North Central Texas Council of Governments

Dallas-Fort Worth CLEAN CITIES

DFW Clean Cities Project Showcase

April 24, 2024

North Central Texas Council of Governments

Thank You to Our Dallas-Fort Worth Clean Cities Sponsors

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Who We Are

Regional Planning Agency

North Central Texas Council of Governments

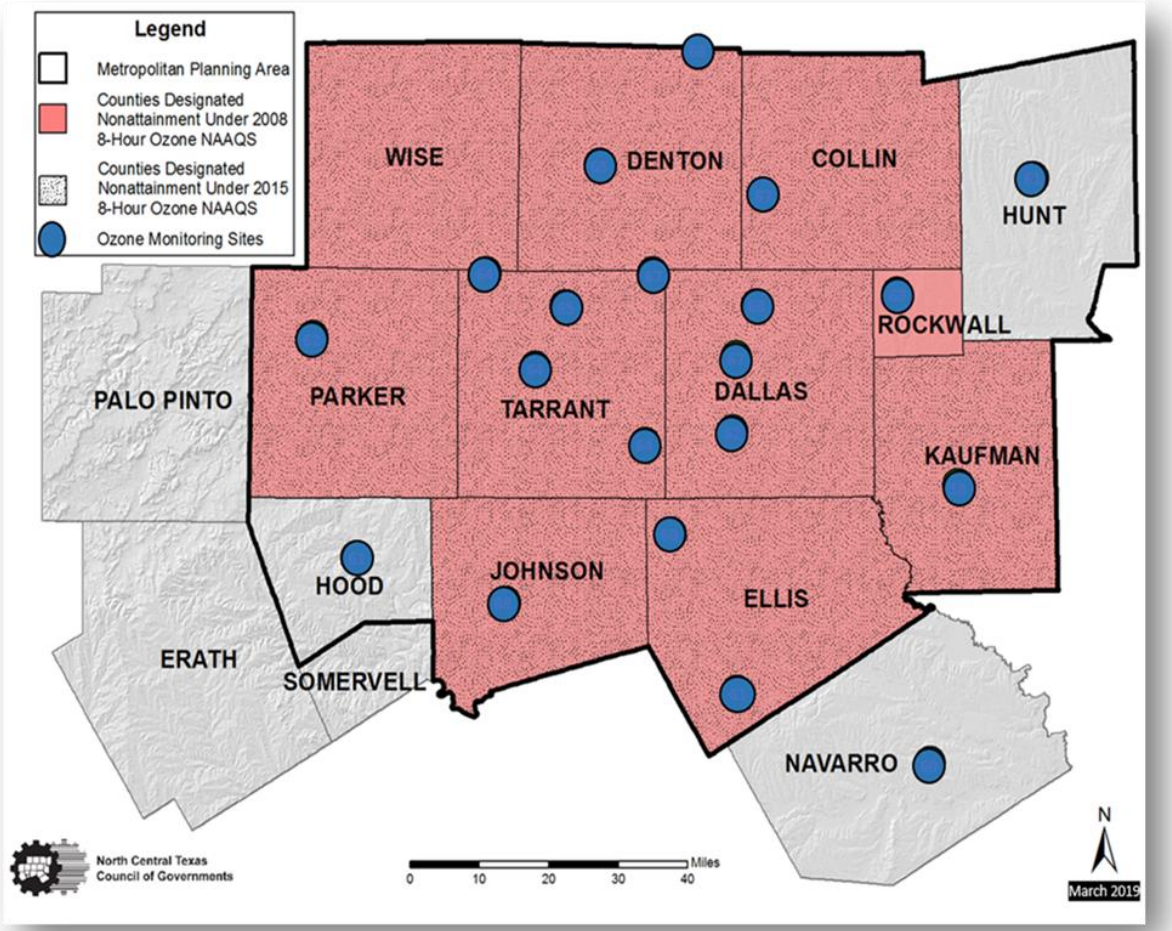
Metropolitan Planning Organization (MPO)

Regional Transportation Council

Department of Energy-Designated Clean Cities Coalition

Dallas-Fort Worth CLEAN CITIES

Sister Coalitions in Texas:
Alamo Area Clean Cities (San Antonio)
Houston-Galveston Clean Cities
Lone Star Clean Fuels Alliance (Austin)

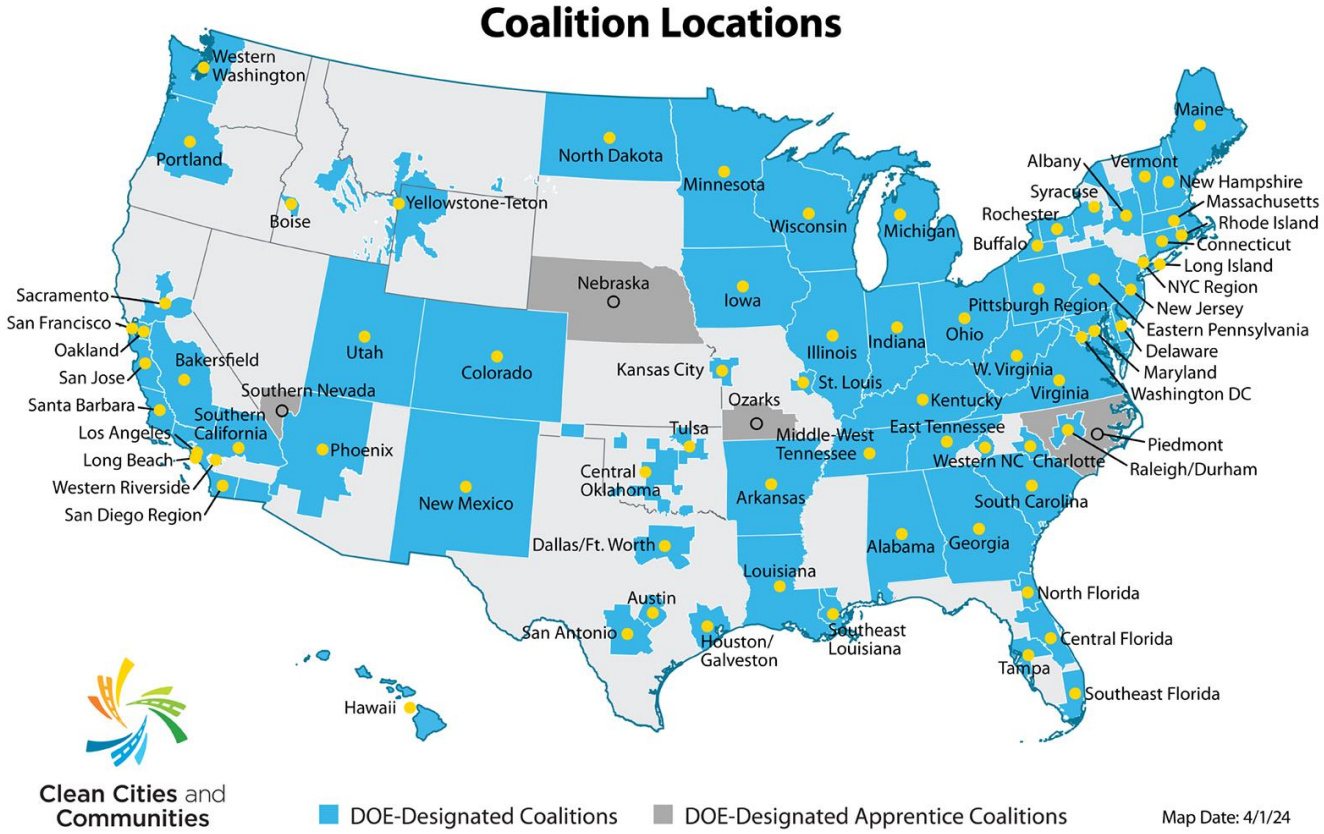


National Network of Clean Cities Coalitions

More than 85 Clean Cities coalitions with thousands of stakeholders, representing ~90% of US population

Designated by the Department of Energy

Working locally to advance affordable, domestic transportation fuels, energy-efficient mobility systems, and other fuel-saving technologies and practices



Clean Cities Technology Portfolio

Light-, Medium-, and Heavy-Duty Vehicles

Alternative and Renewable Fuels and Infrastructure

Idle Reduction Measures and Fuel Economy Improvements

New Mobility Choices and Emerging Transportation Technologies

What We Do

Funding Support

Assist with Navigating Programs and Developing Grant Applications

Administer Funding

Technical Assistance

Maintain and Analyze Data

Hold Webinars, Workshops, Peer Exchanges

Develop Best Practices and Template Resources

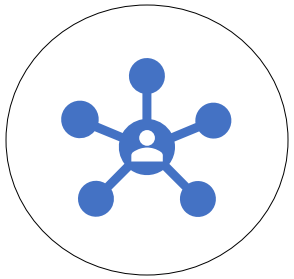
Planning the Future

Alternative Fuel Corridors

Texas EV Charging Plan

ZEV Infrastructure

Organic Waste to RNG Feasibility Study



Raising Awareness

Facilitating Relationships

National Drive Electric Week

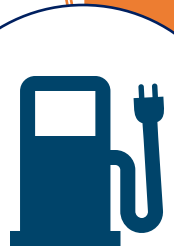
Fleet Recognition

Success Stories and Community Events

Key Focus Areas and Goals

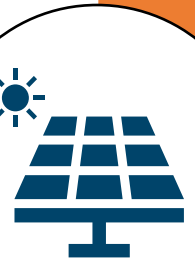
Clean Vehicle Initiatives

- Support Transition to Zero Emission Vehicle and Other Alternative Fuel Technologies Through Education and Technical Assistance
- Assist Deployment of Clean Vehicle Technologies by Identifying, Promoting, and Providing Funding



Alternative Fuel Infrastructure Initiatives

- Build and Support EV Charging Infrastructure Installations that Fill Gaps or Increase Equitable Access
- Support Increased Reliability and Resiliency of EV Charging Infrastructure
- Build and Plan Publicly-Accessible Infrastructure Network to Support ZEV Transition in Medium- and Heavy-Duty Sector



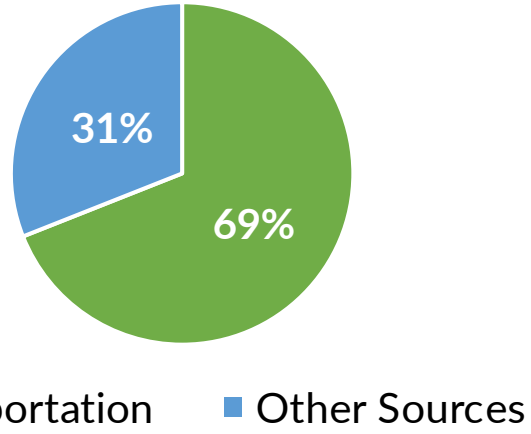
Energy Integration & Community Readiness

- Educate Local Governments on How to Support Local Adoption of Clean Transportation Technologies
- Minimize Negative Electric Grid Impacts Associated with Transportation Electrification and Advance Energy Conservation to Offset Increased Load
- Increase Local Adoption, Safety, and Resilience of Renewable Fuels (electricity, natural gas, hydrogen, biodiesel)
- Plan and Support Workforce Development to Support Clean Transportation Technologies and the Electric

Air Quality in Dallas-Fort Worth

2019 Nitrogen Oxides (NO_X) Emissions Inventory
10-County DFW Ozone Nonattainment Area

Nitrogen Oxides (NO_X) = 247.02 Tons per Day

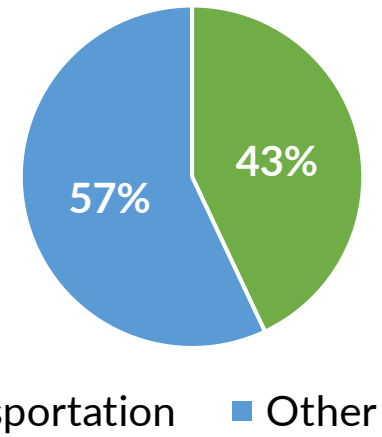


"Transportation" includes off-road, on-road, and non-road mobile
"Other Sources" includes point, area, and oil and gas production

Source: TCEQ, 2019 summer weekday anthropogenic emissions for the DFW 10 County Ozone Nonattainment Region, ***Proposed DFW Moderate Attainment Demonstration State Implementation Plan Revision for the 2015 Eight-Hour Ozone NAAQS***

2019 Greenhouse Gas Emissions Inventory
12-County Metropolitan Planning Area

Carbon Dioxide Equivalent (CO_2e) = 102,856,587 Metric Tons per Year



"Transportation" includes off-road, on-road, and non-road mobile
"Other Sources" currently includes energy, water, wastewater, and solid waste; agricultural, process & fugitive emissions not included to date

Source: NCTCOG, North Central Texas 12-County Metropolitan Planning Area 2019 Inventory of Community Greenhouse Gas Emissions

Benefits

- Improved Local Air Quality
- Improved Public Health
- Lower Vehicle Operating Cost
- Improved Transportation Access
- Increased Energy Resilience
- New Business and Workforce Opportunities

Section 1

New Mobility Choices and Emerging Technologies

City of Arlington
Multimodal Delivery Demonstration

ARLINGTON℠
THE AMERICAN DREAM CITY

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
- Project Team:

ARLINGTON
THE AMERICAN DREAM CITY

North Central Texas Council of Governments

TARRANT AREA FOOD BANK

UNIVERSITY OF TEXAS ARLINGTON

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AERIALOOP
DRONE DELIVERY AIRLINES

Project Details

- US Department of Energy, Office of Energy Efficiency and Renewable Energy funding opportunity
  - Promote innovation in the transportation sector to deploy clean energy technologies
  - Provide better and cleaner mobility options that are affordable for all, especially disadvantaged communities
- Total project cost is $1,601,056
  - $780,182 from US Department of Energy
  - $820,874 local cost share from all partners
- Timeline:
  - Two year project, with significant community engagement, two delivery demonstration periods, and robust analysis
  - October 2023 through September 2025

Project Tasks and Timeline

Year 1 Oct. 2023 – Sept. 2024: Engagement, Analysis, Demo 1

- 1.1 Community Engagement
- 1.2 Location Analysis
- 1.3 Cost Modeling
- 1.4 Community Workshop
- 1.5 Stakeholder Engagement
- 1.6 Concept of Operations
- 1.7 Demonstration 1

Current projects

Year 2 Oct. 2024 – Sept. 2025: Analysis, Demo 2, Reporting

- 2.1 Analysis of Demo 1
- 2.2 Demonstration 2
- 2.3 Final Analysis and Report
  - Community Feedback
  - Benefit-Cost Analysis
  - ESRI Story Map
  - Policy Recommendations
  - Fleet Electrification Analysis
  - Educational Materials

Community Engagement

Conduct engagement with Arlington residents and regional stakeholders about the project.

Goal: Develop better understanding of initial public attitudes about robot air and ground delivery vehicles. Identify opportunities and challenges for the delivery process.

Key Components:

- Community Survey: in draft; will be released this spring
- Stakeholder Engagement:
  - DFW Clean Cities Coalition (April 24)
  - North Texas Uncrewed Aircraft Systems Task Force (May 7)
- Community Workshop:
  - Ability for community to see technologies and learn about project
  - May 8, 5:30-7pm, Vandergriff Park in Arlington

Community Survey

Survey being developed by the University of Texas at Arlington team

Will be distributed widely online, in the community where the demonstrations are planned, and at the community workshop

Designed to gather information on the following:

- Internet access and comfort ordering goods online and with an app
- Familiarity with and reactions to autonomous transportation services
- Interest in participating in the delivery demonstrations
- Logistics of residential delivery
- Demographic information

Survey will be distributed starting in May

Community Workshop

May 8, 2024

5:30pm to 7pm, come and go format

Vandergriff Park in Arlington

Robot demonstrations

Project information from each partner

Take the community survey

Sign up to be considered for the food delivery demonstrations!

MULTIMODAL DELIVERY COMMUNITY WORKSHOP

The public is invited to join the City of Arlington and project partners for live demonstrations and to learn more about an exciting new project to test the delivery of essential food items to Arlington residents via autonomous vehicles and uncrewed aircraft systems.

May 8, 2024
5:30 - 7:00 PM

Bob Duncan Center/Vandergriff Park
2800 S. Center St.
Arlington, TX 76014

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Dallas-Fort Worth Clean Cities
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The project is funded by:
U.S. DEPARTMENT OF ENERGY

NCTCOG Project Activities

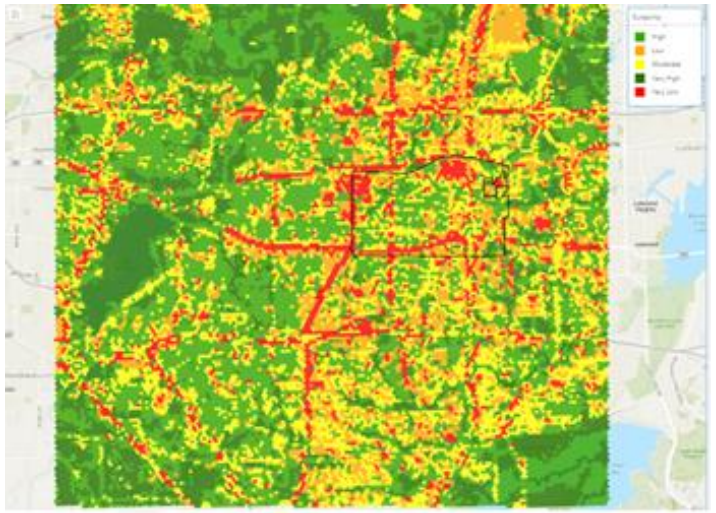
- Produce a cost model for the project and compare to actual costs
- Hold meetings with stakeholder groups to gain industry feedback
- Assist with two live demonstrations
- Support hosting a community workshop
- Create a replication guide and outline work necessary to scale the project
- Produce outreach materials to assist with communicating project results
- Assist with development of an ESRI Story Map Report
- Create a fleet electrification analysis for community partners

Delivery Demonstration Location Analysis

Conduct location analysis of Arlington zip codes to define the customer service area and assess all requirements for multimodal delivery

- Airspace Link: overall coordination and analysis
- Aerialoop: air delivery
- Clevon: ground delivery

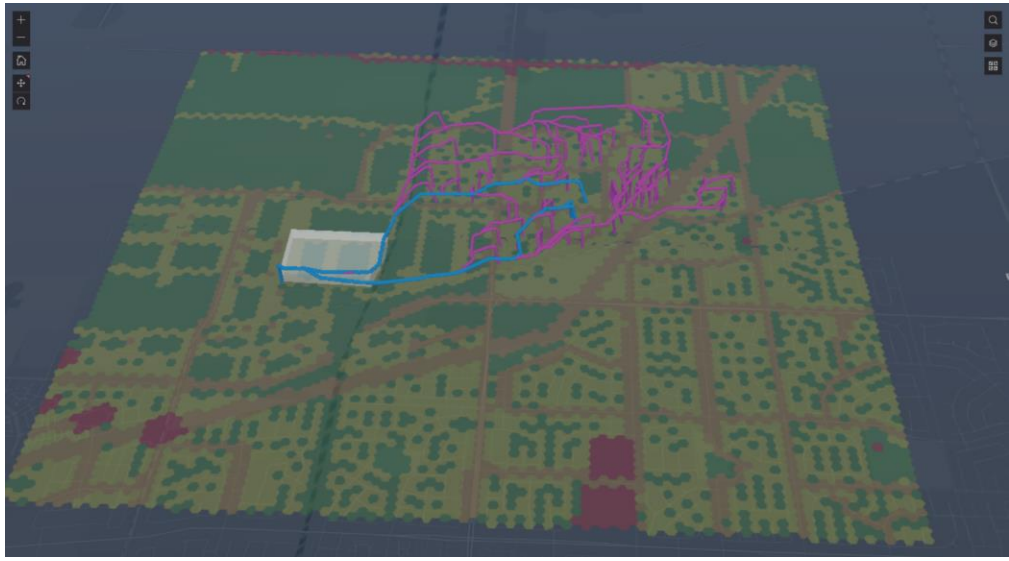
Goal: Determine potential takeoff, landing, and robot hub sites as well as target service areas and recommended routes for the air and ground robots



Initial surface suitability analysis

Process:

- Gather relevant data sets
- Understand location requirements
- Create a geospatial map with relevant layers
- Assess ground and air risk criteria/requirements
- Analyze potential site locations and routing
- Align locations and routes with team
- Finalize locations and routes



Example 3D routing map

Project Technologies: Aerialoop ALT6-4 VTOL

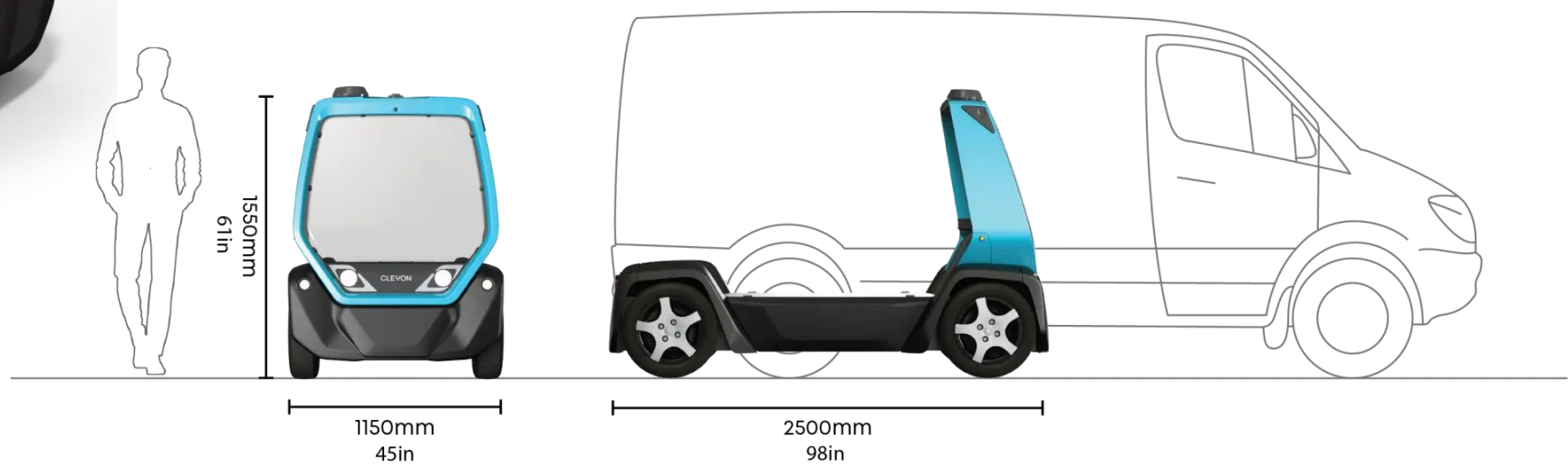
- Speed: 50 mph
- Payload: 9 pounds
- Range: 25 miles
- Redundant rotors
- Built-in ballistic parachute
- Vertical take off and landing

Dimensions:

- Wingspan: 8½ feet
- Length: 6 feet

Project Technologies: Clevon Autonomous Robot Carrier

- Speed: 15 mph max on 40 mph roads
- Sensors: 360 degree view
- Power: fully electric
- Range: 50 miles per charge
- Charging: ~1 hour



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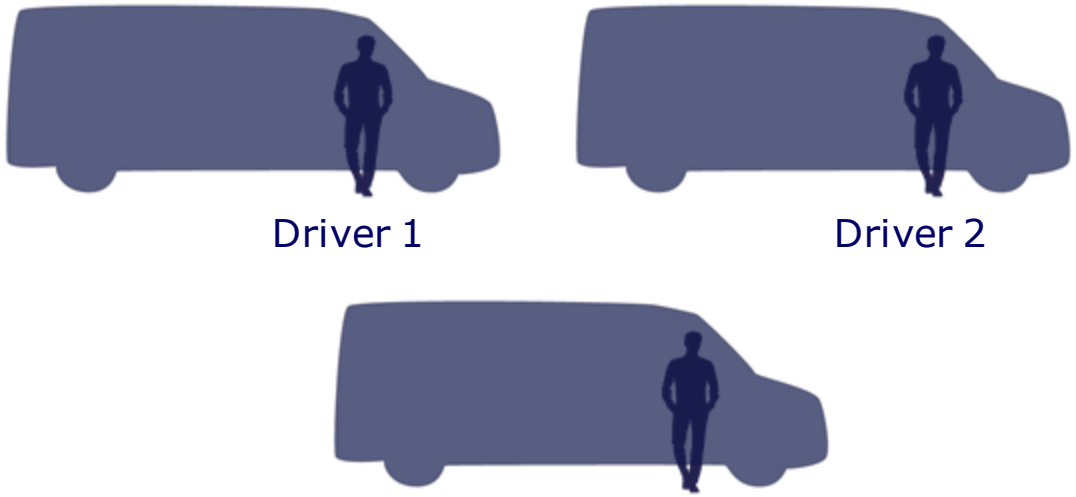
Autonomous Delivery Technology Company

What problem do we solve?

Problem

- Labor costs account for up to 80% of the last mile delivery costs
- Driver shortage for commercial vehicles is a worldwide problem



Driver 1

Driver 2

Driver 3

Solution

- Autonomous multifunctional electric robot carriers
- Operating in optimal 2–5-mile radius
- 10+ vehicles per one supervisor

Supervisor

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Timeline

2018:
First robotic carrier prototype

2008:
Cleveron founded

Cleveron today:
>7,000 terminals
> 50 countries
> 20 install partners
> 200 global suppliers
> 200 clients

2020:
First unmanned robot in Europe on public roads

2022:
April - Clevon's clean-cut spin-off from Cleveron

May - Release of 3rd gen robot CLEVON 1

2022-2023:
Pilots and commercial services

>45,000 miles on public roads with 20x AVs

2024:
Pilots and commercial mini fleet services in the US

2025:
Launch of ClevonPilot for commercial services

2026:
Scaling

CLEVON

Today

3 years on EU public roads

>70 000 miles driven in daily traffic

3rd generation delivery robot

2024 - **Public road and industrial pilot projects in the US**

City of Arlington project a key milestone for showing the future already today

Proven and scalable approach

- **Proven perception technology**
  fusing cameras and radars for navigation (Tesla's approach)
- **Unbound by weather**
  designed to cope with heat, cold, snow, rain and fog
- **Deep learning systems**
  Machine Learning helps the robots to learn on the go
- **Fast start of operations**
  services can be started within a few days
- **Operator-assisted autonomy**
  today, trained operators support each CLEVON 1 robot
- **95% autonomy by 2025**
  AI driven robots - one operator to supervise multiple robots

Unparalleled multifunctionality for your specific business needs

CargoBox

MultiBox

Flatbed

Mini Truck

Recycling

Surveillance

Mobile Drone Pod

CLEVON

Let’s make it happen together!

Meelis Anton

COO, US

Meelis.Anton@clevon.com

Stakeholder Feedback: Clean Cities Coalition

Questions about the project?

Opportunities for food delivery

Technology opportunities

Community acceptance

Challenges

Discussion

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Section 2

Infrastructure to Enable Zero Emission

IH 45 Zero Emission Vehicle Plan

- Developed recommendations for refueling/recharging stations to facilitate zero emission vehicle infrastructure
  - 5 medium-/heavy-duty EV charging sites recommended
    Adoption may be limited to short, regional haul routes that return to depot
  - 3 medium-/heavy-duty hydrogen refueling locations recommended (co-located with EV charging recommendations)
  - Additional light-duty EV charging sites recommended

	Hydrogen Fuel Cell Truck	Battery Electric Truck
Emissions	Zero Tailpipe	Zero Tailpipe
Range	Comparable to Diesel	~250 Miles
Weight	Some Extra Weight	Much Extra Weight
Refueling Time	Comparable to Diesel	30+ Minutes

Medium-/Heavy-Duty Emissions

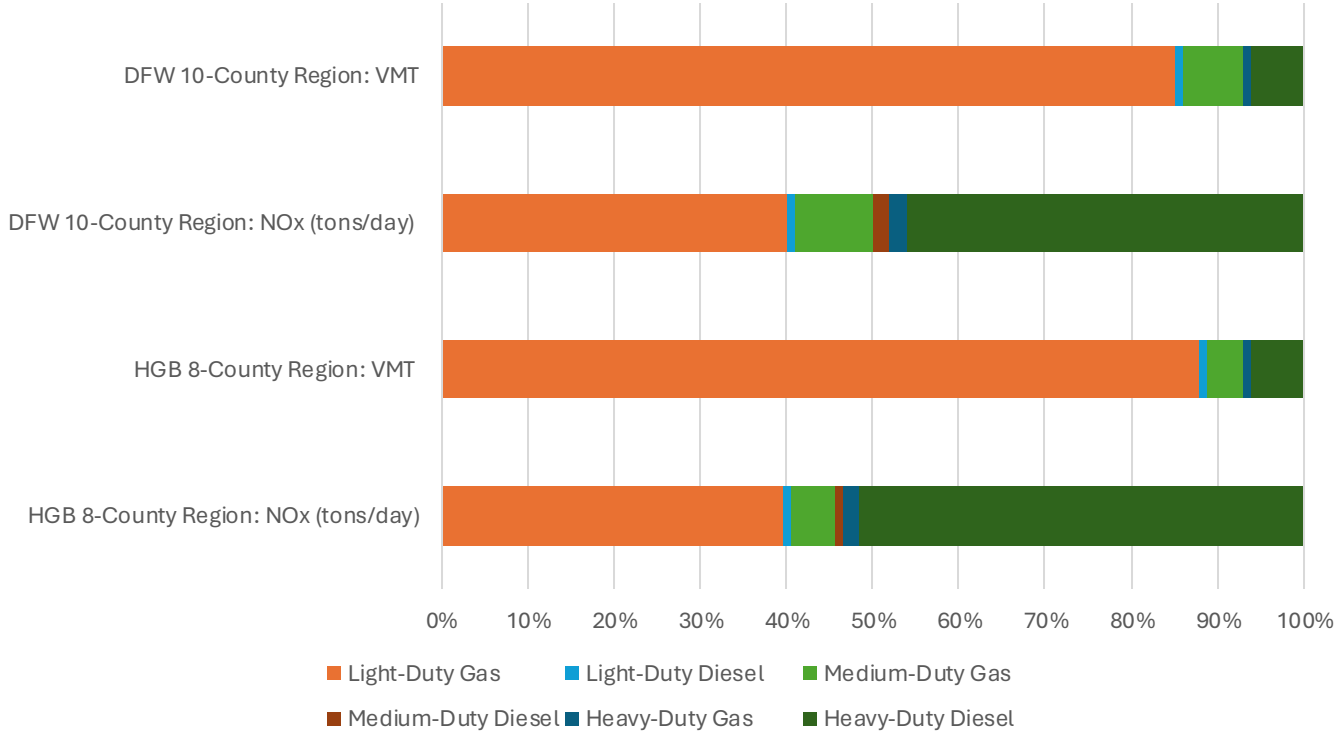
Improve Air Quality

Ongoing ozone nonattainment issues in DFW, Houston-Galveston-Brazoria, and San Antonio Areas

Reduce Medium-/Heavy-Duty Vehicle Emissions

- In DFW and San Antonio, heavy-duty trucks make up 48% of all ozone-forming NOx emissions
- In Houston-Galveston-Brazoria area, heavy-duty trucks make up 54% of all ozone-forming NOx emissions

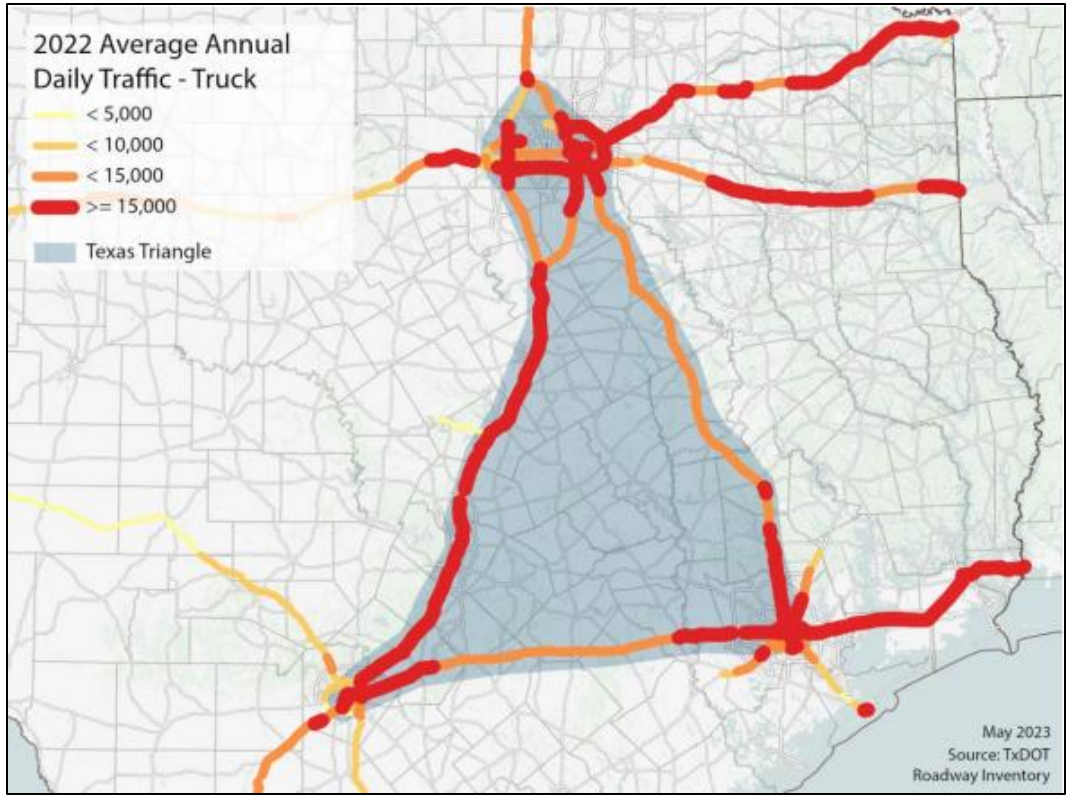
Vehicle Miles Traveled Versus Nitrogen Oxides Contribution by On-Road Vehicle Type in DFW and Houston-Galveston Areas



Emissions Impact of Heavy-Duty Diesel is Disproportionately High Compared to Miles Traveled

Texas Triangle Freight Traffic

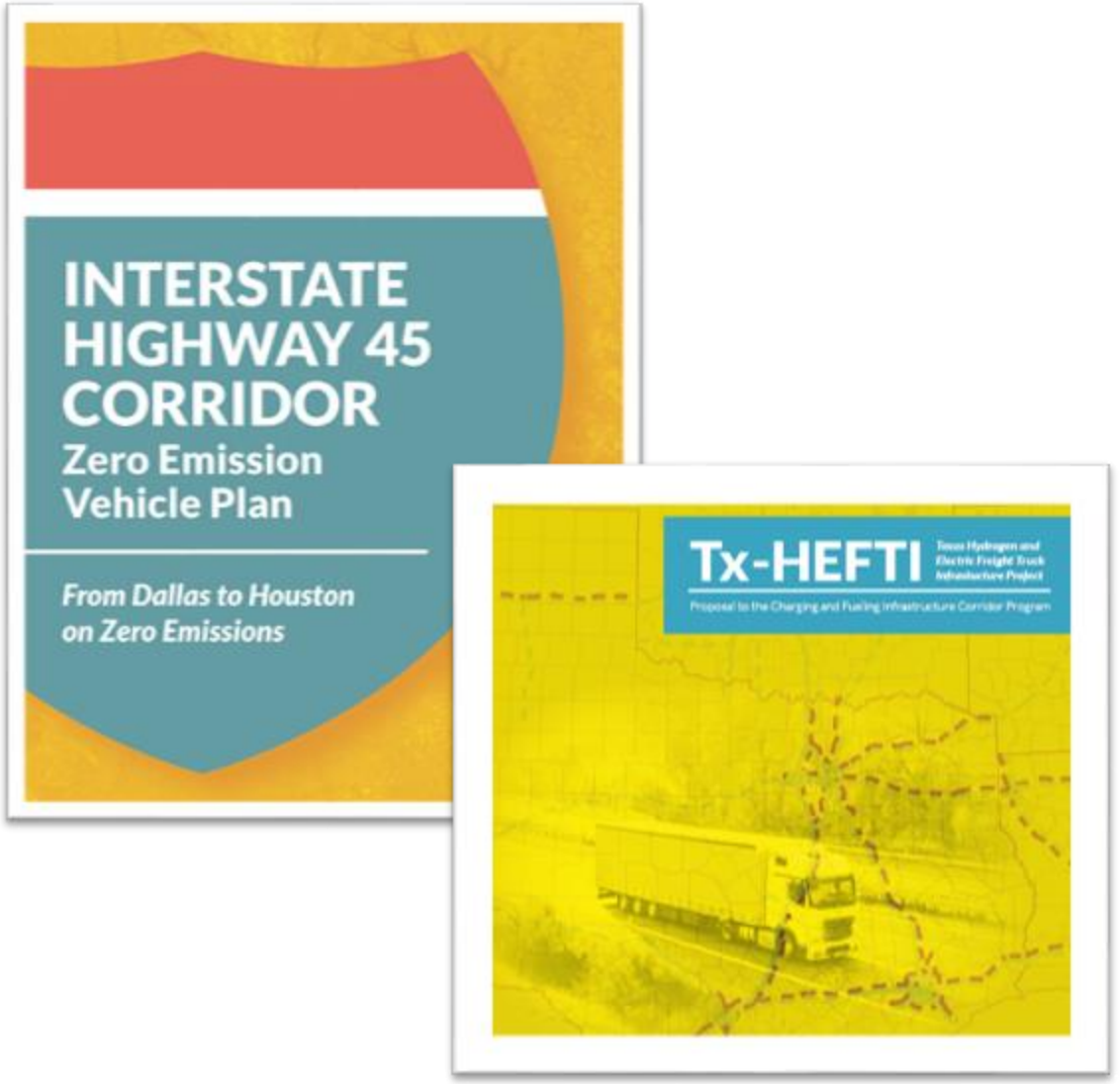
- Each leg of Texas Triangle has an average annual daily truck traffic over 10,000 trucks
- Texas holds the fastest increasing Real Gross Domestic Product in the US
- By 2050, freight traffic moving through Texas is expected to more than double ($7.2 trillion)
- Network of alternative fuel infrastructure along entire Texas Triangle necessary to move adoption beyond pilot stages



Building from IH 45 Plan

- IH 45 Corridor Plan informed Charging and Fueling Infrastructure (CFI) corridor application
- IH 45 Plan supports H2LA's study of the Texas Triangle
- Established relationships with local governments allows for:
  - Energy and environmental justice recommendations
  - Local air quality data at a more granular level
  - Local workforce considerations

nctcog.org/IH45-ZEV



Hydrogen Project Synergies

HyVelocity Gulf Coast Hydrogen Hub

Led by GTI Energy; Investing in clean hydrogen production centered in Houston to leverage the region's abundant resources to bring down the cost of hydrogen

Texas Hydrogen Alliance Activities

UT Arlington Hydrogen Event – June 11

Ability to Tap Into Current/Pending Expertise

- Railroad Commission of Texas Hydrogen Production Policy Council
- Department of Energy Grants for Station Design
- Toyota Light-Duty Fueling Station Experiences
- Department of Energy Hydrogen & Fuel Cell Technology Office
- Clean Cities Network – Connecticut and New Jersey

Image Source: Air Liquide

GTI Energy Houston to Los Angeles (H2LA) I-10 Corridor Project

H2LA Hydrogen Infrastructure Planning

GTI Energy led project awarded by the Department of Energy (DOE)

- Build computer models for vehicle, fueling infrastructure, and operational data
- Develop a replicable blueprint for other corridors and megaregions
- Establish a heavy-duty hydrogen refueling and freight truck network in the Texas Triangle and I-10 corridor from Houston to Los Angeles

H2LA Project Team

CORE TEAM	
GTI Energy	Overall study coordinator and prime applicant. Leads Diversity, Equity, and Inclusion Plan and activities.
Oak Ridge National Laboratory, UT Austin	Data collection, modeling, and analysis of transportation systems.
ExxonMobil	Contribute input from large scale clean hydrogen producer.
Walmart	Contribute fleet operational data and needs.
Dallas-Fort Worth, Alamo Area, and Western Riverside Clean Cities/Councils of Governments	**Incorporate community and coalition stakeholders needs into plan. Provide outreach and dissemination plan.**
Nikola, Hyundai, Toyota Motor	Provide truck requirements and fueling needs data.
Air Liquide	Support real-world data and logistics for hydrogen supply.
Center for Houston's Future	Incorporate community needs into plan.
Land of Enchantment and Valley of the Sun County Clean Cities Coalitions	Incorporate community and coalition stakeholders needs into plan.
Trillium, member of the Love's Truck Stop Family of Companies	Siting, operating, previous station development experience in CA.
Hydrogen Fuel Cell Partnership (HFCP)	Utilize expertise in hydrogen corridor planning and industry connections.

NCTCOG/DFWCC Involvement in H2LA

1. Provide travel demand and property location data to GTI Energy for hydrogen infrastructure modeling
2. Create a Local Project Advisory Group and hold urban/rural meetings at least quarterly
3. Share advisory group findings with identified minority serving institutions and publicly, which will include:
    - Community perception of hydrogen refueling and vehicles
    - Community concerns and priorities related to hydrogen refueling and vehicles
    - Recommendations for public safety, and workforce safety/opportunities

Project Timeline

SPRING 2024-SUMMER 2025

Quarterly or Bimonthly Local Project Advisory Group Meetings

SUMMER 2025

Minority Serving Institutions Engagement

FALL 2025

Project Concludes, Resources from Advisory Group Meetings Posted

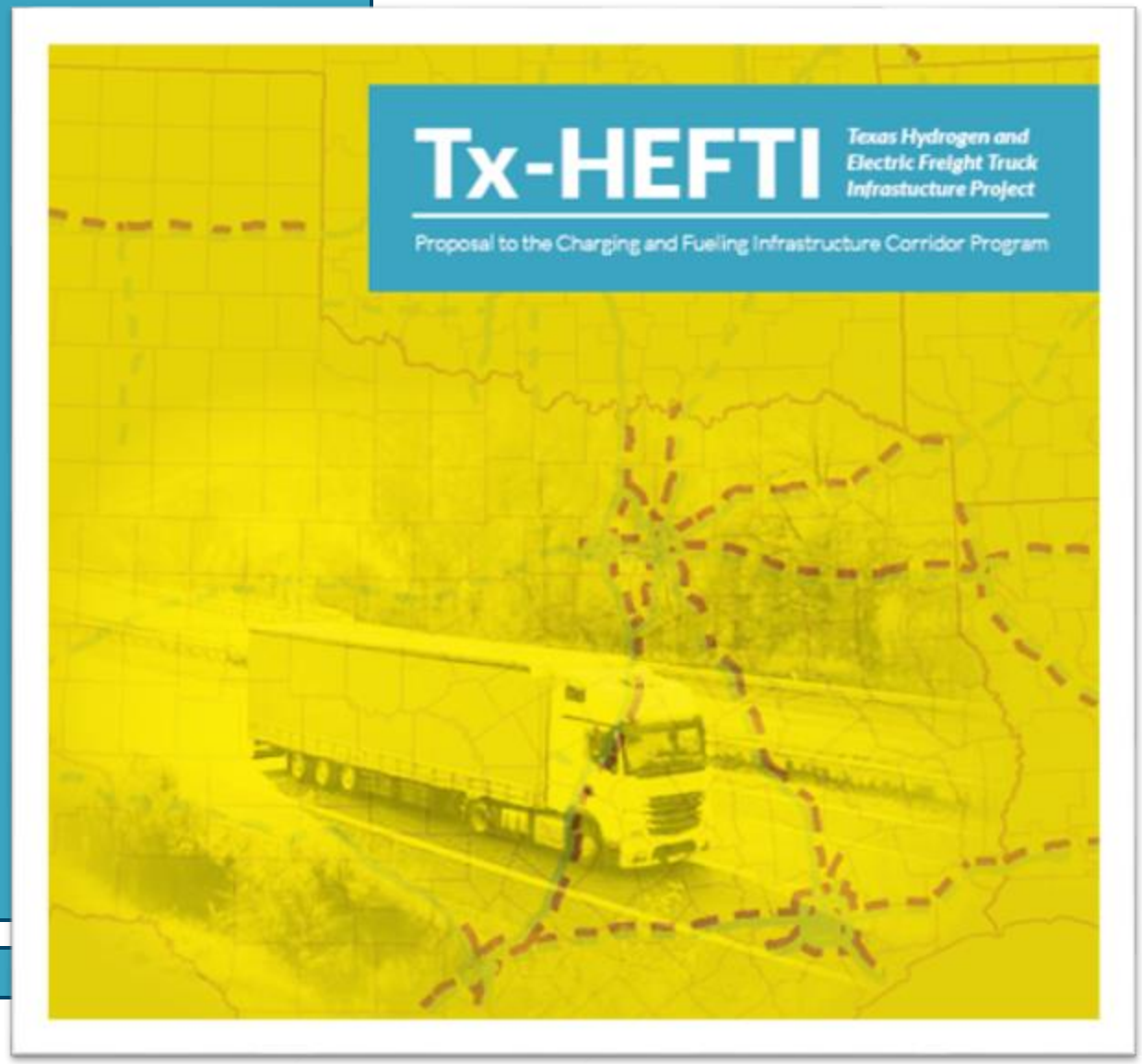
Hydrogen Refueling Audience Input

In your community, what are the potential…

- General concerns and priorities?
- Public, health, and safety concerns?
- Training, education, and workforce needs?
- Jobs and community benefits?

Any other concerns?

Feedback received will inform Local Project Advisory Group meeting topics



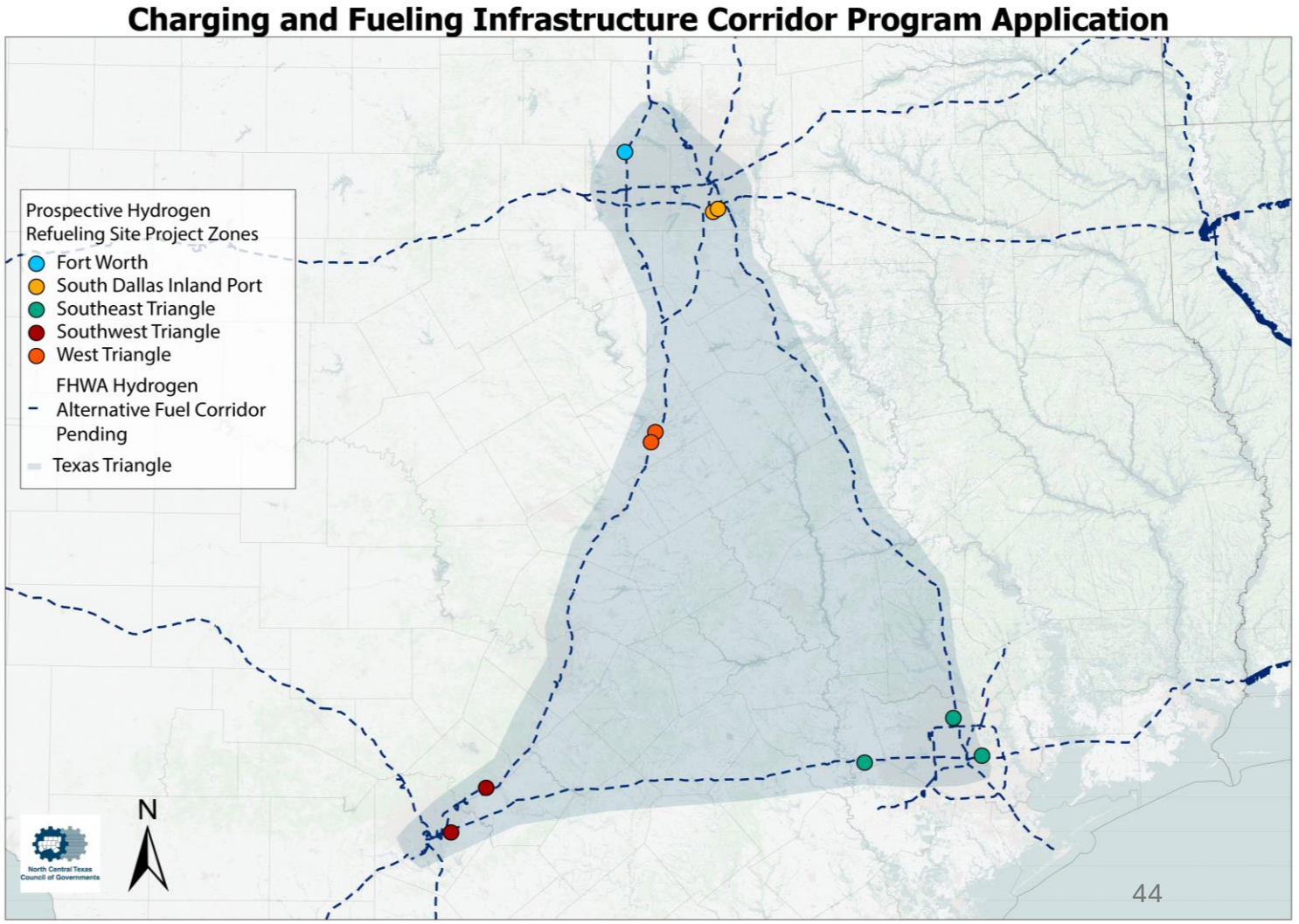
Federal Highway Administration Charging and Fueling Infrastructure Program: Corridor Project

Charging and Fueling Infrastructure Corridor Program

Texas Hydrogen and Electric Freight Infrastructure Project (Tx-HEFTI)

Awarded $70 million to construct 5 medium-/heavy-duty hydrogen refueling stations

All stations will be open to the public and co-located with currently existing truck stop locations



Tx-HEFTI Engagement Opportunities

NCTCOG will coordinate with local governments in potential project areas

- Host public engagement events for communities in project areas
- Select final project areas in coordination with local governments and community input

Coordinate with station provider for procurement needs

- Request for Proposals issued as needed for any equipment, site construction, goods and services, etc.
- Prioritize Disadvantaged Business Enterprise (DBE) engagement through all procurements

Tentative Timeline

- Started coordination with potentially affected areas
- Public engagement conducted throughout
- Up to 5 years operations and maintenance funding for operations

FALL 2024

Sign contract with FHWA, begin work

SPRING 2025

Finalize site selections

SUMMER 2025

Complete site planning and NEPA clearance

FALL 2025

Procure equipment and services

WINTER 2025-2028

Construction of sites in phases

Tx-HEFTI Audience Input

- Would you/your community benefit from public outreach events focused on hydrogen fuel education?
- What community groups could we work with in these project areas?
- What fleets might be interested?
- Other thoughts on local hydrogen refueling stations?

Regional Investments in EV Charging

Texas EV Charging Plan

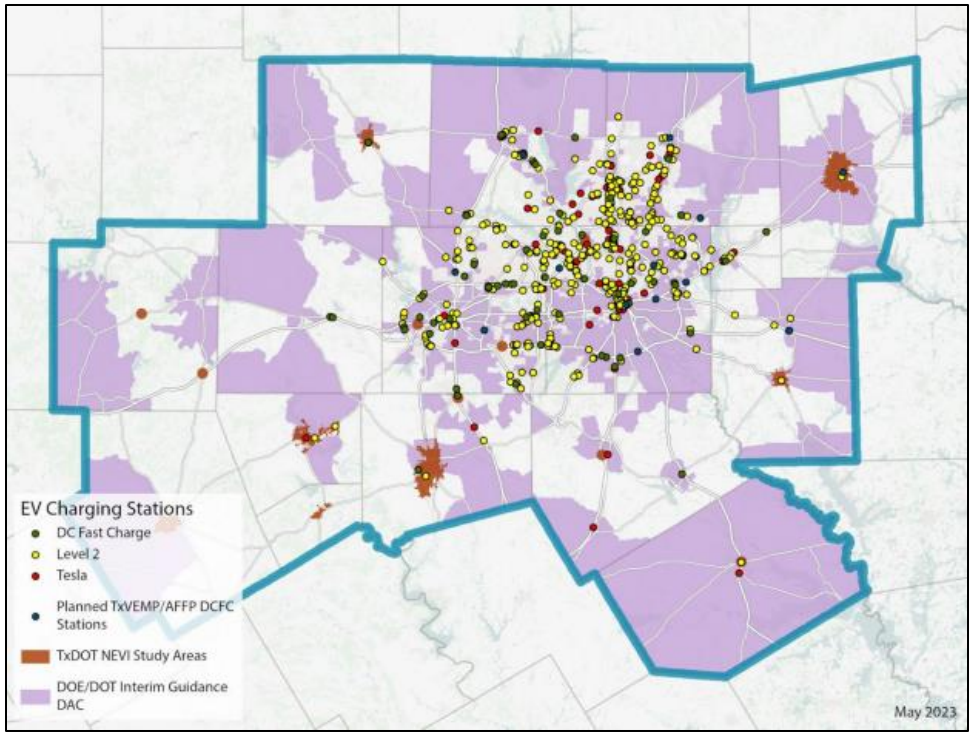
TxDOT administering $408 million over 5 years to build out EV charging infrastructure, $64.5 million will go to NCTCOG MPA to fill charging gaps

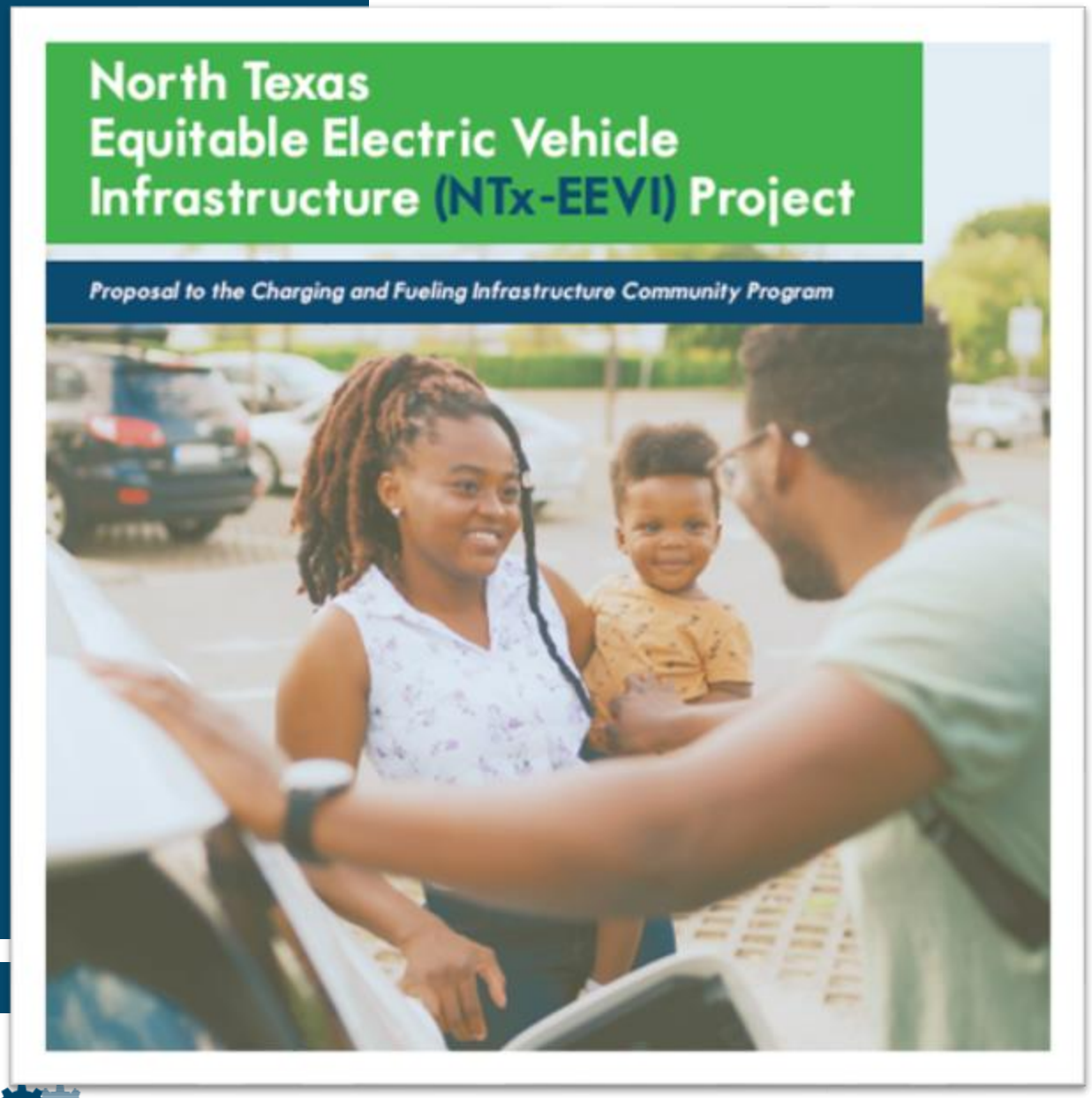
North Texas Equitable Electric Vehicle Infrastructure Project

$15 million award that will fund up to 100 EV charging ports in the NCTCOG region

North Texas Reliable Electric Vehicle Infrastructure Project

$3.6 million award to repair and replace non-operational chargers in the DFW region





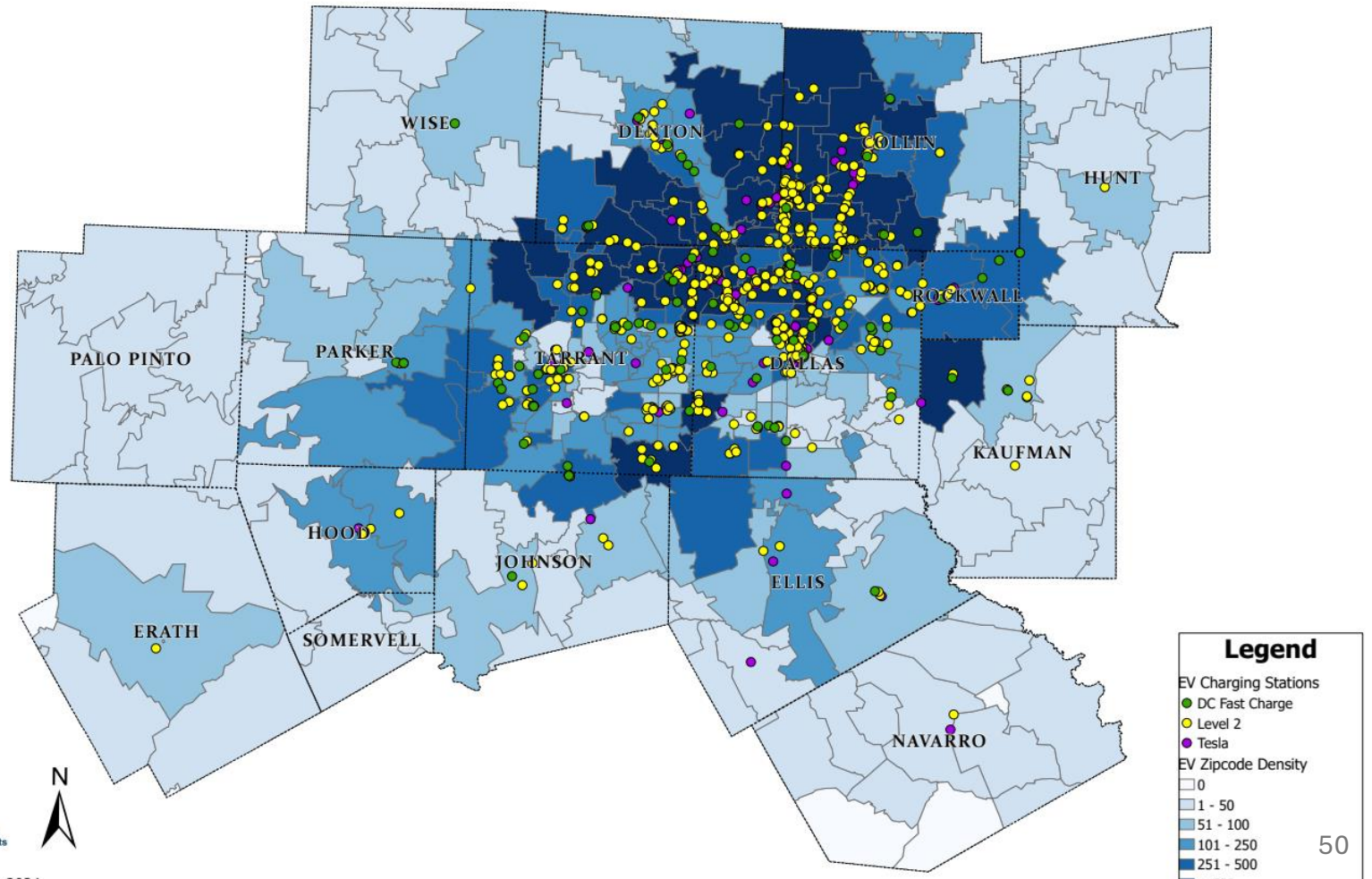
Federal Highway Administration Charging and Fueling Infrastructure Program: Community Project

Charging and Fueling Infrastructure Community Program

North Texas Equitable Electric Vehicle Infrastructure Project (NTx-EEVI)

Awarded $15 million to build EV charging stations to provide up to 100 charging ports regionwide and create specialized technical teams to streamline implementation

Currently Available Electric Vehicle Chargers in the NCTCOG Region



North Central Texas Council of Governments

January 2024

Project Objectives

At least 50% of ports in Justice40 Areas
Emphasize FHWA Focus Areas:

- Rural communities
- Low- and moderate-income neighborhoods
- Underserved communities
- Areas with low ratio of private parking to households
- Areas with high ratio of multiunit dwellings to single family homes
- Justice40 environmental justice areas
- Multimodal hubs and shared-use fleets and services
- Fleet vehicles that operate in communities

Complement planned and future infrastructure investments by the public and private sectors

Project Related Procurements

Anticipate issuing an open, competitive Request for Proposals to select private sector firm(s) for Deployment Dream Team

- Seeking teams of experts in site selection, design, engineering, permitting, inspection, safety, utility coordination, NEPA, Buy America, etc.
- Goal is to expedite the “cradle to grave” process of siting and deploying chargers
- Will have regular coordination meetings with Authorities Having Jurisdiction to help them through the process and troubleshoot when necessary
- NCTCOG staff will be involved to gain experience for future projects

Project Related Procurements

Anticipate issuing a cooperative Request for Proposals (RFP) for EV Charging Station Providers on behalf of local governments

Procurement Considerations:

- Station technicians must be EVITP certified or equivalent
- NCTCOG may select one or multiple providers for 'turnkey' installation
- Will incorporate input from local governments
- Prioritize DBE engagement through all procurements

Site Considerations:

- Project sites determined through site selection
- Must be located on publicly owned property
- Will likely be a mix of L2 and DCFC and incorporate multiport locations
- All stations must comply with federal NEVI standards (23 CFR Part 680)

SUMMER 2024

Release Request for Proposals for deployment Dream Team

FALL 2024

Reimbursable activities may begin

SPRING 2025

Finalize site selection, work with local governments for specific project locations

SUMMER 2025

Release Request for Proposals to select charging station vendors

FALL 2025-SUMMER 2026

Site construction process

Tentative Timeline

- Public outreach conducted throughout
- Deployment Dream Team learnings will be shared with local governments, other Clean Cities Coalitions, and stakeholders
- Operations and maintenance funding and tracking will continue for five years

NTx-EEVI Audience Input

- What definition of equity for charging should be considered?
  1. Simple equality = higher population, more chargers
  2. Complex equality = EV owners should have chargers
  3. Utilitarian = place chargers based on expected use
  4. Capability approach = everyone has access
- What criteria should be used to focus on equity for site selection?
- Should priority be placed on many L2 or few DCFC?
- Where would your community like to see more public EV charging stations?
- Would your community benefit from public outreach focused on EVs and EV infrastructure education?

Federal Highway Administration EV Charger Reliability and Accessibility Accelerator Program

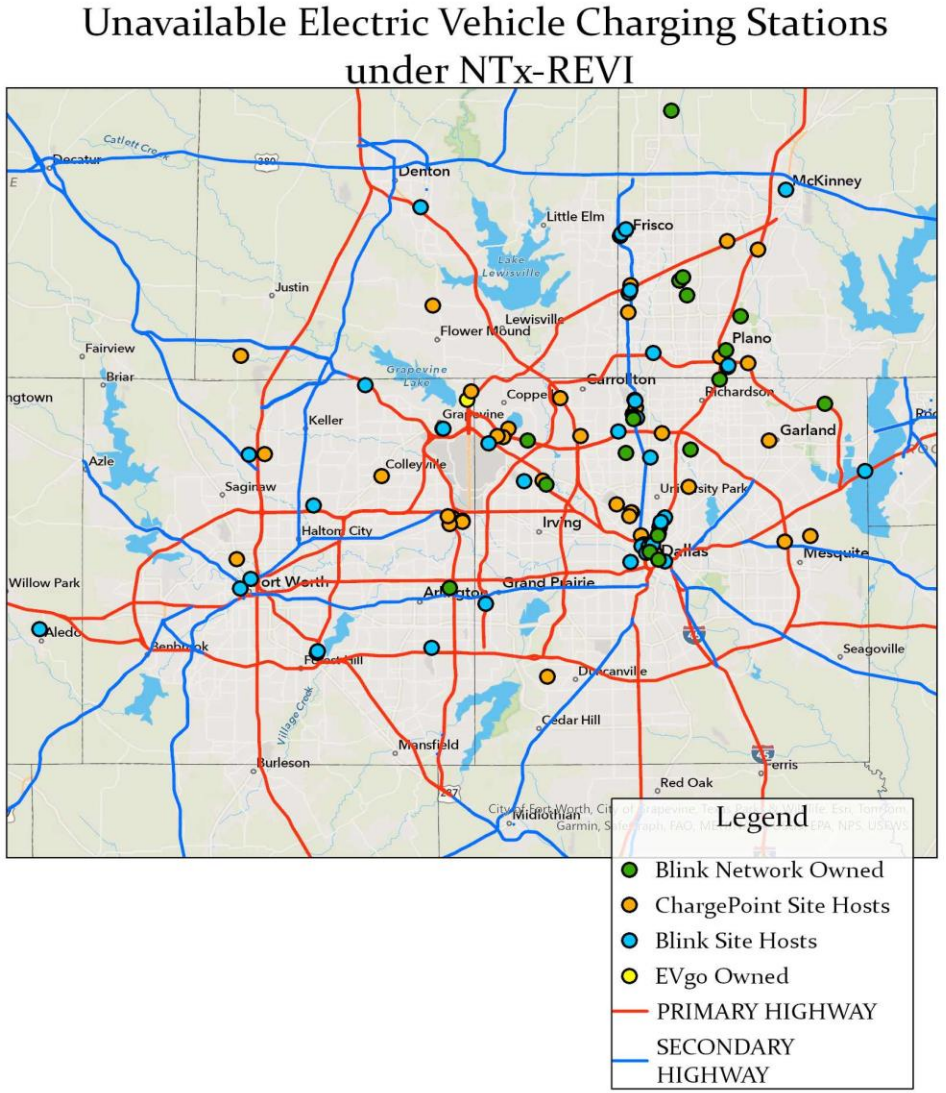
Electric Vehicle Charger Reliability and Accessibility Accelerator Program

North Texas Reliable Electric Vehicle Infrastructure (NTx-REVI) Project

Awarded $3.6 million to repair, replace, or upgrade EV charging stations

230 total eligible ports across 138 stations and 125 sites

- Universe of eligible stations defined by FHWA



Project Details

Coordinate with host cities, charging station networks, and site hosts to determine appropriate repair/upgrade needs

Prioritize/Select Sites that:

- Provide 20% cost share
- Streamline NCTCOG administrative burden
- Are not in proximity to existing charging stations
- Increase access in key areas such as multi-family properties, grocery stores, and retail locations

All stations must comply with federal NEVI standards (23 CFR Part 680)

- Stations must be replaced like-for-like
- Exception: Level 2 stations within 1 mile of an alternative fuel corridor may be upgraded to a NEVI-compliant DCFC station

Results of Coordination with Charging Networks

Now have more information from FHWA about the ability to transition Level 2 stations to DCFCs

Based on available funding and expected costs, potential outcomes could be:

- Scenario #1: 3 DCFC ports + 194 Level 2 ports (original proposal from application)
- Scenario #2: 16 DCFC ports + 56 Level 2 ports (merit/DCFC focused)

More community low power ports vs less higher power ports along highways?

Tentative Project Timeline

SPRING/SUMMER 2024

Finalize potential project locations for the program

FALL 2024

Reimbursable activities may begin

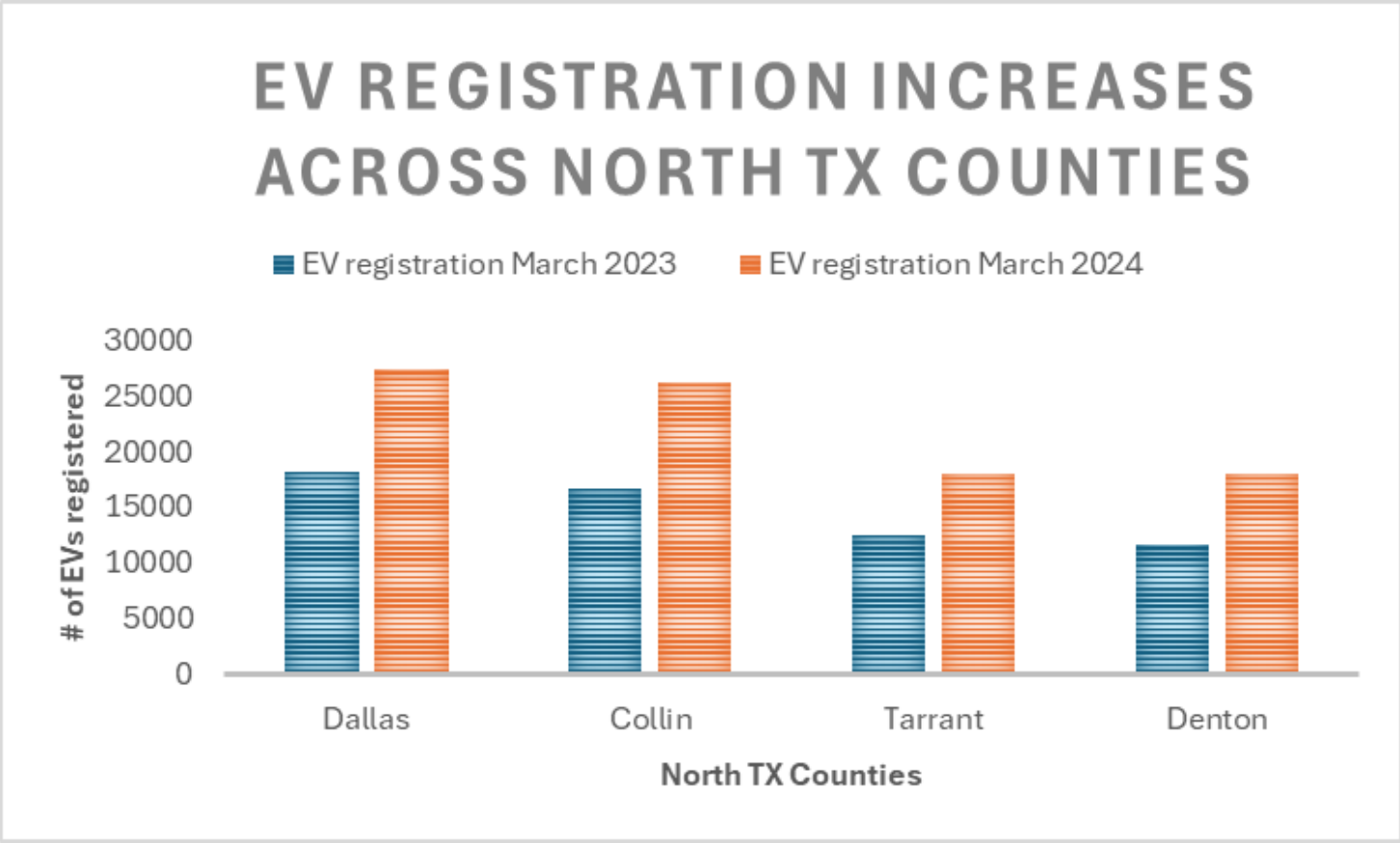
WINTER 2024-2025

Repair/replacement/upgrades completed throughout 2025

Energy Initiatives for Resilient and EV-Ready Communities

Section 3

EV Adoption Statistics



Source: [EVs in North Texas | DFWCC](#)

County	EV registration March 2023	EV registration March 2024	Percent Increase
Dallas	18,218	27,425	51%
Collin	16,726	26,202	57%
Tarrant	12,414	18,050	45%
Denton	11,662	18,002	53%

Resilient EV Charging Infrastructure

Now – August 2024: Developing a White Paper on resilient EV charging infrastructure planning
(Funded by the State Energy Conservation Office (SECO))

Summer 2024 – Q4 of 2026: Developing and Demonstrating a Resilient EV Charging Plan for North Texas (Funded by the Joint Office of Energy and Transportation Ride and Drive Electric)

- Project Name: Planning Resilient EV Charging in Texas
- Federal Award: $1.5 Million
- Timeframe: 30-Month Project Period
- Project Outcome: A resilient electric vehicle (EV) charging plan for North Texas
  - Actionable recommendations to ensure the continuity of operations of critical EV travel
  - Address concerns and risks to the reliability of the electric grid
  - Demonstration of projects
    - Tabletop scenario planning exercise
    - Test effectiveness of resilient strategies and equipment at project partner facilities

Resilient EV Charging Infrastructure

Project Partners:

NCTCOG/DFWCC (Lead)

Oncor Electric Delivery

Dallas-Fort Worth International Airport

Dallas Area Rapid Transit

North Texas Innovation Alliance

Additional local governments

Project Approach:

Research and stakeholder engagement
- Resiliency planning
- Emergency preparedness
- EV infrastructure
- Potential impacts on disadvantaged communities

Draft EV charging resiliency plan

Plan and execute demonstration projects

Incorporate demonstration project findings into plan

Disseminate project and plan materials – outreach, public workshop

CHARGING SMART

NATIONALLY DISTINGUISHED. **LOCALLY POWERED.**

Dallas-Fort Worth CLEAN CITIES

IREC

INTERSTATE RENEWABLE ENERGY COUNCIL

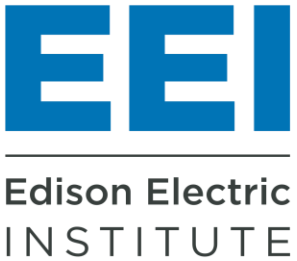
Independent leadership. Trusted clean energy expertise.

Charging Smart 101

IREC-led project, awarded by the DOE

- A structured technical assistance and designation program that supports local governments in setting and achieving equitable EV-readiness goals
- Provides no-cost technical assistance for communities to streamline planning, permitting, and inspections to develop EV infrastructure
- Justice40 Initiative, targeting benefits towards disadvantaged and lower-income communities
- Implemented through Clean Cities Coalitions in participating states and regions
- Modeled after SolSmart, another IREC program

Partners


EEI
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RMI


Metropolitan
Mayors
Caucus


chargepoint


EVgo


DRIVE CLEAN
COLORADO
a Clean Cities Coalition


North Central Texas
Council of Governments


LONG
BEACH
Clean Cities


VIRGINIA
CLEAN CITIES


COLUMBIA – WILLAMETTE
WESTERN WASHINGTON
CLEAN
CITIES

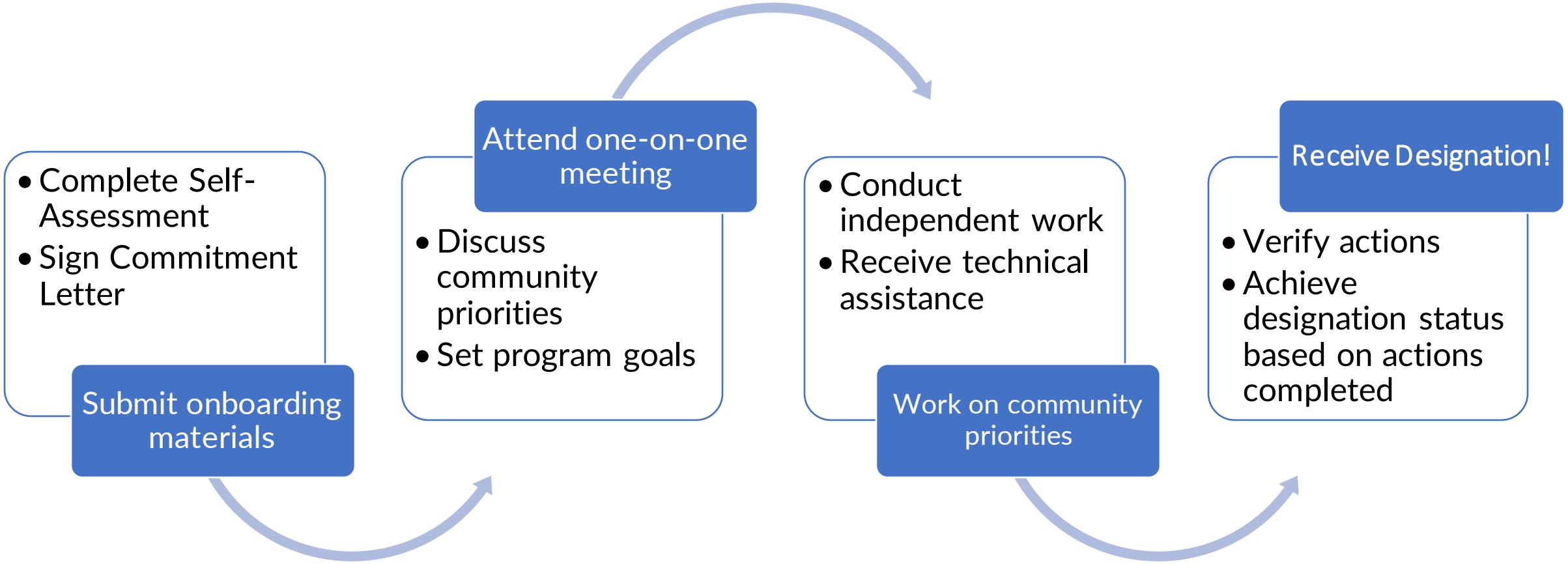

Clean Cities
GREATER NEW HAVEN
Clean Cities Coalition


Connecticut
Southwestern Area
Clean Cities Coalition

Key Functions of Charging Smart

- Provide communities access to expert technical assistance from a team of knowledgeable organizations at no cost
- Send a signal to EV service providers and project developers that communities are open to EV charging development
- Make local government processes more efficient
- Showcase community achievements on a large scale
- Facilitate the development of EV charging on public properties
- Stimulate an increase in charging portals, including in underserved communities

Steps toward Designation



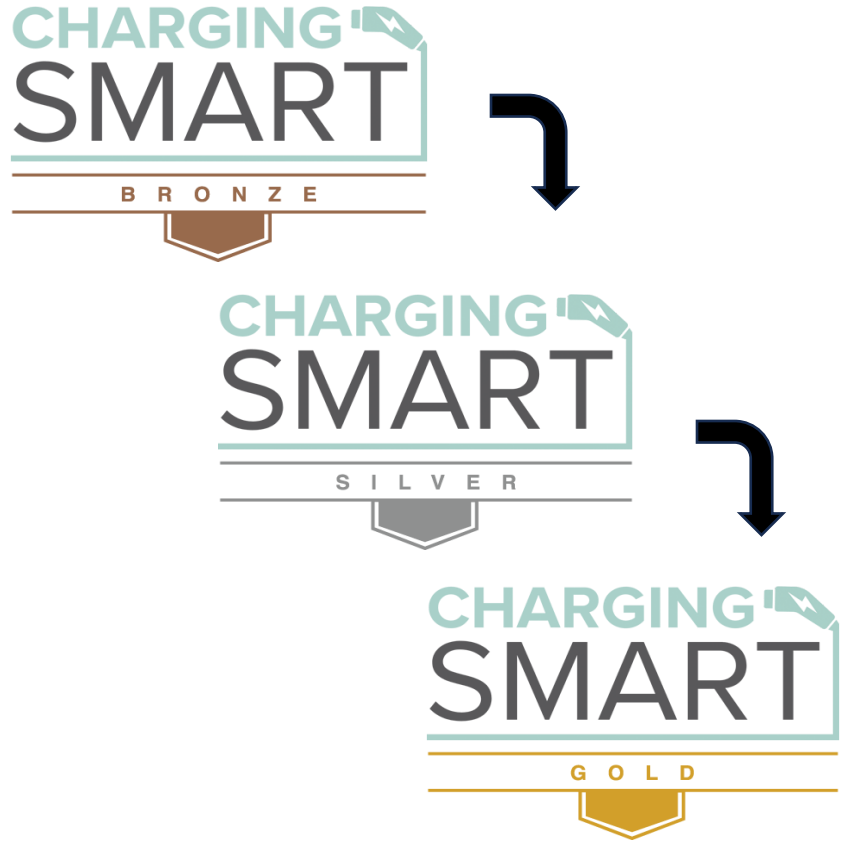
Charging Smart Framework

Action Categories

1. Planning
2. Regulation
3. Utility Engagement
4. Education and Incentives
5. Government Operations
6. Shared Mobility

EVs for All

Designation Levels



Point System: Each category contains actions that, when completed, points are added towards the total points needed for designation status. An additional opportunity for points, "EVs for All", focuses on serving disadvantaged populations.

Bronze Prerequisite Requirements

Regulation:

- Review zoning requirements and identify restrictions that intentionally or unintentionally prohibit EVSE deployment.
- Adopt a standard EV charging infrastructure permit application process
- Develop a charging infrastructure permitting checklist

Utility Engagement:

- Meet with utilities to discuss EV collaboration opportunities

Silver Prerequisite Requirements

Complete Bronze criteria

Regulation:

- Permit chargers as an accessory use to parking lots in all zoning districts, by right
- Allow all EVSE parking stalls to count toward minimum parking requirements, when applicable

Government Operations:

- Complete a fleet analysis (also consider plans for future EV purchases)

Gold Prerequisite Requirements

Complete Bronze and Silver criteria

Planning:

- Complete an action in the "Address EVs and charging infrastructure comprehensive plan" best practices

Regulation:

- Establish standard approval timelines for EVSE installations and limit review comments to one round
- Adopt a technology-neutral, EV-ready ordinance or plan for new construction

Government Operations:

- Install a public charger
- Purchase EVs for fleet use to meet adopted goals

How to Participate

- Reach out to cleancities@nctcog.org to participate; learn more at https://www.dfwcleancities.org/
- DFW Clean Cities staff will:
  - Provide onboarding documents to start the designation process
  - Fill out the Community Scorecard
  - Offer technical assistance along with tools like IREC's Program Guide
- Attend our Informational Webinar on June 5th and future Cohort Meeting to learn more details!

IREC's Charging Smart webpage:

Guaranteeing Access to Underserved and Marginalized Populations by Building Employment Opportunities

GUMBO 101

Louisiana Clean Fuels-led project, funded by the DOE

- Develop a curriculum with local colleges to train a workforce to install, maintain, and service electric vehicle charging equipment (EVSE)
- Meet National Electric Vehicle Infrastructure (NEVI) Program and Justice40 Initiatives
- Now spreading to participating states and areas, including DFW, Colorado, NYC, Long Beach, San Diego, Tennessee, Virginia and D.C.

DFWCC Involvement in GUMBO

Identify and Connect

- Community-Based Organizations (CBOs)
- Community Colleges
- Workforce Development Programs (WFDPs)

Conduct Community Outreach

Host Local Advisory Committee Meeting and Listening Sessions with Potential Employers

Achieve at Least One Community College/WFDP to Commit to Introducing this Curriculum at Their School

Benefits

- Fill the need for a local, skilled EVSE installation and operations workforce as EV purchases continue to soar
- Give opportunities to individuals from disadvantaged communities to earn high-demand credentials
  - Prepare students to enter the workforce and earn a competitive wage
- Will help achieve a nationwide network of over 500,000 EV chargers by 2030

LCF Pilot Program Timeline

FALL 2023
Develop a curriculum with the help of Cerritos College and ChargerHelp!

WINTER 2024
Create a replication playbook for multistate rollout

SUMMER 2024
Pilot the training program at Baton Rouge Community College

FALL 2024-2026
Support community colleges across the country in developing training courses

FALL 2026 (END OF PROGRAM)
Deploy a trained, local EV charger workforce

Curriculum includes In-Depth Training on:

- Electric Vehicles and Batteries
- Electrical Energy
- Fundamentals of Electrical Codes and Safety
- Charging Stations and EVSE
- Preventative Maintenance
- Corrective Maintenance
- EVSE Commissioning
- Industry Standards

Closing Remarks

Vehicle Funding Opportunities

Program/Incentive	Eligible Activities	Funding Amount	Deadline to Apply
Commercial Electric Vehicle (EV) and Fuel Cell Electric Vehicle (FCEV) Tax Credit	New EV, Plug-In Hybrid Vehicle (PHEV), or FCEV	15% of the purchase price for PHEVs, 30% of the purchase price for EVs and FCEVs, maximum tax credit of $7,500 for vehicles under 14,000 lbs. GVWR and $40,000 for vehicles over 14,000 lbs. GVWR	No deadline
Clean Heavy-Duty Vehicles (CHDV) Grant Program	Replace existing Class 6 and 7 heavy-duty vehicles with zero emission vehicles, includes funding for infrastructure and workforce development	$400 million to serve communities located in an area in nonattainment; 70% to school bus replacements, 30% to non-school bus Class 6/7 HD vehicles	July 25, 2024
Alternative Fuel Infrastructure Tax Credit	Installation of qualified fueling equipment, such as EV charging infrastructure in eligible locations	Up to 30% tax credit	December 1, 2032

Upcoming Events

Charging Smart Informational Webinar

Learn more about this new EV-readiness program. Webinar on **Wednesday, June 5 from 1:00 - 2:00 pm**. Registration coming soon.

North Central Texas Hydrogen User Forum

The North Central Texas Council of Governments, University of Texas at Arlington, and the Texas Hydrogen Alliance will be hosting a Hydrogen User Forum on **Tuesday, June 11** from **9:00 am – 3:30 pm** at the UT Arlington campus.

Regional EV Infrastructure Working Group

- Monthly meeting series to coordinate electric vehicle infrastructure deployment efforts throughout the region.
- Next meeting held virtually on **Wednesday, May 15 from 2:00 – 3:00 pm.**

Texas Clean Cities and Communities Renewable Natural Gas Webinar

First webinar in a series of upcoming RNG meetings, held in June.

Tools and Resources

DFWCC Events

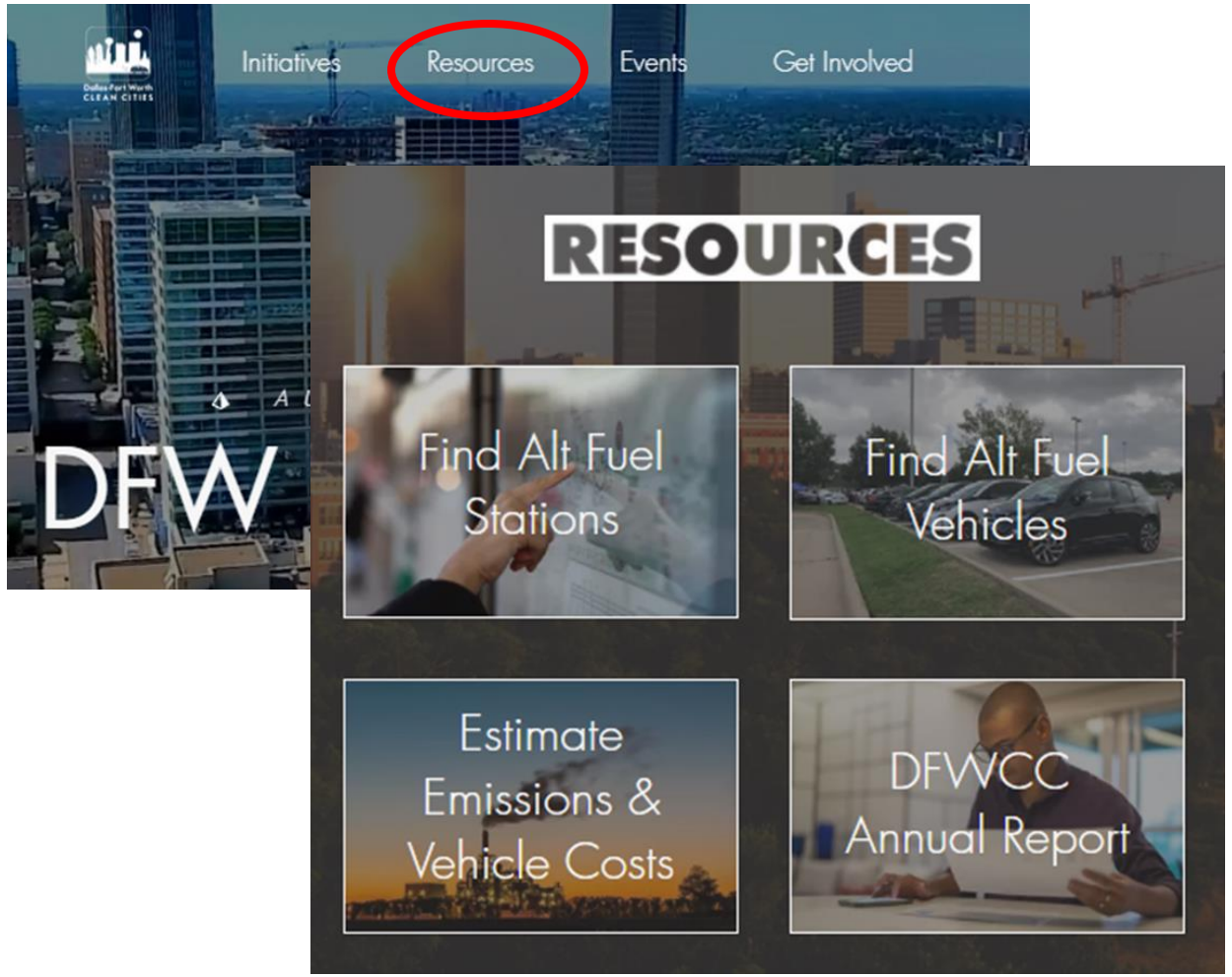
dfwcleancities.org/events

EV Registration Data

dfwcleancities.org/evnt

Funding Opportunities

nctcog.org/aqfunding



Get Involved with DFWCC

Contact us at cleancities@nctcog.org for any questions on fleet electrification, funding opportunities, or other inquiries

Upcoming and past webinars and events posted at dfwcleancities.org/events

Dallas-Fort Worth CLEAN CITIES

To stay up to date on procurement opportunities, register under "air quality/energy planning" and/or "alternative fuels" on the NCTCOG Transportation Department Vendor Database nctcog.org/trans/funds/overview

Sign up for our weekly email list
dfwcleancities.org/getinvolved

Contact Us

New Mobility Choices and Emerging Technologies

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Dallas-Fort Worth CLEAN CITIES

Want to sponsor Dallas-Fort Worth Clean Cities?

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