Career Readiness Tools
- Job Shadowing & Career Days
- Summer Earn & Learn

Veterans
- Hiring Red, White & You! Veteran Hiring Event
- Civilian Career Transition Support
- Customized Resources
- Occupational Training

Employers
- Recruitment Assistance
- Reduced Employee Training Costs
- Economic & Labor Market Information
- Work Opportunity Tax Credits
- Fidelity Bonding

Economic Development Organizations
- Regional Economic Trends
- Education, Skill and Wage Data
- Information to Support Business Expansion/Relocation Decisions

Academic Institutions
- Partnerships with Community Colleges and Technical Training Institutions
- Customized Training Programs to Increase Workforce Skill Levels
- Grant Opportunities

Skills Training
- Skills Development Training Grants
- Work-Based Learning*
- Apprenticeships
- Tuition Support*

Child Care
- Reduced Child Care Costs*
- Training and Scholarships for Early Learning Programs
- Participation in Texas Rising Star Quality Rating System

Vocational Rehabilitation
- Partnership with Texas Workforce Solutions-Vocational Rehabilitation (formerly known as DARS)
- Access to Personal VR Counselor
- Job Placement Assistance and Other Specialized Services

Promoting Economic Growth, Opportunity and a Skilled Workforce

WORKFORCE SOLUTIONS
NORTH CENTRAL TEXAS

*Must meet eligibility requirements.

Customary Workforce Services

- Job Posting Assistance (Work in Texas)

- Recruitment Assistance
  - On-the-Job Training (OJT)
  - Subsidized Work Experience (SWE)

- Customized Hiring Events and Job Fairs

- Texas Veterans Programs

- Mobile Workforce Unit

Industry & Workforce Engagement

- Board staff that directly engages with industry and economic development partners

- Provide Talent Pipeline Development Strategies and Access to Resources

  - Skills Development Fund (SDF)
  - Skills for Small Business (SSB)
  - Adult Education & Literacy (AEL)
  - Registered Apprenticeship

- Education Team collaborates with K-12 and Higher Education partners

Labor Market Information

Better Data. Better Decisions. Better Outcome.

WORKFORCE SOLUTIONS
NORTH CENTRAL TEXAS

Questions?

Eric Shanks
Industry Workforce Engagement Specialist
(817) 695-9295 **|** eshanks@dfwjobs.com

Mobility 2050

The Metropolitan Transportation Plan for North Central Texas

North Texas UAS Safety and Integration Task Force
August 27, 2024

#PlanInProgress
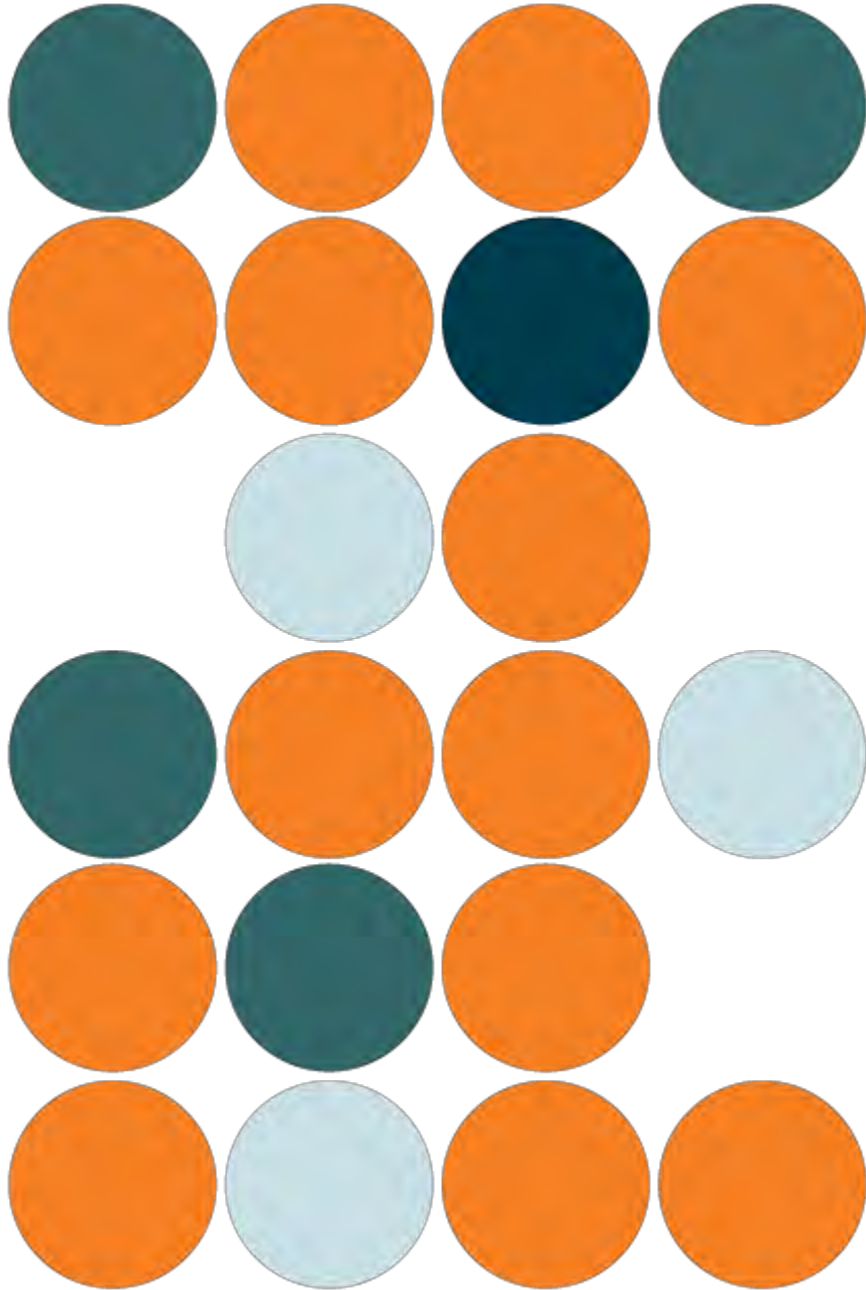
Long-Range Metropolitan Transportation Plan

NCTCOG is federally required to maintain a performance-based, multimodal transportation plan that guides the spending of federal investments and serves as a blueprint for the region's transportation network. The plan includes policies, programs, and projects that aim to **#ConnectNorthTexas**

Must adopt plan within 4 years

Must have a 20-year horizon (expires end of 2025)

Must include financial plan

Consistency with Transportation Improvement Program and other documents

Public Involvement

Air Quality Conformity

Plan Timeline

MOBILITY 2050 KICKOFF
Oct. 2023

CONTENT COMPILED
Nov. 2024

DRAFT PLAN POSTED ONLINE
Jan. 2025

FINAL PUBLIC COMMENT PERIOD
Apr. - May 2025

RTC ADOPTION
Jun. 2025

CONFORMITY DETERMINATION
by Dec. 31, 2025

Analysis and planning,
Public and committee engagement

Content editing

Draft plan review

Comment period

Finalize plan document,
Conformity review period

NOV '23   JAN '24   MAR   MAY   JUL   SEP   NOV   JAN '25   MAR   MAY   JUL   SEP   NOV   DEC '25

GATHERING PUBLIC INPUT

REQUESTING PUBLIC FEEDBACK

REQUESTING FEDERAL FEEDBACK

WE ARE HERE

MOBILITY 2050

3

What's in a Plan: Recommendation Types

Policies

Programs

Projects

What's Changing?

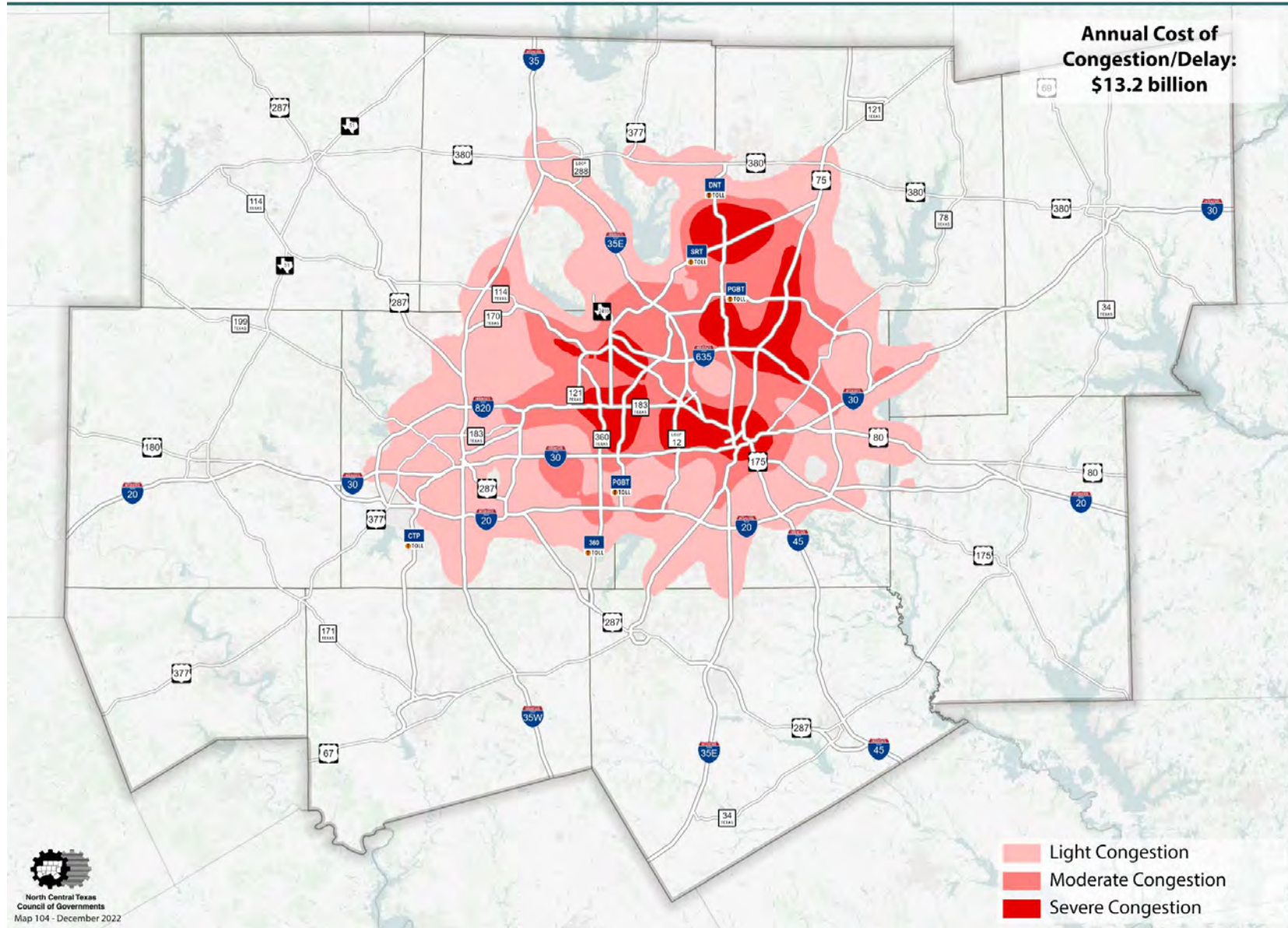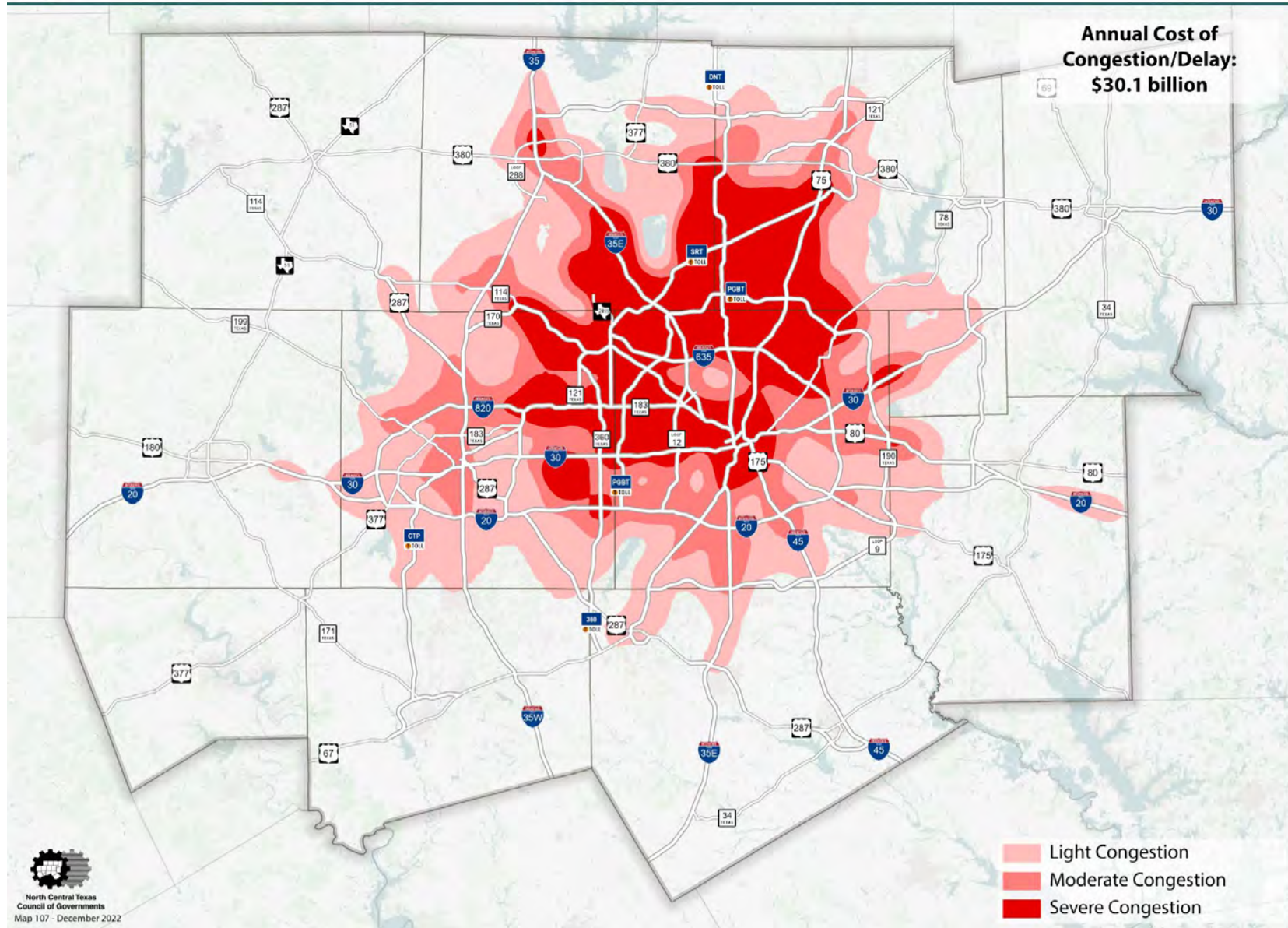|	*Mobility 2045 Update*	*Mobility 2050*
Years in plan	2023-2045 (22 years)	2026 -2050 (24 years)
Demographic forecast	11.4 million population forecast 8.1 million employment forecast	Draft forecast out for local review: 12.3 million population; 8.6 million employment
Policies, programs, projects	Minor policy, program updates, limited project updates	Comprehensive update to policies, programs, projects
Financial plan	$148 billion total plan	New forecast being developed
Performance measures and goals	New performance measures relative to plan goals	Continue performance measures; assess goals/objectives for public need, policy need, and technology

Current Highlighted Efforts

- Technical analysis and forecasting, policy, program, and project review and development

- Public engagement continues through 2024; working to summarize insights received to-date

- Financial plan development

Draft Population Forecast: 2019 - 2050

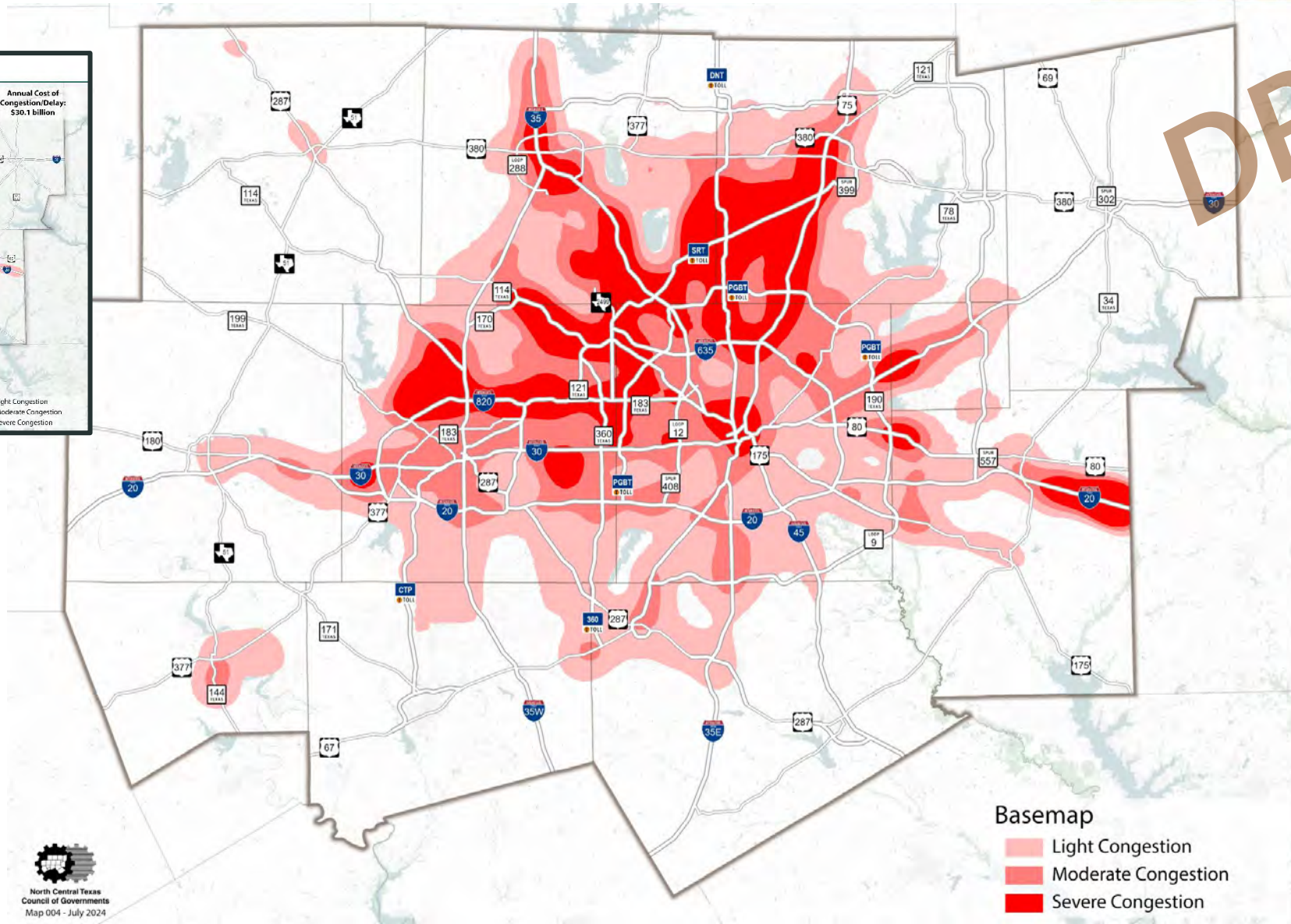## COUNTY FORECAST TARGETS – POPULATION

County	2019	2035	2050	2019 – 2050 Change	2019 – 2050 Percent Change	2019 – 2050 Compound Annual Growth Rate
Collin	1,036,595	1,613,969	2,158,340	1,121,745	108.2%	2.4%
Dallas	2,563,285	2,835,539	3,094,330	531,045	20.7%	0.6%
Denton	879,286	1,390,052	1,872,385	993,099	112.9%	2.5%
Ellis	187,453	324,747	452,132	264,679	141.2%	2.9%
Hood	59,934	112,725	162,845	102,911	171.7%	3.3%
Hunt	96,015	152,527	205,848	109,833	114.4%	2.5%
Johnson	174,456	275,089	368,962	194,506	111.5%	2.4%
Kaufman	140,490	234,441	321,673	181,183	129.0%	2.7%
Parker	144,367	263,189	374,523	230,156	159.4%	3.1%
Rockwall	104,942	177,129	245,395	140,453	133.8%	2.8%
Tarrant	2,061,041	2,484,544	2,877,012	815,972	39.6%	1.1%
Wise	67,174	120,815	171,552	104,378	155.4%	3.1%
MPA	**7,515,038**	**9,984,765**	**12,304,997**	**4,789,959**	**63.7%**	**1.6%**

2023 Levels of Congestion/Delay

Annual Cost of Congestion/Delay: $13.2 billion

Light Congestion
Moderate Congestion
Severe Congestion

North Central Texas
Council of Governments
Map 104 - December 2022

2045 Levels of Congestion/Delay

Annual Cost of Congestion/Delay: $30.1 billion

Light Congestion
Moderate Congestion
Severe Congestion

North Central Texas
Council of Governments
Map 107 - December 2022

2050 Level of Congestion/Delay (*New Baseline Forecast*)

Basemap
- Light Congestion
- Moderate Congestion
- Severe Congestion
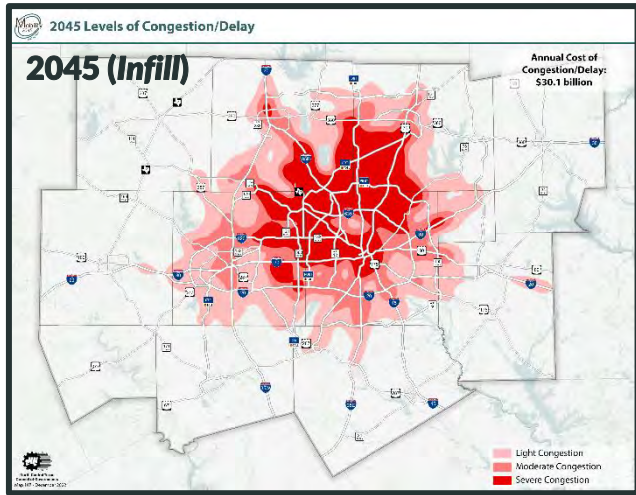
The population living inside a transit authority service area is expected to fall from 48% in 2019 to only 37% by 2050.

52%

Outside

48%

Inside

2019

63%

37% ▼

2050

DCTA

DART

Trinity Metro

■ Authorities
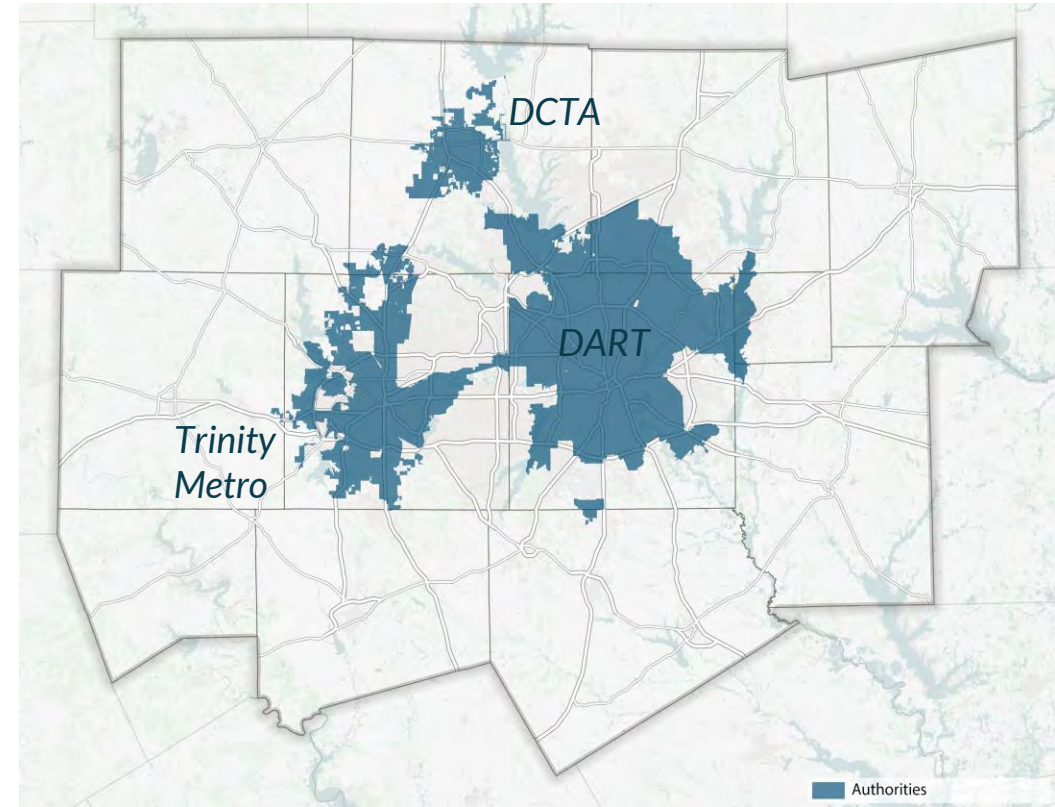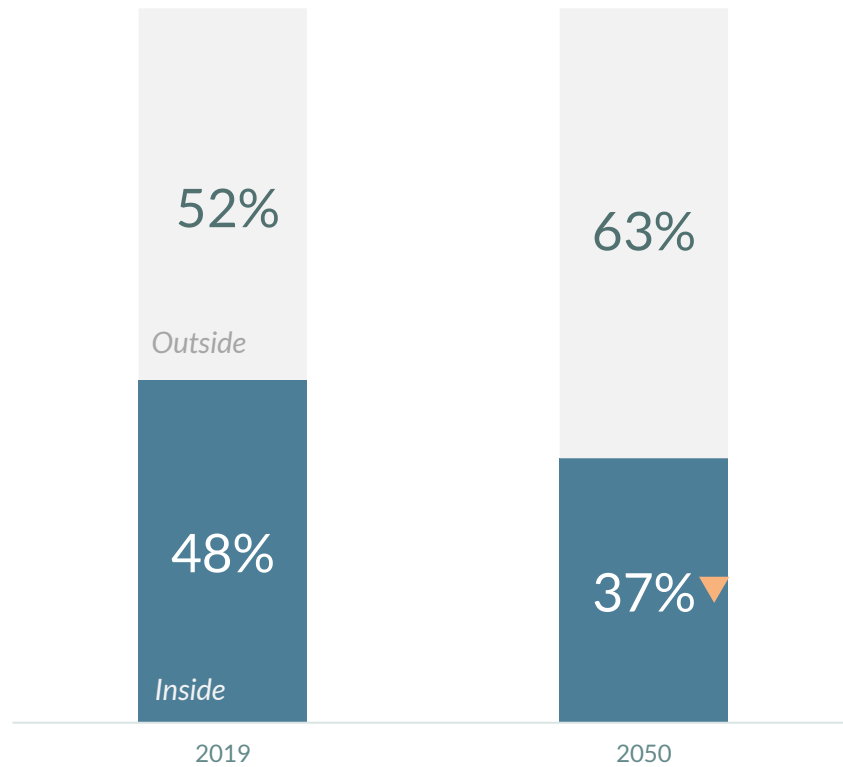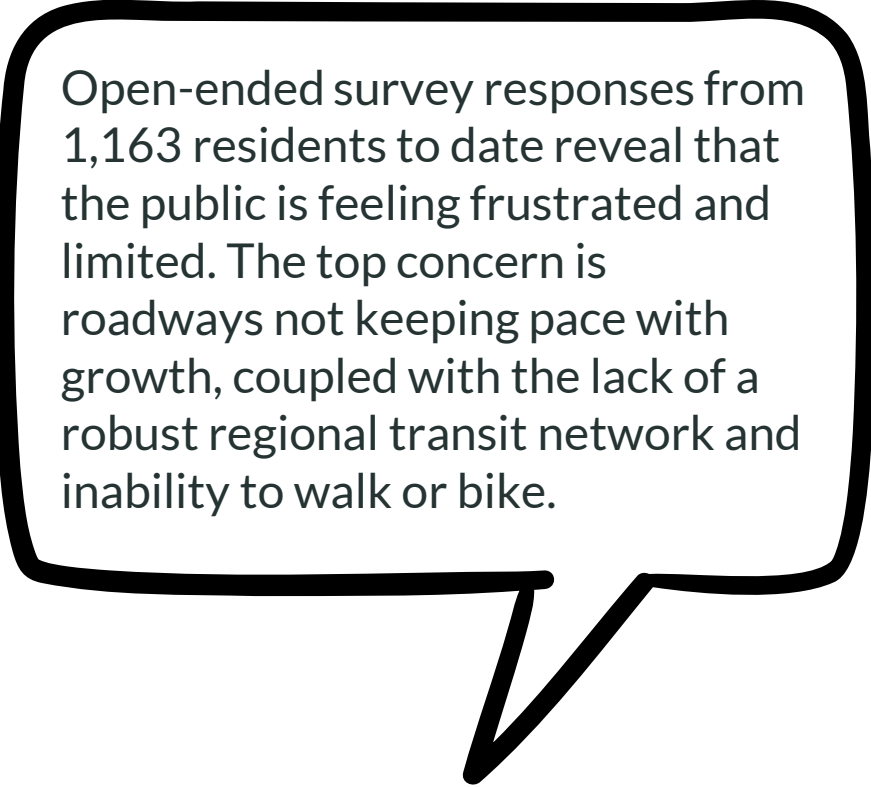
Public input reflects awareness of the population growth and its impacts.

2,000 + Survey responses through June 2024

1,100 + Open-ended responses collected through June 2024

300 + Map Your Experience comments through June 2024

Open-ended survey responses from 1,163 residents to date reveal that the public is feeling frustrated and limited. The top concern is roadways not keeping pace with growth, coupled with the lack of a robust regional transit network and inability to walk or bike.

What should we solve?

Transit and active transportation are the most needed modal investments, according to members of the public.
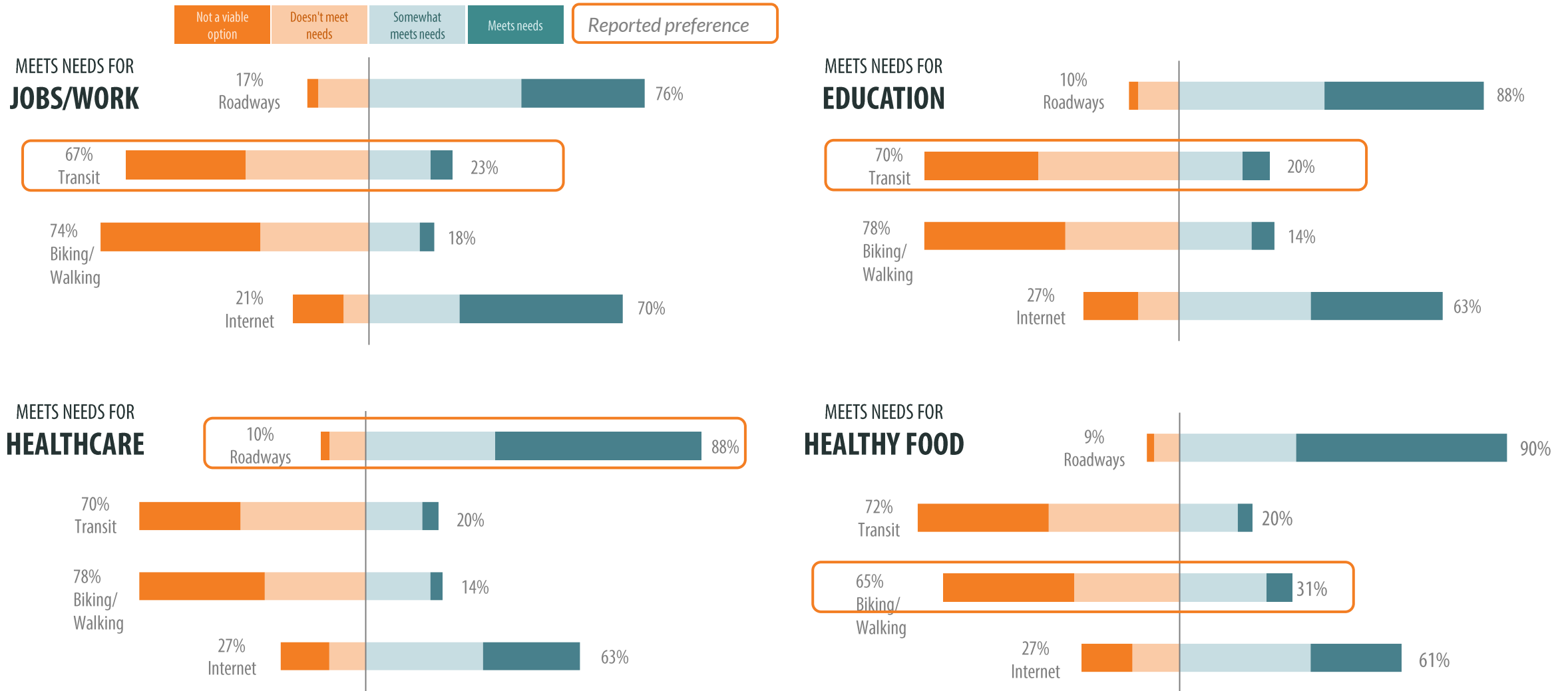
Legend: Not a viable option | Doesn't meet needs | Somewhat meets needs | Meets needs | Reported preference

MEETS NEEDS FOR JOBS/WORK
- 17% Roadways — 76%
- 67% Transit — 23%
- 74% Biking/Walking — 18%
- 21% Internet — 70%

MEETS NEEDS FOR EDUCATION
- 10% Roadways — 88%
- 70% Transit — 20%
- 78% Biking/Walking — 14%
- 27% Internet — 63%

MEETS NEEDS FOR HEALTHCARE
- 10% Roadways — 88%
- 70% Transit — 20%
- 78% Biking/Walking — 14%
- 27% Internet — 63%

MEETS NEEDS FOR HEALTHY FOOD
- 9% Roadways — 90%
- 72% Transit — 20%
- 65% Biking/Walking — 31%
- 27% Internet — 61%

MOBILITY 2050

Emerging Policy Priorities

What is not changing?
- Continuity of projects over long project development cycles
- Goal themes remain in sync with overall public and policy priority

What are items to examine?
- How to generate infill development/density
- Transit 2.0 guidance for policies to support transit system strategy
- Safety as a priority, including performance measures, modal safety issues, and strategies
- Funding and cost of implementing projects

Aviation Policies in the Plan

- AV3-001: Improve efficiency, safety, air quality, and access related to aviation.

- AV3-002: Provide input to the National Plan of Integrated Airport Systems and the Texas Airport System Plan.

- AV3-003: Encourage compatible land-use planning surrounding airports in the region.

- AV3-004: Establish a comprehensive and integrated Aviation Education System in North Central Texas.

- **AV3-005: Implement operational restrictions and other requirements of uncrewed aircraft systems around regionally significant aviation facilities.**

- **AV3-006: Safely and efficiently integrate vertical mobility technology (advanced air mobility, urban air mobility, unmanned traffic management, uncrewed aircraft systems) into the North Central Texas Council of Governments region.**

Public Use Airport   Private Airport
Public Use Heliport   Private Heliport
Military Airport
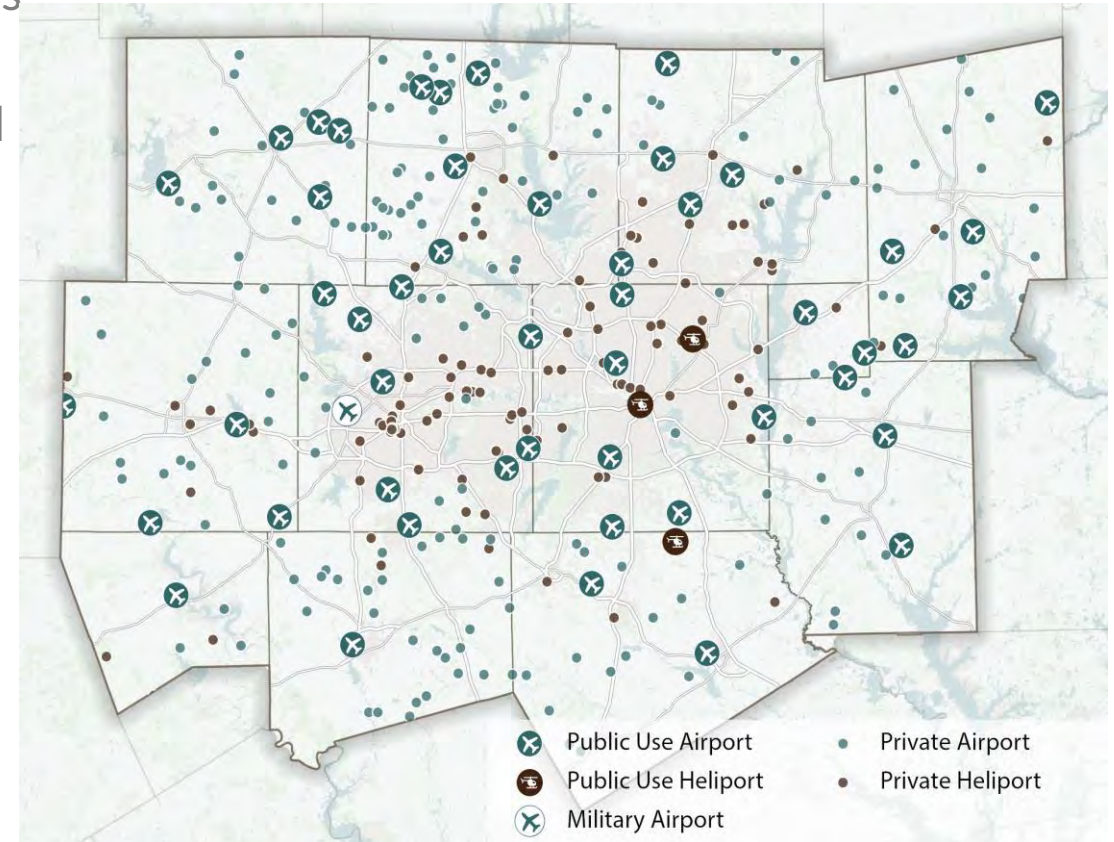
Highlighted Technology Policies

TT3-013: The region will work with educational institutions at all levels to develop workforce training solutions to prepare area residents for job opportunities in the emerging transportation technologies sector, to pursue funding opportunities, and to support deployments of automated vehicles and other emerging transportation technologies.

TT3-014: The region will prioritize the safety of all transportation system users in and through the deployment of emerging modes of transportation such as e-scooters, e-bikes, automated vehicles, and delivery robots through the use of strategic technology, design, and policy solutions.

Public input on aviation is mostly related to improving access to airports.

Transit Services to Complement Aviation Mode of Travel
- TRE and Bus Services: Recommendations for more frequent service in the Centreport area, including Sundays.
- Overnight Parking: Proposal to permit overnight parking to facilitate transit use to/from the airport.
- DFW Airport: Suggestions for improved transit options to/from DFW Airport, including rideshare services by DCTA and express train connections.
- Suggestion for a new DART line connecting Mockingbird Lane to a new "Love Field Station" with direct access, bypassing downtown and including an in-fill station at Dallas North Tollway and Lovers Lane.

Airport Connectivity and Accessibility
- Highlighting the need for more on-demand accessible taxis and rideshares for disabled travelers at DFW Airport and Love Field.
- Proposal to explore tunneling under Love Field for direct airport access.

Traffic Congestion Around Love Field
- Heavy traffic due to Love Field Airport (Dallas North Tollway and Mockingbird Lane).
- Mockingbird Lane: Originally a residential street, now heavily used for airport traffic.
- Need for Study: Suggestion to identify alternate routes using IH 35 to alleviate congestion on Mockingbird Lane.

If you haven't already, there's still time to provide input at
www.nctcog.org/M50

Take the Survey/Opinion Poll
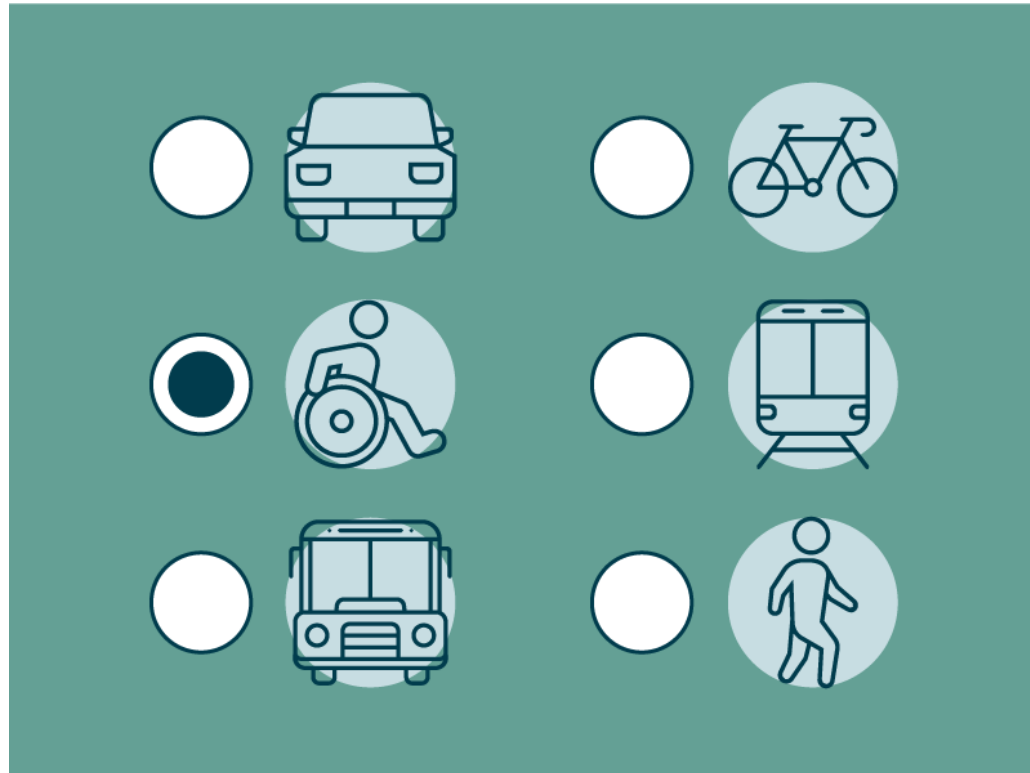
Map Your Experience

Stay Connected

Website
nctcog.org/planinprogress

Social media
@nctcogtrans
#PlanInProgress

Public Meetings
nctcog.publicinput.com/#events

Public Input Platform
publicinput.com/mobility2050

Email Us
mobility2050@publicinput.com

Take the Survey
nctcog.org/mobility2050survey

MOBILITY 2050

19
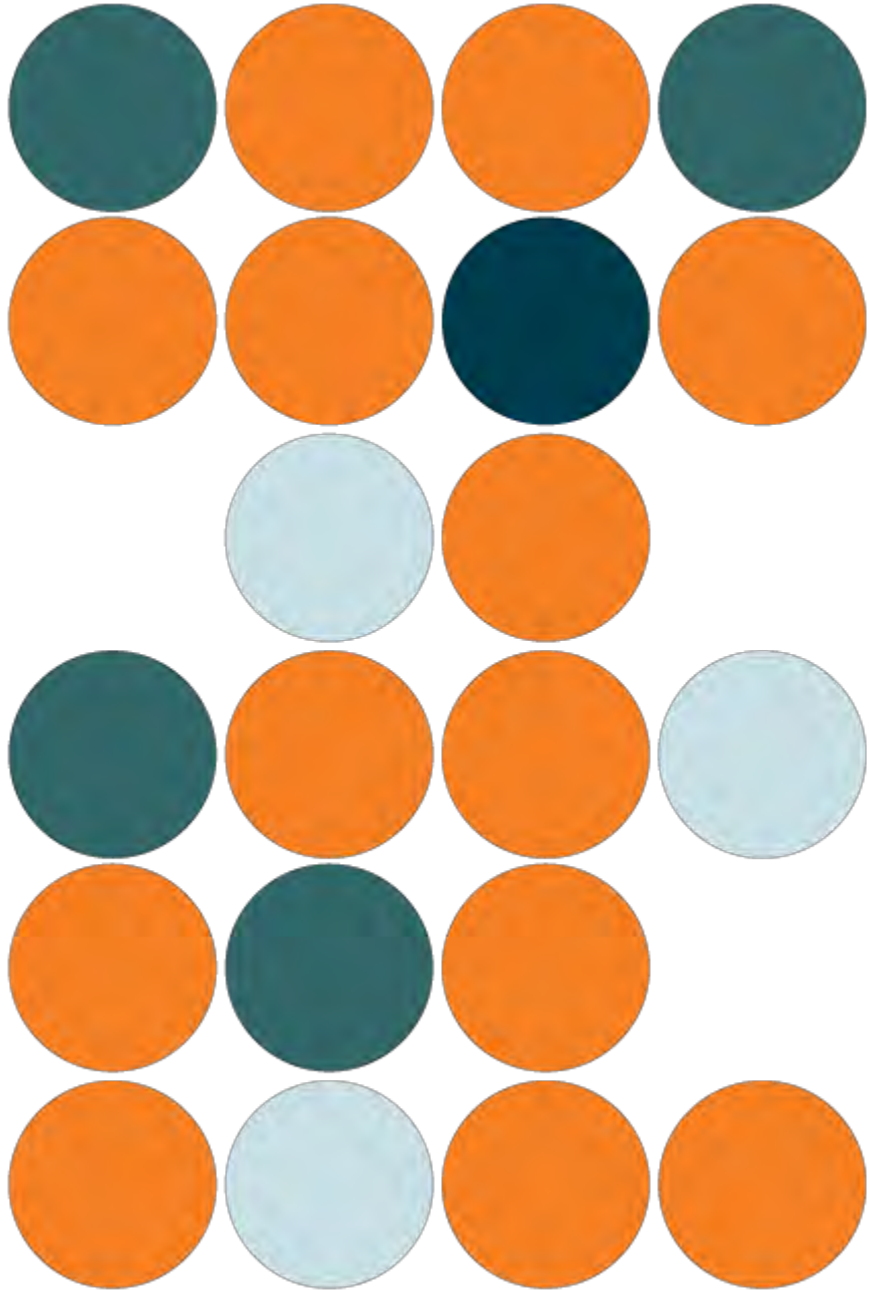
Contact Us

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Principal Transportation Planner

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Website

www.nctcog.org/PlanInProgress

North Texas UAS Safety and Integration Task Force

August 27, 2024

NCTCOG Programming Update

Ernest Huffman

Updates

📍	North Texas Airspace Awareness Pilot	[Airspace Dashboards](#)
🚁	FAA's UAS Traffic Management (UTM) Key Site News	[Announcement](#)
🏆	World Cup 2026 AAM Planning	
🚁	Texas AAM Advisory Committee	

Phase 1 report done soon

Moving on to Phase 2

RFP released soon for 4th Vendor

Zipline and Wing BVLOS and Collaboration

Working on creating a network of airports

Currently working on Final report to the Texas Legislature

NORTH TEXAS AVIATION PROGRAM
UNMANNED